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**Forest Service**  
Eastern Region

Superior  
National  
Forest

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# Echo Trail Area Forest Management Project

## Final Supplement to the Final Environmental Impact Statement



**FINAL SUPPLEMENT TO THE FINAL ENVIRONMENTAL IMPACT STATEMENT  
FOR THE  
ECHO TRAIL AREA FOREST MANAGEMENT PROJECT**

**Superior National Forest  
Eastern Region**

**St. Louis and Lake Counties, Minnesota**

**February 2009**

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**ABSTRACT:**

The USDA Forest Service is proposing forest vegetation management and related transportation system activities on National Forest System (NFS) land with the Echo Trail Area Forest Management Project. The purpose of the Project is to implement the *Superior National Forest Land and Resource Management Plan* (Forest Plan). The purpose of this Final Supplement is to further describe the direct, indirect and cumulative effects to water quality and watershed health, including in the Boundary Waters Canoe Area Wilderness (BWCAW). This Final Supplement tiers to the Final EIS for the Echo Trail Area Forest Management Project (December 2006).

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Final Supplement to the Final Environmental Impact Statement  
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# Summary

## Introduction

This is a Final Supplement to the Final Environmental Impact Statement (FEIS) for the Echo Trail Area Forest Management Project. The purpose of this Supplement is to disclose the direct, indirect and cumulative effects to water quality and watershed health, including in the Boundary Waters Canoe Area Wilderness (BWCAW). The Supplement is being prepared to address concerns raised in the Memorandum Opinion and Order for *Sierra Club, et. al. v. Kimbell* (Case No. 07-3160) issued September 15, 2008 by the United States District Court, District of Minnesota. The opinion stated that “the FEIS is vacated and the Forest Service is ordered to amend the FEIS to include an analysis of the Project’s impacts to water quality and watershed health in the Boundary Waters” (pp. 20-21).

This Final Supplement supplements the FEIS for the Echo Trail Area Forest Management Project and tiers to the FEIS to the 2004 Superior National Forest Plan. These documents are incorporated by reference rather than repeated here (CFR 1502.21). These documents are available on the internet at [www.fs.fed.us/r9/superior](http://www.fs.fed.us/r9/superior) under Projects and Plans. The Echo Trail Project proposes to implement vegetation management actions and associated road construction and decommissioning actions to achieve the purpose and need of the Project. The Final Environmental Impact Statement for the Echo Trail Project describes public involvement and scoping (p. 1-15 to 1-16), purpose and need (p. 1-9), proposed action (pp. 1-12 to 1-14), and alternatives (pp. 2-3 to 2-11). The Summary to the FEIS is contained on pages S-1 to S-20 of the FEIS. This Final Supplement contains analysis represented in the Water Quality section of the original FEIS (section 3.13), and also includes additional analysis addressing water quality and watershed health in the BWCAW.

## Analysis Indicators and Analysis Area

Three indicators (miles of new temporary and temporary winter road construction and decommissioning, number of stream crossings, and proportion of upland open and upland young forest within each 6<sup>th</sup> order watershed) related to water quality and watershed health are addressed in the analysis of effects of four alternatives associated with the Echo Trail Area Forest Management Project. These indicators help to measure the potential direct, indirect, and cumulative effects to water quality and watershed health at both the site specific and watershed-scale, including potential downstream effects to water quality within the BWCAW. The Analysis Area includes relevant portions of the BWCAW and other lands which are in 6<sup>th</sup> order watersheds that are contained in or intersect the Project Area (see Figure SUP 3).

## Environmental Consequences

### *Direct and Indirect Effects*

Indicator 1: miles of new temporary and temporary winter road construction and decommissioning

Potential effects from new road construction include effects to watershed, riparian, stream, and wetland hydrologic functions such as reduced soil water infiltration, increased surface runoff, removal of streamside vegetation and riparian habitat, and disruption of natural wetland flow. These potential effects would be greatly reduced and mitigated with the use of mitigation measures described in Appendices A and B to the FEIS. These mitigation measures are drawn from the Superior National Forest Plan, Minnesota Forest Resource Council (MFRC) Site-level Guidelines, and mitigations identified by the Echo Trail Interdisciplinary Team.

While effects would be minor, the greatest degree of effects from new temporary and temporary winter roads to water quality and watershed health would occur under Alternative 2 (90 miles), followed by Alternative 3 Modified (74 miles) and finally Alternative 4 (67 miles) when considered across the entire Project Analysis Area (Table 3.13-1). Within 1 mile of the BWCAW boundary, the greatest degree of effects from new temporary and temporary winter roads to water quality and watershed health would occur under Alternative 2 (21 miles), followed by Alternative 4 (19 miles) and finally Alternative 3 Modified (15 miles) (Table SUP 5).

Alternatives 2, 3 Modified, and 4 also include decommissioning existing system, unclassified and temporary use roads (Table 3.13-1). Road decommissioning would render each road unusable by motorized vehicles, remove stream crossings and fill from flood prone and wetland areas, and require revegetating exposed soil surfaces (USDA Forest Service 2004b p. 2-50). This activity would improve existing water quality and watershed conditions within the Analysis Area, including downstream reaches within the BWCAW by reducing total road surface area, potential surface erosion and run-off, as well as sediment input into local streams, lakes, and wetlands. All action alternatives decommission a similar amount (34 to 35 miles) of road and would produce similar benefits to water quality and watershed health when considered for the entire Analysis Area.

New temporary roads would be constructed with mitigation measures that substantially reduce or eliminate negative impacts, and would be decommissioned when use is complete. On the other hand, existing unclassified and system roads may continue to remain on an indefinite basis without decommissioning and some old roads may have been constructed in the past to lower standards than roads constructed currently. Accordingly, the short term, mitigated negative impacts that accompany the construction of new temporary roads are generally outweighed by the positive, long-term impacts of decommissioning existing unclassified and system roads. The no action alternative would not decommission any existing roads and thus would not benefit watershed health and water quality as much as the action alternatives even though no new temporary roads would be constructed under Alternative 1 (no action alternative).

#### Indicator 2: Number of Stream Crossings

Potential effects from stream crossings include unnaturally confined stream channels with increased flows, reduced stream flood flow capacity, and reduced floodplain function during high flow events. As for Indicator 1, mitigation measures identified in Appendices A and B of the FEIS would reduce impacts.

While effects would be minor, the greatest degree of effects from the use of temporary seasonal, temporary winter road and special use crossings to water quality and watershed health across the entire Analysis Area would occur under Alternative 1, Alternative 2 (46 crossings), followed by Alternative 3 Modified (42 crossings) and finally Alternative 4 (31 crossings) (Tables 3.13-2 and 3.13-3). Alternative 1 has the greatest potential to negatively affect water quality and watershed health conditions across the entire Analysis Area because it does not reduce the total number of road stream crossings through decommissioning unclassified roads (Table 3.13-2).

Although possible, it is highly unlikely that new stream crossings within 1 mile of the BWCAW would negatively affect water quality and watershed within the BWCAW. While effects would be minor, Alternative 2 would have the greatest impact to water quality and watershed health in the BWCAW since it would have two stream crossings potentially affecting the BWCAW, followed by Alternatives 3 Modified and 4 with one stream crossing each (Table SUP 6). The mileage of stream affected under all action alternatives is less than 1 mile. Alternative 1 has the least potential to impact water quality in the BWCAW since no new stream crossings would be constructed within 1 mile of the BWCAW.

Indicator 3: Proportion of upland open and upland young forest within 6<sup>th</sup> level watersheds

The proportion of upland open and upland young forest within 6<sup>th</sup> level watersheds influences the hydrologic function of watersheds in several ways. In recently harvested or open areas, transpiration and evaporation losses are low because of low leaf area and soils are wet; thus there is more water available for streamflow and in groundwater that has the potential to contribute to increased water yield and peak flows. It is also widely accepted that changes in forest vegetation cover from a mature forested area to young forest or open areas can cause snow to melt faster and rainfall to reach streams faster. None of the 6<sup>th</sup> level watersheds would reach the 60% threshold for upland open and upland young forest at which impacts to watershed health and water quality may occur as measured by this indicator as a result of the action alternatives or the no action alternative (Table SUP 1 and Figure SUP 4).

Cumulative Effects

The three indicators described above were considered for cumulative effects analysis. Past, present, and reasonably foreseeable future actions that could potentially contribute to cumulative effects associated with new road construction and decommissioning, stream crossings and upland open and upland young forest were considered. This includes federal, State, county, and private projects associated with timber harvest, private development, and special use permits, as well as routine road maintenance activities. Federal projects include the Travel Management Project, which would decommission roads in the Analysis Area, along with the Border and Glacier projects which would create young forest. The application of MFRC and other State guidelines for state and private projects and the application of federal and MFRC guidelines for other federal projects would minimize the contribution of these projects to cumulative effects. There would be

minimal negative cumulative effects to water quality and watershed health. The Travel Management project would contribute beneficial cumulative effects due to the decommissioning of roads. On a net basis, there would be minor, but beneficial, cumulative effects.

Conclusion

Potential short-term negative effects both overall and within the relevant portion of the BWCAW identified by the Analysis Area are expected to be minimal with the application of mitigation measures. Positive long-term effects would occur from the action alternatives due to decommissioning unclassified roads.

On a net basis across the entire Analysis Area, Alternative 4 has the greatest potential to benefit water quality and watershed health, followed by Alternative 3 modified, Alternative 2 and Alternative 1. On a net basis within the BWCAW, Alternative 3 Modified has the greatest potential to benefit water quality and watershed health, followed by Alternative 4, Alternative 2 and Alternative 1.

### **3.13 WATER QUALITY AND WATERSHED HEALTH**

#### **3.13.1 Summary**

The Echo Trail Area Forest Management Project proposes to complete vegetation management and road construction and decommissioning actions to implement the Superior National Forest Plan. This Final Supplement to the Final Environmental Impact Statement (FEIS) for the Echo Trail Project addresses direct, indirect and cumulative effects to water quality and watershed health, including in the Boundary Waters Canoe Area Wilderness (BWCAW).

Effects are analyzed using three indicators: miles of new temporary and temporary winter roads and road decommissioning, number of stream crossings and proportion upland open and upland young forest in 6<sup>th</sup> order watersheds. Potential short-term negative effects both overall and within the relevant portion of the BWCAW identified by the Analysis Areas are expected to be minimal with the application of mitigation measures. Positive long-term effects would occur from the action alternatives due to decommissioning roads.

Looking at the effects in a combined sense, the differences between alternatives would be minor. On a net basis across the entire Analysis Area, Alternative 4 has the greatest potential to benefit water quality and watershed health, followed by Alternative 3 Modified, Alternative 2 and Alternative 1. On a net basis within the BWCAW, Alternative 3 Modified has the greatest potential to benefit water quality and watershed health, followed by Alternative 4, Alternative 2 and Alternative 1.

#### **3.13.2 Introduction**

This is a Final Supplement to the FEIS for the Echo Trail Area Forest Management Project. The Supplement has been prepared to address concerns raised in the Memorandum Opinion and Order for *Sierra Club, et. al. v. Kimbell* (Case No. 07-3160) issued September 15, 2008 by the United States District Court, District of Minnesota. The opinion stated that “the FEIS is vacated and the Forest Service is ordered to amend the FEIS to include an analysis of the Project’s impacts to water quality and watershed health in the Boundary Waters” (pp. 20-21). This Supplement is a complete version of the water quality and watershed health section 3.13 and is based on the FEIS along with additional analysis and information to comply with the Court Order. For example, the analysis indicators remained the same and a more specific application of those indicators was developed to better disclose the effects to water quality and watershed health in the BWCAW.

This Final Supplement supplements the FEIS for the Echo Trail Area Forest Management Project and also tiers to the FEIS to the 2004 Superior National Forest Plan. These documents are incorporated by reference rather than repeated here (CFR 1502.21). These documents are available on the internet at (<http://www.fs.fed.us/r9/forests/superior/>) under Projects and Plans. The Echo Trail Project proposes to implement vegetation management actions and associated road construction and decommissioning actions to achieve the purpose and need of the Project. The FEIS for the Echo Trail Project describes public involvement and scoping (p. 1-15 to 1-16), purpose and need (p. 1-9), proposed action (pp. 1-12 to 1-14), and alternatives (pp. 2-3 to 2-11). This Final Supplement contains analysis represented in the Water Quality section of the original FEIS (section 3.13), and also includes additional analysis addressing water quality and watershed health in the BWCAW. It contains lists of materials relevant to the Supplement in Chapter 4 and supplements lists found in Chapter 4 of the FEIS. It also includes a section describing the public involvement process for the Draft Supplement (section 3.13.7).

### The Role of the Supplement in addressing Wilderness Character

The USDA Forest Service has developed guidelines and methods for wilderness monitoring. The purpose of monitoring is to provide managers with a tool they can use to answer key questions about wilderness character and stewardship, such as: what is the current state of wilderness character, how is it changing over time, and how do stewardship actions affect and best preserve wilderness character? The guidelines and methods are documented in the General Technical Report “Monitoring Selected Conditions Related to Wilderness Character”: a National Framework (USDA Forest Service 2005). This report defines the four qualities of wilderness as:

- *Untrammeled* – wilderness is essentially unhindered and free from modern human control or manipulation.
- *Undeveloped* – wilderness is essentially without permanent improvements or modern human occupation.
- *Natural* – wilderness ecological ecosystems are substantially free from the effects of modern civilization.
- *Outstanding opportunities for solitude or a primitive and unconfined type of recreation* – wilderness provides outstanding opportunities for people to experience solitude or primitive and unconfined recreation, including the values of inspiration and physical and mental challenge.

This Supplement analyzes the potential impacts to water quality and watershed health in the BWCAW, and this analysis describes how the natural aspect of wilderness character in relation to water quality and watershed health would be affected. While the entire Supplement contains information on effects to the natural aspect of wilderness character in relation to water quality and watershed health, headings titled “Effects to BWCAW” contain information that summarizes effects in the wilderness (see the Environmental Consequences section). The deciding officials will use this analysis to inform the finding that they make for compliance with the Wilderness Act. Additional information informing the finding for the Wilderness Act is contained in the FEIS and project record. A summary of that information is included in the project record.

### **3.13.3 Analysis Methods**

Three indicators (miles of new road construction and decommissioning, number of stream crossings, and proportion of upland open and upland young forest within each 6<sup>th</sup> level watershed) related to water quality and watershed health are addressed in the analysis of effects of four alternatives associated with the Echo Trail Area Forest Management Project. These indicators help to measure the potential direct, indirect, and cumulative effects to water quality and watershed health at both the site specific and watershed-scale, including potential downstream effects to water quality within the BWCAW.

These same indicators were also used to analyze potential effects in the Superior National Forest Land and Resource Management Plan FEIS (pages 3.6-1 – 3.6-60, USDA Forest Service 2004d) and in the Echo Trail FEIS watershed section. The Forest Plan FEIS effects Analysis Area for these indicators was at the watershed scale (USDA Forest Service 2004d, page 3.6-6) including all 6<sup>th</sup> level watersheds that occurred within larger 5<sup>th</sup> level watersheds that were wholly included or intersected the SNF, including those watersheds that were entirely or partially within the BWCAW (USDA

Forest Service 2004d, page 3.6-6). The analysis with these three indicators is augmented with additional discussion on the BWCAW in this Supplement.

**Indicator 1: Miles of new (including new temporary and new temporary winter) road construction and road decommissioning**

Indicator 1 assesses the miles of new road construction, including both new temporary and new temporary winter roads and road decommissioning that are proposed within the Project Area for each alternative. Additionally, the total miles of new temporary and new temporary winter roads and road decommissioning within 1 mile of the BWCAW boundary were analyzed for each alternative to evaluate potential effects to water quality and watershed health within the BWCAW. As a relative comparison among alternatives, this analysis provides a very good way of evaluating potential effects to water quality and watershed health within the BWCAW because potential effects from roads to perennial, intermittent, and ephemeral streams, wetlands, and other lowland areas that drain into the BWCAW can occur up to 1 mile downstream from impacted areas (Verry et al. 2000).

Overall, indicator 1 does a good job of highlighting the differences among alternatives because it is reflective of potential soil disturbances, erosion, and point source sediment input into local streams as well as a measure of potential change to watershed, riparian, stream, and wetland hydrologic functions. If roads are not properly designed and constructed, they may affect watershed, riparian, stream, and wetland hydrologic functions such as reduced soil water infiltration, increased surface runoff, removal of streamside vegetation and riparian habitat, and disruption of natural wetland flow, respectively. A thorough description of potential geomorphic, hydrologic, aquatic habitat, and soil displacement effects from roads and trails is contained in the Superior National Forest Land and Resource Management Plan FEIS, pages 3.6-11-12 (USDA Forest Service 2004d). By following required guidelines, project design features and mitigation measures necessary to protect water quality and watershed health, these effects would be eliminated or substantially minimized.

**Indicator 2: Number of stream crossings**

Indicator 2 assesses the total number of stream crossings resulting from either decommissioning and/or building new temporary roads that are proposed within the Project Area for each alternative. This number may increase through new temporary road construction, or decrease due to road decommissioning. Additionally, the number of stream crossings within 1 mile of the BWCAW on streams that flow into the BWCAW and the total miles of stream channel that could potentially be affected by these stream crossings was evaluated for each alternative to determine potential effects to water quality and watershed health within the BWCAW. This additional analysis acknowledges that effects to water quality from new stream crossings, including inputs of sand and other fine sediments can occur ½ -1 mile downstream from new stream crossing sites (Verry et. al. 2000).

