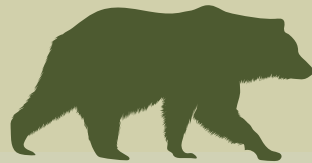


Disturbance Changes Animal Movement

The effects of human-caused fragmentation of the boreal forest on wildlife differs by species and by season.

We tracked grizzly bears and caribou in west-central Alberta, using GPS data to assess the influence of disturbance and regeneration on their movements through the landscape.

Spring



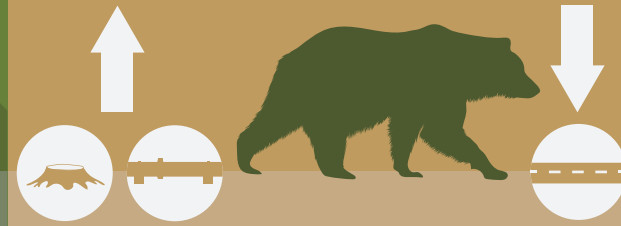
Bears moved much more quickly through areas with high densities of harvest blocks and wellsites.

Summer



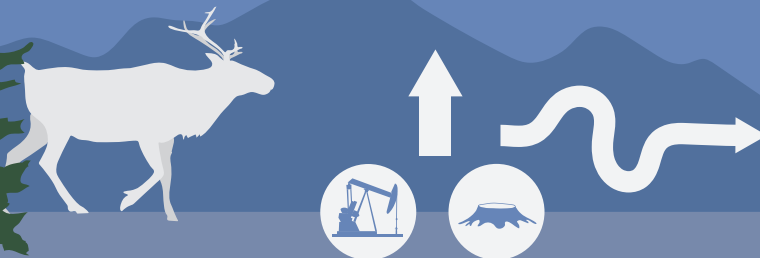
Bears traveled farther in areas with high road density and less distance in areas with high densities of wellsites. They also covered distances faster in more rugged terrain.

Fall



Bears moved farther in areas with lots of harvest blocks and pipelines, and moved less distance in areas with high road density.

Early Winter



Caribou moved more quickly in areas with high densities of wellsites and harvest blocks. They followed more complicated paths in areas with more rugged terrain.

Late Winter



Caribou moved more quickly in less rugged, open areas.

In response to disturbance, grizzly bears moved three to seven times further. Caribou moved up to seven times further.

These increased movements likely have an energetic cost.

Our results support current conservation actions to limit the density of disturbance in caribou ranges and the density of linear features within grizzly bear ranges.