

# MCLEOD LAKE MACKENZIE COMMUNITY FOREST



## Coarse Woody Debris and Furbearer Applied Research Project in the McLeod Lake Mackenzie Community Forest

### What is CWD and why is it important?

Coarse Woody Debris (CWD) can be defined as *“sound and rotting logs and stumps, and coarse roots in all stages of decay, that provide habitat...and a source of nutrients. Material generally greater than 7.5 cm in diameter”* (Stevens, 1997). For this study, the majority of the CWD consisted of various sized unmerchantable logging debris piled in large, continuous windrows.

CWD plays an important role in forest ecosystems, serving in three key areas: long term enhancement/ maintenance of forest productivity; provision of habitat for a variety of flora and fauna and; provision of structure for streams and soil. Functions of CWD include:

- Nutrient cycling and storage
- Moisture retention
- Regeneration sites for trees
- Moist microsites for invertebrates
- Hiding and protective cover
- Facilitates travel of organisms
- Sites for nests, dens and burrows
- Erosion prevention
- Flow control in streams

### Project Background

In March, 2016 the MLMCF developed a Coarse Woody Debris (CWD) Strategy in order to guide management decisions around CWD and to serve as a reference for forest practitioners working within the Community Forest. In the Ministry of Forests, Lands and Natural Resource Operations' (FLNRO) Management Guidelines for Fur Bearers in British Columbia (2003), a frequent recommendation is to create a complex cover of CWD in the post-harvest stand. The MLMCF has adopted this recommendation and is implementing a post-harvest CWD management goal to improve fur bearer habitat through management techniques incorporating CWD and habitat connectivity.

The most recent work towards this goal has been in cooperation with the John Prince Research Forest; developing in September 2016, 19 windrows which varied in length from 100 to 400 m. The windrows were constructed of stacked coarse woody debris to create terrestrial structure; enhancing habitat for invertebrates, fur bearers, birds and amphibians. Generally extending

from one standing timber edge to another, the windrows also acted as CWD travel “corridors”, providing connectivity. In total, approximately 3,000 m of windrows were constructed on 6 cutblocks that were created by salvaging Mountain Pine Beetle (MPB) damaged stands within the Community Forest. With practice, the operator became quite skilled at constructing windrows with abundant cavities and entrance points.

The objective of this project is to confirm that CWD wildlife habitat windrows do indeed create fur bearer habitat on recent cut blocks as demonstrated through quantified wildlife use of the windrows. If the outcome is successful, the MLMCF will implement this technique on appropriate future blocks; thereby contributing to biodiversity and creating opportunities for wildlife viewing and trapping.

### **The Study**

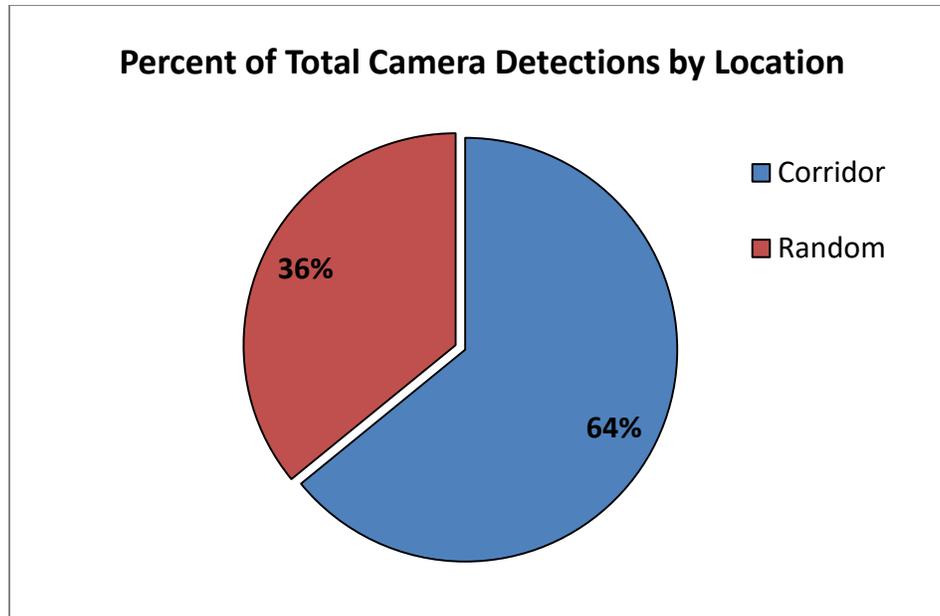
To determine whether or not the establishment of the coarse woody debris corridors made a positive difference in the habitat suitability of cut blocks to fur-bearers, corridor and non-corridor locations were monitored with trail camera stations over a 10-week period (January to March of 2017). Twenty sites in total were selected within the recent MPB salvage cut blocks; each was set up with both a trail camera and a small piece of meat, just large enough so that if an animal was in the immediate vicinity, it would position itself in front of the camera. The installations were designed by staff from the John Prince Research Forest (JPRF), who then worked with Kim Forest Management Staff to complete the installations.

