

## **Alberta Conservation Association 2011/12 Project Summary Report**

**Project Name:** *Wildlife Habitat Initiative in Low Disturbance Zones – Wolverine Distribution Mapping*

**Wildlife Program Manager:** Doug Manzer

**Project Lead:** Robert Anderson

**Primary ACA staff on project:**

Robert Anderson, Mike Jokinen, Doug Manzer, Mike Verhage and Shevenell Webb

### **Partnerships**

Alberta Trappers' Association  
Shell FuellingChange

### **Key Findings**

- An early look at responses to our questionnaire suggests that trappers highly regard wolverines both for their intrinsic value and recreational opportunities.
- Based on records stretching back 26 years, the traplines with the highest wolverine harvests have occurred in areas north of 56 degrees latitude (e.g., Peace River).
- During field trials in 2011/12, six volunteer trappers tested a method to passively collect wolverine photos and DNA samples.

### **Introduction**

Hunters and anglers have long been stewards of the land and have been recognized for playing a key role in wildlife conservation, but they are not alone in their passion for wild places and the species that occupy them. Trappers also have been part of this conservation effort and highly value the land and wildlife resources that they have helped to manage. Trapping has been a part of Alberta's heritage, culture and wildlife management for centuries, and the Alberta Trappers' Association (ATA) would like to maintain its role in wildlife/furbearer management using modern technology and science.

In partnership with the ATA, we are working to identify which areas of the province wolverines occupy and to determine the major factors that influence their distribution. As the project moves forward, we hope to better understand the genetic relationships of wolverines across the province and the importance of genetics in conserving the species over the long term. We predict that areas highly affected by human disturbance will have a lower probability of use by wolverines than areas of lower disturbance, but areas with persistent late spring snow cover will be more likely to be used. We also predict that wolverines in the boreal forest will be more closely related to each other than they are to wolverines in the mountains.

## **Methods**

Working together with the ATA, we have initiated a questionnaire that draws on trapper knowledge throughout the province to determine trapper effort, attitudes and experience with wolverines and, in particular, whether evidence of wolverines (tracks or sightings) has been detected on traplines. Furthermore, we are analyzing all available harvest records between 1985 to 2011 to map the location of harvests over this 26-year period and to assess whether the distribution of harvests has changed.

Both the trapper survey and analysis of harvest records will provide valuable information, but these are first steps in determining wolverine distribution and predicting how wolverines will be affected by changes in land use in the future. To investigate these relationships, the field component of the wolverine project is focusing on a citizen-science approach where ATA members will collect wolverine population and distribution data. We are testing a field protocol in winter 2012 that can be applied by trappers on their own traplines. We are working to refine a sampling methodology using baited hair traps and remote camera stations. Information from hair samples will help us with our long-term goals of determining genetic relationships across the province, and occurrence information from tracks and photos will provide information on the distribution of wolverines in relation to factors such as disturbance, landscape features and snow cover.

## **Results**

The trapper questionnaire was distributed to the trapping community during winter 2011/12 through the ATA electronic newsletter, magazine and local chapters. The questionnaire will provide local knowledge of wolverine distribution that is not limited to areas where wolverine harvests have occurred. An early examination of responses suggests that trappers highly regard wolverines both for their intrinsic value and recreational opportunities.

We compiled historic fur harvest information using three data sources: provincial fur affidavits (1985 – 2011), provincial compulsory fur registrations (1989 – 2011) and Statistics Canada Census of Pelt Production (1971 – 2010). Preliminary data analysis indicates that wolverine harvests are sparsely distributed across the mountains, foothills and boreal forest, with higher harvests occurring in areas north of 56 degrees latitude (e.g., Peace River). Approximately one-quarter of traplines in Alberta have ever caught wolverines (n = 418 out of 1,667 traplines); in 2011, 4% of traplines reported a wolverine harvest, totalling 70 wolverines, which was the highest proportion of traplines and total wolverine harvest in the past 26 years. It is not clear if this spike in harvest numbers is a reflection of trapper effort, wolverine abundance or a combination of both. The change in annual wolverine harvests has curiously followed a similar pattern to that of lynx harvest trends, with lows and highs occurring during similar years. Most traplines (97%) that have caught wolverines have also caught lynx at some point in time.

We deployed trail cameras and hair snags next to bait stations with the assistance of six trappers, who collected field data between January – March, 2012. We tested a run-pole technique developed in Alaska (Magoun et al. 2011) to determine whether it would work with a diverse group of volunteer trappers in Alberta. The camera data provide evidence of wolverine

occurrence, visitation rates and individual identification (determined from unique chest pattern). DNA results from hair samples will provide gender information, will identify individual animals and will enhance our understanding of movements and relatedness of wolverines in Alberta. These camera trap locations will be selectively deployed in future years as a method to associate wolverine presence with various land use patterns.

## Conclusions

We will use the knowledge acquired during the trial season to strategize for an augmented field operation during winter 2012/13, involving more trappers and traplines in select areas of the province. We will continue to summarize the harvest data and expand the updated wolverine harvest assessment in order to provide complimentary information to the trapper questionnaire and field component, each of which will contribute to our understanding of wolverine distribution in relation to factors such as human disturbance.

Human activity and development will continue to have a major influence on the long-term conservation of many carnivores, including wolverine. Ultimately, information from this project will provide better baseline data to make informed decisions on appropriate harvest strategies and habitat protection that will help ensure long-term conservation of wolverines in Alberta.