Overall, this indicator does a good job of highlighting differences among alternatives because it represents the potential effects to instream and riparian habitat, potential erosion and point source sediment input at stream crossing sites, as well as potential effects to stream flow, flood flow capacity, and sediment transport. Potential effects to watershed and stream flow conditions include unnaturally confined stream channels with increased channel flows, reduced stream flood flow capacity, and reduced floodplain function during high flow events. Additionally, this indicator is very useful for determining potential effects to aquatic organisms and stream connectivity. Potential effects to aquatic organisms include reduced egg and juvenile survival resulting from point source sedimentation, degraded instream and riparian habitat, fish migration barriers, and loss of stream connectivity. These potential effects would potentially be observable at impacted sites as well as in

downstream areas, if proposed new temporary stream crossing construction activities were not properly designed and constructed. By following required guidelines, project design features and mitigation measures necessary to protect water quality and watershed health, these effects would be eliminated or substantially minimized.

**Indicator 3: Proportion of upland open and upland young forest within each 6<sup>th</sup> level watershed**

Indicator 3 assesses the proportion of upland open and upland young forest within each 6<sup>th</sup> level watershed that occurs within or intersects the Echo Trail Project Area. This includes portions of those watersheds that occur within the BWCAW. Indicator 3 assesses all ownerships.

The indicator was chosen for the analysis because potential effects associated with vegetation management and other activities associated with each alternative should be evident at the watershed scale. A proportion of upland open and upland young forest on all ownerships (<16 years old) of less than 60% of a 6<sup>th</sup> level watershed is considered acceptable to protect water quality and watershed health (see Forest Plan p. 2-13, S-WS-1). This indicator can assess direct and indirect effects from vegetation management proposed in the Echo Trail Project as well as cumulative effects when other vegetation management projects are considered.

The proportion of upland open and upland young forest within 6<sup>th</sup> level watersheds influences the hydrologic function of watersheds in several ways. In recently harvested or open areas, transpiration and evaporation losses are low because of low leaf area and soils are wet thus there is more water available for streamflow and in groundwater that has the potential to contribute to increased water yield and peak flows (Verry et al. 2000). It is also widely accepted that changes in forest vegetation cover from a mature forested area to young forest or open areas can cause snow to melt faster and rainfall to reach streams faster (USDA Forest Service 2004, Tomahawk Project Area Environmental Assessment).

This indicator was also used during the 2004 Forest Plan revision and analysis process (USDA Forest Service 2004d, USDA Forest Service 2004b). This indicator has also been successfully used in guiding development of several past vegetation management projects on the Forest including the Virginia Forest Management Project (USDA Forest Service 2004f), the Dunka Project (USDA Forest Service 2005b), and the Tomahawk Project (USDA Forest Service 2004).

**Data Sources**

The following is a discussion of the data sources and analysis methods used for determining the results of Indicator 3. Changes were made between the Draft and Final Supplement to provide additional data sources for other ownerships and in the BWCAW. A conservative assumption of calculating the amount of upland open and upland young forest was made as if the Echo Trail project and projects considered under cumulative effects were fully implemented by 2014. In fact, implementation would take place over a longer period and thus effects would be less than what are disclosed in this analysis. The data sources for determining the amount of young upland forest and upland open areas are as follows:

**Upland Young Forest**

The source of information for estimating the *age* of forest cover for each of the ownerships is described below in Table SUP 2.

Table SUP 2 Source of Information for Estimating Age of Forest Cover ('Young')

<b>Ownership</b>	<b>Existing (2008) Conditions</b>	<b>Future (2014) Conditions</b>
National Forest land <i>outside</i> of the BWCAW	Stand data from the USFS that describes the year of origin	Existing stands were aged accordingly.  The Echo Trail project as well as federal projects considered for cumulative effects were incorporated into this data source
Land <i>within</i> the BWCAW (all ownerships)	There were two data sources used to estimate the age of the stand.  1. Stands that were subject to "severe" intensity fire were considered to be 'stand-replacement' events. This means the age of the stand is reset to 0 at the time of the fire.  2. The '1999 Blowdown' area was also included as a stand replacement event (age 0 in 1999).	1. The stands were aged accordingly and brought to 2014.  2. The Blowdown Area is assumed to be young and open in 2014 (at year 15 of the age class, therefore it would <i>not</i> be considered young and open in 2015)
State and County Land Outside of the BWCAW	The blowdown area and burned areas were treated the same as " <i>Land within the BWCAW (all ownerships)</i> "  Stand data was obtained for County and State land outside of the BWCA. This information included the stand date of origin. These stands were aged accordingly to 2014.	The blowdown and burned areas were aged accordingly to 2014.  Stand data from the State of Minnesota and St. Louis County was aged accordingly to bring it up to 2014.  Proposed activity by the landowner(s) was based upon information obtained from the State and the County. This proposed activity was incorporated into the 2014 condition.
Private Land Outside of the BWCAW	The blowdown area and burned areas were treated the same as " <i>Land within the BWCAW (all ownerships)</i> "  There were two additional data sets used to estimate the age of stands.  1. Date of origin was available for much of the analysis area including all of the project area. This was available through interpretation of available photo data. This information captured activities creating young forest prior to 2008.  2. The remaining area was filled in using the 'change detection' analysis performed by the State of Minnesota includes a category of "Forest Harvested" for all land (including private ownership). This is available from 2001 to 2007 and a stand origin date can be assigned for activity within this time period. Information for activity prior to 2001 and the change detection of 2008 is unavailable. All 'Forest Harvested' land was assumed to be 'young'.	The blowdown and burned areas were aged accordingly to 2014.  The areas with available stand date of origin were aged accordingly to 2014.  The 'Forested Harvested' category could be aged accordingly. However, since we only have data for activity after 2000 and the analysis is brought to 2014 there will be no harvested 'young' forest that ages to 16 years and becomes 'non-young'. Hence, this land was not aged, but conservatively assumed as remaining 'young' in 2014.  Available future harvest plans from private landowners were incorporated into the 2014 condition (Potlach).

## ***Echo Trail Area Forest Management Project***

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Data sources for determining whether a young forest was considered upland or lowland are described below in Table SUP 3.

Table SUP 3. Source of Information for Estimating Upland vs. Lowland

<b>Land Mass</b>	<b>Data Source</b>
National Forest land outside of BWCAW	From the USFS stand data
All other land	From the thematic mapper coverage <sup>(1)</sup>

(1) *Thematic mapper is an interpretation from aerial photos developed for the State of Minnesota. It has classifications such as “aspen-birch-conifer, red oak, roads, agriculture, tamarack, etc.”*

### **Upland Open Areas**

Open areas were determined using the thematic mapper (TM) as classified for the State of Minnesota in 1995. This coverage includes classifications such as ‘agriculture, roads, etc. that were considered open areas. Open areas were not ‘aged’ and were considered to remain open once identified.

The compilation of available data sets described above provides the most current and reliable information available for the Echo Trail Indicator 3 analysis. A more detailed technical description of the databases and methodology is contained in the project file.

### **Aquatic Organisms**

The Biological Evaluation (Appendix H) for the Echo Trail FEIS addressed the Regional Forester Sensitive Species (RFSS) sensitive aquatic species that occur or are likely to occur in the project area. The BE used miles of new road construction, number of stream crossings, and percent of young in 6<sup>th</sup> order watersheds as indicators to evaluate effects. Three RFSS fish (lake sturgeon, shortjaw cisco, and northern brook lamprey), and two RFSS mussels (creek heelsplitter mussel, and black sandshell mussel) occur on the Superior National Forest. Because there are no records of shortjaw cisco occurring within the project area (MN NHR database 2004) and it is unlikely that individuals, populations, and/or habitat would be affected by the Echo Trail Project alternatives, shortjaw cisco were not analyzed in detail. The BE included the following determination: All alternatives may impact individuals or habitat for lake sturgeon, brook lamprey, black sandshell, and creek heelsplitter, but are not likely to cause a trend toward federal listing or a loss of viability.

Data from surveys also informs the effects disclosure as described in the Affected Environment section (section 3.13.5).

### **Maps**

The maps depicting 4<sup>th</sup> and 6<sup>th</sup> order watersheds and the analysis area for Indicator 3 have been updated between draft and final Supplement to provide a clearer depiction of general waterflow patterns (see figures SUP 2 and 3 below). A standard disclaimer placed on Superior National Forest maps is included as a footnote to save space on the maps<sup>1</sup>.

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<sup>1</sup> The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on

### **3.13.4 Analysis Area**

#### **Indicator 1: Miles of new (including new temporary and new temporary winter) road construction and road decommissioning**

The Analysis Area for direct, indirect and cumulative effects for Indicator 1 includes the area within 1 mile of all routes types within the Project Area (see FEIS Alternative Maps for road locations). These route types include classified roads, temporary roads, non-jurisdictional roads, unclassified roads<sup>2</sup>, unauthorized motorized trails, decommissioned roads, and special use authorizations. This Analysis Area includes both lands within the Project Area as well as lands outside the Project Area such as relevant portions of the BWCA that are within 1 mile of routes. This Analysis Area was chosen because effects to water quality and watershed health from routes are evident and relevant within 1 mile or less of the route (Verry et. al. 2000).

#### **Indicator 2: Number of stream crossings**

The Analysis Area for direct, indirect and cumulative effects for indicator 2 includes all stream reaches 1 mile downstream of stream crossings within the Project Area. This includes both stream reaches within the Project Area and stream reaches outside the Project Area such as relevant portions of the BWCAW. In order to evaluate potential effects to water quality and watershed health within the BWCAW, those stream crossings within 1 mile of the BWCAW boundary and the miles of stream channel below those crossings that flow into the BWCAW are identified (see Figure SUP 5 and Table SUP 6). This Analysis Area was chosen because effects to water quality from new stream crossings, including inputs of sand and other fine sediments, can occur ½ -1 mile downstream from new stream crossing sites (Verry et al. 2000).

#### **Indicator 3: Proportion of upland open and upland young forest within each watershed**

The Analysis Area for direct, indirect and cumulative effects for Indicator 3 includes all 6<sup>th</sup> level watersheds that occur within or intersect the Echo Trail Project Area, including those watersheds that extend into the BWCAW (Figures SUP 2 and SUP 3). This analysis includes all ownerships. The Analysis Area was chosen because potential effects from vegetation management and other activities associated with each alternative should be evident at the watershed scale. The analysis area includes two subwatersheds also within the Glacier project area and four subwatersheds also within the Border project area as described in the Table SUP 4 and Figure SUP 1. These projects are among those considered in the cumulative effects analysis.

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<sup>2</sup> Most of the known unclassified roads on the Forest are proposed to be designated or decommissioned as a part of the Travel Management Project. Once the Travel Management Project is implemented, unclassified roads become unauthorized for use. However, some unclassified roads in the Echo Trail Project Area are proposed for decommissioning as part of the Echo Trail Project.

**Echo Trail Area Forest Management Project**

Table SUP 4 Watersheds in Common with Other USFS Projects

Subwatersheds in Common with the Glacier Project	Subwatersheds in Common with the Border Project
Range River	Echo River
Fall Lake	Picket River
	Vermilion River - Middle
	Loon River

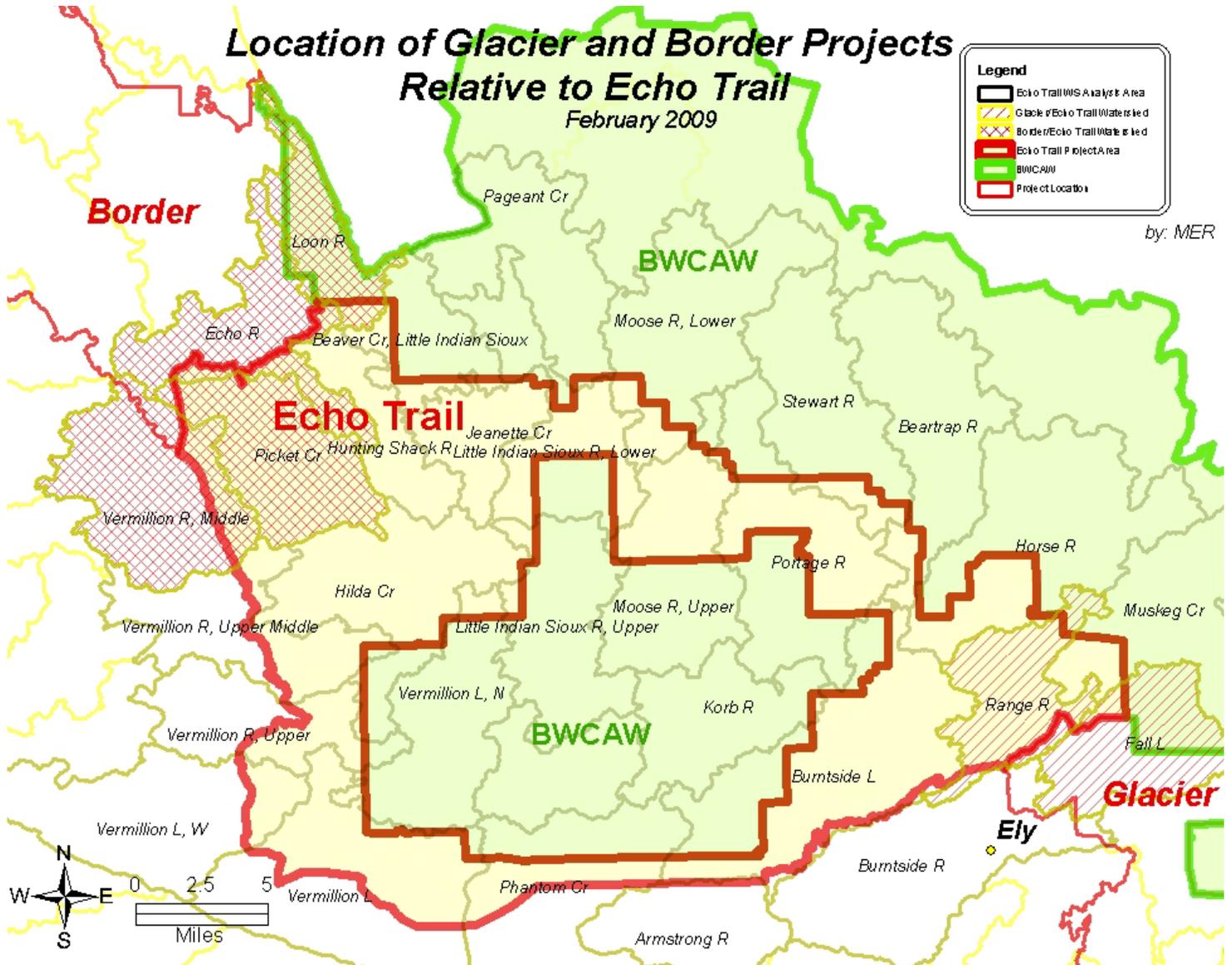


Figure SUP 1 Echo Trail Indicator 3 Analysis Area Relative to Glacier and Border Projects and BWCAN (Common Subwatersheds shown in Hatch)

It should be noted that approximately 6 acres within the Burntside River watershed is within the Echo Trail project area, and no activity is planned there, so is not considered further. Also of note is that Pine Creek, Vermilion (HUC No. 090300020205) watershed, is located entirely within the BWCAW and is not considered further.

The timescale selected for the direct, indirect and cumulative effects for all indicators is 20 years because effects from road construction, stream crossings, and vegetative management may be observable for many years following the initial impact of a particular activity. In the Superior National Forest Land and Resource Management Plan FEIS, page 3.6-6, a timescale of 10-20 years was selected for the same indicators (USDA Forest Service 2004d). Note that for Indicator 3, a conservative analysis point of 2014 is used as explained in the Analysis Methods section.

### **3.13.5 Affected Environment**

A watershed is defined as the area from which all surface water drains to a common point, commonly thought of as the area that drains water into a given lake or stream (Forest Plan Glossary-30). The mapping system for watersheds consists of multiple levels, called “orders”. These watershed order levels are described in detail in the Forest Plan FEIS pages 3.6-1 -3.6-2.

There are two 4<sup>th</sup> order watersheds that divide the Echo Trail Project Area, the Vermilion River and the Rainy River. The Vermilion River watershed drains to the north and west of the Project Area while the Rainy River watershed drains to the north and east (Figure SUP 2). Within these larger 4<sup>th</sup> level watersheds, there are 30 6<sup>th</sup> level sub-watersheds that intersect the Project Area (Figure SUP 3). Eighteen (18) of these sub-watersheds, 394,778 acres, drain north and east away from the Project Area into the Rainy River system (Figure SUP 3; Table SUP 1). Twelve (12) of these sub-watersheds, 267,893 acres, drain north and west away into the Vermilion River system (Figure SUP 3; Table SUP 1). In general, the Vermilion River Watershed flows away from the BWCAW and the Rainy River Headwaters Watershed flows into the BWCAW as can also be seen in Figures SUP 2 and SUP 3.

The general flow patterns of the 4<sup>th</sup> order and 6<sup>th</sup> order watersheds are shown below in Figures SUP 2 and Figure SUP 3 respectively.

