Strathcona Mill Complex Biodiversity Risk Assessment

Client
Xstrata Nickel (now Glencore's Sudbury Integrated Nickel Operations)

Location
Levack, Ontario

Date Completed
2009-2012

NovaTox conducted a comprehensive risk assessment of potential impacts to biodiversity from Glencore's Sudbury Integrated Nickel Operations (formerly Xstrata Nickel) Strathcona Mines/Mill Complex near Sudbury, Ontario. The risk assessment supported the development of a Biodiversity Conservation and Management Plan as part of the company's commitment to minimize effects on biodiversity from its Canadian operations.

The Biodiversity Conservation and Management Plan was conducted using a phased approach:

- Phase I: Establishment of existing biodiversity status
- Phase II: Assessment of potential impacts and risks to biodiversity from land use activities
- Phase III: Development of a Plan for each site in which biodiversity monitoring indicators are used and relevant standards are developed for land use and management of ecologically sensitive areas
- Phase IV: Implementation of the biodiversity monitoring program

NovaTox contributed to Phases II, III, and IV of the Plan. An ecological risk assessment was conducted using historical data as well as terrestrial plant surveys, breeding birds surveys, winter mammal track surveys, and aquatic field surveys designed to characterize diversity of existing wildlife communities in the areas surrounding the Strathcona Mines/Mill. The ERA evaluated risks from atmospheric releases, point and non-point emissions to surface water, noise, and potential habitat loss as a result of Mine activities.

Biofuel crops growing on tailings at Strathcona Mill

The results of the ERA were used to identify critical performance indicators protective of biodiversity and harmonize biodiversity plans for other operations in northern Ontario. In Phase III of the Plan, results of the terrestrial and aquatic biodiversity surveys were used to identify areas in the vicinity of the Strathcona mill complex that supported the highest levels of diversity, and identified candidate species for monitoring purposes. Higher diversity of mammals was found in upland forest habitats compared to lowland habitats and disturbed areas; diversity was similar among upland deciduous, upland coniferous, and upland mixed forest habitat types. The greatest diversity in breeding birds was associated with upland mixed forest habitats, but diversity was generally high in all habitat classes. Based on the survey results, the pine marten and ovenbird were identified as mammalian and avian indicator species for future monitoring efforts.

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