Alberta Conservation Association
2017/18 Project Summary Report

Project Name: Wolverine Density, Movement, and Denning along the Western Periphery of the Birch Mountains

Wildlife Program Manager: Doug Manzer

Project Lead: Robert Anderson

Primary ACA staff on project: Robert Anderson, Stephanie Fenson, Troy Furukawa, John Hallett, Joe Hopkins, Dave Jackson, Tyler Johns, Mike Jokinen, Garret McKen, Andy Murphy, Mike Ranger, Corey Rasmussen, Amanda Rezansoff, Jon Van Dijk, and Ken Wright.

A special thank you goes to Alberta Trappers' Association member Neil Kimmy, who volunteered his time in the field and allowed us to stay at his remote trapping cabin over multiple winters. We greatly appreciate the work of two contractors that put in a lot of effort to make this project a success: Duncan Abercrombie and Shevenell Webb.

Partnerships

Alberta Environment and Parks
Alberta-Pacific Forest Industries Inc.
Alberta Trappers' Association
Animal Damage Control – A Division of Bushman Inc.
ATB Financial
Bildson Realty Ltd.
BRE-JON Enterprises Ltd.
Crowsnest Conservation Society
Daishowa-Marubeni International Ltd.
Hinton Trappers Association
McGill University
Orion Foundation of Calgary
Richard D. McCabe Professional Corporation
Roadrunner Leasing and Sales Ltd.
Rocky Mountain Wilderness Society
South Country Trappers
Stojan's Motor Sports
TD Friends of the Environment
Trapper Gord Homestead & Survival
University of Alberta

Individual donors: P. Bumstead, L. Elias, L. Hommy, R. Kantor, G. Kruger, G. Macmillan, L. Marciak, D. Middleton, S. Otto, D. Pilon, A. Pollock, R. Reed, B. Smith, J. Sorenson, W. Sullivan, N. Tait, D. Ukeniek, S. Wilson and M. Zapach.

Key Findings

- We collared ten wolverines (four females and six males) in the Birch Mountains during two winters (2015/16 and 2016/17). The last of those collars were retrieved in 2017/18.
- Home range sizes have been variable, depending on age and gender. Young animals will cover large areas when establishing a home for themselves and the range of denning adult females will get noticeably smaller as they care for their young.
- We located eight boreal wolverine dens. Seven of the eight dens were in a partially lifted root ball created by a leaning or fallen spruce tree. Black spruce stands characterized by hummocky, wet, and mossy terrain were selected.

Introduction

We are working in partnership with Alberta Trappers' Association (ATA) to identify where wolverines (and other furbearers) occur in the province and to determine the major factors associated with their distribution. In 2012, we expanded our partnership to include the University of Alberta and worked with researchers to study the effects of industrial disturbance on wolverines in the boreal forest of northwestern Alberta. As that project wrapped up, we shifted our focus to northcentral Alberta, where there is less industrial but more wildfire disturbance. We worked with local ATA members to radio collar wolverines and set up cameras to estimate the number of wolverines in the area, monitored their movements, and determined what sort of structures female wolverines used for denning. We've been working with researchers from McGill University to investigate how much energy wolverines use as they move across such large areas, in cold temperatures.

Methods

In previous years, we focused on live capture, collaring, and recapture of wolverines, as well as the use of camera traps, to collect data for a population estimate. We investigated clusters of data points to determine what wolverines eat and where they rest or den. During this past year, we retrieved collars, and downloaded and processed the data. We visited several known female dens used to raise their young and collected information related to the den and surrounding forest.

Results

A total of five wolverines (three females, two males) were captured during the study in the Birch Mountains by the end of winter 2015/16. During summer 2016, we investigated a mortality of a male wolverine and located four dens (one natal [where female gives birth], three maternal) of a female. During winter 2016/17, seven wolverines were captured in the Birch Mountains—two females that were collared the previous winter (F2 and F3), a new female (F4), and four new males (M3, M4, M5, and M6). F3 produced three kits the previous winter (2015/16), and both she and F2 denned in 2017. A couple of unmarked wolverines were identified by cameras at run poles that were never captured and collared. Home range sizes were variable, depending on age and gender; young wolverines can roam large distances before settling into an unoccupied territory, and males tend to have much larger home ranges (947—9,422 square kilometres) than females (484—2,254 square kilometres).

We continued to receive collar data into spring 2017. Once GPS collar batteries approached low levels, we triggered the remote collar drop-off mechanisms and retrieved the dropped collars. One male wolverine (M6) wandered off immediately after he was collared and he appeared to reside north of the study area in and around Wood Buffalo National Park (WBNP). M6 traveled approximately 270 kilometres, entering WBNP during his first 13 days of being collared. He logged about 35 kilometres during one of those days (Figure 1). As M6 continued north, he strolled within one kilometre of the world's largest beaver dam.

