Ekati Diamond Mine

2018 Wildlife Effects Monitoring Program

Dominion Diamond Mines

Excerpts – wolf

7. WOLF

7.1 Background

Grey wolves (*Canis lupus*) are considered a wildlife VEC within the Ekati Diamond Mine study area. Wolves in this area depend on the Bathurst caribou herd as their main source of prey (Kuyt 1972; Walton et al. 2001). During the spring, wolves follow the Bathurst caribou herds north of the treeline and choose den sites south of the Bathurst calving grounds. This strategy likely optimizes the availability of food resources for rearing pups (Heard and Williams 1992). Wolf pups usually leave the natal den in early August, but do not leave the summer range until October. As predators of migratory caribou, wolves in the central barrens have larger home ranges and exhibit less territorial behaviour than wolves in other parts of North America (Walton et al. 2001). Food availability for wolves has been reduced by barren-ground caribou population declines. As a result, resource availability may decrease adult fitness and pup survival, both of which could have implications for population growth (Klaczek, Johnson, and Cluff H. D. 2015).

Wolves are listed as secure in the Northwest Territories (Working Group on General Status of NWT Species 2016) and considered “Not at Risk” by the Committee on the Status of Endangered Wildlife in Canada (Government of Canada 2019a). Populations are stable or increasing within their Canadian range, except in northern Alberta and some parts of the Northwest Territories (Frame, Cluff, and Hik 2008). Potential risks for the local population may arise from habitat removal and human disturbance (Clark, Paquet, and Curlee 1996). Human development can result in wolves avoiding certain areas (C. J. Johnson et al. 2005). Conversely, certain features of human developments (such as landfills and infrastructure) can act as wildlife attractants, increasing the likelihood of wildlife attraction and habituation. In response to these concerns, Dominion monitors wolves near mine infrastructure, and supports regional wolf monitoring initiatives coordinated by ENR. Between regional wolf monitoring study periods, wolves have been monitored at the Ekati Diamond Mine through incidental observations. The following section describes the methods and results of monitoring activities on wolf movement and denning in the Ekati Diamond Mine study area.

7.2 Incidental Observations

7.2.1 Introduction

Incidental wolf sightings are reported at the Ekati Diamond Mine as part of the wildlife monitoring program conducted by Dominion. Potential risks associated with human and wildlife interactions may be avoided by monitoring incidental wolf observations in the study area. Once a wolf is sighted within the mine site, Dominion personnel at risk of encountering the wolf are notified and work actions are adjusted accordingly. In addition, incidental wolf observations help determine the timing and family composition of wolf packs moving through the study area.

7.2.2 Objectives

The standardized objectives of this component of the wolf monitoring are to:

- avoid and minimize wolf-human interactions;
- identify the presence and composition of incidental wolf observations in the study area; and

 document and determine the cause of direct Mine-related mortality of wolves should they occur.

7.2.3 Methods

Incidental wolf observations in and near the Ekati Diamond Mine were reported to the Environment Department. Incidental observations included those made from helicopter surveys and ground-based field work and other staff. Each wolf observation includes the date, location, number of individuals sighted, dominant behaviour, and the presence or absence of a radio collar.

7.2.4 Results

During the 2018 reporting period, there were 79 incidental wolf sightings, totaling 139 wolves on 59 separate days near the Ekati Diamond Mine (Table 7.2-1). Observations with sufficient location information were plotted on a map of the study area (Figure 7.2-1). This does not indicate that 139 different individual wolves were observed, because the same wolf or wolf family group were potentially recorded on multiple occasions. Most observations occurred relatively close to mine infrastructure (e.g., Airport, helipad, the Ekati Diamond Mine Main Camp), or along the Misery, Sable, and Jay Roads.

Table 7.2-1: Summary of Incidental Wolf Observations near the Ekati Diamond Mine, 2001 to 2018

Wolf	2001	2002	2003	2004	2005	2006	2007	2008	2009
Incidental Observations (over separate days)	38 (-)	59 (42)	54 (27)	58 (46)	58 (40)	47 (43)	34 (30)	55 (45)	58 (45)
Family Group Observations	n/a	n/a	n/a	22	20	13	21	16	20
Wolf	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Incidental Observations (over separate days)	25 (23)	41 (36)	80 (55)	55 (47)	82 (66)	69 (52)	95 (68)	93 (78)	79 (59)
Family Group Observations	10	14	20	13	23	19	32	41	20

Notes:
Family groups include all sightings of multiple wolves.
n/a. = Not reported.

Twenty of the 79 incidental wolf observations were of multiple wolves (Table 7.2-1). Family groups consisting of more than one adult wolf were mainly observed along the roads (Figure 7.2-1). Group composition included: two observations of two adult wolves and five pups two observations of two adults with two pups, and one observation of three adults with four wolves of unknown age. There were also three observations of two pups, two observations of six adults, three observations of five, three, and two adults, and one observation of three wolves of undetermined age. The remaining 59 incidental adult wolf observations were of solitary individuals.

7.2.5 Discussion

Overall, wolf occurrence near the Ekati Diamond Mine had remained relatively consistent from 2001 to 2011. More recently, incidental observation totals from 2012 to 2018 include the six highest totals with observations peaking in 2017 (93) and 2016 (95). The next highest numbers of observations were 82 in 2014 and 80 in 2012, followed by 79 in 2018. Family groups of two or more adult wolves were observed in 2018 in several locations including near Misery, Sable, and Jay Roads as well as near Misery camp.

Unlike the previous two years, family groups of two adults and two to five pups were observed again in 2018, moving between Km 24 of Misery Road, the Jay Road, and Lynx Pit area for an extended period of time (August 26, 2018 to October 26, 2018). Family groups of two pups were also observed near Sable Road Km 11, Cujo Lake, and Jay Crusher. Prior to 2017, pups had not been observed since 2014 and 2015, where they were found near Km 20 of Misery Road, and prior to 2014, pups had not been observed since 2009 (ERM 2016).

All of the 2018 wolf observations occurred at sites relatively close to mine infrastructure, in areas with increased human activity, and hence a higher probability of an animal being recorded if present. The increase in observations may be associated with increased awareness and reporting of wolves in the vicinity of the mine site, and with de-centralization of mining activity to include new areas that were previously not frequented by mine site personnel. Increases in caribou observed near the mine site over the last three years may also contribute to increased wolf presence. Wolves were known to have killed caribou on two occasions in 2018 (March 14 near Sable Road and April 21 on Pigeon Pit ramp; Section 4.2.1) and were observed pursuing caribou unsuccessfully on October 26 near Jay Road.

7.3 Wolf Den Occupancy and Productivity

Ekati Diamond Mine's partnership with the GNWT-ENR for regional wolf monitoring was discontinued in 2014 by the GNWT-ENR following program completion. Results of the GNWT's wolf den productivity surveys suggest that between 1995 and 2014, wolves continued to den in close proximity to the Ekati Diamond Mine and successfully raise pups (ERM 2015; Klaczek 2015). Using resource selection functions, the factors that influenced den site selection for wolves were land cover, distance to caribou migration routes, and esker density (Klaczek, Johnson, and Cluff H. D. 2015).