

# 'We have caught (them) in the act': Beavers are invading Alaska, the final frontier

One possible explanation is that the beavers aren't actually colonizing Alaskan territory but reclaiming land that once belonged to them



Beaver (*Castor canadensis*) family enjoy the fruits of their considerable labors, Denali Nat'l Park, Alaska. Getty Images/iStockphoto



JOE O'CONNOR

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Ken Tape, an associate professor at the University of Alaska Fairbanks, was studying moose. And moose were neat, indeed, because up until about 1950 there were no moose living on the Alaskan tundra. But then woody shrubs, a moose delicacy, started growing there, enticed by gradually warming temperatures, and the moose, a boreal creature, followed, wandering out of the woods and onto the permafrost and eventually all over the largest state in the union.

What Tape was wondering, and as someone who studies landscape change in the Arctic he wonders about things a lot, was if the moose expanded its range onto the tundra — as had the snowshoe hare — what animal would be next?

"That's when I started getting interested in beavers," he says. "These guys are small, highly industrious engineers."



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crops?

And now they are on the march, pushing into the Alaskan tundra, an incursion by a beloved Canadian symbol that the professor and his colleagues highlight in a new paper — Tundra be Damned: [Beaver colonization of the Arctic.](#)

“We have caught the beavers in the act,” Tape says. “We are really only at step two of a 10-step process in understanding what is going on, and the implications of it.”

In the beginning, Tape needed proof. He had a hunch. But he had never glimpsed a beaver in action in a tundra environment. So he started comparing several decades worth of satellite photographs from an 18,293-square-kilometre chunk of permafrost in the state's northwest. Beaver ponds, unlike moose tracks, are actually visible from space. What the satellite images showed was 56 new beaver pond complexes in a previously beaver-less landscape.

“Is it a good thing or a bad thing?” Tape says. “Put it this way: if someone went into a land manager's office and wanted to get a permit to do all the work that the beavers are doing in the Arctic right now, it would be a lot of paperwork. But I see these guys as facilitating change in the Arctic — and accelerating the changes that are already underway.”

Industrious and strong, the plucky beaver is the animal kingdom's ultimate do-it-yourselfer, a creature that doesn't live off the land so much as renovate it for its own purposes. Beavers dam rivers and streams, slowing water flow, creating ponds and expanding the percentage of wetlands. In a southern Canadian (or American) context, an active beaver enriches the overall health of the ecosystem. Dams filter pollutants. Ponds are full of life. Flooding becomes less likely.



This graphic shows the dams that the beavers have been building. *courtesy of Ken Tape, University of Alaska Fairbanks*

But in the Arctic, a swelling beaver pond washes over permafrost, degrading frozen ground, rinsing away soils and releasing buckets of (previously frozen) carbon dioxide and methane. Already in retreat, the demise of the permafrost is hastened by the beavers handiwork. And that's not necessarily a bad thing — beaver ponds produce warmer water and may create new spawning

-12 °C

Partly cloudy  
Feels like -21 °C



Sunday	2 °C
Monday	3 °C
Tuesday	1 °C
Wednesday	-5 °C

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... what does it all mean? It's too early to say, says Tape. One possible explanation is that the beavers aren't actually colonizing Alaskan territory but reclaiming land that once belonged to them. Now found in abundance in North America, beaver pelts, if we remember our history, were once fancied by the haberdashers of Europe. The critters were nearly trapped into extinction because of it.

Beavers may have roamed the tundra, pre-fur trade, or they didn't, which would make their march through Alaska now a remarkable find.

"I love the fact the beaver is the Canadian national animal," Tape says. "You just need to look at the map to see how well beavers recolonized the rest of North America after over-trapping."

"They are now in all the lower 48 states, and Alaska is the last standing — and it's going to fall."

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