

CONSERVATION

To save caribou, Alberta wants to fence them in

Controversial proposal envisions the construction of a massive, predator-free pen

By Warren Cornwall

The Little Smoky caribou herd of western Alberta province is among the most imperiled in Canada, its few dozen animals threatened by oil and gas development, logging, and hungry wolves. Soon, the herd could also become a high-profile test case for a controversial plan to save some of Canada's woodland caribou from extinction: herding them into pens enclosing 100 square kilometers or more and ringed with electric fences, and killing or removing every predator inside.

The massive, predator-free pen proposed for the Little Smoky animals last month by Alberta's government is "a Noah's Ark strategy, and it's desperate. But these are desperate times," says Mark Hebblewhite, a wildlife biologist at the University of Montana, Missoula.

But some caribou advocates are skeptical that the expensive pens will work. They also fear that the strategy, which the energy industry has helped fund, will undermine efforts to curb habitat destruction, the main cause of caribou decline. The thinking is that "if industry is willing to invest in these sorts of activities, then you give them license to trash the rest of the boreal forest," says biologist Chris Johnson of the University of Northern British Columbia, Prince George, in Canada.

The woodland caribou (*Rangifer tarandus*) inhabits a vast swath of northern Canada, from the Yukon to Newfoundland and Labrador. But the modern era hasn't been kind to the gentle, reclusive creatures, which sport distinctive upsweeping antlers. The leveling of old growth forests through logging, road building, and seismic mapping of oil and gas deposits has created habitat more suitable to moose and deer. Those animals compete with caribou and have attracted wolves that also hunt cari-

bou when the chance arises. Of 51 herds of boreal caribou, a type of woodland caribou that includes the Little Smoky, just 14 are self-sustaining, according to a 2012 federal report. The Little Smoky herd's roughly 80 animals is well below historic levels; one study estimated the herd shrank by 35% just from 2000 to 2006.

To protect caribou populations, officials in Alberta and elsewhere have launched wolf killing operations, which have drawn

a fence 2.5 to 3 meters high, laced with electrified wires, and then killing or removing any wolves, bears, and other predators inside. The enclave would hold 20 or more female caribou, along with a handful of males. As the fenced population grows, biologists would release surplus animals, supplementing the herd outside. One estimate puts the cost at \$15 million over 10 years.

"The fence in some ways is a necessary evil," Boutin says. But it could be more politically palatable than

the wolf kills, he says, "and I guess I'm opting to say that this is less evil than a full-fledged, ongoing wolf-control program." It's not clear, however, that the enclosure would lead the government to lay down its guns, others note. Alberta's plan calls for continued wolf killing.

Alberta officials are accepting comments on their plan through 5 August, and critics are urging the government to drop the penning project and shield more land from development. "Our concern is that the government is

allocating money to this flashy experiment at the [expense] of actual protection," says Alison Ronson, executive director of the Northern Alberta chapter of the Canadian Parks and Wilderness Society in Edmonton.

But if fencing moves forward and is successful, promoters say the approach could be used elsewhere—including in the oil sands region of northern Alberta, the heart of Canada's oil industry. "There certainly are opportunities other than Little Smoky," says Scott Grindal, a senior environmental coordinator with ConocoPhillips Canada in Calgary, which is part of an industry group that has funded fencing research.

Alberta's government says it wants to issue recovery plans for all its caribou herds by the end of 2017. If fencing becomes widespread, caribou biologist Johnson says, it would mark a "transformational change in how we see the conservation of caribou." ■



Caribou cows and calves were released from an experimental pen in British Columbia in Canada on 15 July.

public opposition. In the Little Smoky range, hunters killed 841 wolves between 2005 and 2012, reducing the winter population by nearly half each year. The caribou population stabilized, but a 2014 study found that there was no evidence the wolf hunt was helping the herd increase.

Alberta's new plan for reviving the Little Smoky herd, released in early June, calls for a range of actions, including new restrictions on logging and drilling, as well as a push to reforest thousands of kilometers of old seismic lines by 2022. It also includes an unprecedented government endorsement of the penning strategy, which has been tested on much smaller scales in neighboring British Columbia, with mixed results.

For Stan Boutin, an ecologist at the University of Alberta, Edmonton, the plan offers a chance to try an idea he has been pursuing for 5 years. He envisions building



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Editor's Summary

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