Ten of the sites were located on the CWD windrows while the remaining ten sites were “control” sites. The control sites were located sufficiently away from mature timber and the corridors so as to be removed from their influence. The trail cameras recorded animals as they came to investigate the bait, or as they passed in the back ground. After receiving training from JPRF staff, field data collection and initial processing was then done by KFM before being shared with the John Prince Research Forest.

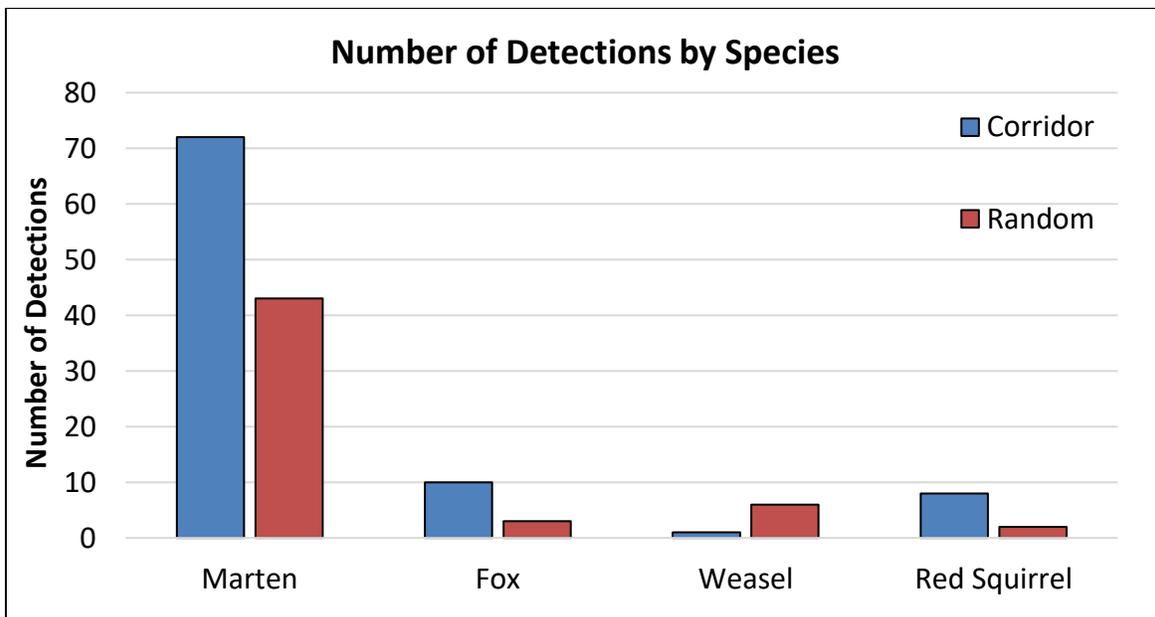
### **Outcome and Application**

The American Marten (*Martes americana*) was by far the most commonly detected animal on the cameras. Other species included squirrels (*Tamiasciurus hudsonicus*), fox (*Vulpes vulpes*), moose (*Alces alces*), Lynx (*Lynx canadensis*) and wolf (*Canis lupus*).

Based on camera detection comparisons, preliminary results of this study show a distinct trend of higher wildlife use associated with the coarse woody debris corridors than without.



This pattern was consistent among nearly all species.



These findings, however, represent only a very small sample size over a small window of time. Prior to this strategy being wholly adopted by the MLMCF, further research will be needed to better understand the relationships between the coarse woody debris windrows and other organisms over time. Encouraged by these promising early results, it is the intent of the MLMCF to pursue funding opportunities to continue this research on this and other sites where CWD corridors have subsequently been established.