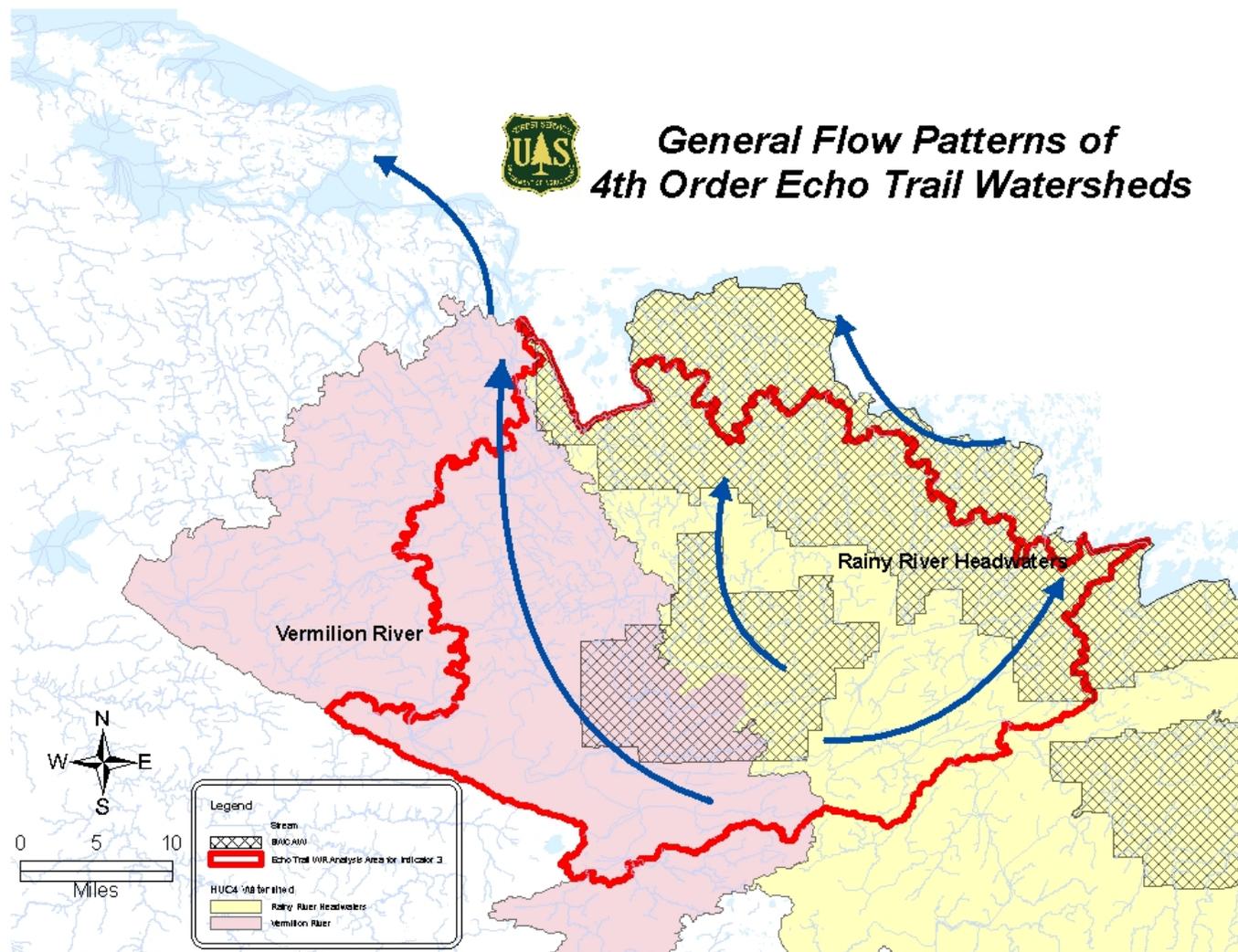


Figure SUP 2 Echo Trail 4<sup>th</sup> Order Watershed General Flow Patterns

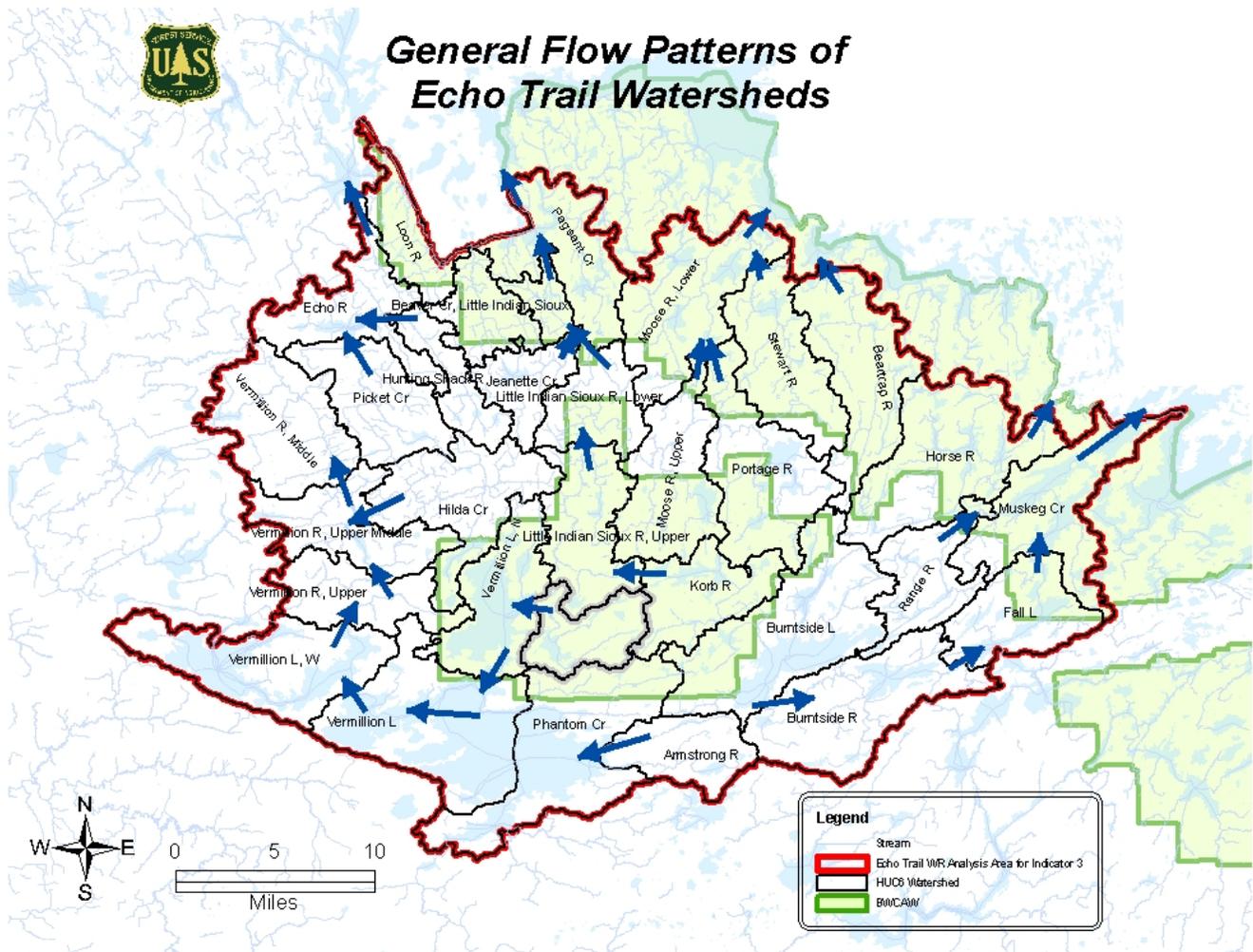


Figure SUP 3 Echo Trail 6<sup>th</sup> Order Watershed General Flow Patterns

The Echo Trail Forest Management Project Area and intersecting watersheds (outside of the BWCAW) have been historically subject to road building and decommissioning, timber harvest, prescribed fire, and some development (such as campgrounds). These activities are anticipated to continue in the future. Nonetheless, water quality and watershed health are considered high (see Indicator 3 below) and the area is a forested environment with some development and roads. See p. S-3 of the FEIS for the Echo Trail Project for more information on the affected environment.

Inside the BWCAW, timber harvest, road construction and use of wheeled motor vehicles have been prohibited since the BWCA Wilderness Act of 1978. Vegetative cover and an absence of mechanized disturbance to land contribute to high water quality and watershed health in the BWCAW. The waters in the BWCAW are classified as Outstanding Resource Value Waters by the State of Minnesota (BWCAW Fuel Treatment FEIS page 3.6-8).

**Indicator 1: Miles of new (including new temporary and new temporary winter) road construction and decommissioning**

There are currently 416 miles of existing classified roads, temporary roads, non-jurisdictional drivable roads, unclassified roads, and special use roads within the Echo Trail Project Area (Table 3.13-1). Of the 416 miles of existing roads that occur within the Project Area, 135 miles occur within 1 mile of the BWCAW boundary (Table SUP 5). Existing roads and routes have been and are currently maintained at various levels for different uses and transportation needs as a result of historical or more recent road management decisions.

**Indicator 2: Number of stream crossings**

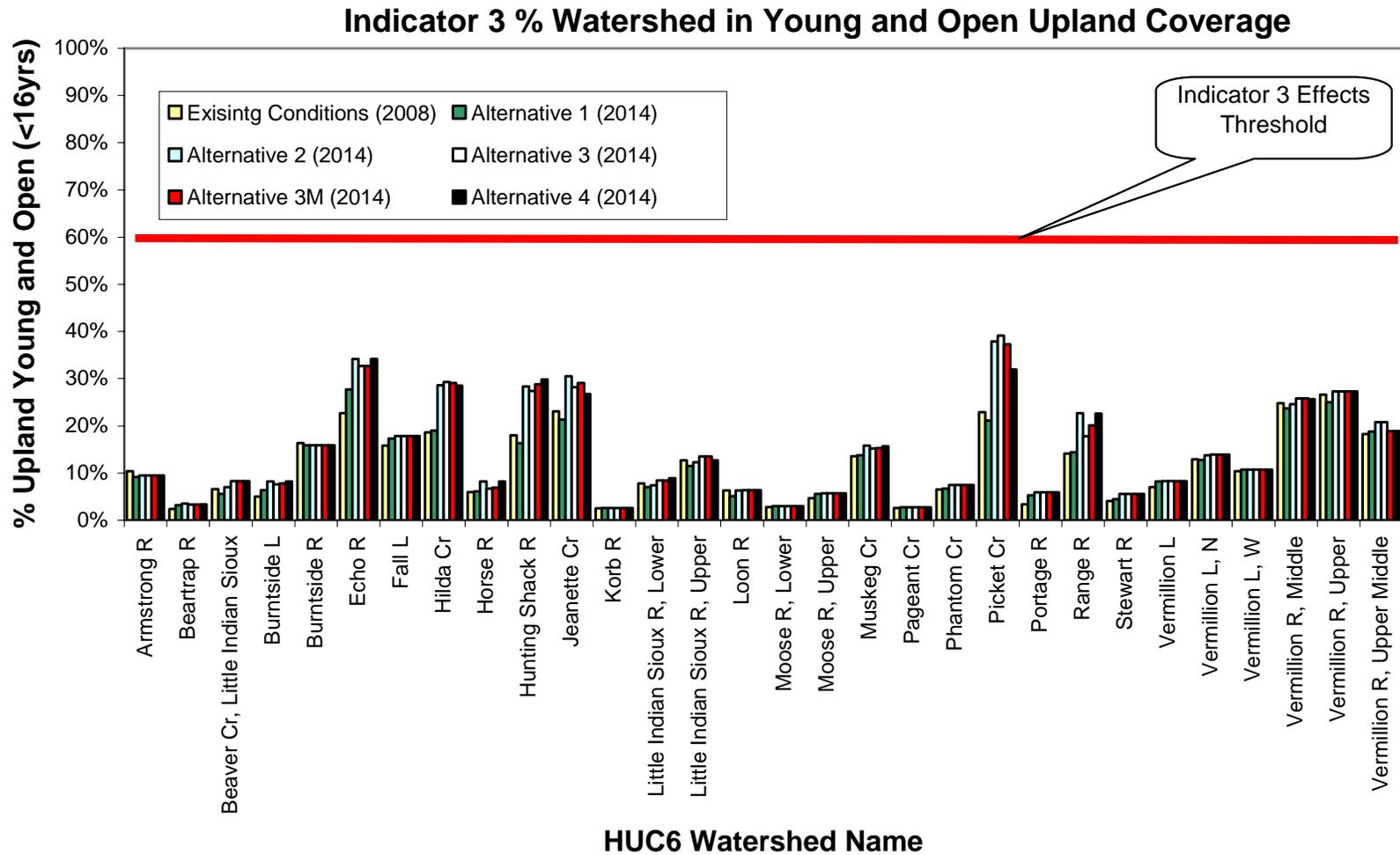
There are currently 233 stream crossings within the Echo Trail Project Area (Table 3.13-2 and Table 3.13-3). These crossings are on different types of roads including classified all season, seasonal, and winter roads, non-jurisdictional drivable roads, and system trails. Winter road and snowmobile trail crossings of smaller streams typically do not include the installation of roadfill or a culvert as vehicles simply cross on the ice without damage to the resource. Winter roads and roads closed to the public motorized use are not likely to have road erosion issues since they are used in frozen soil conditions and used very infrequently for administrative purposes. Beginning in 2002, the Superior National Forest has surveyed the condition of stream crossings on 975 sites in all major project areas within the Forest (including 73 crossing surveys in the Echo Trail Project area in 2003). This work has focused on crossings of larger streams and on larger / more heavily traveled roads because of the larger potential for impact to water resources. Based upon this work, it was found that approximately 80% do not have erosion issues and 84% do not pose aquatic organism passage issues. Crossings that are found to have erosion issues or impede aquatic organism passage are prioritized and replaced or repaired as part of the annual road maintenance program. All replaced crossings are installed to be consistent with Forest Plan standards and guidelines.

Of the 233 crossings within the analysis area, 15 crossings occur within 1 mile of the BWCAW and on streams that flow into the BWCAW (Table SUP 6, Figure SUP 5). Only 6 of these crossings are considered to be on drivable roads and 1 is on a drivable special use road.

**Indicator 3: Proportion of upland open and upland young forest within each watershed**

In 2005, a preliminary Watershed Analysis and Resource Report was completed for the Project Area. The Resource Report concluded that the existing condition of all 6<sup>th</sup> level watersheds that intersected the Project Area was well within Forest Plan desired conditions and in particular S-WS-1 (Forest Plan page 2-13) for vegetative cover and age at the watershed scale (Watershed Resource Report, Berrisford 2005, project file).

Figure SUP 4.



**Table 3.13-1. Miles of Existing and Proposed Roads<sup>1</sup>**

Road/Route Type	Alt. 1	Alt. 2	Alt. 3 Mod	Alt. 4
<b>Classified Roads</b>				
Classified State, County, Twp (public roads)	62	62	62	62
Classified Seasonal State Forest Roads	4	4	4	4
Classified All Season OML 5 (NFS)	0.04	0.04	0.04	0.04
Classified All Season OML 4 (NFS)	24	24	24	24
Classified All Season OML 3 (NFS)	24	24	24	24
Classified Seasonal OML 2 (NFS)	65	56	56	56
Classified Seasonal OML 1 (NFS)	42	46	46	46
Classified Winter OML 1 (NFS)	99	94	94	94
<b>Total Miles</b>	<b>321</b>	<b>310</b>	<b>310</b>	<b>310</b>
<b>Temporary Roads</b>				
Temporary on Existing Road	0	2	2	2
Temporary New Road	0	17	17	15
Temporary Winter on Existing Road	0	15	14	14
Temporary New Winter Road	0	56	41	36
<b>Total Miles</b>	<b>0</b>	<b>90</b>	<b>74</b>	<b>67</b>
<b>Non-Jurisdictional Roads</b>				
Non-Jurisdictional Drivable Roads	22	23	23	23
Non-Jurisdictional Motorized Trails	18	17	17	17
<b>Total Miles</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>
<b>Unclassified Roads</b>				
	39	13	13	13
<b>Total Miles</b>	<b>39</b>	<b>13</b>	<b>13</b>	<b>13</b>
<b>Decommissioned Roads</b>				
Roads Removed from system, no work required		11	11	11
Miles of Road Proposed for Decommissioning <sup>2</sup>	0	23	24	23
<b>Total Miles</b>	<b>0</b>	<b>34</b>	<b>35</b>	<b>34</b>
<b>Special Use (SU) Authorizations</b>				
Special Use Long-Term Trail Authorization	9	8	8	8
Special Use Long-Term Road Authorization	7	7	7	7
Special Use Short-Term Road Authorization	0.4	3	3	3
New Const. Special Use Road Authorization	0	3	3	3
<b>Total Miles</b>	<b>16</b>	<b>21</b>	<b>21</b>	<b>21</b>
<b>Total Miles new SU Road Auth. Short Term (Temporary Roads)</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>6</b>

<sup>1</sup> The existing condition of the transportation system is displayed under Alternative 1. If Alternative 1 is chosen for implementation, no changes to the transportation system would occur. Alternatives 2, 3 Modified, and 4 propose changes to the transportation system.

<sup>2</sup> "Miles of Road Proposed for Decommissioning" includes system and unclassified roads as well as user developed ATV trails (Dan Hernesmaa, per. Comm. Feb 3, 2006).

