

Embargoed until: Aug 29, 2017, 2017: 7am EST / 12pm UK time / 11am GMT



## PRESS RELEASE

### **An alternative to wolf control to save endangered caribou**

*Researchers study the effectiveness of a new government strategy to stabilize the caribou population by focusing on the reduction of invasive moose populations, indirectly lowering the density of the caribou's primary predator.*

What happens when invasive and native species are eaten by the same predator? If the invasive species is abundant, the native species can go extinct because predator numbers are propped up by the invading species. This process is called “apparent competition” because on the surface it “appears” that the invading and native prey directly compete with each other, but really the shared predator links the two prey.

Apparent competition is an increasing problem, causing endangerment and extinction of native prey as abundant species colonize new areas in the wake of human-caused change to the environment. This is exactly what is happening to the iconic woodland caribou across North America. Prey like moose and white-tailed deer are expanding in numbers and range because of logging and climate change, which in turn increases predator numbers (e.g. wolves). With all these additional predators on the landscape, more caribou become by-catch, driving some herds to extinction.

A short-term solution would be to kill wolves but this can be seen as just a band aid, and is no longer politically acceptable in many jurisdictions. As a more ultimate solution, Serrouya and colleagues used a new government policy and treated it as an experiment, to maximize learning. The new policy was to reduce moose numbers to levels that existed prior to widescale logging, with an adjacent reference area where moose were not reduced. The results of this research are published in an article titled “Experimental moose reduction lowers wolf density and stops decline of endangered caribou,” and is published today in the peer reviewed and open access journal *PeerJ*.

Following the reduction of moose using sport hunting, wolf number numbers declined, with wolf dispersal rates  $2.5 \times$  greater than the reference area,

meaning that dispersal was the process leading to fewer wolves. Caribou annual survival increased from 0.78 to 0.88 for the Columbia North herd, located in the moose reduction area, but survival declined in the reference area (Wells Gray). The Columbia North herd probably stabilized as a result of the moose reduction, and has been stable for 14 years (2003 – 2017). By expanding their comparison across western Canada and the lower 48 states, they found that a separate herd subjected to another moose reduction was also stable, whereas at least 15 other herds not subjected to moose reductions are continuing to decline.

The results obtained by Serrouya and colleagues are similar to other studies that used more controversial approaches. For example, in Alberta, 841 wolves were removed in the Little Smoky caribou herd over 7 years, but results were as good or better using the less controversial approach of reducing invasive prey (moose). But, population stability is insufficient to achieve recovery goals for caribou, which require population growth. This conclusion suggests that several limiting factors and management levers must be addressed simultaneously to achieve population growth for caribou. These levers include habitat protection, reducing invading prey, and if needed, short-term and focused predator removal.

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## IMAGES



**Image 1:** Mountain Caribou in British Columbia, Canada, moving to low elevation during spring. Credit: Hans Mohr (CC BY 4.0)



**Image 2:** Mountain Caribou in British Columbia, Canada observed during a population census. Credit: Robert Serrouya (CC BY 4.0)

**Full Media Pack including image:**

<https://drive.google.com/open?id=0BzGrFBtalE6wZzZUTXBELVY2ek0>

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**EMBARGOED** until Aug 29th: 7 am EST; 12 midday UK local time; 11 am GMT (i.e. the date of publication)

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**Citation to the article:** Serrouya et al. (2017), Experimental moose reduction lowers wolf density and stops decline of endangered caribou. DOI **10.7717/peerj.3736**

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