



# United States Department of the Interior

NATIONAL PARK SERVICE  
St. Croix National Scenic Riverway  
401 Hamilton Street  
St. Croix Falls, Wisconsin 54024

IN REPLY REFER TO:

May 18, 2012

L7615 (SACN)

City of Scandia  
Attention: Anne Hurlburt, City Administrator  
14717 209<sup>th</sup> St. N.  
Scandia, Minnesota 55073

Dear Ms. Hurlburt:

The National Park Service (NPS) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Zavoral Mining and Reclamation Project. We appreciate the opportunity to provide comment, as well as the opportunity to serve on the Project Advisory Committee (PAC) for development of the EIS. The transparency afforded by the City of Scandia during the environmental process for this controversial proposal has been exemplary. As you know, the proposed mine is adjacent to the Lower St. Croix National Scenic Riverway (Riverway), which is managed by the NPS. If approved, the proposed mine would have significant impacts on the Riverway. Therefore, the NPS is opposed to issuance of a Conditional Use Permit for the proposed Zavoral Mine.

## Introduction

In 1968, the US Congress passed legislation entitled the Wild and Scenic Rivers Act (Public Law 92-542 as amended; 16 U.S.C. 1271-1287; WSRA). Eight special rivers across the nation were originally designated as "Wild and Scenic" by this groundbreaking environmental law. Of those eight rivers, only one, the St. Croix, was to be managed by the NPS. Thus the St. Croix River became a full-fledged unit of the National Park System. As a national park unit, the St. Croix River is guided by the same management policies as better known national park areas such as Yellowstone, Gettysburg, Grand Canyon, Statue of Liberty, Apostle Islands, and Voyageurs. The St. Croix River is a "national park" for all people, but it especially serves the Twin Cities Metropolitan Area. Before we comment on the specifics of this DEIS, please know that, conceptually, activating a mine on the boundary of the Riverway is no different than activating a mine on the boundaries of any one of the parks listed above (or the almost 400 other national park units throughout the United States). In creating this national park, the U.S. Congress recognized that the St. Croix River is very special and stands out amongst the thousands of rivers found throughout America.

The mission of the NPS is to "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Public Law 39 Stat. 535, U.S.C., Title 16 Sec. 1)

The concerns of the NPS fall into three main areas; 1) noise and its impacts to wildlife and recreational users; 2) erosion and sedimentation and impacts to water quality; and 3) cumulative impacts to the Riverway.

## Noise

The DEIS uses State of Minnesota noise standards as a basis for comparison in evaluating impacts to the Riverway. It applies NAC-1 standards to the Riverway and campsites near the proposed mine. The NAC-1 standards for “residential” areas include designated camping and picnicking areas and allow a  $L_{50}$  sound level of 60 decibel A-weighted (dBA). A sound level of 60 dBA would result in speech interference based on 95% speech intelligibility of normal voice communications at 2 meters (US EPA, 1974). In other words, if the NAC-1 standard applied to the Riverway, allowable noise levels would mean that two people canoeing side-by-side would not be able to carry on a conversation. As previously stated in our comments on the Preliminary DEIS, the State standards are clearly not in keeping with protecting the recreational value of the Riverway and should not be applied to the area.

The noise standards that do apply to the Riverway are from the 2006 NPS Management Policies (NPS, 2006). The 2006 NPS Management Policies require us to “preserve, to the greatest extent possible, the natural soundscapes of parks...and protect natural soundscapes from degradation due to noise.” Further, they require that the “natural ambient sound level – that is, the environment of sound that exists in the absence of human-caused noise” be used as the baseline condition and standard against which current and projected conditions are measured and evaluated. Because the DEIS uses State of Minnesota NAC-1 as the standard for comparison, instead of the natural ambient sound level, the DEIS greatly understates the impact that noise from the proposed mine would have to the Riverway.

The Final EIS should use natural ambient sound levels as the standard of comparison rather than continuing to apply State of Minnesota noise standards to a unit of the National Park System. The Natural Ambient Sound Levels on this stretch of the Riverway can reach 35 dBA during the day and 27 dBA at night (NPS, 2011). The Median Natural Ambient ( $L_{nat}$ ) in dBA for this section of river is 35.1 dBA during the day (NPS, 2011). Therefore, the projected increase from natural ambient with the mine operating would be from 5.6-6.9 dBA. The final report for 2011 acoustical monitoring at the Riverway is enclosed for use in correcting the noise analysis in the FEIS.

### Impact of Noise to Wildlife

The impact of noise to wildlife should have been considered in Section 4.5 of the DEIS; Fish, Wildlife, and Ecologically Sensitive Species and Threatened and Endangered Species. The document currently only references wildlife displacement that would result from the mine. However, the noise associated with the mine operation would also have an impact on area wildlife.