<b>Table 3.13-2. Number of Stream Crossings Displayed by Road/Route Type</b>				
<b>Road/Route Type</b>	<b>Alt. 1</b>	<b>Alt. 2</b>	<b>Alt. 3 Mod</b>	<b>Alt. 4</b>
<b>Permanent and Seasonal Crossings</b>				
Classified All Season Roads	61	61	61	61
Classified Seasonal Roads	45	42	42	42
Classified Winter Roads	48	48	48	48
Non-Jurisdictional Drivable	13	15	15	15
Special Use Road (Long Term)	2	2	2	2
Special Use Non-Federal Rd. Portion (Long Term)	5	5	5	5
Special Use Trail Authorization	5	5	5	5
System Trails <sup>1</sup>	44	44	44	44
Unclassified Roads with ATV Use	10	7	7	7
<b>Total</b>	<b>233</b>	<b>229</b>	<b>229</b>	<b>229</b>
<b>Short Term Special Uses</b>				
Special Use Seasonal Road	0	2	2	2
Special Use Seasonal Road Decommissioned	0	2	2	2
Special Use Winter Road	0	1	1	1
Special Use Winter Road Non-Federal Road Portion	0	5	5	5
<b>Permanent Stream Crossings</b>				
Seasonal System Road Crossings Decommissioned	0	0	0	0
Unclassified Road Crossings Decommissioned	0	2	2	2
<b>Federal Temporary Road Stream Crossing</b>				
New Temporary Seasonal Road Crossings Constructed	0	3	4	3
New Temp Seasonal Road Crossings Decommissioned	0	3	4	3
Temporary Winter Roads	0	40	35	25

<sup>1</sup> Includes motorized and non-motorized trails and portages.

<b>Table 3.13-3. Number of Decommissioned Stream Crossings<sup>1</sup></b>				
<b>Road/Route Type</b>	<b>Alt. 1</b>	<b>Alt. 2</b>	<b>Alt. 3 Mod</b>	<b>Alt. 4</b>
Special Use Seasonal Roads	0	2	2	2
Special Use Winter Roads	0	1	1	1
Unclassified Roads	0	2	2	2
New Temporary Seasonal Roads	0	3	4	3
Temporary Winter Roads	0	40	35	25
<b>Total</b>	<b>0</b>	<b>48</b>	<b>45</b>	<b>33</b>

<sup>1</sup> Includes the following under the control of the Forest Service- winter and seasonal temporary and special use temporary, unclassified, and permanent seasonal and winter roads.

**Table SUP 5. Project Area Road Miles within 1 Mile of the BWCAW Boundary by Alternative.**

Road/Route Type	Alt. 1	Alt. 2	Alt. 3 Mod	Alt. 4
<b>Classified and Unclassified Roads</b>				
Classified Drivable Roads	61	61	61	61
Classified Winter and Roads Closed to Public Motorized Use	50	44	44	44
Special Use Roads (Special Use and Special Use Temporary) (Approximately 1 mile is new construction)	8	9	9	9
Unclassified Roads *	16	1.5*	1.5*	1.5*
Roads to be Decommissioned*	0	(10.5)	(10.5)	(10.5)
<b>Total Resulting Classified and Unclassified Roads</b>	<b>135</b>	<b>115.5</b>	<b>115.5</b>	<b>115.5</b>
Temporary and Temporary Winter Roads constructed on unclassified road corridors and decommissioned after use.	0	10	10	10
New Temporary and Temporary Winter Roads that would be decommissioned after use	0	21	15	19
*The unclassified roads in the action alternatives are decommissioned, used as temporary roads, or used as special use road. The 1.5 miles of remaining unclassified road in the action alternatives will be decommissioned under the Travel Management project.				

The changes in SUP 5 between Draft and Final Supplement are clarification, rounding numbers, and rearranging. The existing condition is quantified by Alternative 1 (No Action). The differences between Alternative 1 and the action alternatives quantify what the action alternatives would do. The roads to be decommissioned include existing temporary and temporary winter roads that would be newly constructed (or constructed on unclassified road corridors) in the alternatives and then decommissioned as well as all other existing roads with no planned future use and proposed for decommissioning. A notable difference between the no action and action alternatives is that there would be about 20 miles less classified and unclassified road within 1 mile of the BWCAW boundary if an action alternative were implemented. The final line of the table indicates the only notable difference among the action alternatives; Alternative 3 Modified has the fewest miles (15) of new temporary and temporary winter roads compared to Alternative 2 (21 miles) and Alternative 4 (19 miles). New temporary and temporary winter roads would be decommissioned after their use.

**Table SUP 6. Number of Stream Crossings Within 1 Mile of the BWCAW On Streams That Flow Into The BWCAW By Alternative. Miles of potential stream channel potential affected within the BWCAW is included in parentheses.**

Road/Route Type with Stream Crossings	Alt. 1	Alt. 2	Alt. 3 Mod	Alt. 4
Drivable Roads	6 (3.7)	6 (3.7)	6 (3.7)	6 (3.7)
Winter and Roads Closed to Public Motorized Use	7 (3.6)	7 (3.6)	7 (3.6)	7 (3.6)
Special Use Roads (Special Use and Special Use Temporary)	1 (0.3)	1 (0.3)	1 (0.3)	1 (0.3)
Deferred Roads *	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)
<b>Total Existing Stream Crossings</b>	<b>15 (8.1)</b>	<b>15 (8.1)</b>	<b>15 (8.1)</b>	<b>15 (8.1)</b>
* This stream crossing will be decommissioned under the Travel Management Project				
<b>New Temporary and Temporary Winter Roads that would be decommissioned after use</b>	<b>0 (0)</b>	<b>2 (0.8)</b>	<b>1 (0.7)</b>	<b>1 (0.7)</b>

Changes in Table SUP 6 between Draft and Final Supplement: The number of stream crossings in each category were updated and corrected as necessary upon further examination of source data. In addition, the table was rearranged to show existing stream crossings first and then show the only difference among the alternatives, which is the mileage of temporary roads that would be decommissioned after use. Figure SUP 5 Stream Road Crossings that Flow into the BWCAW was also updated with this corrected data and included land ownership information.

### **3.13.6 Environmental Consequences**

This section evaluates the potential impacts of Alternatives 1 through 4 to water quality and watershed health. The original analysis in section 3.13 of the FEIS for indicators 1, 2 and 3 was expanded to include further explanation and evaluation of potential effects to water quality and watershed health within the BWCAW. It is important to emphasize that potential direct and indirect effects to water quality and watershed health are expected to be minimal if not completely avoided by following all required guidelines, project design features, and mitigation measures during and after project implementation. Cumulative effects would also be reduced through following MFRC Voluntary Site-Level Forest Management Guidelines on state and private land. This expectation is supported by monitoring data gathered by the Superior NF and partners (see Design Features and Mitigation Measures as well as Monitoring and Compliance below).

#### Design Features and Mitigation Measures

During development of the Echo Trail Area Forest Management Project, the interdisciplinary team, including watershed and fisheries specialists, cooperated in developing design features and mitigation measures that were necessary to avoid or minimize adverse effects to water quality and watershed health during project implementation. All action alternatives would follow applicable MFRC Voluntary Site-Level Forest Management Guidelines (MFRC 2005) as well as required design features and mitigation measures contained in the FEIS (Appendices A and B). All applicable Forest-wide desired conditions, objectives, standards and guidelines contained in the Superior National Forest Land and Resource Management Plan would also be followed during project implementation. Applicable Forest Plan desired conditions, objectives, standards and guidelines include, but are not limited to those established for: 1) Watershed Health, Riparian Areas, and Soil Resources, 2) Terrestrial and Aquatic Wildlife; and 3) Transportation System (USDA Forest Service 2004b; see especially pp. 2-10 to 2-18 and pp. 2-47 to 2-50). A complete list of design features and mitigation measures for the Echo Trail Project is included in Appendices A and B to the FEIS and is located in the project file available at the LaCroix Ranger District in Cook, MN.

#### Monitoring and Compliance

Based upon recent Forest Plan monitoring information collected by the Superior National Forest (2004-2006) and the Minnesota Forest Resource Council (2000-2002 vs. 2004-2006), there is evidence that MFRC Voluntary Site Level Forest Management Guidelines, Forest Plan Standards and Guidelines, project area design features and mitigation measures have been successfully implemented to help protect water quality and watershed health. Furthermore, there is evidence that these mitigation measures are effective at reducing impacts to water quality and watershed health. This is not only occurring on the Superior National Forest but also across the State of Minnesota.

### *Timber Sales*

In 2005, the results from cooperative MFRC/SNF compliance monitoring at 5 sites on the Superior National Forest indicated that Fiscal Year 2004 and 2005 timber sales demonstrated consistent and effective use of appropriate best management practices (BMPs) (Fiscal Year 2005 Monitoring and Evaluation Report, p. 25, USDA Forest Service February 2007). The results from the 2005 Monitoring Report are summarized below:

1. Exposed soil over more than 5% of the area, erosion, and rutting deeper than 6 inches in filter strips did not occur at any site;
2. Wetland skid trail crossing impacts did not occur at 3 of 5 sites; at 2 sites a skid trail crossed a wetland during unfrozen ground conditions, resulting in some rutting but no erosion;
3. At 4 of 5 sites post operation skid trail re-vegetation exceeded 50%, there was not rutting deeper than 6 inches, and no erosion; at 1 site a small amount of skid trail erosion was observed in one wetland;
4. Water diversions on roads and skid trails were not needed at 4 of 5 sites;
5. No evidence of petroleum-based spillage at 4 of 5 sites, one small spot of oil observed at 1 site, no logging trash was observed at any of the 5 sites;
6. 4 of 5 landing sites were exclusively upland; one landing was partially located in a wetland and a filter strip;
7. No erosion or repeated rutting deeper than 6 inches was observed at any of the landings or over the harvest sites in general.

In 2006, MFRC monitoring of Fiscal Year 2006 timber sales on the Superior National Forest also indicated good use of appropriate BMPs (Fiscal Year 2006 Superior National Forest Monitoring and Evaluation Report, page 11, USDA Forest Service 2008). The findings indicated a continuation of high level of compliance and effectiveness for reducing impacts as documented in audit results from previous years. The results from monitoring at 4 sites on the Forest were as follows:

1. Water quality evaluations were performed for projects near or including a total of 22 wetlands/water bodies.
2. Rutting was either not evident in or impacted less than 2-5% of wetland areas for all sites monitored.
3. No bare soil, erosion, or rutting was observed in any filter strips.
4. The main skid trails were all more than 50% vegetated.
5. Erosion was only reaching one (a non-open water system) of 22 wetlands monitored in 2006.
6. There was no evidence of equipment fueling and maintenance or spills at any of the sites.
7. Between 2 to 5 logs per acre of coarse woody debris was left on all sites.

8. Slash was present in non-open water wetlands at two of the four sites.

Overall, statewide implementation and effectiveness of Voluntary Site Level Forest Management Guidelines in Minnesota has been very good although there is still a need for County, State, Federal, and private forest land managers to improve some erosion control practices (Richard Dahlman, Minnesota Department of Natural Resources, pers. com; Minnesota Department of Natural Resources 2008, Timber Harvesting and Forest Management Guidelines on Public and Private Forest Land in Minnesota, Monitoring for Implementation, 2004, 2005, 2006 Results Compared to Baseline Monitoring Report). Highlights from the 2008 MNDNR Report which compared monitoring results for 2004-2006 to 2000-2002 (years before MFRC guidelines were implemented) are summarized below:

1. Landowners and logger followed filter strip guidelines very well.
2. Compliance with riparian management zone guidelines decreased slightly between the two periods.
3. Rutting was evident in non-open water wetlands but did not disrupt hydrology.
4. Some road and skid trail stream and wetland crossings lacked adequate erosion control measures. There was a need identified to improve training for loggers, natural resource professionals, and private land owners.
5. Landings were generally in good condition and were located away from filter strips, riparian management zones, and wetlands.
6. Most road and skid trail locations were within slope recommendations.
7. Although there was an increase in skid trail erosion, there was no corresponding increase in sediment reaching wetlands or other water bodies.

#### *Road Decommissioning and Stream Crossings*

Monitoring and evaluation of road decommissioning and stream crossing improvements on the Forest has shown successful implementation of appropriate BMPs and design features to improve water quality, watershed health and aquatic organism passage. Long term monitoring of road decommissioning projects on the Kawishiwi Ranger District indicates that removal of drainage structures, ruts and berms, reshaping and re-contouring, seeding and mulching, drainage control, and road blockage have been successful (2005 Monitoring and Evaluation Report, USDA Forest Service 2007). Monitoring and evaluation surveys conducted at 7 stream crossing sites on 6 streams in 2006, indicated the stream crossing improvement projects completed in 2004 and 2005 were successfully improving water quality, watershed health and aquatic organism passage (2006 Monitoring and Evaluation Report, USDA Forest Service 2008; Ken Gebhardt, Fisheries Biologist, personal communication). Furthermore, in 2008, electrofish surveys occurred at 7 stream crossing improvement sites on the Forest to document movement of fish through newly constructed stream crossings. Brook trout had successfully swum through 2 stream crossing structures on the Kadunce River (Ken Gebhardt, Fisheries Biologist, personal communication). Successful movement of all fish species is expected to occur with stream simulation culvert designs that would be planned and implemented.

New stream crossings that would be completed for the Echo Trail Project would meet the design standards of the stream crossing improvements discussed above.



Picture 1. Example of stream crossing meeting current design standards. Inga Creek, Superior NF

*Conclusion on Monitoring and Compliance*

The above monitoring shows that mitigation measures on National Forest, State, county and private land have been consistently applied and are effective at reducing impacts to water quality and watershed health. This is further supported by auditing of Minnesota BMPs on federal, State, county and private land that have shown the BMPs to be effective at protecting water quality in 99% of situations when correctly applied (US EPA 1994). Mitigation measures derived from the 2004 Forest Plan as well as State of Minnesota BMPs have been updated based upon additional technical information and monitoring results since this study occurred (personal communication, Marty Rye, Forest Hydrologist).

Possible Effects with Mitigation Measures

While effects would be greatly reduced, it is still possible that there would be minimal effects after the application of mitigation measures discussed above. These effects could include:

1. Minor sediment input may occur at stream crossing construction sites during initial site preparation. These impacts would occur at a very small scale.
2. Grubbing and clearing activities near road stream crossing construction sites may inadvertently contribute fine sediment and other debris into local stream channels.
3. The use of temporary winter roads on “frozen ground” conditions may compact wetland and riparian vegetation near lakes, streams, and wetlands. This could potentially affect stream, lake and wetland shoreline habitats.
4. The use of temporary winter roads during “frozen ground” conditions may contribute to minor sediment input at stream crossing sites when machinery crosses with dirty tracks, treads, or wheels. Minor sediment input into local stream channels may occur as a result.
5. The use of temporary winter roads on “frozen ground” conditions across wetlands may temporarily affect surface flow of water in wetlands due to ice and snow compaction.

The Effects of Constructing New Temporary Roads vs. Decommissioning Existing Unclassified or System Roads

New temporary roads would be constructed with mitigation measures that substantially reduce or eliminate negative impacts, and would be decommissioned when use is complete. However, existing unclassified and system roads may continue to remain on an indefinite basis without decommissioning and some may have been constructed in the past to lower standards than roads constructed currently. Accordingly, the short term, mitigated negative impacts that accompany the construction of new temporary roads are generally outweighed by the positive, long-term impacts of decommissioning existing unclassified and system roads. (See *The Value of Decommissioning Existing System Roads and Trails* by Ken Gebhardt, Fisheries Biologist, project file). Monitoring of decommissioning techniques on the Superior National Forest has shown these techniques to be generally effective in preventing further motorized use of the decommissioned road (2007 Superior NF Monitoring Report p. C-3; 2006 Superior NF Monitoring Report p. 103). In addition, unauthorized motorized use is brought to the attention of law enforcement (2007 Superior NF Monitoring Report p. 89).

**3.13.6.1 Direct and Indirect Effects**

The direct and indirect effects of the alternatives to the Analysis Area as well as the BWCAW are presented for each alternative.

**Alternative 1 (No-action)**

**Indicator 1**

Alternative 1 would maintain the existing road transportation system within the Echo Trail Project Area (Table 3.13-1). No new temporary or new temporary winter roads would be constructed. As a result, there would be no increased potential for negative effects to water quality or watershed health. There would also be no road decommissioning. As a result, there would be no potential improvements to existing water quality and watershed health conditions from road decommissioning activities. Continued motorized use of unclassified roads would continue to potentially contribute sediment into local streams and impact both instream and riparian habitat conditions. Overall in the long-term, Alternative 1 has a higher potential to negatively affect water quality and watershed health than the other alternatives because while it does not construct new temporary roads, neither does it decrease total system road miles by decommissioning roads within the Project Area (Table 3.13-1). This is because the short term, mitigated negative impacts that accompany the construction of new temporary roads are generally outweighed by the positive, long-term impacts of decommissioning existing unclassified and system roads (see section 3.13.6).

Effects to BWCAW

Alternative 1 would also maintain the existing road transportation system within 1 mile of the BWCAW boundary (Table SUP 5). No new temporary or new temporary winter roads would be constructed. As a result, there would be no increased potential for new temporary road construction activities to negatively affect water quality or watershed health within the BWCAW. There would also be no road decommissioning within 1 mile of the BWCAW. As a result, there would be no potential improvements to existing water quality and watershed health conditions within the BWCAW. Continued motorized use of unclassified roads would continue to potentially contribute sediment into local streams and impact both instream and riparian habitat conditions within the

BWCAW. For Indicator 1, Alternative 1 has a higher potential to negatively affect water quality and watershed health in the BWCAW than the other alternatives because while it does not construct new temporary roads, neither does it decrease total system road miles within 1 mile of the BWCAW (Table SUP 5). This is because the short term, mitigated negative impacts that accompany the construction of new temporary roads are generally outweighed by the positive, long-term impacts of decommissioning existing unclassified and system roads (see section 3.13.6).

