



2020 Project Summaries

## Boreal Ecosystem Recovery & Assessment

An NSERC Collaborative Research & Development Program

# Wildlife Team: Canada Warbler Response to Vegetation Structure on Regenerating Seismic Lines

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#### Project Summary

Linear disturbances have implications for species at risk due to habitat removal, degradation, and fragmentation. The Canada Warbler (*Cardellina canadensis*) is a federally threatened songbird which has approximately 80% of its breeding range within Canada's boreal forest. This species' primary threat is habitat loss on the wintering grounds; however, it also faces habitat fragmentation and degradation in Canada from natural resource extraction. Seismic lines represent a unique pattern of disturbance with an extensive and variable footprint due to the accumulation of legacy features. Previous studies have indicated that the density of these lines does not influence Canada Warblers on a landscape scale, but there remains uncertainty regarding their influence at a local scale. The objective of this research was to understand how Canada Warblers respond to vegetation structure on regenerating seismic lines.

Canada Warblers were not detected on or even near legacy seismic lines with little and no encroachment from tall shrubs or saplings; When Canada Warblers were found by a seismic line, how they used the forested edge differed depending on vegetation conditions on the seismic line itself. When there was some vegetation on the seismic line, Canada Warbler were more likely to use the forested edge. When the vegetation reached a tall shrub/sapling state, there was no evidence of edge selection or avoidance because the birds began to hold territories that included both sides of the seismic line.

#### Management Implications and Lessons Learned

- Legacy seismic lines remain as a disturbance on the landscape and require active restoration efforts to mitigate impacts to species at risk. The perception and management of these lines has evolved over time, but the lag in restoration means that we are now dealing with seismic lines of various widths, soil disturbance levels and states of regeneration.
- Multi-scale analyses are necessary to fully understand species' response to a disturbance. At the local scale, Canada Warblers do perceive seismic lines as sub-optimal habitat but eventually this effect disappears as vegetation reaches specific thresholds.
- While this focused on a particular species, similar thresholds of response are expected for many other songbird species.

#### Publication(s)

A thesis of this work is anticipated to be completed by summer 2020. Publication is to follow.

