

EXECUTIVE SUMMARY

The benefits of linear restoration are well understood. Legacy seismic lines remain on the landscape for decades: Many legacy seismic lines require some type of intervention to regrow vegetation and become functional caribou habitat. A major barrier to linear restoration is that it is expensive: restoration can cost between \$8,000 and \$17,000 per kilometre depending on required treatments and the landscape characteristics of the ranges (e.g. remote locations, wet areas, etc.).

During the Algar Caribou Restoration project implementation, a few techniques were tested to boost production rates – helping reduce program costs while striving to achieve restoration outcomes. One technique applied was Leapfrog treatment. Leapfrog methods treated a seismic line for 100 m followed by 100 m of no treatment. The Leapfrog pattern was followed for the entire test treatment area. The concept of less direct ground treatment allows operators to significantly increase restoration production rates by reducing the treatment area by half.

The intent of both forms of linear restoration treatment is to deactivate the line from human, wildlife, and predator use as well as reduce line of sight and establish vegetation cover. Leapfrog treatment goals are the same as full treatment areas but at a higher production rate.

This project's analysis of Leapfrog linear restoration treatment seeks to address key knowledge gaps in the effectiveness of the regular and Leapfrog treatments in achieving restoration goals of caribou habitat restoration, reduced human traffic, and reduced predation risk. This research will benefit both industry and government as they seek innovative and cost-effective solutions for restoring caribou habitat. Both industry and government are embracing linear restoration as a part of caribou range planning. Key questions are:

- How do alternative treatments such as Leapfrog perform in meeting caribou habitat restoration objectives and how do they compare to fully treated lines?
- What is the trajectory of restoration being achieved on Leapfrog lines and in the Algar project area as a whole?
- Can advanced high-resolution imagery from Unmanned Aerial Systems (UAS) be used as an effective tool for efficiently gathering key monitoring data under the Draft Provincial Restoration and Establishment Framework (the Framework) for Legacy Seismic Lines? If so, what kind of imagery data will accomplish monitoring goals?

Overall the indicators assessed in this analysis suggest that the treatments completed in Algar, including an alternative Leapfrog treatment, are progressing towards achieving a positive vegetation response measuring against the Framework. This is an encouraging result that supports further exploration and testing of a Leapfrog approach on other sites as one method to boost the efficiency of implementing linear restoration treatments while achieving the goals and objectives of caribou habitat restoration.