Forestry practice inspired by wildfire could help save grizzly bears, study shows

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A shift in how Alberta forests are managed could benefit grizzly bears, according to new research from the University of Alberta.

New findings show that local food supply for the animals increases when trees are harvested in irregular patches rather than clear-cut squares or rectangles. Known as retention forestry, the practice—which the provincial government is in the process of adopting—creates uneven edges and patches of retained trees that are rich in plant species used by bears.

"It can be a win-win situation—forestry can be done in a way that most supports roots, insects, fruit and game for bears," said Scott Nielsen, a U of A conservation biologist.

In fact, he expects the practice, which emulates patterns of wildfire, would leave at minimum five to 10 percent of trees standing as residual structure.

"That's a definite benefit to creating foraging patches for some of the bears living in areas that haven't seen forest fires for 70 or more years," Nielsen said.

"The more forest edge with fruit-producing shrubs you can maintain, the better it should be for the bears," added Terrence Larsen of fRI Research, who teamed with co-worker Gordon Stenhouse and Nielsen to conduct the study in the Grande Cache area.

Square, alternating patches of cutblocks resembling checkerboards have been traditionally used by the logging, pulp and paper industries, creating similar edge benefits for bears, but cutblocks today tend to be larger and have less perimeter edge. The practice of retaining tree patches inside these cutblocks could increase edge habitat and therefore, bear food supply, Larsen said.

The researchers measured the distribution and abundance of the bears' plant-based foods, such as berries and herbs, using the edges of three

different forest harvest treatments—cutblocks, uncut [forest](#) and retention patches.

They believe creating more and smaller retention patches could support more food supply and provide hiding cover that should be more beneficial to bears than patches of wide open areas associated with traditional forestry.

"What we found was that, at the edge of these cutblocks, there seemed to be a lot of berry production, and when you go into these blocks, there seem to be more herbs. So retaining more trees could be the most beneficial because you have a diversity of foods in close proximity," Larsen said.

Grizzly bears are listed as a threatened species in the province, with fewer than 750 thought to exist in Alberta's foothills and mountains. When food is scarce, it can take up to eight years for a female to successfully reproduce, in a cycle where the average is just four to five years in more productive habitats, Nielsen noted.

"It's important to have habitats that lead to successful survival and reproduction if we want to more quickly recover grizzly bear populations in Alberta."

Restricting roads and human access to areas where harvested stands have high food value means bears can feed safely without the risk of negative interactions that could compromise their survival, Larsen noted.

"That means pulling out the roads as the harvesting is complete or putting up a barrier such as a gate if the roads must stay."

  More information: Terrence A. Larsen et al. Do remnant retention patches and forest edges increase grizzly bear food supply?, *Forest*

Provided by University of Alberta