

Tireless ecosystem engineers or nuisance animals? Beavers' presence felt in Boise River

July 13 2023, by Julie Jung, Idaho Statesman



North American beaver (*Castor canadensis*) Credit: Wikipedia.

Some of the trees along the Boise Greenbelt at the southeast end of the city are wrapped at their bases with chicken wire. These are not Christmas trees, and this ornamentation, strung by the city of Boise in conjunction with volunteer groups, is not just for show.

Rather, the mesh is protective, meant to stave off the city's resident [beavers](#).

The North American beaver, *Castor canadensis*, is not a subtle species. The animals serve vital purposes, but they also can be so destructive that they have to be relocated.

"If you have a beaver in your system, it's pretty obvious," Cory Mosby, Idaho Fish and Game's furbearer biologist, told the Idaho Statesman in a phone interview. As North America's largest rodents, beavers "eat a couple pounds of vegetation a day."

Like most rodents, they need to munch to keep their teeth trimmed, so telltale signs of these hungry herbivores are bite marks and bark stripped off branches, or tree cuttings piled up high enough to dam moving water.

"It's like they're hardwired in their brains to dam moving water," quipped Mosby.

Why the urge to stockpile sticks? They do it to create deeper ponds, so that they can dodge predators like coyotes, mountain lions, wolves, bobcats and bears.

Are there too many of those ponds along the Boise River system and across Idaho this year? Is the beaver population out of control or is it stable? Those can be difficult questions to answer.

Where Idahoans and beavers butt heads

Both Mosby and Nick Kolarik, a Ph.D. student at Boise State University monitoring ecosystem dynamics in wetland habitats, brought up with the Statesman the concept of a "cultural carrying capacity"—meaning the maximum number of a species that can be tolerated—and suggested that this is the crux of the matter for beavers.

"Beavers are kind of chaotic," said Kolarik. "You don't really know what they're going to do."

To some, "herbeavery" is a perennial nuisance, signs of an unwanted squatter gnawing on their trees and garden goods, and causing irreparable property damage.

Sara Arkle, parks resource superintendent for Boise Parks and Recreation, noted in an email that "beaver activity is a consistent management consideration." And Roger Phillips, Idaho Fish and Game spokesperson, said in a phone interview that management is all about balance: "There's no such thing as a good beaver or bad beaver."

Sometimes a beaver will just try to make a home in the wrong place at the wrong time, officials said, perhaps slowing the flow of water to a farmer's crops or plugging up a culvert because it seemed like an inviting space to lay down some sticks.

But these semi-aquatic anarchists also play important beneficial roles.

Building tools for climate resilience? Leave it to beavers

The megadrought across the West of the past several years has transformed waterscapes for the drier. In times like these, beavers play crucial roles as savvy ecosystem engineers, building dams that can store

precious water, slow the rate at which it leaves the system and enhance the exchange from surface water to groundwater.

In high snowpack years, on the other hand, beavers' handiwork can create wetland complexes that are helpful in holding back the snowmelt. The natural dams promote a slower release of water, which can mitigate flooding and generally buffer critical riparian landscapes from the harmful effects of climate change.

For instance, in summer 2018, the Sharps Fire burned major portions of the Bough Creek watershed in Central Idaho, but beaver dam complexes kept parts of the riverscape wet and verdant while [unprotected areas](#) burned to ash.

More and more, humans are trying to emulate beaver activity by building Beaver Dam Analogs—low-cost, human-made channel complexity that slow the way water moves through a system.

Kolarik, a scientist involved in related research, said these changes attempt to create favorable conditions for beavers to move in and take over the related geomorphological processes.

These beaver-inspired processes and practices attract numerous stakeholders, often involving a collaborative effort linking nonprofits, government agencies, watershed councils and private citizens. For example, the Sage Grouse Initiative is invested in restoring mesic areas with human-constructed beaver dams, since that's where sage grouse like to raise chicks.

Ranchers and farmers also stand to benefit from the ecosystem services of beavers, since their strategic rewilding can yield significant additional streamflow annually, according to a report by the USDA.

Estimating Idaho's beaver populations

Beavers are found statewide, according to Mosby, "in pretty much any perennial water source where there's food for them," which are trees such as aspen and willow, and the cottonwoods that line the Boise River.

