



Environment & Labour

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*Our File Number.*

Protected Areas Branch

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## MEMORANDUM

**TO:** Dave Hopper

**FROM:** Robert Cameron and David MacKinnon

**DATE:** 6 March 2008

**SUBJECT:** CGC Inc. Fundy Gypsum Project, Miller's Creek, Hants County

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We are writing this memo over concern of the proposed gypsum mine by CGC Inc. Fundy Gypsum Project at Miller's Creek, Hants County. The proposed mine impact area has a very high ecological value and is largely unrepresented in the NS protected areas system. We have evaluated this area with the same criteria being used on a province-wide basis in the Colin Stewart Forest Forum, and have concluded that the area would have one of the highest scores in desirability for protection of any area so far identified through that process. The ecological attributes include: 1. a large number of rare ecosystems (significant ecosites); 2. a number of rare and threatened species; 3. unrepresented ecosystems; and 4. rare topographic features. The area, and the species and ecosystems it contains, are essentially unique, and irreplaceable. See below for details of the analysis.

This area occurs within the Windsor Group and because of the ecological richness, settlement history, and land tenure pattern of these areas throughout the province, very few intact natural areas remain. Some of the province's most threatened ecological diversity occurs in these areas, including many endangered species and ecosystems. Remaining intact Windsor Group areas are a high priority for conservation action. Most examples of these ecosystems have already been destroyed through agriculture, mining, and other forms of development. Furthermore, even within the already-rare areas of karst topography on Windsor strata, examples that support a more-or-less full complement of rare, gypsum-associated plant species are exceedingly rare.

The footprint of the mine will destroy significant portions of all the above described ecological values. Further, the effectiveness of the proposed conservation area is questionable. The area is considered too small to maintain ecological integrity or dependent species over time. For example, hydrological processes could be impacted by the mine, affecting the rare vascular plants. Windthrow and invasion by exotic and/or weedy species are likely to degrade the integrity of the habitats on which rare species depend. Dust and pollution from mine activity are likely to affect the rare lichens. In short, it is likely that the irreplaceable values found in this area will only be partially and temporarily maintained in the proposed conservation area, and that eventually, these values be lost due to ecological isolation (being cut off from other populations of the same species) and stressors penetrating the area from outside.

We feel that should the mine proceed with the outlined plan, significant and valuable ecosystems and species will be lost.

Should the mine proceed, we believe the only way to protect and maintain the outstanding ecological values present is to greatly enlarge and more rigorously buffer the proposed conservation area, and to permanently protect it through stringent legal means, such as through designation under the Special Places Protection Act. Even with such an approach, the long-term viability of these species and ecosystems is threatened by the proposed project.

**Summary of Ecological Analysis:**

1. Rare ecosystems - 5 shallow ponds/vernal pools; 7 calcareous wetlands
2. Rare species - 1 endangered vascular plant; 6 other red or yellow listed vascular plants; one red listed lichen; 4 lichen species never before recorded in the province.
3. Representivity - At the present time, throughout the province, approximately 285 ha of land overlying Windsor strata is being considered for nature reserve designation. These lands represent 0.095% of the total area of Windsor strata in the province. The total area of all existing and candidate protected areas overlying Windsor strata is about 1375 ha, or 0.46% of the area of Windsor strata, or 0.025% of the province. In short, existing protected areas cover virtually none of the exceptional features found within the impact area of the proposed mine. Further, the Avon Peninsula falls within the Shubenacadie River Rolling Plain Natural Landscape which is currently inadequately represented.
4. Karst topography is rare in the province. Recent modeling (Cameron et al. 2008) suggest karst makes up only 0.005% of the province. Karst topography is a unique feature found in no other landform.



Robert Cameron,  
Protected Areas Branch Ecologist



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