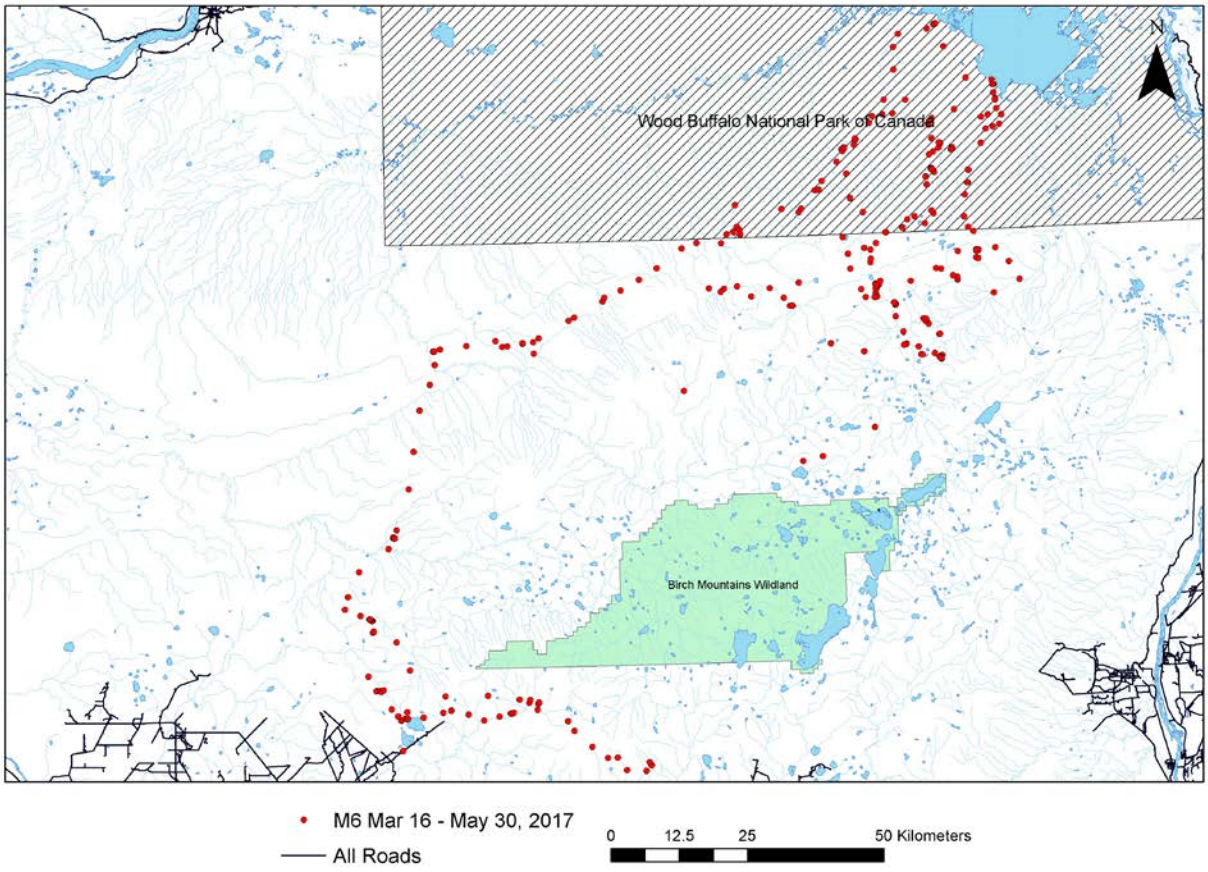

Figure 1. Movements of male wolverine (M6) after he was collared on March 16, 2017.

In general, we've found that wolverines in the boreal forest of Alberta make use of woody debris for their den structures as opposed to the deep snow pack or boulders that have been reported elsewhere. That woody debris may be provided by partially upturned tree roots, as was often the case for dens that we visited, or even old log piles in regenerating forestry cut blocks.

Conclusions

The partnership between ACA and ATA was strengthened by continuing to work together to study wolverines in a unique landscape in northcentral Alberta. We've learned a great deal about how far these animals will travel and what types of habitat they use for raising their young. This information can provide valuable insight into the requirements of the species for sustainable harvest and long-term conservation.

Communications

- Provided project update at the ATA AGM, September 2017.
- Provided project update to several ATA locals during fall 2017.
- Presentation at the Alberta Chapter of the Wildlife Society conference, March 2018
- Provided updates for ACA's website and Facebook site.
- Project featured in articles in *Alberta Trapper* magazine.
- Project was showcased on Nat Geo Wild television channel on an episode of Dr. Oakley, Yukon Vet (*Wild, Wild Wolverine)*, in October 2017. Michelle and the camera crew visited the study site in March 2017 to film the episode.
- First of three project manuscripts will be submitted in spring 2018. This manuscript is a descriptive paper that discusses the characteristics of wolverine dens in the lowland boreal forest of northcentral Alberta.

Photos

F4 (a new female) scurries off with a chunk of bait from a run pole that was used to help estimate the number of wolverines in the study area. Photo: Alberta Conservation Association

Determining the age of the forest where wolverines chose to establish their dens will help us to better understand the type of habitat that is important for their long-term conservation. This can be done by taking a tree core and counting the rings. Photo: Mike Jokinen

M6's collar retrieval was only a few kilometres from the border of Wood Buffalo National Park in the far north. Photo: Mike Jokinen

M6’s collar was located in a small wooded valley that was surrounded by an expanse of bog and fen. Photo: Corey Rasmussen

One of F3's maternal dens was located in an old growth black spruce stand characterized by hummocky, wet, and mossy terrain. The den entrance was located on the right (exposed root) and the partially lifted root ball formed the den cavity on the left. Photo: Mike Jokinen