"There's not a county in Idaho that does not have beaver in it," he said.

But beaver population sizes remain unknown. Unlike with elk, mule deer or larger predators that roam the Gem State, beaver trends are tracked indirectly, combining harvest data with anecdotal observations.

Beavers are classified as a furbearer in Idaho. As such, the species is open only to trapping, not hunting.

If you want to trap a furbearer, the requirements are considerable. First, you must get a trapping license and take an education class, which focuses on the ethics and regulations associated with trapping. For instance, you must set your traps a certain way next to the water to avoid catching non-target species, and you must have permission to trap on private lands.

Rusty Kramer, president of the Idaho Trappers Association, said there are more than 2,000 licensed trappers in Idaho in any given year.

These trappers act as citizen scientists, as they are required by Idaho Code to collect data about beavers—and all animals they trap—on a county basis. Metrics such as the number of traps set, how many nights those traps were out on the landscape and how many beavers were caught are used to calculate a metric called catch per unit effort, which serves as a proxy for beaver abundance.

"If it takes more time to catch an animal over the years, that would

suggest that the population is decreasing," Mosby said. "If they're more abundant, it would be easier to catch them."

Going by this proxy, Idaho Fish and Game officials say that the beaver population across the state has remained fairly stable for the past 20 to 25 years.

Kramer doesn't buy it. He claimed unequivocally that "honestly, in the last 20 years, the beaver population has exploded."

During the 18th century, beavers were getting hunted to the point of extermination. Now, according to Kramer, they have rebounded to the point of overpopulation. His evidence is anecdotal but comes from a lifetime of first-hand experience, he said.

Beavers are "prolific breeders ... so in a lot of areas, they're kicking out last year's litter, who are constantly moving down stream and relocating, spilling into more areas, and spreading their range farther than ever before," Kramer told the Statesman.

He said he turned down 10 trapping jobs just in the past month—some offering double the typical wage—from landowners desperate to remove beavers from their property.

The tradition of beaver translocations

Idaho Fish and Game periodically works to translocate nuisance beavers from high-density areas to help smooth out the lumpy distribution of the animals and help slow the flow of water where needed.

Kolarik recalled walking a dog at Silver Lake, in between the Greenbelt and State Street in Boise, and spotting a woman loading a dog crate into the back of an Idaho Fish and Game truck. This was in response to a call

about a "nuisance beaver" that was chewing on someone's ornamental trees. Plans were made to take the animal to the Owyhees in Southwest Idaho.

Idaho is no stranger to beaver translocations, of course. In 1948, beavers were preventing people from building homes in Central Idaho. Idaho Fish and Game trapped 76 nuisance beavers, placed them in quick-release wooden boxes with holes punched in them for air, attached them to parachutes left over from World War II and dropped them into unoccupied wilderness.

Miraculously, all but one unlucky beaver survived.

These days, beavers are carried in dog crates and transported by truck instead of chucked out of airplanes and forced to skydive to their destinations. But still, the tradition of beaver translocation in Idaho endures—for now.

The rise of lethal trapping?

Kramer said he had been removing 25 to 50 problematic beavers every summer from 1999 to 2021, working primarily throughout the eastern and southern parts of the state with the U.S. Forest Service, which buys them to restock in certain areas where they'd be more helpful. But since last year, these requests to relocate beavers have slowed down because the Forest Service is "running out of places to put them," he said.

"Historically, most of the places in the U.S., when you have beaver problems, is going to be lethal trapping," Kramer said. "My situation was kind of unique where we're able to take some beavers alive."

Increasingly, though, beaver-damage cases that Kramer and other licensed trappers take on involve lethal trapping, he said.

Arkle from Boise Parks and Rec explained in an email that if [translocation](#) is unavailable, "our last resort is to (lethally) trap the animals, utilizing a local contractor."

"That's a shame because when you do lethal [trapping](#) in the summer, their fur has no value. You're having to just kind of waste the animal," Kramer said.

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Citation: Tireless ecosystem engineers or nuisance animals? Beavers' presence felt in Boise River (2023, July 13) retrieved 26 June 2024 from <https://phys.org/news/2023-07-tireless-ecosystem-nuisance-animals-beavers.html>

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