The preservation of an area’s acoustical environment is vitally important to overall ecosystem health. The peer-reviewed literature widely documents that sound plays a critical role in intra-species communication, courtship, predation and predator avoidance, and effective use of habitat. Additionally, similar studies have shown that wildlife can be adversely affected by sounds and sound characteristics that intrude on their habitats. While the severity of the impacts varies depending on the species being studied and other conditions, research strongly supports the fact that wildlife can suffer adverse behavioral and physiological changes from intrusive sounds (noise) and other human disturbances. Documented responses of wildlife to noise include increased heart rate, startle responses, flight, disruption of behavior, and separation of mothers and young (Selye 1956, Clough 1982, National Park Service 1994, US Department of Agriculture 1992, Anderssen et al. 1993).

When noise elevates ambient sound levels, signals that might otherwise have been detected and recognized are missed. Noise is said to mask these signals. Masking degrades an animal's auditory awareness of its environment, and fundamentally alters interactions among predators and prey. Masking also affects acoustical communication. Animals have been shown to alter their calling behavior and shift their vocalizations in response to noise (Brumm and Slabbekoorn 2005; Patricelli and Blickley 2006; Slabbekoorn and Ripmeester 2008; Warren et al. 2006). These shifts have been documented in a variety of signal types: begging calls of bird chicks (Leonard and Horn 2007), alarm signals in ground squirrels (Rabin et al. 2006), echolocation cries of bats (Gilman and McCracken 2007) and sexual communication signals in birds, frogs, and toads (Brumm and Slabbekoorn 2005, Patricelli and Blickley 2006, Warren et al. 2006, Slabbekoorn and Ripmeester 2007, Parris et al. 2009). Vocal adjustment likely comes at a cost to both energy balance and information transfer; however, no study has addressed receivers. Some species are unable to adjust the structure of their sounds to cope with noise even within the same group of organisms (Lengagne 2008)."

Section 4.15 of the DEIS, Noise Analysis discusses potential changes in sound level up to approximately 3 dBA. This has the potential to cause a 50% loss in listening area for wildlife. Listening area is the area of circle whose radius is the alerting distance and is pertinent to wildlife that search for sounds (Barber, Crooks, & Fristrup, 2010).

As stated in our December 2011 comments on the Preliminary DEIS, the document should analyze the impact of noise to wildlife in the entire affected area. Sensitive bird species likely to be found in the affected area include Black-billed Cuckoo, Wood Thrush, Rose-breasted Grosbeak, Ovenbird, Eastern Meadowlark, Brown Thrasher, and Louisiana Waterthrush (Personal Communication between Jill Medland, Environmental Coordinator, NPS and Robin Maercklein, Biologist, NPS).

#### Impact of Noise to Recreational Enjoyment

Visitors to national parks often indicate that an important reason for visiting the parks is to enjoy the relative quiet that parks can offer. In a 1998 survey of the American public, 72% of people identified opportunities to experience natural quiet and the sounds of nature as an important reason for having national parks (Haas & Wakefield, 1998). Additionally, 91% of NPS visitors "consider enjoyment of natural quiet and the sounds of nature as compelling reasons for visiting national parks" (McDonald, Baumgartner, & Iachan, 1995). Table 42 acknowledges that mine operations would increase ambient noise levels from 1.3-2.6 dBA and that this increase "may be perceptible." In addition, it correctly points out the noise from the mine would be at a higher frequency than existing, increasing the likelihood that it would be audible.

#### **Erosion and Sedimentation**

Soils at the proposed mine site are sandy and the area immediately to the east of the site down to the St. Croix River has very steep slopes and bluffs that are at a high risk of erosion. Portions of the proposed mine site discharge to three different creeks that run down the steep slopes to the St. Croix River. The DEIS correctly acknowledges that the potential for erosion exists after the start of construction when soils are exposed for overburden removal or other activity. Mitigation measures listed in the DEIS that would reduce the potential for erosion and sedimentation include Best Management Practices (BMP's) such as double rows of silt fences, vegetated buffer strips, and berms that would be constructed on the north and south ends of the mine. The purpose of the proposed berms is to divert run-off so that it would drain into the mine rather than off-site. These BMP's would be developed in a Stormwater Pollution Protection Plan.

The DEIS reflects the good intentions of the proposed mine operator to avoid sedimentation impacts to the St. Croix River. However, intentions expressed during the permitting phase for projects like these are not always fully implemented during project operation. The NPS, Wisconsin Department of Natural Resources (WDNR), and Burnett County have been involved in responding to a significant sediment discharge to the St. Croix River from Soderbeck Pit (frac sand mine) near Grantsburg, Wisconsin, that occurred in April 2012. Because the Riverway runs through the City of Scandia and the City has zoning authority that can help protect the Riverway, the NPS believes we have an obligation to inform you of this event. Soderbeck Pit is also operated by Tiller and was to be internally drained. However, an improperly constructed berm around a washing pond leaked water laden with very fine sediment off-site and into an adjacent wetland. The wetland is drained by a creek that flows into the St. Croix River. At least 4 days of sediment discharge to the St. Croix River occurred before the problem was discovered by the proper authorities and addressed by Tiller. The owner of the mine has received a notice of violation from the WDNR for 1) discharging to a surface water without a permit, 2) failure to maintain dikes and berms utilized for holding or diverting wastewater, 3) failure to maintain physical controls (BMP's) to prevent discharge, and 4) failure to notify the WDNR of facility expansion (WDNR, 2012). Given the vulnerability of the sandy soils and steep slopes at Zavoral site, the potential for a similar sedimentation event exists, brought about by rainfall rather than wash water.

