

Remediation of Abandoned Mine Openings in 2013

E. W. Hennick

Introduction

There are thousands of abandoned mine openings in Nova Scotia, many of which are located on Crown land. Since 2001, the Abandoned Mine Opening (AMO) Remediation Program, which is managed jointly by the Mineral Resources and Regional Services branches of the Department of Natural Resources, has invested about \$730,000 to remediate the most hazardous of these openings on Crown land. From April 1 to December 31, 2013, about \$50,000 was invested in this program.

Background

The AMO Remediation Program is overseen by a steering committee, which consists of executive directors of the Mineral Resources, Regional Services and Land Services branches of the Department of Natural Resources. Implementation of the program is managed by a working group, consisting of Mineral Resources Branch staff, three regional geologists and one regional resource manager.

The Department of Transportation and Infrastructure Renewal plays a major role in the AMO Remediation Program, both in carrying out work with their own crews and in tendering and managing contracted work.

The Mineral Resources Branch conducts field programs to inspect almost all of the AMOs on Crown land on a regular basis. On a three year cycle, almost every AMO on Crown land in the province is inspected, and the degree of hazard assessed. Warning signage and flagging are upgraded as needed. Field inspection reports are used to update both the Nova Scotia Abandoned Mine Openings Database and an AMO remediation priority list.

The Nova Scotia Abandoned Mine Openings Database is maintained by the Mineral Resources Branch. It records the known abandoned mine openings in the province, both on private and Crown lands. This database is available online at <http://www.gov.ns.ca/natr/meb/links/amolinks.asp>. In November 2013, Version 5 of the Nova Scotia Abandoned Mine Openings Database was released. This is an update to the 2009 Version 4 and contains an additional 329 mine openings not previously documented. The increased use of GPS and GIS technology over the past number of years has resulted in updates to mine opening locations. More information is also available on historical operators.

Method

The methods used by the AMO Remediation Program to remediate AMOs on Crown land include excavating, backfilling, fencing and placement of concrete caps over mine openings. In the past 12 years the program has backfilled about 500 AMOs, fenced 50, capped seven mine openings and placed three grates to protect bat habitat. In addition, about 150 AMOs on Crown lands have been addressed through partnerships with private operators. Work has been carried out at 36 different sites throughout the province. Table 1 and Figure 1 indicate the remediation work completed in 2013.

Conclusions and Recommendations

All of the Type I (inescapable) and some of the Type II (escapable but potentially hazardous) abandoned mine openings known to exist on Crown land in Nova Scotia have now been remediated. These are the AMOs that the

Table 1. Abandoned mine opening remediation work completed in 2013.

Central Region	
Caribou Mines	Contractor backfilled 38 AMOs and 15 prospect pits/trenches.
Joggins/River Hebert	Contractor excavated and backfilled 39 AMOs and 85 pits/subsidence features along the outcrop of three coal seams.
Stellarton	Contractor backfilled (after a ground collapse) one AMO, which had been previously filled in 1987.
Thorburn	Contractor was engaged to deepen a drainage ditch near the air shaft for the old Acadia Coal Company No. 3 mine, which closed in 1938.
Western Region	
Mill Village	Transportation and Infrastructure Renewal placed a cap over one AMO and backfilled five other AMOs and three prospect pits/trenches.

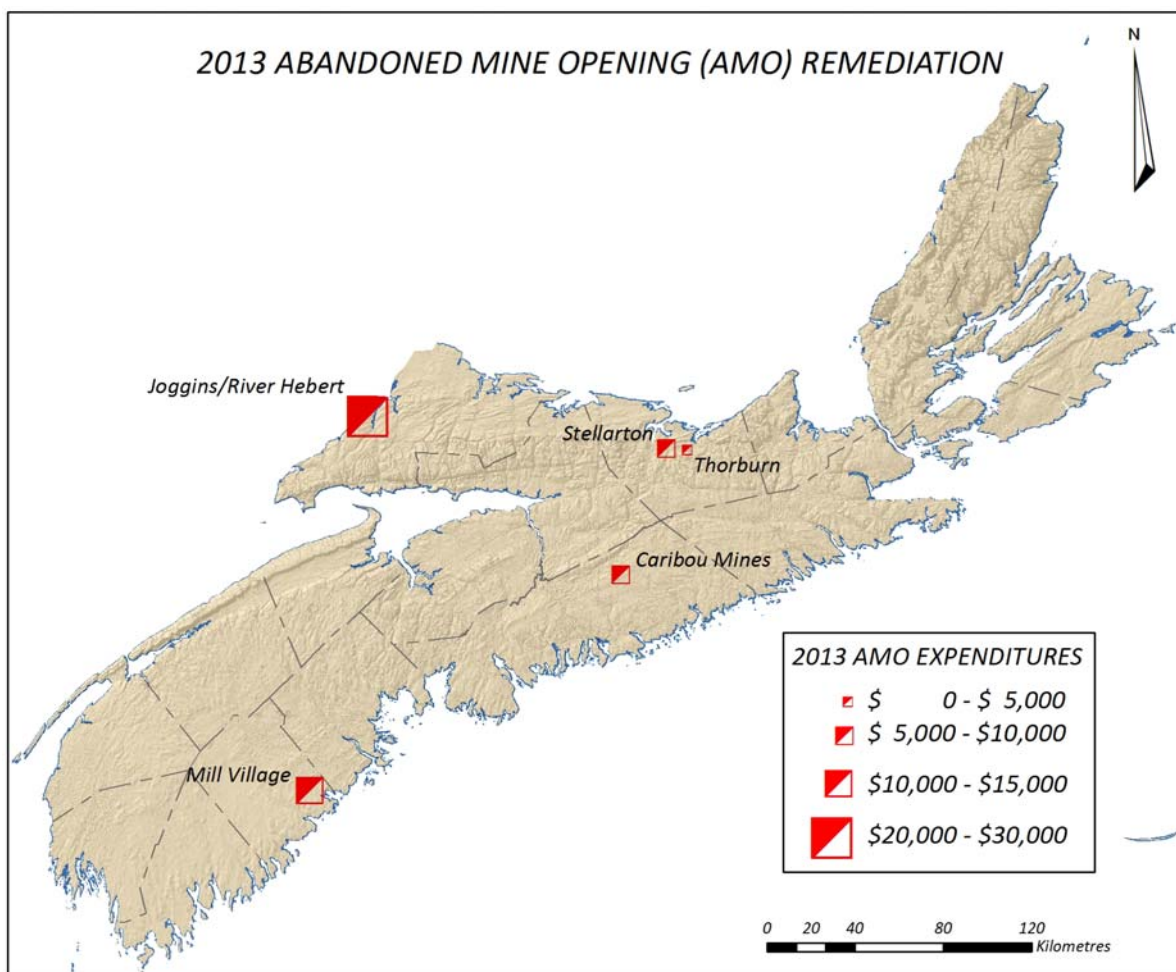


Figure 1. Expenditures on and locations of abandoned mine opening remediation work completed in 2013.

Department of Natural Resources believes are the most hazardous. About 1,450 less hazardous openings on Crown land remain to be remediated. Many are either located in very remote areas of the province or are in such a state that they pose little or no risk to public safety.

It is recommended that the Mineral Resources and Regional Services branches of the Department of

Natural Resources continue to remediate abandoned mine openings on Crown land and monitor those that have already been remediated. It is also recommended that private landowners be made more aware of the work that needs to be done to eliminate the hazards to public safety that are posed by the estimated 5,000 abandoned mine openings known to exist on their properties.