

Partnering with Beavers to Help Tackle the Climate Change Crisis

Frequently Asked Questions

How do beaver help with climate change?

Wetlands and wet meadows created by beaver are natural carbon capture-and-store areas that remove large amounts of carbon from the atmosphere, via the natural process of photosynthesis, and stores it in roots and decaying matter below ground, in riparian vegetation, and in beaver ponds.

Beaver habitat improves the ability of fish and wildlife to survive climate changes. Their habitats are more stable and less sensitive to short-term climate variability because they contain reservoirs of surface and groundwater that buffer habitats from drought, and they create conditions for groundwater recharge to occur during flooding. As a result, habitat changes are more gradual, giving wildlife time to both adapt and relocate.

Beaver ponds, wetlands, and wet meadows hold water in storage and slowly release it, partially offsetting declines in stream flows and water quality related to declining snowpack and spring melt. These natural fire breaks create safety zones for wildlife and livestock to survive extreme fire events that are expected to increase with climate change and can help slow the speed that fire moves across the landscape.

How do beaver help with wildfires?

Beaver create and maintain wetlands, wet meadows, and ponds which are natural fire breaks. The areas provide refuge for livestock and wildlife during fires and habitat post-fire which are critical for helping wildlife survive the winter. Because vegetation remains, these areas trap soil eroding from surrounding hillsides post wildfire and prevent it from reaching the streams, helping to protect water quality.

How do beaver help native fish?

Beaver create habitat that improve the function and diversity of the biological and physical systems native fish need to survive and thrive. Ponds provide critical winter rearing habitat for juvenile Coho salmon. Ponds and wetlands temporarily store surface and groundwater which later contribute to cooler stream temperatures (currently, thousands of miles of Oregon streams are too warm). Improved riparian conditions result in greater vegetation and insect life, which enhances food sources for native fish.

How do beaver help farmers and ranchers, and cities and towns?

Farmers and ranchers need water during to grow crops and raise livestock. Cities and towns need dependable high-quality water, and drinking water for many Oregonians comes from national forests. Beaver-created habitats temporarily store water in ponds and in the ground, which is then slowly and sustainably released. Because the ponds create conditions that allow for regular groundwater recharge, benefits are maintained over time. This temporary storage helps offset impacts of drought, decreases the frequency and magnitude of downstream flooding, and improves water quality (i.e. stream temperatures, turbidity) and stream flows.

How do you deal with beaver-human conflicts such as blocked culverts?

Most beaver-human conflicts can be solved through non-lethal, co-existence strategies developed using human ingenuity and knowledge about beaver. These strategies eliminate conflicts for the long-term and are more cost-effective than repetitive trapping because removal simply makes the habitat available to another family of beaver—thus compounding potential for infrastructure damage and costs over time. Over the long-term changing poorly-designed human infrastructure, often the source of many problems, will also eliminate conflicts. An

example is replacing undersized culverts with larger, appropriately sized culverts that address fish passage and stream flow issues. These are not conducive to beaver dam building activity.

How many beaver are there in Oregon?

We don't know. Less than historic numbers and not enough based on abundance of unoccupied, suitable habitat and lack of the habitat they create and maintain that provides abundant ecosystem services. What we do know is that from 2000-2020 over 51,200 beaver have been trapped and hunted under the ODFW Furbearer Regulations and 10,051 beaver have been killed by Wildlife Services. That's a lot of beavers that could have been building and maintaining beaver dams, wetlands, ponds, and riparian areas and helping salmon runs improve.

How valuable are beaver to Oregonians?

Beaver are valuable to all 4.2 million Oregonians. They provide lots of services to human and wild communities for free. The habitat they build and maintain enhances fishing, hunting, and wildlife viewing, creates natural fire breaks, increases water quality and stream flows, improves and expands salmon rearing habitat, and improves and expands habitat for countless other wildlife and aquatic species. A 2009 report commissioned by ODFW and Travel Oregon found that the economic returns of fishing, hunting, wildlife viewing, and shellfishing were \$2.8 billion. A 2016 report commissioned by the state legislature revealed that the majority of Oregonians are concerned about habitat loss, lack of water, low/declining fish populations, urban sprawl, and conservation and management of resources in general.

What would be the impact of closing Oregon's federal and state-managed public lands to beaver trapping and hunting as currently allowed under ODFW's furbearer regulations?

Over 4.2 million Oregonians and countless aquatic species and wildlife would benefit from expanded beaver numbers and distributions. Fish and wildlife habitat, water quality and stream flows would improve and natural fire breaks and wildfire refuges would be created and expanded as the dams that beaver build and maintain create ponds, wetlands, and diverse riparian areas and stream systems. Benefits would be in the 100s of millions of dollars. Currently, less than 170 people statewide out of 4.2 million trap and hunt beaver under the ODFW furbearer regulations and would no longer be able to do this activity on Oregon's federal and state-managed public lands. But we are all in the climate crisis together and this is a small activity to give up for so many benefits and sense of hope that comes from positive action.

How does beaver trapping and hunting, as currently allowed under ODFW's furbearer regulations, hurt Oregonians and its fish and wildlife?

Maintaining family units is key for expanding populations, successful dam building and maintenance, dispersal, and habitat creation. Trapping and hunting can eliminate entire colonies in one season. As a result, when the dams fail, they are not repaired. The ponds drain, water tables drop, water quality declines, wetlands and wet meadows begin converting to drier species and fish and wildlife habitat decreases. Even if some beaver remain, there is a lag between birth, adulthood, dispersal and finding a mate which limits creation and maintenance of habitat and its benefits. Those that remain are vulnerable to trapping and hunting pressures the following year in addition to all the other mortality causes.

How does beaver trapping and hunting, as currently allowed under ODFW's furbearer regulations, differ from wild carnivore predation on beaver?

Winter is the beaver breeding and pregnancy season and the time beaver are most safe from wild carnivores due to limited land exposure. This is also the time when ODFW furbearer regulations allow trapping and hunting to occur because the fur quality is best. Once a trap is set a trapper can leave and return at leisure leaving the trap on the landscape 24/7 until removed or an animal is caught. Whole colonies can be removed in a single season leaving dams unattended, which then fall into disrepair and fail, causing habitat benefits to be lost. Wild carnivore predation is an opportunistic kill and unlikely to remove an entire colony. Therefore, the habitat benefits remain because in many cases the remaining beaver are able to maintain their dams and expand their numbers.