**Indicator 2**

Alternative 1 would maintain all existing stream crossings within the Echo Trail Project Area (Table 3.13-2). No temporary or new temporary winter road stream crossings would be constructed. As a result, there would be no increased potential for sediment input at new stream crossing construction sites that could potentially affect water quality and watershed health. Alternative 1 would also not contribute to improvement of existing conditions including erosion and sediment input and aquatic organism passage issues at stream crossing sites as a result of decommissioning poorly designed, inadequate, or unnecessary stream crossings. Adequate fish and other aquatic organism passage and connectivity would continue to be a concern at some crossing sites. Stream crossings associated with unclassified roads would not be closed or removed through administrative decisions and/or road/trail decommissioning. As a result, improvement of watershed conditions and reduction in sediment sources at existing stream crossing sites would not occur. Continued motorized use of stream and wetland crossings on unclassified roads would continue to potentially contribute sediment into local streams and impact both instream and riparian habitat conditions. For Indicator 2, Alternative 1 has the greatest potential to negatively affect water quality and watershed health conditions across the entire analysis area because it does not reduce the total number of road stream crossings through decommissioning unclassified roads (Table 3.13-2).

**Effects to BWCAW**

Alternative 1 would also maintain the existing number of stream crossings within 1 mile of the BWCAW on those streams that flow into the BWCAW (Table SUP 6). As a result, there would be no increased potential for negative effects to water quality and watershed health within the BWCAW as a result of implementing this alternative. There would also be no decommissioning of stream crossings within 1 mile of the BWCAW. As a result, there would be no potential improvements to existing water quality and watershed health conditions within the BWCAW. Continued motorized use of unclassified roads and stream crossings would continue to contribute sediment into local streams and potentially impact both instream and riparian habitat conditions within the BWCAW. For Indicator 2, Alternative 1 has the lowest potential to negatively affect water quality within the BWCAW because this alternative does not propose any new crossings on streams that flow into the BWCAW. The existing 15 crossings within 1 mile of the BWCAW would potentially continue to affect 8.1 miles of stream channel and habitat within the BWCAW (Table SUP 6).

**Indicator 3**

As displayed in Table SUP 1, all watersheds are under the 60% benchmark in the existing condition. Under the no action alternative, there would be no additional young forest created by vegetation management. As discussed in section 3.13.5, water quality and watershed health as measured by indicator 3 is high under the existing condition. These effects apply to both the BWCAW and the rest of the Analysis Area.

**Effects to Aquatic Organisms in the BWCAW (Indicators 1, 2, and 3)**

The indicators for aquatic organisms are the same as those used for water quality (i.e. number of stream crossings, miles of road, and percent upland open and upland young). The BE determination remains unchanged with respect to the updated percent upland young and upland open analysis since no watersheds reach the 60% threshold. A summary of the BE as it relates to the sites within 1 mile of the BWCAW follows:

- There are no documented occurrences of the aquatic RFSS at or near stream crossings within 1 mile of the BWCAW.
- There is likely habitat for aquatic RFSS at the following sites within 1 mile of the BWCAW: Little Indian Sioux River at Echo Trail, Portage River at Echo Trail, Spring Creek at Echo Trail, and Duck River. Crossings on the Little Indian Sioux and Portage River are bridge structures which pose no potential impact to organism passage or to aquatic species via excessive sedimentation. The Duck River crossing is a winter road with no permanent structure crossing the river; it poses no potential impact to organism passage or to aquatic species via excessive sedimentation. Spring Creek on the Echo Trail has been evaluated through the stream crossing survey assessment for Echo Trail and is not considered a passage barrier or a source of excessive sediment and poses no impact to aquatic organisms.
- There is not likely habitat for any aquatic RFSS at the remaining stream crossings within 1 mile of the BWCAW. These streams are small, beaver impounded, headwater streams that are not the preferred habitat types of any of the aquatic RFSS.

**Alternatives 2, 3 Modified, and 4**

**Indicator 1**

Alternatives 2, 3 Modified and 4 each propose increasing the number of new temporary and new temporary winter road miles within the Project Area (Table 3.13-1). This is also evident when looking specifically at areas within 1 mile of the BWCAW (Table SUP 5). Depending upon the alternative and miles of new temporary road, the construction and use of these roads has the potential to increase short-term soil disturbances, soil erosion, and point source sediment inputs into local streams in the Analysis Area, including stream reaches ½ -1 mile downstream in the BWCAW. However, by following required guidelines, project design features, and mitigation measures, effects are expected to be minimal. Under all alternatives, newly constructed temporary roads would be decommissioned after all use is completed (USDA Forest Service 2004d p. F-9; Dan Hernesma per. comm. Feb 3, 2006).

As discussed and evidenced above, there would be few, if any anticipated negative effects to water quality and watershed health within the Analysis Area, including the BWCAW, from proposed new temporary winter roads because they would be designed, constructed, and used following appropriate design criteria and mitigation measures. Typically, these roads are specifically designed to reduce impacts to soils, streams, and wetlands by providing over-the-snow or ice travel for logging equipment during the winter. The use of winter roads provides for greater protection to water quality and watershed health than roads that allow use outside of “frozen” conditions since travel over ice or snow has far less chance to create erosion or contribute sediment to receiving water bodies. A substantial majority of the proposed new roads

under the action alternatives are temporary winter roads. There may be some short-term disturbances to riparian vegetation within Project Area sites that are not protected by snow. Negative impacts to water quality and watershed conditions within the Analysis Area from the use of temporary winter roads, including downstream reaches within the BWCAW, are not anticipated since that use is restricted to “frozen” conditions.

While effects would be minor, the greatest degree of effects from new temporary and temporary winter roads to water quality and watershed health would occur under Alternative 2 (90 miles), followed by Alternative 3 Modified (74 miles) and finally Alternative 4 (67 miles) when considered across the entire Analysis Area (Table 3.13-1).

Alternatives 2, 3 Modified, and 4 also include decommissioning existing system, unclassified and temporary use roads (Table 3.13-1). Road decommissioning would render each road unusable by motorized vehicles, remove stream crossings and fill from flood prone and wetland areas, and require revegetating exposed soil surfaces (USDA Forest Service 2004b p. 2-50). This activity would improve existing water quality and watershed conditions within the Analysis Area, including downstream reaches within the BWCAW by reducing total road surface area, potential surface erosion and run-off, as well as sediment input into local streams, lakes, and wetlands. All action alternatives decommission a similar amount (34 to 35 miles) of road and would produce similar benefits to water quality and watershed health when considered for the entire Analysis Area.

### **Effects to BWCAW**

Within 1 mile of the BWCAW boundary, the greatest degree of effects as measured by miles of new temporary and temporary winter roads to water quality and watershed health would occur under Alternative 2 (21 miles), followed by Alternative 4 (19 miles) and finally Alternative 3 Modified (15 miles) (Table SUP 5). The action alternatives would all decommission about 20 miles of classified and unclassified roads within 1 mile of the BWCAW. When both new temporary road construction and decommissioning existing roads are considered, Alternative 4 would produce the greatest benefit to water quality and watershed health, followed by Alternative 3 Modified and finally Alternative 2 (Table SUP 5). This is because the short term, mitigated negative impacts that accompany the construction of new temporary roads are generally outweighed by the positive, long-term impacts of decommissioning existing unclassified and system roads (see section 3.13.6). Note that no treatments are proposed inside the BWCAW and effects to the BWCAW are indirect effects produced by actions outside the BWCAW.

### **Indicator 2**

Alternatives 2, 3 Modified, and 4 each propose to construct stream crossings associated with special use, new temporary, and new temporary winter roads within the Project Area (Table 3.13-2). Under all alternatives, newly constructed temporary roads and associated stream crossings would be decommissioned after all use is completed (USDA Forest Service 2004d p. F-9; Dan Hernesmaa per. comm. Feb 3, 2006). There may be some short-term negative effects to both local and downstream reaches, resulting from point source erosion, sediment input, and stream flow manipulation. However, stream crossings would be designed and constructed properly following required guidelines, project design features, and mitigation measures and effects would be minimal, if any. Possible effects after mitigation measures are applied include minor contributions of sediment to streams during initial site preparation.

There would be few, if any anticipated negative effects to water quality and watershed health in the Analysis Area, including relevant portions of the BWCAW, from proposed new temporary winter road

stream crossings because they would be designed, constructed, and used following appropriate design criteria and mitigation measures. Typically, new temporary winter roads and associated crossings are specifically designed to reduce impacts to soils, streams, and wetlands by providing over-the-snow or ice travel for logging equipment during the winter. There may be some short-term disturbances to riparian vegetation within the Project Area that is not protected by snow. Negative impacts to water quality and watershed conditions at both the site specific and watershed scale are not anticipated because use would be restricted to “frozen” conditions.

While effects would be minor, the greatest degree of effects from the use of temporary seasonal, temporary winter road and special use crossings to water quality and watershed health would occur under Alternative 2 (46 crossings), followed by Alternative 3 Modified (43 crossings) and finally Alternative 4 (31 crossings) (Tables 3.13-2 and 3.13-3).

Alternatives 2, 3 Modified, and 4 also propose to reduce the total number of road stream crossings within the Project Area as a result of road decommissioning. This activity would improve water quality and watershed conditions within the Analysis Area as well as improve aquatic organism passage. Water quality improvements include reduced point source erosion and sediment input at existing stream crossing sites. Improvements to watershed conditions include improving natural stream flow conditions, flood flow capacity, and floodplain function as well as sediment and large woody debris transport. Benefits to aquatic organisms include improved egg and juvenile survival, aquatic organism passage, and stream connectivity. Alternatives 2, 3 Modified and 4 would reduce the total number of unclassified road stream crossings by the same amount and thus have the same benefit to water quality and watershed health in this regard.

#### Effects to BWCAW

Although possible, it is highly unlikely that new stream crossings within 1 mile of the BWCAW would negatively affect water quality and watershed within the BWCAW. While effects would be minor, Alternative 2 would have more impact to water quality and watershed health in the BWCAW since it would have two stream crossings potentially affecting the BWCAW, followed by Alternatives 3 Modified and 4 with one stream crossing each (Table SUP 6). The mileage of stream affected under all action alternatives is less than 1 mile. There are no locations within 1 mile of the BWCAW boundary where road stream crossing decommissioning would occur under the action alternatives (Table SUP 6). Note that no treatments are proposed inside the BWCAW and potential effects to the BWCAW are indirect effects produced by actions outside the BWCAW.

#### Indicator 3

There are 30 6<sup>th</sup> level watersheds occurring within or intersecting the Echo Trail Forest Management Project Area that comprise the Analysis Area for Indicator 3 (Figure SUP 3; Table SUP 1). These watersheds range in size from 9,910 to 37,159 acres (Table SUP 1). Nine of these watersheds occur almost entirely or partly within the BWCAW where no management activities occur (Table SUP 1). Six of the 30 watersheds have more than 50 percent of their area inside the Echo Trail Area Project boundary (Table SUP 1).

Based on a review and analysis of existing conditions, which reflects all past vegetative management activities within the analysis area as well as those conditions that would result from full implementation of Alternatives 2, 3 Modified, and 4; there are no watersheds within or intersecting the Echo Trail Project Area that currently or would potentially exceed the 60 percent threshold (Table SUP 1; Figure SUP 4). This includes watersheds in the Analysis Area that have some acreage in the

BWCAW. Although upland open and upland young values for individual watersheds differ slightly among alternatives, no value was found to exceed the 60 percent threshold (Table SUP 1), including those watersheds that have some acreage in the BWCAW. Thus, the action alternatives would not produce substantial negative effects to water quality and watershed health as measured by Indicator 3 and the effects would not vary by a notable degree among alternatives.

Furthermore, vegetation management activities for the action alternatives would follow required design features and mitigation measures contained in the FEIS (Appendix A and B), applicable standards and guidelines in the 2004 Forest Plan (USDA Forest Service 2004b), and applicable MFRC Voluntary Site-Level Forest Management Guidelines (MFRC 2005). Design features and mitigation measures as well as Forest Plan standards and guidelines have been developed to maintain or restore riparian ecological function within near-bank and remainder riparian zones. Under these design criteria, no harvest of trees would occur within 100 feet of flowing streams except for the purpose of maintaining or restoring riparian ecological function. Remainder riparian management zones would also be established adjacent to near-bank zones depending upon floodplain and shoreline slope conditions where vegetative management would favor extended rotation of site appropriate tree species. These criteria would together serve to protect and enhance both riparian and within stream channel habitat conditions as well as water quality and watershed health in the Analysis Area, including downstream reaches which may occur within the BWCAW. Monitoring has shown that timber harvest within near bank riparian zones was completed with good compliance with relevant standards and guidelines (2006 Superior NF Monitoring Report p. 12). As discussed in Section 3.13.6, these design criteria and mitigation measures, Forest Plan standards and guidelines, and applicable MFRC guidelines have been effective in the past and would continue to protect water quality and watershed health in the future.

Note that no treatments are proposed inside the BWCAW and potential effects to the BWCAW are indirect effects produced by actions outside the BWCAW.

### **Effects to Aquatic Organisms in the BWCAW (Indicators 1, 2, and 3)**

Any new stream crossings constructed within 1 mile of the BWCAW, including those proposed in Alt. 2 (2 new sites), 3 Modified (one new site), and 4 (one new site) would follow all design features and mitigation measures for both the installation and removal of roads and stream crossings (see Monitoring and Compliance in section 3.13.6). Since these roads and crossings structures are temporary and temporary winter, they pose little or no risk to aquatic organisms via sedimentation or organism passage.

### **Conclusion – Direct and Indirect Effects**

There may be some minor direct or indirect negative effects to water quality and watershed health in the Analysis Area including potential effects to downstream areas and stream reaches that occur within the BWCAW as a result of implementing any of the action alternatives. Potential short term negative effects associated with new temporary roads and stream crossings including point source erosion, run off, and stream flow and flood plain manipulation, are expected to be minimal, especially in stream reaches and downstream areas that are not immediately adjacent to or near proposed temporary road and stream crossing sites. These effects are expected to be minimal because all required project design features and mitigation measures referred to previously would be followed during project implementation. For example, Forest Plan standards, guidelines and objectives require that road and trail crossings of streams, wetlands, and riparian areas adjacent to lakes and

streams be minimized, that hydrologic and riparian functions be maintained or improved when roads or trails are constructed across wetlands, that temporary roads and stream crossings be stabilized and effectively closed to motorized traffic following all use, and that vegetation is established on these roads within 10 years after termination of all contracts, leases, or permits (USDA Forest Service 2004b pp. 2-47 to 2-50).

All action alternatives have the potential to directly benefit water quality and watershed health within the Analysis Area through road decommissioning and stream crossing removals. All action alternatives also have the potential to directly benefit water quality and watershed health within the BWCAW through road decommissioning because the total road miles within 1 mile of the BWCAW resulting from each action alternative would ultimately be less than that of the existing condition (Table SUP 5). It is unlikely that stream crossing removals within 1 mile of the BWCAW boundary would have a net benefit to water quality and watershed health within the BWCAW because the total number of permanent crossings on streams that flow into the BWCAW would not change as a result of the action alternatives (Table SUP 5).

Looking at the effects in a combined sense, the differences between alternatives would be minor. Based upon the above analysis, Alternative 4 has the greatest potential to benefit water quality and watershed health when the entire Analysis Area is considered, followed by Alternative 3 Modified, Alternative 2 and Alternative 1. Alternative 3 Modified has the greatest potential to benefit water quality and watershed health within the BWCAW, followed by Alternative 4, Alternative 2 and Alternative 1.

### **3.13.6.2 Cumulative Effects**

See Section 3.13.4, Analysis Area, for the temporal and spatial boundaries for the cumulative effects analysis. The past, present and reasonably foreseeable future projects considered for cumulative effects are identified in Appendix I to the FEIS. Of the projects listed in Appendix I, those that could affect watershed health and water quality such as vegetation management (e.g. timber sales and prescribed fire), road construction, and stream crossing construction are considered in this analysis. In addition, projects that have become reasonably foreseeable between the time the FEIS was finalized and the current time were considered for this analysis. This includes the Glacier, Border and Travel Management projects. Harvest plans by the State, County and Potlatch Corporation are unchanged from those analyzed in the FEIS and are also considered in the Supplement. Potlatch Corporation is the only private entity that has a reasonably foreseeable future harvesting project in the area affected by the Echo Trail project.

#### **Indicators 1 and 2**

##### **Non-federal roads and stream crossings**

Past, present, and reasonably foreseeable future actions of other land owners that could potentially contribute to negative cumulative effects associated with new road construction and stream crossings include State, county, and private road construction projects associated with timber harvest, private development, and special use permits, as well as routine road maintenance activities.

The Analysis Area has mixed ownership with roads crossing from one landowner to the next. Tables 3.13-1, 3.13-2 SUP-5 and SUP-6 indicate land ownership for roads and stream crossings. The discussions for cumulative effects take into consideration all existing roads and stream crossings in the Analysis Area, including those owned by State and private parties.

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The known potential future harvest on State, county, and private land was provided by those landowners. (State: 2,100 acres, county: 50 acres, Potlatch: 100 acres) The associated road access needs were addressed through the proposed special use authorizations listed in the tables and described in the Echo Trail FEIS section 3.26. Potential effects for any proposed special use authorizations were also discussed under the direct and indirect effects.

There are no known potential future private land developments in the Analysis Area. If private access requests are made, they would be analyzed separately. It can be assumed that the various nonfederal landowners in the Analysis Area would continue to maintain their roads in their existing condition.

