Microsoft

Restoring beaver habitat for healthy rivers

Beaver dam installations replenish groundwater and restore river ecosystems in central Washington

Beaver dam analogs rebalance stream ecosystems

Beaver dams play a critical role in the river ecosystem, slowing stream flow to provide habitat for plants and animals. Microsoft has partnered with Trout Unlimited to restore Rock Island Creek and other Columbia River Basin habitats by installing beaver dam analogs—structures that mimic beaver dams to create pools, ponds, and wetlands.

Beaver dams once transformed floodplains into wetlands that sustained diverse ecosystems, improved groundwater infiltration, and even reduced wildfire severity. In the late 1800s, fur trapping decimated the beaver population. Unsustainable grazing practices have further degraded river habitats, threatening some native fish and waterfowl with extinction.

Microsoft and Trout Unlimited are working together with the US Fish & Wildlife Service and the Natural Resources Conservation Service to restore these critical habitats using beaver dam analogs (BDAs).

A BDA is a porous, wicker-like woven wall rising to just the right height for fish to clear. Since 2020, the team has installed over 100 BDAs and reintroduced two beavers in the Rock Island Creek Watershed in Douglas County, Washington.

The first phase, an installation of 24 structures, will increase groundwater infiltration by an estimated 0.8 acre-feet per year (volumetric water benefit). Water pooling around the installed BDAs will also create habitat for threatened native wildlife like the Upper Columbia summer steelhead trout and the greater sage grouse.

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Microsoft teamed up with Trout Unlimited and other partners to install over 100 beaver dam analogs across Rock Island Creek Watershed

With the success of phase one, the team has launched a broader watershed restoration effort with the installation of 105 beaver dam analog structures across one mile of Rock Island Creek. This vast network of dams is helping to create pools and ponds, induce channel meandering, and expand flood plain and wet meadow habitats. The ponds that form behind beaver dams provide a cool-water refuge for wildlife and encourage vegetation growth.

In addition to providing healthy aquatic habitat for native flora and fauna, the beaver dam analog projects increase ponded surface area and groundwater recharge, storing an estimated 3–4 acre-feet of groundwater annually.

Together, the 129 structures should produce an estimated volumetric water benefit of nearly 4,000 cubic meters per year.

> "Trout Unlimited has been able to increase habitat availability for threatened fish in a creek that had long been written off by the restoration community."
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> —Lisa Foster, Trout Unlimited project manager

The long-term goal of the BDA installation projects is to reintroduce so they can take over the damming process. This will take a broader partnership with local landowners, as most of the installations are on private land. While many people welcome beavers for their ecological benefits—one landowner fondly recalls swimming and fishing in beaver ponds— others see them as pests who destroy orchard trees and crops.

Trout Unlimited aims to restore the entire 16-mile stretch of Rock Island Creek down to the Columbia River. With the collective effort of private landowners, public agencies, and companies like Microsoft, healthy wetlands are within reach.

Learn more about Trout Unlimited

Fishing. Conservation. Community. tu.org
Water restoration co-benefits: tu.org/co-benefits-of-restoration