## Communications

- Discussions with members of the ATA.
- ATA collaboration with citizen-science field portion of the study.
- Project summary in ATA magazine and questionnaire distributed via ATA newsletter.
- Participation of trappers completing questionnaire.
- Shell FuellingChange grant online voting system for environmental projects: “Tracking a Ghost: Using Citizen Science to Conserve the Wolverine”.  
[www.fuellingchange.com/main/project/236/Tracking-a-Ghost-Using-Citizen-Science-to-Conserve-the-Wolverine](http://www.fuellingchange.com/main/project/236/Tracking-a-Ghost-Using-Citizen-Science-to-Conserve-the-Wolverine)
- Presentation “Using Citizen Science to Study Wolverine (*Gulo gulo*) Occurrence in Alberta” at the Alberta Chapter of the Wildlife Society conference, Shevenell Webb, March 17, 2012.
- Promotion of the wolverine project by ACA Communications, including ACA’s web page, newsletter, Facebook and YouTube.
- *Let’s Go Outdoors* television program featured our wolverine project, March 4, 2012 episode.

## Literature Cited

Magoun, A.J., C.D. Long, M.K. Schwartz, K.L. Pilgrim, R.E. Lowell, and P. Valkenburg. 2011. Integrating motion-detection cameras and hair snags for wolverine identification. *The Journal of Wildlife Management* 75: 731–739.

PHOTO CAPTIONS



P1080460-  
Wolverine hair/camera trap used by trappers during winter 2011/12. (Photo: Mike Jokinen)



P1080496-  
On the trail of the wolverine, 2012. (Photo: Mike Jokinen)



IMG 280 –

Wolverine on run pole, January 2012. Large wolverine captured on trail camera leaves several hair samples behind. (Photo: Participating Trapper)



P1080652 – Participating trappers checking hair/camera trap site in 2012. (Photo: Mike Jokinen)

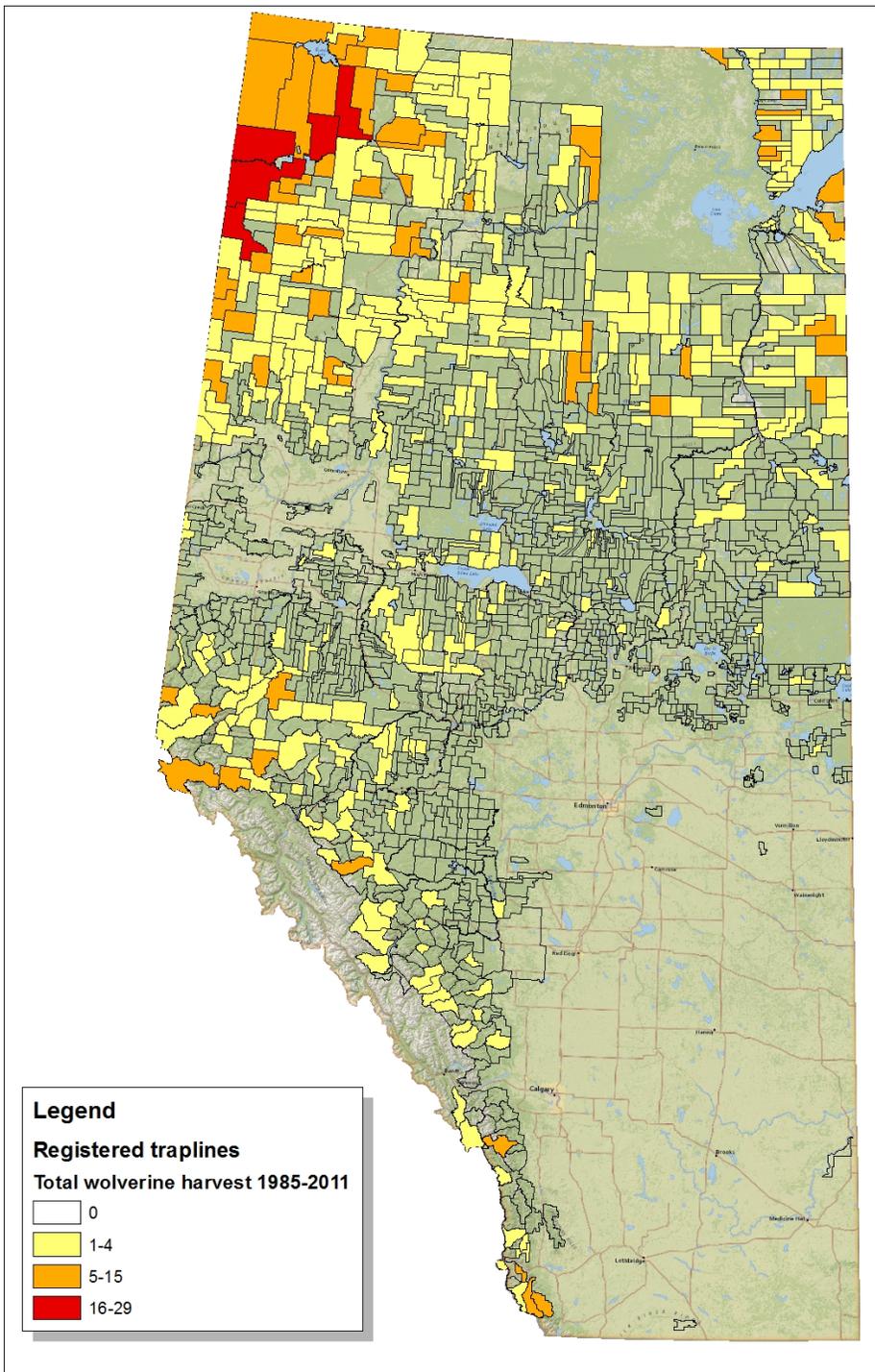


Image: Wolverine Total Annual Summary jpeg –  
 The distribution of wolverine harvest is spread across the boreal and mountain regions, with the vast majority of harvest records coming from areas in northern Alberta.