

Wolf Behaviour and Seismic Lines

Linear features, like seismic lines, influence how wolves use the landscape. Seismic lines can also alter the potential for wolf-caribou encounters.

We Asked:

How does wolf behaviour around seismic lines change throughout the year, and with varying degrees of human-caused disturbances on the landscape?

What We Did:



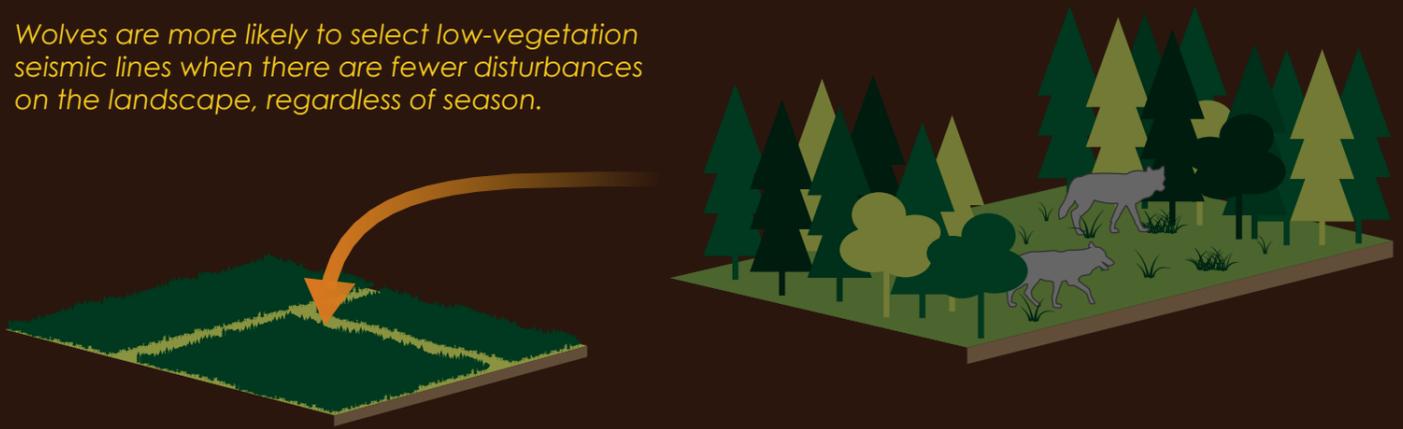
We combined GPS collar data from eight wolf packs and seismic line characteristics, including LiDAR-based vegetation heights, to examine wolf response to seismic lines in contrasting landscapes.

What We Found:

1 Common Key Factors

Density of disturbance features and vegetation height on seismic lines are key.

Wolves are more likely to select low-vegetation seismic lines when there are fewer disturbances on the landscape, regardless of season.

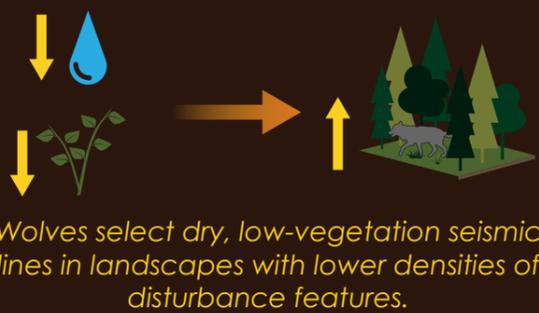


2 Variable Factors

Soil moisture, terrain ruggedness, and forest age also affect wolf behaviour around seismic lines. These factors vary by season and with density of disturbance features.



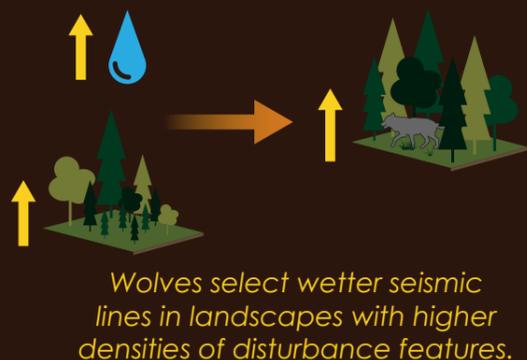
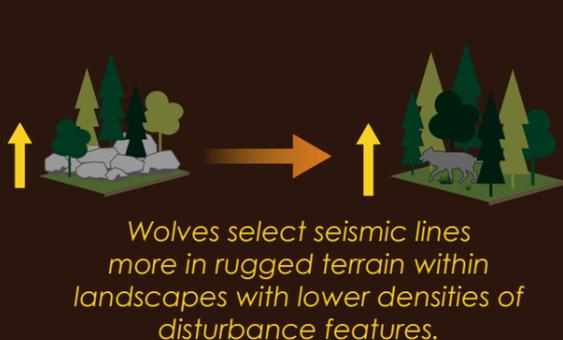
Spring & Early Summer



Late Summer & Early Fall



Late Fall & Winter



Implications:

The densities of disturbance features influence how wolves use seismic lines.

Land restoration in caribou ranges should ensure that ease-of-travel isn't improved for wolves; selective restoration could increase the use of remaining, unrestored seismic lines by wolves, particularly low-vegetation seismic lines.

Pigeon, KE, D MacNearney, M Hebblewhite, M Musiani, L Neufeld, J Cranston, GB Stenhouse, F Schmiegelow, and L Finnegan. 2020. The density of anthropogenic features explains seasonal behaviour-based functional response in selection of linear features by a social predator. Scientific Reports.