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Comments:

To:

USDA, Forest Service Responsible Official: Constance Cummins, Forest Supervisor, Superior National Forest

Dear Ms. Cummins:

I have a number of concerns and comments after reading and considering the Draft Environmental Impact Statement regarding the Lutsen Mountain Ski Area Expansion Project, and the request for a Special Use Permit. I will group these into several topics:

1) EROSION: As was reported in the University of Minnesota's 2010 Poplar River Sediment Source assessment by Brad Hansen, et.al., infiltration of water into soil is twice as fast into forest soil than in a vegetated ski slope, and forty times faster than a graded ski slope. A lot more water will be running off if the ski area is expanded!

Add to that the MANY acre/feet/acre of runoff due to additional artificial snow. Flowpaths along roads cutting across steep slopes (to access lifts, chalets, ski patrol facilities, etc.) invite increased water movement and erosion. In the DEIS on page 66, the acreage to be graded will be 119 (56%) or 128.6 (62%) across soils with and erosion rating of SEVERE or VERY SEVERE.

Then consider the impervious surfaces of paved roads. Existing Lutsen Mountain Corporation roads have received a POOR rating by the Forest Service Watershed Condition Classification Technical Guide. Are we certain that new roads built with the expansion will be better, and maintained more expertly? You can imagine (and your people have calculated) the water runoff from more than 1,260 additional parking spaces. Note too the trend in the past two decades of more precipitation, coming in stronger storms. [Comparing annual precipitation 1930 to 1961 vs. 1930 to 2009 is one way to see this.]

My point is that despite efforts outlined in the DEIS, there will be increased erosion. It has been noted that sediment delivery from ski slopes averages four tons/acre. There will be increased sediment in the Poplar River, and (depending on the SUP granted), in Rollins Creek. The Poplar River only recently was removed from Minnesota's list of impaired waters. If the ski area is allowed to expand, there is an increased chance-some would say a likelihood-that the Poplar River will again experience significant impairment. I beg the U.S. Forest Service to NOT let that happen!

There is another form of erosion that was not mentioned in the DEIS. That is slumping. With clay subsoils and steep slopes, a slump may occur from removal of the base (undercutting), say with road construction. Other precipitating factors likely to occur are water saturation and freeze/thaw events. A slump can be a nuisance or a disaster, but this possibility has not been accounted for. Designs for roads, buildings, lift towers, and the slopes themselves must consider slumping.

2) PLANT GROWTH: A sterilized product, Snomax, will be used for snowmaking. Frankly, the testing of this product is not complete, and there are causes for concern. In Christian Rixen, 2003, in referring to Snomax, "...additives affected the growth of some alpine plant species in laboratory experiments." Indeed, Snomax contains nitrogen, and can have a fertilizing effect. Also, hydrologist Dr. Carmen DeJung, at the University of Strasbourg, has asserted that the "product is dangerous for more than 400 plant species because a cocktail of

enzymes causes the dissolution of cells." To accept snowmaking with the additive Snomax at this time is a bad idea, taking an ecological chance.

3) SOIL ORGANISMS: Snomax is also a risk for soil organisms. Alberto Fiore, 2008, has noted fungicidal residue in the product. "The occurrence of these bioactive metabolites should be considered when *P. syringae* no. 31 and its derivatives are used in products for making artificial snow." And Utah State University researcher Jon Takemoto said, "Snomax threatens a root-associated fungi that plants depend on to process nutrients and water." We are only beginning to understand mycorrhizal networks, but their importance is clear. To risk unknown effects on surrounding forests, when the melt from artificial snow can travel far, is unacceptable.

4) TAXPAYER RISK: As reported in Outside Magazine, "Climate change is ravaging the \$12 billion ski industry. The Natural Resources Defense Council estimates reduced snowfall has cost businesses a full \$1 billion in the last decade." The progression of climate change is here, and will worsen for decades to come. In Colorado alone, there are over 100 abandoned ski areas. To counter the problem of inadequate natural snow, a ski resort has to make snow to stay in the black. However, the future looks grim. WHEN Lutsen Mountain Corporation goes belly-up, it will leave roads, parking lots, buildings, pipes, drain-fields on and in the ground. That is Superior National Forest land!

Such an unsightly mess cannot simply be abandoned, as was done for old mines in the past. The Ski Area Expansion Project needs to have assured funds-in escrow-to allow a clean-up of the damage to the National Forest. Once the man-made debris is removed, the area must be re-vegetated, too. The magnificent forest that was slaughtered to create ski runs will not be back in less than a century, but once the ski area closes (or when their lease is up), we can start the healing process., if enough forethought is applied to reserve copious future funds.

5) DARK SKY: There will of necessity be an increase in artificial lighting associated with the roads, buildings, parking lots, and miscellaneous customer services as a by-product of the Ski Area Expansion Project. This will inevitably worsen night sky viewing. If lighting of ski slopes for night use occurs, that problem will be made hugely worse. Grand Marias has a Dark Sky festival the second weekend in December. The BWCAW is a recognized Dark Sky Area. To preserve, as best as possible, the Dark Sky in the Lutsen region, the Special Use Permit must be denied.

6) LUTSEN SCIENTIFIC AND NATURAL AREA: Both Alternatives two and three bring the ski slopes dangerously close the the Lutsen SNA. Such a place is to be protected, yet it will experience runoff, invasive plants, and trespassing among other ill effects. To properly protect the SNA, the SUP must be denied.

IN SUMMARY, for the above reasons, I believe that granting the Special Use Permit will result in overall and lasting harm to the Superior National Forest, and that either Alternative two or three cannot result in an ecological and enduring outcome. I respectfully request that Alternative ONE (no action) be the wise choice by you, Ms. Cummins.

Most Sincerely,

(name withheld per instructions)