### **Mitigations on State and Private Land**

MFRC Voluntary Site-Level Forest Management Guidelines (MFRC 2005), State of Minnesota best management practices (BMPs), Shoreland Rules (Minnesota Department of Natural Resources (MNDNR) 1989), as well as other Minnesota Public Water Works rules and State wetland regulations should also contribute to minimizing negative cumulative effects from State, county, and private landowners in the Analysis Area, including the relevant portion of the BWCAW. The success and effectiveness of implementing MFRC Guidelines on a statewide basis was discussed in the Supplement in Section 3.13.6.

Furthermore, the Superior National Forest will continue to improve the existing road transportation system and associated stream crossings on the Forest. It is also very likely that road transportation systems and associated stream crossings managed by other State, county, local, and private entities have similar improvement needs. The USFS and State of Minnesota have also made significant improvements in the design and correct placement of stream crossings that maintain fish passage and sediment transport. Accordingly, it is very likely that future actions contributing to cumulative effects will be further minimized and/or mitigated.

### **Other federal roads and stream crossings: Forest-wide Travel Management Project**

During development of the Echo Trail Area Forest Management Project, decisions on 13 miles of unclassified roads were deferred (2007 ROD, table ROD-1). Those deferred roads were included in the Forest-wide Travel Management Project analysis. The Travel Management Project proposed action included the following for the 13 miles of unclassified road within the Echo Trail Project Area.

- About 9 miles would be decommissioned. Of those 9 miles, 1.5 miles are within 1 mile of the BWCAW. Decommissioning that 1.5 miles of road within 1 mile of the BWCAW would also result in the removal of one stream crossing.
- About 4 miles would be converted to a classified road or special use.

Within the entire Echo Trail project area, the Travel Management Project would also have an overall reduction in roads allowed for OHV use. The decision maps indicate more roads closed where OHV use was previously allowed than roads open where OHV use was previously closed. The segments of road where use would now be allowed under the Travel Management decision (part of 199, 217, and 464EA) have had a variety of motorized use in the past, especially during dry seasons. The

Travel management designations for those roads (particularly 199 and 217) would be for seasonal use.

The Travel Management Project includes allowing seasonal OHV use on the 199 road to a section of State land that is within 1 mile of the BWCAW. Tables SUP 5 and 6 include the road data for that area. The Travel Management Project does not add stream crossings within 1 mile of the BWCAW.

Accordingly, the Travel Management Project would contribute a net beneficial effect to water quality and watershed health in the Echo Trail Analysis Area. This is especially the case for the BWCAW. Information on the Forest-wide Travel Management Project can be found on the Forest web site ([www.fs.fed.us/r9/superior](http://www.fs.fed.us/r9/superior)) under Projects and Plans. The Forest-wide Travel Management Project proposals were also coordinated with the State OHV planning.

#### Summary for Indicators 1 and 2

Potential short-term negative cumulative effects from building roads and stream crossings may include point source erosion, surface run-off, and sediment input into local streams, lakes, and wetlands. Other negative cumulative effects include reduced flood flow capacity and floodplain function as well as sediment transport, movement of large woody debris, and restricted aquatic organism passage. However, effects would be minimized since required Forest Plan standards and guidelines (USDA Forest Service 2004b) for federal projects would be followed, and MFRC and other State mitigation measures for state and private projects are followed during project implementation and construction activities. The sum of past, present and reasonably foreseeable future construction of new roads and stream crossings in the Echo Trail Project Analysis Area would contribute to minimal negative cumulative effects to water quality and watershed health, including downstream reaches and areas that occur within the BWCAW. Furthermore, the Travel Management Project contributes a beneficial effect to water quality and watershed health as discussed above. When road and stream crossing construction and decommissioning are considered on a net basis, there would be beneficial cumulative effects to both the BWCAW and the rest of the analysis area.

#### Indicator 3

Table SUP 1 and Figure SUP 4 display the percentage of upland young forest and upland open land in each HUC 6 watershed in the Analysis Area. This data includes consideration of past, present and reasonably foreseeable activities that create young upland forest and upland open land on all ownerships and no watershed exceeds the 60% threshold. Therefore, there would be no substantial effect to water quality and watershed health as measured by indicator 3.

The analysis displayed in Table SUP 1 and Figure SUP 4 does not include future harvesting from private landowners because these projects are not reasonably foreseeable since no proposals are available for any projects (besides 100 acres of harvest by Potlach Corporation, which was included in the analysis). However, it can be assumed that some very minimal level of harvest may take place. Those harvests would add a minimal amount of acres to the young age class based on harvest activity from the recent past and studies that have shown that timber production is a low priority for private forest landowners (Baughman & Updegraff, 2001). This minimal level of harvest would not cause any watershed to exceed the 60% threshold.

### Effects to the BWCAW

The analysis for indicator 3 includes all ownerships within and outside of the BWCAW. It also includes events such as fire and the 1999 blowdown. No HUC6 watershed exceeded the 60% young and open effects threshold, including those watersheds that contain portions within the BWCAW and those that drain to the BWCAW. Therefore, there would be no substantial effect to water quality and watershed health in the BWCAW as measured by indicator 3.

### **Conclusion-Cumulative Effects**

The effects from past, present, and reasonably foreseeable future projects, when added to the effects of the Echo Trail Project, are expected to be minimal given the nature of these activities as described above and the application of design features, mitigations, standards, and guidelines (including MFRC guidelines that apply to state, county and private ownerships). As discussed above, there would be a net beneficial effect due to decommissioning activities. This is the case both within the BWCAW and in the rest of the Analysis Area. Cumulative effects would vary by a minor degree between alternatives since direct and indirect effects vary to a minor degree between alternatives and other federal, State and private actions are likely to be the same among alternatives.

#### **3.13.6.3 Conclusion-Direct, Indirect and Cumulative Effects**

Potential short-term negative effects both overall and within the relevant portion of the BWCAW identified by the Analysis Area are expected to be minimal with the application of mitigation measures. Positive long-term effects would occur from the action alternatives due to decommissioning unclassified roads.

Looking at the effects in a combined sense, the differences between alternatives would be minor. On a net basis across the entire Analysis Area, Alternative 4 has the greatest potential to benefit water quality and watershed health, followed by Alternative 3 Modified, Alternative 2 and Alternative 1. On a net basis within the BWCAW, Alternative 3 Modified has the greatest potential to benefit water quality and watershed health, followed by Alternative 4, Alternative 2 and Alternative 1.

#### **3.13.7 Public Involvement**

A Notice of Intent to prepare a Supplement to the Echo Trail FEIS was published in the Federal Register on October 28, 2008. A Notice of Availability for the Draft Supplement was published in the Federal Register on November 21, 2008. Copies of the Draft Supplement were mailed to those parties that received the Final EIS. The Draft Supplement was also posted on the Superior NF website at [www.fs.fed.us/r9/superior](http://www.fs.fed.us/r9/superior) under Projects and Plans. Seven comments on the Draft Supplement were received. The Final Supplement, Record of Decision and response to comments will be provided to those parties that commented on the Draft Supplement and posted on the web. Please note that scoping is not required when preparing a Supplement (40 CFR 1502.9(c)(4)).

## **CHAPTER 4 LISTS**

### **4.1 LIST OF PREPARERS AND CONTRIBUTORS**

Biosketches for the Interdisciplinary Planning Team that developed the Supplement to the Echo Trail Area Forest Management Project Final EIS are provided below. The original Final EIS also lists additional Forest Service staff that contributed to the development and preparation of the Final EIS.

#### **Interdisciplinary Planning Team (Core)**

<b>Name</b>	<b>Peter Taylor</b>
Position	Forest Environmental Coordinator, Superior National Forest
Education	Master of Forestry and Environmental Management, Duke University
Experience	2 years USDA Forest Service experience in planning; 2 years experience in wetlands management and other natural resources with other organizations.
Contribution	Project Coordinator for Supplement to the Echo Trail Area Project EIS
<b>Name</b>	<b>Carol Booth</b>
Position	Integrated Resource Analyst, Superior National Forest
Education	BS Forest Science, University of Minnesota
Experience	31 years USDA Forest Service experience in planning, recreation, trails, wilderness, forestry, and special uses
Contribution	Interdisciplinary Team Leader for Echo Trail Area Project EIS
<b>Name</b>	<b>Erich Grebner</b>
Position	West Zone GIS Coordinator, Superior National Forest
Education	BS, University of Minnesota Certified Silviculturist in Alaska on the Tongass National Forest
Experience	28 years USDA Forest Service experience in natural resource management and GIS analysis.
Contribution	Provided spatial analysis and maps
<b>Name</b>	<b>Kenneth Gebhardt</b>
Position	Fishery Biologist – Superior National Forest
Education	MS, Natural Resources/Fisheries – University of Wisconsin-Stevens Point
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Contribution	Provided Watershed and Water Quality effects analysis.
<b>Name</b>	<b>Marty Rye</b>
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Education	University of Minnesota Institute of Technology BS Agricultural Engineering Soil and Water BS Civil Engineering Water Resources Professional Engineer and Certified Floodplain Manager
Experience	17 years experience in fisheries habitat and fish population management.
Contribution	Assisted in Watershed and Water Quality effects analysis.
<b>Name</b>	<b>Kendall Cikanek</b>
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Education	Kansas State University, BS Natural Resource Management
Experience	12 years experience in fisheries management, wildlife management, biology, and GIS analysis.
Contribution	Provided spatial analysis, data, and maps

## **4.2 DISTRIBUTION LIST**

These lists identify the agencies, individuals, and organizations that received the Draft Supplement to the Final EIS. People who provided comments on the Draft Supplement will receive paper copies or notification when the Final Supplement to the Final EIS is available, depending on their preference. The Final Supplement to the Final EIS will be distributed to required agencies.

### **Federal Government**

Advisory Council on Historic Preservation, Director, Washington, DC  
Federal Aviation Administration, Great Lakes Region  
Federal Highway Administration, Division Administrator  
U.S. Army Engineers, Great Lakes and Ohio Division  
U.S. Coast Guard, Environmental Management CG-443  
U.S. Department of Agriculture, APHIS PPD/EAD  
U.S. Department of Agriculture, Natural Resource Conservation Service  
U.S. Department of Agriculture, National Agricultural Library  
U.S. Department of Energy, Office of NEPA Policy and Compliance  
U.S. Department of the Interior, Director, Office of Environmental Policy and Compliance  
U.S. Department of the Interior, Fish and Wildlife Service, Twin Cities Field Office, Dan Stinnett  
U.S. Environmental Protection Agency, Office of Federal Activities, EIS Filing Section  
U.S. Environmental Protection Agency Region 5, EIS Review Coordinator  
U.S. Environmental Protection Agency, Region 5, Kenneth Westlake  
U.S. Representative Betty McCollum  
U.S. Representative James L. Oberstar  
U.S. Representative Gil Gutknecht  
U.S. Senator Norm Coleman  
U.S. Senator Amy Klobuchar  
U.S. Department of Justice, Assistant U.S. Attorney, David W. Fuller

### **Tribal Government**

1854 Authority, Andrew Edwards  
1854 Authority, Sonny Myers  
Boise Forte Tribal Office, Chairman Kevin Leecy  
Fond Du Lac Tribal Office, Chairman Peter Defoe  
Fond Du Lac Natural Resources Department, Mike Schrage  
Grand Portage Tribal Office, Chairman Norman Deschampe

### **State and Local Government**

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North St. Louis Soil, Water, and Conservation District  
Representative David Dill  
Representative Tom Rukavina  
Senator David Tomassoni  
Senator Tom Bakk  
St. Louis County Commissioner Keith Nelson  
St. Louis County Commissioner Mike Forsman  
St. Louis County Commissioner Dennis Fink

St. Louis County Land Department, Mark Kailanen  
St. Louis County Land Department, Robert Krepps  
St. Louis County Assistant Attorney Barbara A. Russ  
Lake County Commissioner Claire Nelson  
Lake County Assistant Attorney Laura M. Auron  
State of Minnesota Assistant Attorney General David P. Iverson  
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MN DNR Area Forester, Mike Magnuson  
MN DNR Area Hydrologist, Amy J Loiselle  
MN DNR Area Wildlife Manager, Thomas P Rusch  
MN DNR Northeast Regional Director, Craig Engwall  
MN DNR Orr Area Forest Supervisor, John Stegmeier  
MN DNR Regional Environmental Review Specialist, Dave Holmbeck  
MN DNR Regional Forest Wildlife Coordinator, Rick Horton  
MN DNR Trails and Waterways, Stephen J Hennessy  
MN DNR, Northeast Region Wildlife Manager, Jeff Lightfoot  
MN DNR Wildlife Habitat Specialist, Walt Gessler  
Minnesota Historical Society - State Heritage Preservation Office, Dennis Gimmestad

**Libraries**

Arrowhead Library System  
Cook Public Library  
Duluth Public Library  
Grand Rapids Public Library  
Virginia Public Library

**Organizations**

Audubon Minnesota  
Audubon Center of the Northwoods, Craig Prudhomme  
Backcountry Hunters and Anglers, David Lien  
Conservationists with Common Sense, Doug & Nancy McReady  
Defenders of Wildlife  
Friends of the Boundary Waters Wilderness  
Friends of the Boundary Waters, Wever Weed  
Izaak Walton League of America, Dave Zentner  
Living Forest Cooperative, Charly Ray  
Minnesota Center for Environmental Advocacy, Matthew Norton  
Minnesota Environmental Partnership, Heather Kastern  
Minnesota Forest Watch  
Minnesota Project, Loni Kemp  
Minnesota Public Radio, Stephanie Hemphill  
Northeast Minnesotans for Wilderness  
Quetico Superior Foundation  
Ruffed Grouse Society  
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The Wilderness Society

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Ainsworth Engineered (USA), LLC, Patrick E. Orent

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Cook County Star, Rhonda Silence  
Duluth News Tribune, Connie Wirta  
Ely Chamber of Commerce  
Ely Echo, Anne Swenson  
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Faegre & Benson LLP, Collette L. Adkins Giese  
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Minnesota Timber Producers Association, Ray Higgins  
Minnesota Forest Industries & Minnesota Timber Producers Association, Attorney David P. Oberstar  
Rutar Logging LLC, Mark Rutar  
Weyerhaeuser, Kirk Titus

**Individuals**

George and Frances Alderson	Bill & Marge Forsberg
Andrea Allison	Katie & Rick Fournier
Bradley Anderson	Jim Gallina
Lori Andresen	Madeline Gardner
Bruce Barnard	Frank Gauley
Annie Barzen	Rachel Geissinger
Margie Bates	Phillip Gordon
Mary Beemer	Brian Graff
Daniel Belgum-Blad	Tom Grahek
Paul Benick	Colleen Grams
Dave Boerger	Robert Graves
W.E. Bollenweider	Janet Green
Randall Brenton	Joshua Gumm
Randy Buss	Al Gustaveson
Doug Chasar	Bob & Mary Haedt
Stephanie Coffey	Gail Harty
Ted Colescott	Cathleen Hauenstein
Patti Combs	Susan Hawthorne
Christopher Cox	Tom Herschelman
Valencia Darby	Benjamin Hocker
Larry DeFoe	William Hohengarten
Kelly Dehner	Barbara Horlbeck
Dave Dempsey	Mike Huseby
John Dickerson	Kurt Indermaur
Harold Diers	Maureen Johnson
Bob Douglas	James Johnston
Bruce Drake	Robert Kaiser
William Drennan	Sherrie Kamm
Sandy Dvorsky	Andrew Keller
Craig Engwall	Bill Klersy
John Eret	Jerry Koski
Christina Erickson	Morey Knutson
Stephen Erickson	Glenn Kreag
Eric Evans	Richard Krueger
Richard Flint	Ledger Krupp

David Larson	William Rose
Robert Lenthart	Bill Rowles
Lee Lewis	Rick Ruhanen
Mimi Long	B. Sachau
Sue & Scott Long	Brad Sagen
Lynn MacLean	Thomas Saylor
Lynn Malek	Jeff Schaller
Jim & Marion Manning	Lisa Myslajek Schmidt
Gordon Martin	Rick Schubert
Judith Mattison	Ellen Silva
Mike Mattison	Jane Skalisky
Ted Mattison	Rick Skoog
Mike Matz	Dan Skriba
Steve Maxwell	Stephen Snyder
Susan McCallum	Jeremy Stahl
Ronald McIvor	Kathy Steinberger
Darlene Miller	Martin Steitz
Benjamin Moerke	Valdi Stetanson
Tom & Gerry Morrow	Mackenzie Sullivan
Pete Morsch	John Swanson
Keir Morse	Robin Taylor
Mike Nagengast	Patricia & John Telfer
Dave Nelson	Jennifer Timmers
Pam Nelson	Richard Van Deusen & Marjorie Sigel
Steve, Kathy, & Aaron Nelson	David Waldschmidt
Tim Nelson	Doug Wallace & Peggy Hunter
Julie Nester & Zdenek Mestenhauser	Michael Wastman
Richard Nethercut	Thomas Waters
Nancy Newman	Kaiija Webster
Denise Niedzolkowski	Kris Wegerson
Ronald Noga	Charles Weisbrod
Dick Olson	Lisa Wellman
Gregory Olson	Michael Wener
Marc Olson	Dyke Williams
Mark Olson	Joanne Winship
Wendy Olson	Robert Wirtanen
Brent Oswald	Danelle Wolf
Elanne Palcich	Jeanne & Greg Wright
Steve & Clare Pett	Reginald Yoder
Dave Phelps	Barbara Young
Doug Phillips	Jason Zabokrtsky
James Raml	Lisa Zamberletti
Michelle Raskovich	Andy & Lisa Zelinkas
Ronald Reimann	James Zieba
Sheila Williams Ridge	Reid A. Zimmerman
Terry Riley	Don Zupec
J. Reed Roesler	
William Rom	

### **4.3 LITERATURE CITED**

The Supplement uses the citations as needed for references listed in the original Echo Trail Final EIS. In addition, the following references were used in development of the Supplement.

