Large Wood in the Lower Deschutes River

Our commitment to the Deschutes Basin

PGE and the Confederated Tribes of Warm Springs – co-managers of the Pelton Round Butte Project – are reconnecting the Deschutes River and restoring healthy, sustainable runs of migratory salmon and steelhead to the Upper Deschutes Basin. We work closely with partners across Central Oregon, including tribal, local, state and federal organizations. Protecting fish, wildlife, and their habitats (both in water and on land) is critical to achieving our shared goals.

Overview

Large pieces of wood provide cover for fish and wildlife in river channels. They can also trap and hold gravel used by trout and salmon for spawning. Downstream of the Pelton Round Butte Project, the Lower Deschutes River flows for 100 miles in a deep desert canyon, with trees growing along the banks and on river islands. As riparian trees die, they fall into the water, staying in place to provide habitat, or floating downstream to a new location in the channel or floodplain.

Quick facts

White alders and cottonwoods are the most common tree species along the Lower Deschutes River.

Large conifers can also be found near the headwaters of upstream tributaries, but these are rarely transported to the lower river.

Among other benefits, large wood provides shelter for juvenile fish hoping to avoid predation.

Today, we transport large wood from Lake Billy Chinook to the Lower Deschutes, placing it in natural configurations.

Logs found in the Metolius arm of Lake Billy Chinook above Rattle Snake Point are anchored in place, providing cover for juvenile fish and resting areas for other wildlife.

The need for large wood

When the Pelton Round Butte dams were constructed in the late 1950s and early 1960s, the passage of large wood from upstream tributaries into the Lower Deschutes became blocked. Rather than naturally moving downstream, logs entered Lake Billy Chinook and stayed there. Some trees accumulated along the shoreline, providing habitat in the reservoir. Many were removed, cut up and burned; others were used as log booms.

During the flood of 1996, most of the remaining large wood along the Lower Deschutes River was flushed downstream and deposited in logjams on the floodplain. Due to the low supply of riparian trees and blocked passage of upstream logs, these pieces of critical Lower River habitat were never replenished.

(Left) Logs placed in the Lower Deschutes River are marked and monitored for movement by PGE staff.

Our solution: reconnecting the Deschutes

One of our over-arching goals on the Deschutes is reconnecting the river basin, which was artificially divided for half a century. This means restoring fish runs, managing water according to seasonal temperature patterns, and initiating programs to transport ecosystem elements blocked by the dams, including gravel and large wood. In 2007, we started removing logs from Lake Billy Chinook and transferring them to the Lower Deschutes River, downstream of the Reregulating Dam.

PGE crews use cranes to place logs in locations and configurations that mimic naturally-transported wood.

Each spring, our biologists conduct snorkel surveys, searching under and around tagged logs to monitor for use by fish and wildlife.

Tracking and monitoring

From 2007-2019, we have moved 352 pieces of large wood to the Lower Deschutes. Each log is individually marked prior to placement, and the length, diameter, tree species and presence or absence of limbs and roots are all recorded. Large wood pieces are left unanchored in the river channel, allowing for their movement downstream.

Each year after high spring flows, biologists float downriver, monitoring the position of marked logs and recording any movement. We have tracked large wood as far as 25 miles downstream of its original placement!

Usually, the wood aggregates around islands or on the outside banks of river bends, and can often be often found alongside naturally-occurring trees. As time passes, we hope that wood abundance below the Pelton Round Butte Project increases, enhancing ecological function in the lower river.

Results and next steps

We have observed juvenile Chinook salmon, redband trout and steelhead utilizing the placed logs in the Lower Deschutes River. A wide variety of animals have also been spotted at the large wood sites, including geese, herons, beavers, otters and snakes. Data suggest that our large wood management program is helping us restore a connected and sustainable ecosystem, improving conditions for native salmon and trout populations.

In 2019, we used a helicopter to place logs and boulders in strategic locations below our dams.

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