

How Wolves Are Saving Trees in Yellowstone

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In [Yellowstone](#) National Park, rangers [used to kill wolves](#). The last official kill was in 1926, and for seven decades the park lived wolf-free. Elk thrived without their primary predator—by the time the Park Service reintroduced wolves to Yellowstone in 1995, more than 15,000 elk roamed the park, feasting on cottonwoods, willows, and aspens. The trees suffered: [William Ripple](#) and [Robert Beschta](#), ecologists and professors at Oregon State University, calculated that in 1998, the tallest of the young aspen trees stood less than a foot and a half high.

Now, fifteen years after wolves returned to Yellowstone, the trees are coming back. In Ripple and Beschta's [latest survey](#), young trees stretched to an average height of more than six feet. Willows and cottonwoods are also doing better, too. The reintroduction of wolves also has affected other species. Songbirds, which live in the willows, are repopulating. Beavers depend on the willows, and as their population grows, the resulting dams improve conditions for fish and other aquatic life. “We think we're at just the beginning part of the recovery,” Ripple says. “The first signs of recovery are happening now, but it's going to take many more years for the story to play out.”

Ripple began studying aspens in Yellowstone in 1997, when they were on the decline and no one knew why. He and his colleagues first posited in 2000 that the loss of wolves had allowed elk to eat so many young trees that the aspen population could not regenerate. As wolves returned to their home in the park and the elk population shrank, the researchers continued to watch the changes in the ecosystem to see if the wolves would alter the fate of other species and watch what Ripple calls “a natural form of ecosystem restoration.”

“Yellowstone now is a very different place with the wolves back than it was,” he says. “You can hear them howling, and they're seen almost every day. There are fewer coyotes than there were before wolves. Those two compete, and the coyotes are the losers every time because they're smaller.” Coyotes eat young pronghorn antelope, so fewer coyotes means more antelope.

The cascading effect of removing large predators from an ecosystem is not limited to Yellowstone. When humans started [killing off sharks](#), the population of rays increased, which in turn killed off colonies of bay scallops. Scientists have documented similar consequences where predators like sea otters and African lions have disappeared. “The humbling message is to be very careful if we want to kill off predators because they're inconvenient for us,” says Ripple. “There can be major ripple effects from that.”

Yellowstone's recovery is not yet complete: Over the decades the wolves were absent, a smaller population of trees allowed greater soil erosion, an impact that takes much longer to reverse. But grey wolves are doing well enough now that the Fish and Wildlife Service [recently rescinded](#) their status as a “threatened” species. Which is good news for the aspens, too.