Baughman, Updegraff & Cervantes. 2001. Motivating forest landowners in the North Central United States. University of Minnesota, College of Natural Resources, St. Paul, Minnesota.

Dahlman, Richard. Minnesota Department of Natural Resources, personal communication.

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US Environmental Protection Agency. 1994. Minnesota: Forestry audits evaluate how BMPs work. <http://www.epa.gov/owow/nps/Section319I/MN.html>

#### **4.4 ACRONYMS AND ABBREVIATIONS**

See p. 4-23 of the Echo Trail Final Environmental Impact Statement for a list of acronyms and abbreviations, some of which were used in this Supplement.

#### **4.5 GLOSSARY**

See pp. 4-25 to 4-41 of the Echo Trail Final Environmental Impact Statement for the glossary. In addition, the following terms used in the Supplement are defined below.

**Downstream reach scale-**Downstream reaches are those that have similar physical stream channel characteristics (i.e. stream gradient, substrate, and channel type)

**Point source sediment-** Sediment which enters a stream, lake, or wetland at a specific site as a result of a specific activity or cause (i.e. a stream crossing construction site).

**Watershed: 6<sup>th</sup> level and 4<sup>th</sup> level-**The Hydrologic Unit Code (HUC) system is a standard watershed map system used by State and federal agencies. The 6<sup>th</sup> level HUC watershed is a size relevant to planning and project level analysis on the National Forest, while the 4<sup>th</sup> level HUC watershed covers a larger area. See p. 3.6-1 of the Forest Plan FEIS for more information.

#### **4.6 INDEX**

Given the short length of this Supplement, an Index will not be prepared. See the Table of Contents at the beginning of the document for the organization of the document.

**Echo Trail Final Supplement to the Final Environmental Impact Statement**

**Response to Comments on the Draft Supplement**

The following table lists the individuals, agencies, and groups who submitted comments on the Draft Supplement to the Echo Trail Area Forest Management Project Final Environmental Impact Statement. The letters or a summary of the letter is included (italicized within quotation marks) after the table along with the Forest Service response. The project file contains the original letters. Persons wishing to see entire letters may request copies from the District. The table also includes the page number of the Forest Service response to the comment.

<b>Individuals, agencies and groups who commented on the Draft SEIS</b>		
<b>Letter Number</b>	<b>Commenter</b>	<b>Page #</b>
001	Nancy L. Newman	1
002	William Thomas	1
003	Jeff Elliott, Elliott Forest Consulting	2
004	Terry Riley, Theodore Roosevelt Conservation Partnership	2
005	U.S. EPA, Region 5, Kenneth A. Westlake	3
006	State of MN, Department of Natural Resources, Rick Horton	3
007	Friends of the Boundary Waters Wilderness, The Wilderness Society, Northeastern Minnesotans for Wilderness, the Sierra Club North Star Chapter, and Defenders of Wildlife	4 - 13

**Comment letter 001, Nancy L. Newman**

*Handwritten note on a copy of the Draft SEIS: “Please remove my name from your mailing list! Terrible waste of postage and paper.”*

**Response to comment 001**

Nancy L. Newman will not be mailed any further information on the Echo Trail project. In an effort to reduce use of paper, the Forest is trying to send email notifications when project information is available on the web site or mail compact discs of the project documents. Paper copies are usually distributed by request.

**Comment letter 002, William Thomas**

*Email: “There is no link to the draft and searching on the title does not produce it.”*

**Response to comment 002**

The Project Coordinator sent the following email to Mr. Thomas and the Forest Service did not receive any further questions or comments from Mr. Thomas. “Try typing the address in a search: [www.fs.fed.us/r9/superior](http://www.fs.fed.us/r9/superior). That should take you either directly to the Superior National Forest (SNF) web site or give you a link to the web site. The Projects & Plans link is on the left side of the SNF welcome page and that leads to the environmental analysis documents. Please call me on Monday if this does not work.”

**Comment letter 003, Jeff Elliott, Elliott Forest Consulting**

*“I recently reviewed your supplement regarding the issue of water quality in the BWCA. Your work on this issue was thorough and I agree with your conclusion that there will be minimal if any impacts to water within the BWCA. The mitigations and design features along with following MFRC guidelines will assure that impacts to the waters within the harvest area and the BWCA are minimal.”*

**Response to comment 003**

Thank you for your comment.

**Comment letter 004, Terry Riley, Theodore Roosevelt Conservation Partnership**

*“I have reviewed the draft Supplement to the Echo Trail Area Forest Management Project Final Environmental Impact Statement and would like to provide the following comments. I provide comments to you on this draft Supplement as a citizen biologist, hunter, angler, and conservationist. I am primarily concerned about fish and wildlife habitat on your District and I support active forest management that maintains a broad range of age classes of each forest type, particularly young aspen forests.*

*I do not support any more road developments than are absolutely necessary, and I support winter roads with little ground disturbance. I would support a program that places gates on roads and seeing a broad complex of forest roads for foot traffic and recreation opportunities.*

*Based on my review of the alternatives you evaluated in the draft supplement, I support Alternative 3 as modified.*

*Thank you for considering my comments. If you need further clarification or need me to address other issues, please feel free to contact me at your convenience.”*

**Response to comment 004**

As described in the 2007 Record of Decision (ROD-3-1), the Selected Alternative provides the landscape with the greatest mix of small young and large mature forest patches which results in short-term benefits to species that prefer young forest patches while maintaining habitat for species that prefer mature/old forest patches. More specifically, the Selected Alternative will have a beneficial effect on habitat for game species associated with young habitat such as deer and moose (ROD 3.1-10 to 3.1-11) and creates smaller patches of young forest near existing roads and converts fewer acres to pine than Alternatives 2 and 4. The 2007 Record of Decision (section 3.2) also addresses your interest in the minimum road system. The Selected Alternative results in an overall decrease of 35 miles of road in the project area. Of the temporary roads planned, about three-quarters would be winter. Gates and recreation opportunities were not part of this project’s purpose and need. However, effects to recreation were addressed in section 3.9 of the Final EIS. Section 3.2 of the 2007 Record of Decision and Section 3.25 in the Final EIS describe the transportation system. Overall, the project looked at the long-term transportation system needed for vegetation management activities. The recent Forest-wide Travel Management Project Environmental Assessment addresses motorized public access. Thank you for your support of the Selected Alternative (Alternative 3 Modified).

**Comment letter 005, U.S. Environmental Protection Agency, Kenneth A. Westlake, Supervisor**

*“In accordance with Section 309 of the Clean Air Act and the National Environmental Policy Act, the United States Environmental Protection Agency Region 5 (U.S. EPA) has reviewed the Draft Supplement to the Final Environmental Impact Statement (EIS) for the Echo Trail Area Forest Management Project. We have no concerns regarding the document. Therefore, U.S. EPA has rated the Draft Supplement to the Final EIS as LO (Lack of objections).”*

*Clarification Needed*

*The United States Army Corps of Engineers (US ACOE) was not listed under the section heading, “4.2 Distribution List”. The Forest Service has confirmed that the US ACOE had been sent a copy of the document and will be listed in the Final Supplement to the Final EIS.”*

(The remainder of the letter (background and contact information) is not included because it does not have any comments or questions.)

**Response to comment 005**

The Final Supplement will also be sent to required agencies, including the Army Corps of Engineers. Those agencies receiving the Final Supplement, or notification of its availability, will be listed in Chapter 4 of the Final Supplement.

**Comment letter 006, State of MN, Department of Natural Resources, Rick Horton**

*Phone contact: “Rick stated that he distributed the Draft Supplement to the DNR staff and did not receive any new concerns or comments. The State stands by their comments on the original full EIS and has no new comments on the Supplement.”*

**Response to comment 006**

The IDT member that spoke with Rick thanked him for asking State staff for a review of the Draft Supplement. No further coordination, communication, or review with the State is needed at this time.

**Comment letter 007, Friends of the Boundary Waters Wilderness, The Wilderness Society, Northeastern Minnesotans for Wilderness, the Sierra Club North Star Chapter, and Defenders of Wildlife**

*“We jointly submit the following comments on the Draft Supplement to the Echo Trail Final Environmental Impact Statement (FEIS) on behalf of the Friends of the Boundary Waters Wilderness, The Wilderness Society, Northeastern Minnesotans for Wilderness, the Sierra Club North Star Chapter, and Defenders of Wildlife. As a result of litigation brought by these organizations, the District of Minnesota vacated the Echo Trail FEIS and ordered that the Forest Service address the impacts of the Echo Trail Project on water quality and watershed health in the Boundary Waters. Sierra Club Northstar Chapter v. Kimbell, Civ. No. 07-3160 ADM/RLE, slip op., 2008 WL 4287424 (D. Minn. Sept. 15, 2008) (hereinafter the “Order”). We appreciate the opportunity to comment.”*

**Comment 007 01**

**“A Vacated FEIS Cannot Be Merely Supplemented”**

*Two years have passed since the Forest Service issued the FEIS, and changed circumstances warrant reinitiation of the NEPA process. As an initial matter, given the current depressed status of the homebuilding and mill industries, it is appropriate to examine if there is any present need for the timber sales. Moreover, the Forest Service cannot continue to rely on the FEIS because the District Court vacated it and ordered the Forest Service “to amend the FEIS to include an analysis of the Project’s impacts to water quality and watershed health in the Boundary Waters.” Order at 20-21. Nevertheless, the Forest Service continues to rely upon the vacated FEIS, explicitly tiering the Supplemental EIS to the FEIS. See Draft Supplement at S-1. The Forest Service, however, must reinitiate the NEPA process, beginning with the scoping, and draft an amended FEIS in compliance with the Order. See *Ctr. for Biological Diversity v. BLM*, 2006 U.S. Dist. LEXIS 73668 (N.D. Cal. Sept. 25, 2006) (vacating the FEIS and rejecting defendant’s argument that the court should allow the agency to merely supplement the inadequate FEIS rather than conduct a new NEPA analysis).*

*Even assuming that a Supplemental EIS can provide the Court-ordered analysis, the issuance of the Final Supplement will not complete the agency’s obligations under the Court order. Rather, as the Record of Decision was based on the vacated FEIS, the agency must issue a new Record of Decision based on the new NEPA analysis. See *Oregon Natural Resources Council v. Harrell*, 52 F.3d 1499, 1508 (9th Cir. 1995) (“As the environmental impact statement supplement upon which the 1992 ROD was based must be supplemented in light of our decision in *Marsh VII*, that record of decision can no longer be taken as the Corps’ operative decision.”). The Draft Supplement explains that when the Final Supplement is completed “the decision maker will decide whether or not to alter her decision for the Echo Trail Area Forest Management Project based on the information contained in the Supplement.” Draft Supplement at S-1. This approach does not go far enough. After the Final Supplement is issued, the Forest Service must formally reopen its decision-making process and permit another administrative appeal of the new Record of Decision. To allow the original Record of Decision to stand would contravene the purpose of NEPA to inform agency decision making and would reduce the analysis in the Supplemental EIS to a meaningless formality. See, e.g., *Idaho Sporting Congress, Inc. v. Alexander*, 222 F.3d 562, 568 (9th Cir. 2000) (explaining that the agency is required to complete environmental review under NEPA before making the final decision); *Save the Yaak Committee v. Block*, 840 F.2d 714, 718 (9th Cir. 1988) (rejecting NEPA documents when the final decision was made prior to completion of the environmental review).”*

**Response to comment 007 01**

The Memorandum Opinion and Order for *Sierra Club et al. v. Kimbell* (Case No. 07-3160) states that “the FEIS is vacated and the Forest Service is ordered to amend the FEIS to include an analysis of the Project’s impacts to water quality and watershed health in the Boundary Waters...Until the Forest Service amends the FEIS as ordered, it is enjoined from implementing the Echo Trail Project” (pp. 20-21).

To fulfill the court order, we have prepared a supplement in accordance with 40 CFR 1502.9. The NEPA implementing regulations at 40 CFR 1502.9(c) states the following about supplements:

(c) Agencies:

1. Shall prepare supplements to either draft or final environmental impact statements if:
  - (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
  - (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
2. May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.
3. Shall adopt procedures for introducing a supplement into its formal administrative record, if such a record exists.
4. Shall prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council.

The Court Order from Case No. 07-3160 constitutes “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts” (40 CFR 1502.9(c)(1)(ii)). Accordingly, we have prepared a supplement that fulfills the court order to *amend* the FEIS. The Court did not order us to produce an *entirely new* FEIS. Instead, the order was to disclose impacts of the Echo Trail Project to water quality and watershed health in the Boundary Waters. These impacts are disclosed in the Supplement. This use of a Supplement in response to the Court Order fulfills the intended role of supplements as identified in the NEPA implementing regulations at 40 CFR 1502.9. For example, in *Idaho Sporting Congress Inc. v. Alexander*, 222 F.3d 562, 567 (9<sup>th</sup> Cir. 2000) the 9<sup>th</sup> Circuit held that the Forest Service use of a Supplemental Information Report was inappropriate “to present information and analysis that it was required, but according to the finding of the district court, failed to include in its original NEPA documents.” The Court ruled that it is “inconsistent with NEPA for an agency to use an SIR, rather than a supplemental EA or EIS, to correct this type of lapse.” Please note that there is no requirement to complete scoping as a part of producing a supplement (40 CFR 1502.9(c)(4)).

The Record of Decision will be issued in which the deciding officers make a decision based on the analysis and public involvement associated with the Echo Trail Project FEIS, the analysis and public involvement associated with the Supplement to the FEIS, and the project record. The additional information in the Supplement will be carefully considered by the deciding officers. The Record of Decision will describe appeal procedures pursuant to 36 CFR 215.

In regards to timber sales, it is important to recognize that the purpose and need of the Echo Trail Project is multi-faceted. As stated on p. 1-9 to 1-11 of the FEIS, this includes achieving Forest Plan objectives for age class distribution, vegetation composition, Management Indicator Habitats, patches, and the transportation system, as well as forest products. The deciding officers consider all aspects of the purpose and need when making their decision and demand for forest products is not the sole determining factor in making a decision about the management of the national forest. In any case, the Superior National Forest sold 60 MMbf in Fiscal Year 2008 and as of this date all sales that have been offered have been sold except for a portion of one timber sale (from the Ham Lake Salvage Project). We anticipate that there will be sufficient interest from loggers to implement forest management identified in the Echo Trail Project which will help achieve all of the aspects of the purpose and need.

**“Insufficiency of the Draft Supplement**

*In the context of a Supplemental EIS, like a FEIS, the Forest Service is required to take a “hard look” at the environmental impacts of an action. See Neighbors of Cuddy Mt. v. Alexander, 303 F.3d 1059, 1063 (9th Cir. 2002) (holding that the supplemental EIS prepared for a timber sale was insufficient). As explained below, there are several areas of inadequate analysis that must be addressed by the Forest Service in the Final Supplement.*

**Comment 007 02**

***Baseline Impacts***

*To begin, the Draft Supplement does not adequately describe how existing conditions within the Project Area might affect the Boundary Waters. For example, in the discussion of the “Affected Environment,” the Draft Supplement characterizes the existing condition of stream crossings in the Project Area as “variable,” explaining that some stream crossings contribute point source sediment to local streams while others are working well to protect water quality. Draft Supplement at 3-6. According to the Draft Supplement, some stream crossings “are unnaturally confining stream channels, reducing stream flood flow capacity, and inhibiting stream transport” and “[s]ome crossings may also be restricting aquatic organism passage as a result of increased flows and/or perched culvert outlets.” *Id.* The problem with this analysis is that it does not identify which stream crossings cause these problems. Of the 19 stream crossings that occur within one mile of the Boundary Waters and flow into the Boundary Waters, how many are causing these water quality problems? Without this baseline information, it is impossible to understand the direct and cumulative impacts on the Boundary Waters from the “no action” and action alternatives. See *Half Moon Bay Fisherman’s Marketing Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988) (holding that “without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently no way to comply with NEPA.”).*

**Response to comment 007 02**

In response to this comment, the Final Supplement provides an expanded discussion of the affected environment. Beginning in 2002, the Superior NF has surveyed the condition of stream crossings on 975 sites in all major project areas within the Superior National Forest (including 73 crossing surveys in the Echo Trail Project area in 2003). Please see the Affected Environment section of the Final Supplement for information from these surveys. In summary, about 80% of crossings do not pose erosion or aquatic organism passage issues, and the remaining crossings are prioritized for improvements as a part of the annual road maintenance program. These surveys, along with the rest of the analysis in the Final Supplement, have enabled us to take a hard look at how stream crossings are affecting water quality, watershed health and aquatic organisms. While the surveys were completed in 2003, the information from the surveys is useful in describing the affected environment at the present time because stream crossings are a long-lasting feature of the landscape.