On a closely related note, the NPS remains concerned about the potential for slope failure. The "wall" that would be created between the mine and the steep slope to the east that goes down to the river seems vulnerable to collapse; at least until reclamation would be complete and vegetation is reestablished. A slope collapse could have a major impact on the bluff topography and the water quality of the St. Croix River.

### **Cumulative Impacts**

Cumulative impacts are the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what entity undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The DEIS does not address cumulative impacts to the Riverway or any other resource.

The NPS urges the City of Scandia to consider cumulative impacts in reaching a decision. Reasonably foreseeable actions that should be considered include the impacts (including traffic and noise) of additional gravel hauling trucks when those from the Zavoral site are added to those already on the road from other sites and companies; increased duration of truck traffic on the roads when hauling is complete from Zavoral and hauling is reinitiated from Tiller's Franconia and/or Dresser mine sites; the potential for future amendments to be made to any permit that the City of Scandia may issue to allow for the mine (including those that might allow on-site washing or extraction of other mineral resources). The Soderbeck Pit adjacent to the Riverway in Grantsburg, Wisconsin, is also on a dormant, unreclaimed sand and gravel mine. It was described in the March 11, 2011 *Notice of Public Hearing* and April 7, 2011 *Conditional Use Permit* issued by Burnett County as a "gravel pit." However, frac sand also exists on the site and is now the primary mineral being extracted, processed, and transported out by trucks. Information provided to the NPS by the Minnesota Geological Survey shows that Jordan Sandstone lies within 50 feet of the land surface at the Zavoral site. Jordan sandstone is quartz-rich and, of all the sandstone types, is the highest valued for the frac sand it yields (Personal Communication, Jill Medland, NPS and Tony Runkel, Minnesota Geological Survey). Mining gravel from the Zavoral site would make the Jordan sandstone more accessible and economically viable to mine. The possibility that, if permitted, the Zavoral Gravel Mine could be converted to a frac sand mine should be considered. The rate of frac sand mining in Wisconsin has been likened to that of the gold rush. The intensity at which it is mined is much greater than with the gravel mining that we are more familiar with in the St. Croix Valley.

## Conclusion

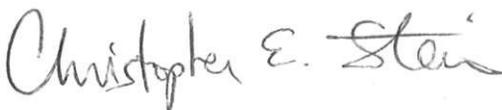
As stated above in the Introduction, the mission of the NPS, as spelled out in the 1916 Organic Act, is "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (Public Law 39 Stat. 535, U.S.C., Title 16 Sec. 1). The 2006 Management Policies provide the most important guidance the NPS has for achieving our mission. In terms of noise, NPS Management Policies state that "The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks... The Service will restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds (noise), and will protect natural soundscapes from unacceptable impacts..." Noise from the proposed mine would impact wildlife and recreational enjoyment and conflicts with the NPS Management Policies and the legislative purpose for setting the St. Croix River aside for protection.

The purpose of protecting a river under the Wild and Scenic Rivers Act is to protect its free-flowing character, water quality and the outstanding resource values of the river and its immediate environment. In addition, NPS Management Policies point out "pollution of waters can impair the natural functioning of aquatic and terrestrial ecosystems and diminish the utility of park waters for visitor use and enjoyment." The NPS is to "avoid, whenever possible, the pollution of park waters by human activities occurring within and outside park boundaries." The proposed mining project has the potential to impact the water quality of the Riverway through erosion and sedimentation, particularly if there is a significant rain event before slopes are stabilized, or if BMP's are not properly managed. Impacts to water quality would conflict with NPS Management Policies and the legislative purpose for setting the St. Croix River aside for protection.

The impacts of the proposed mine would conflict with the legislative purposes for which the Lower St. Croix National Scenic Riverway was established and the NPS Management Policies for taking care of the area. Therefore, the NPS is opposed to issuance of a Conditional Use Permit for the proposed Zavoral Mine. Selecting the no action alternative would appear to be the only option for avoiding the impacts of mining to the Riverway.

Thank you for the opportunity to provide comment. We look forward to continuing to work with the City of Scandia to protect the Riverway. If you have any questions, please call Jill Medland of my staff at 715-483-2284.

Sincerely,



Christopher E. Stein  
Superintendent

Enclosures 1

## References

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