**Comment 007 03**

**“Cumulative Impacts**

*The Forest Service has not gathered information about forest stand condition on non-federal lands needed to assess water quality impacts on the Boundary Waters.<sup>1</sup> Indicator 3 is one of three indicators that the Forest Service is using to assess impacts to water quality (because the potential effects from vegetation management and other activities associated with each alternative should be evident at the watershed scale). Indicator 3 considers the proportion of upland open and upland young forest within each 6<sup>th</sup> level watershed that occurs within or intersects the Project Area. The indicator purports to include all ownerships. The Forest Service explains, however, that stand-level data is not available for the Boundary Waters and that “limited data” is typically available for non-federal lands. Draft Supplement at 3-4. For this reason, the Forest Service provides no data -- and explicitly questions the reliability of the dependant analysis -- for watersheds that occur within the Analysis Area but predominantly outside of the Project Area. Id.*

*The Court made clear that the Forest Service’s analysis must recognize “that there are multiple harvesting projects occurring within the Superior National Forest that may cause minimal impacts on the Boundary Waters, which taken together may give rise to negative cumulative impacts.” Order at 11. By failing to acquire reliable stand data for watersheds outside the Project Area but within the Analysis Area, the Forest Service has not sufficiently studied the cumulative impacts on water quality in the Boundary Waters that the Court ordered.*

*Our concerns about the cumulative impacts analysis goes beyond the effect of inadequate stand data. The Draft Supplement discusses the Glacier Project and concludes that there would not be substantial cumulative effects within the Boundary Waters from this project. Draft Supplement at 3-22. But a conclusion about water quality impacts from the Glacier Project is not sufficient to meet the requirements of NEPA. The Forest Service should analyze all of the cumulative environmental impacts from the Glacier Project and consider this analysis in its upcoming decision on the Echo Trail Project. The Court concluded that the Forest Service did not violate NEPA by excluding the Glacier Project from the analysis in the FEIS because the project was not reasonably foreseeable when the FEIS was drafted. Order at 12. But now that the Court vacated the FEIS and the Forest Service has reinitiated environmental review, the Forest Service can no longer justifiably ignore analysis of the cumulative impacts from the Glacier Project.*

*Similarly, the Forest Service should consider what other new information has surfaced since the drafting of the FEIS that may now necessitate supplemental analysis. See 40 C.F.R. § 1502.9(c)(1); Alaska Wilderness Recreation & Tourism Ass’n v. Morrison, 67 F.3d 723, 728-29 (9th Cir. 1995) (“[A]n environmental agency is required to prepare an SEIS whenever significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts arise.”). For example, in February 2008 the United States Fish and Wildlife Service proposed designating most of the Superior National Forest -- including the Echo Trail Project Area -- as critical habitat for the Canada lynx. 73 Fed. Reg. 10860 (Feb. 28, 2008). The Forest Service must update its environmental review to reflect this and other significant new circumstances.*

<sup>1</sup> *It is our understanding that the data provided in the Draft Supplement on roads and stream crossings within one mile of the Boundary Waters (Indicators 1 and 2) relate to all land ownerships. See Draft Supplement at 3-20. If this is not the case, then the Forest Service needs to acquire this information and include it in the Final Supplement.*

**Response to comment 007 03**

The Draft Supplement Indicator 3 analysis included data from the Glacier and Border Projects for the watersheds shared with the Echo Trail Project Indicator 3 Analysis Area. This information was reviewed and will continue to be included in the Final Supplement. In addition, the analysis for Indicator 3 was updated for non-federal land within watersheds affected by the Echo Trail Project. See the Analysis Methods section of the Final Supplement for further information.

The agency has discretion to evaluate whether new information or changed circumstances requires a Supplement. In *Habitat Education Center, Inc., et al, Plaintiffs, v. United States Forest Service et al, United States District Court, Eastern District of Wisconsin (Case No. 07-C-0578)* the court found that an agency cannot have acted arbitrarily or capriciously in deciding whether or not to file a [supplemental EIS] unless the new information provides a seriously different picture of the environmental landscape such that another hard look is necessary.”

The IDT reviewed new information and considered changed circumstances. The interdisciplinary team investigated if and what circumstances may have changed between the 2007 Record of Decision and the current time (documented in the project file). The projects considered included the Border, Glacier, and Travel Management projects proposed by the Forest Service as well as State, County and private actions. For water quality and watershed health, the cumulative effects analysis disclosed in the Supplement includes consideration of these actions.

The interdisciplinary team also considered the type and degree of change these projects and any other changed circumstances might have for all other resources (besides water quality and watershed health) analyzed in the FEIS. The documentation for considering changed circumstances for resources other than water quality and watershed health is in the project file. The IDT reviewed vegetation, wildlife, recreation, roadless, scenic quality, soils, fire condition class, non-native invasive species, heritage, economics, and transportation resources and tribal concerns to determine if or how they might be affected by changed circumstances created by the Border, Glacier and Travel Management projects, State and private projects, and other factors. This review indicated that the environmental consequences associated with the Echo Trail Project are still within the disclosure made in the Echo Trail FEIS. Accordingly, there is no need or requirement to prepare an additional Supplement for other resources.

In response to the specific comment on lynx, the Project Biologist confirmed with the US Fish and Wildlife Service that the Echo Trail Biological Assessment for lynx critical habitat was still valid and the same findings can be made (documented in the project file). Because the findings are the same, there is no need to include this information as part of the Water Quality Supplement or to prepare an additional Supplement.

In answer to the footnote, the data for roads and stream crossings within 1 mile of the BWCAW does relate to all land ownership.

**Comment 007 04**

***“Impacts To Wilderness Character***

*The Court denied without prejudice our claim that the Forest Service violated the Wilderness Act by approving the Echo Trail Project. Order at 16. The Court explained that the Project’s impacts on water quality and watershed health would need to be analyzed before the Court could determine if these impacts would degrade wilderness character in violation of the Wilderness Act. The Draft Supplement provides no analysis of the Project’s impacts to wilderness character. The definition of wilderness in Section 2(c) of the Wilderness Act provides four qualities of wilderness that provide an appropriate framework for assessing impacts to wilderness character. 16 U.S.C. § 1131(c). These qualities are: untrammelled, undeveloped, natural, and outstanding opportunities for solitude or a primitive and unconfined type of recreation. We believe the impacts to water quality and watershed health identified by the Forest Service degrade the naturalness of the Boundary Waters, violating the Wilderness Act. See also Forest Service Manual 2323.41 (“Maintain satisfactory natural watershed condition within wilderness.”). The Forest Service must therefore analyze how the impacts to water quality and watershed health affect the wilderness character of the Boundary Waters.”*

**Response to comment 007 04**

The impacts to water quality and watershed health in the Boundary Waters Canoe Area Wilderness (BWCAW) are disclosed in the Supplement (for examples, see information under the “Effects to the BWCAW” headers in sections 3.13.6.1 Direct and Indirect Effects and 3.13.6.2 Cumulative Effects). The Final Supplement clarifies that the information it contains addresses effects to the naturalness of the BWCAW that will be used by the decision makers to determine compliance with the Wilderness Act. The project file and FEIS also includes analysis and information on wilderness character as it pertains to section 4 (b) of the Wilderness Act. A summary of this information is in the project file.

The question on whether impacts constitute a degradation of wilderness character is informed by the laws and regulations providing direction for management of the BWCAW as well as adjacent National Forest System land. Section 4(b) of the Wilderness Act requires the Forest Service to preserve wilderness character in the BWCAW. We understand that the BWCAW is an important place for many people in Minnesota and across the United States and we take the charge for stewardship of this resource seriously. At the same time, other laws providing direction to the Forest Service (such as the Multiple Use Sustained Yield Act and the National Forest Management Act) state that national forests shall be managed for multiple uses, including recreation, wildlife, water and timber. We do not believe that preserving wilderness character and managing National Forest System land outside the wilderness for multiple uses is an either/or proposition. Instead, well crafted projects that respond to public comment and carefully consider impacts to the wilderness can both comply with the Wilderness Act and achieve the desired conditions on the multiple use National Forest System land surrounding wilderness.

The feasibility and requirement to both preserve wilderness character and comply with the direction in laws applying to lands outside the wilderness is supported by several points. First, it is important to recognize that wilderness areas, including the BWCAW, do not exist in a vacuum. It is impossible to reduce the impacts of activities occurring outside the wilderness on the wilderness to zero. This would be true even if the Forest Service did not conduct any projects at all outside the wilderness since State, county and private activities outside the wilderness such as timber harvest, road building and road decommissioning, and the operation of motorized vehicles could continue to impact wilderness.

Forest Service Manual 2320 provides direction on wilderness management. Forest Service Manual (FSM) 2320.6 states that:

“In absolute wilderness there is no human influence preventing the area from retaining its purest natural form. It is unlikely, however, that this condition exists anywhere on earth. There are few places, if any, remaining where humans have neither set foot nor where human influences, through pollution, have not been felt. The Wilderness Act defines wilderness at some point below absolute wilderness.”

Furthermore FSM 2320.3 states the following:

“Because wilderness does not exist in a vacuum, consider activities on both sides of wilderness boundaries during planning and articulate management goals and the blending of diverse resources in forest plans. Do not maintain buffer strips of undeveloped wildland to provide an informal extension of wilderness. Do not maintain internal buffer zones that degrade wilderness values.”

It is important to consider the overall existing condition, including the common and expected types of activities that can occur adjacent to the BWCAW, to understand what the baseline is for considering potential project effects on wilderness character. This approach is validated by the following decision in a recent court case.

Avoiding an intensification of impacts beyond what is characteristic of the area is described in a ruling on noise impacts to wilderness in the South Fowl Snowmobile Access Project (U.S. District Court, District of Minnesota Case #06-3357). The Court opinion stated that:

“agency activity that results in sound that is louder, more constant, more frequent, or of a different quality, than the sound that presently exists within the wilderness, is more likely to degrade the wilderness character from its present condition and thus result in a violation of § 4(b) of the Wilderness Act” (p. 26).

This ruling supports the method of considering existing impacts when evaluating whether or not a project degrades wilderness character.

At the time of designation of a wilderness, there is a certain set of uses of the region surrounding the wilderness and a certain set of impacts to wilderness from these uses. In the case of the Boundary Waters Canoe Area Wilderness, these impacts included timber harvesting, road building and road decommissioning, motorized and non-motorized recreation, prescribed fire, some development (such as campgrounds). These activities have some impact on water quality, watershed health, and other aspects of wilderness character in the BWCAW. They have continued up to the present day and are a well established characteristic of the area. They contribute to creating what the character of the Boundary Waters Canoe Area Wilderness is. The Forest Service is required to avoid degrading this wilderness character by avoiding activities that would represent a substantial increase in impact beyond the long-standing set of impacts that existed at the time the BWCAW was established and continues up to the current day. (*The Affected Environment* sections of the Supplement and the FEIS contain additional information on characteristics of the region affected by the Echo Trail project.)

Furthermore, while the Forest Service is required to protect wilderness character, the Agency is also directed to seek opportunities to improve wilderness character. The Superior National Forest has and is completing several projects that are improving wilderness character. For example, the

Travel Management Project decommissions roads near the BWCAW, an ongoing Non-Native Invasive Species program both outside and inside wilderness reduces impacts from invasive plants, and a reduction in entry point quotas in the Vento unit of the BWCAW has reduced impacts from use inside the wilderness.

The Record of the Decision associated with the Supplement will address compliance with the Wilderness Act. As stated above, this will not be based upon a standard of zero impact to wilderness, as that is neither possible to achieve, nor required by the Wilderness Act and other relevant regulations as discussed above. Instead, it will be based on whether the Echo Trail Project degrades wilderness character, given the historic and ongoing impacts characteristic of the region surrounding and inside the BWCAW.

**Comment 007 05**

***“Aquatic Organisms***

*The Draft Supplement provides no analysis of the impacts to aquatic organisms within the Boundary Waters. Instead, the Draft Supplement merely summarizes the prior analysis in the Biological Evaluation, which does not specifically discuss impacts within the Boundary Waters. The Court ordered the Forest Service to analyze the Project’s impacts to water quality and watershed health in the Boundary Waters. It necessarily follows that the Forest Service should discuss how aquatic organisms in the Boundary Waters are affected. This need is especially great considering that the Forest Service identified numerous impacts, such as sediment deposition, that can harm aquatic organisms. See Draft Supplement at 3-3 (impacts to aquatic organisms may include reduced egg and juvenile survival, degraded stream and riparian habitat, fish migration barriers, and loss of stream connectivity). Although the Forest Service has found that the identified effects would be “minimal,” the Forest Service has not explained whether there may be seasonal variations in intensity or other factors that may affect aquatic organisms in the Boundary Waters.”*

**Response to comment 007 05**

The BE included the following determination: All alternatives may impact individuals or habitat for lake sturgeon, brook lamprey, black sandshell, and creek heelsplitter, but are not likely to cause a trend toward federal listing or a loss of viability. Additional information on effects to aquatic organisms in the BWCAW has been included in the Final Supplement. In summary, the BE determination remains unchanged given that the 60% threshold for Indicator 3 is not exceeded for any 6<sup>th</sup> code watershed. Furthermore, there are no documented occurrences of the aquatic RFSS at or near existing stream crossings within 1 mile of the BWCAW. While there are several locations with suitable habitat with stream crossings within 1 mile of the BWCAW, these existing stream crossings do not pose potential impacts via excessive sedimentation. Any new stream crossings constructed within 1 mile of the BWCAW in the action alternatives would follow all design features and mitigations measures for installation and removal of roads and stream crossings. These roads and crossings are temporary and temporary winter, and they pose little or no risk to aquatic organisms via sedimentation or organism passage.

In terms of seasonal variations in intensity, the impacts to sediment concentrations and loading do have some seasonal variability. Sediment delivery to streams from roadways generally occurs in the summer when the ground is unfrozen and the road surface is exposed to rainfall. The ‘natural’ sediment load is expected to be higher during these larger flow events because the ground (and streambanks) are unfrozen. Organisms have evolved with the higher flow / sediment load conditions that occur as part of the natural variability in a stream system.

Effects from the Echo Trail Project would be minimized during the non-frozen season with the application of mitigation measures described under Section 3.13.6. During the frozen season, effects would be further minimized by snow and ice cover as explained in the Supplement for the effects of the action alternatives. In addition, downstream effects to aquatic organisms in the BWCAW would be reduced due to road decommissioning activities.

**Comment 007 06**

**“Roads**

*The Draft Supplement does a poor job of explaining how Indicator 1 (miles of road) differs by Alternative. Table SUP 2 purports to summarize the miles of roads in various categories within one mile of the Boundary Waters. Even after careful examination of this Table, it is difficult if not impossible to determine how many miles of roads in each category exist within one mile of the Boundary Waters and how many miles of each type will be decommissioned under each alternative. Moreover, we are baffled why the miles of “existing” roads would vary by alternative. We request that the Forest Service provide better explanation in the Final Supplement.*

*Finally, we are disappointed that no stream crossings will be decommissioned within one mile of the Boundary Waters as part of the Echo Trail Project. See Draft Supplement at 3-18. Now that the Forest Service has made an effort to identify water quality impacts on the Boundary Waters, the need for such decommissioning has been reinforced. In any event, we hope that decommissioning of roads and stream crossings near the Boundary Waters will continue to be planned as part of the Travel Management Project. But if the Travel Management Project adds any stream crossings or opens up any roads or trails to motorized use within one mile of the Boundary Waters, the cumulative impacts of those actions must be analyzed in the Final Supplement.”*

**Response to comment 007 06:**

We have reviewed the analysis data as well as the presentation of the data in Tables SUP 2 (SUP 5 in the Final Supplement) and SUP 3 (SUP 6 in the Final Supplement). As a result we have updated Tables SUP 5 and SUP 6 in the Final Supplement and we think that the tables present the information in an easier to understand format.

We have removed the term 'existing' from Table SUP 5 along with other changes to clarify what the existing condition is and what the action alternatives would do. In Table SUP 5, the existing condition is quantified by the Alternative 1 column (no action), and differences between Alternative 1 and action alternatives quantify how the action alternatives would modify the transportation system within 1 mile of the BWCAW. We also provide an explanation in the Final Supplement for how the tables differ between the Draft and Final.

The Draft Supplement (page 3-21) described cumulative effects from the Forest-wide Travel Management Project. This information is also clarified in the Final Supplement. In brief, the 1.5 miles of deferred unclassified road within one mile of the BWCAW would be decommissioned under the Travel Management Project. This also includes removal of a stream crossing with the Travel Management Project.

We recognize the benefits to water quality with stream crossing removals and road decommissioning. The IDT carefully reviewed the stream crossings adjacent to the BWCAW and found one additional crossing and winter road for the District Rangers to consider for decommissioning (FR 199C). The District Rangers will consider the IDT recommendation and analysis in the Final Supplement along with public comments to determine if further road closures or eliminations of stream crossings can be made within the parameters of the project purpose and need and reasons for developing the Supplement. The Decision document will identify and provide rationale if further road closures or stream crossing removals will be included. The District IDT and Rangers have been responsive in the past to specific suggestions on road closures. For example, based on comments to the Draft Echo Trail EIS, portions of some roads near the BWCAW were included for closure as described in the Final EIS page 2-4, # 2.

**Final paragraph and signatories to letter 007**

*“Thank you for providing the opportunity to comment of the Draft Supplement. If you have any questions, or would like to discuss the deficiencies we have raised, please contact any of us.*

*Jeff Evans, Chair of the Board of Directors, Friends of the Boundary Waters*

*Mike Anderson, Senior Research Analyst, The Wilderness Society*

*Angell Magliulo, Acting Chair, Northeastern Minnesotans for Wilderness*

*Sharon Stephens, Chapter Chair, North Star Chapter of the Sierra Club*

*Peter Nelson, Federal Lands Program Director, Defenders of Wildlife*