



THE BEALE NATURE TRAIL - RIPARIAN SECTION

BEAVERS - NATURE'S ENGINEERS



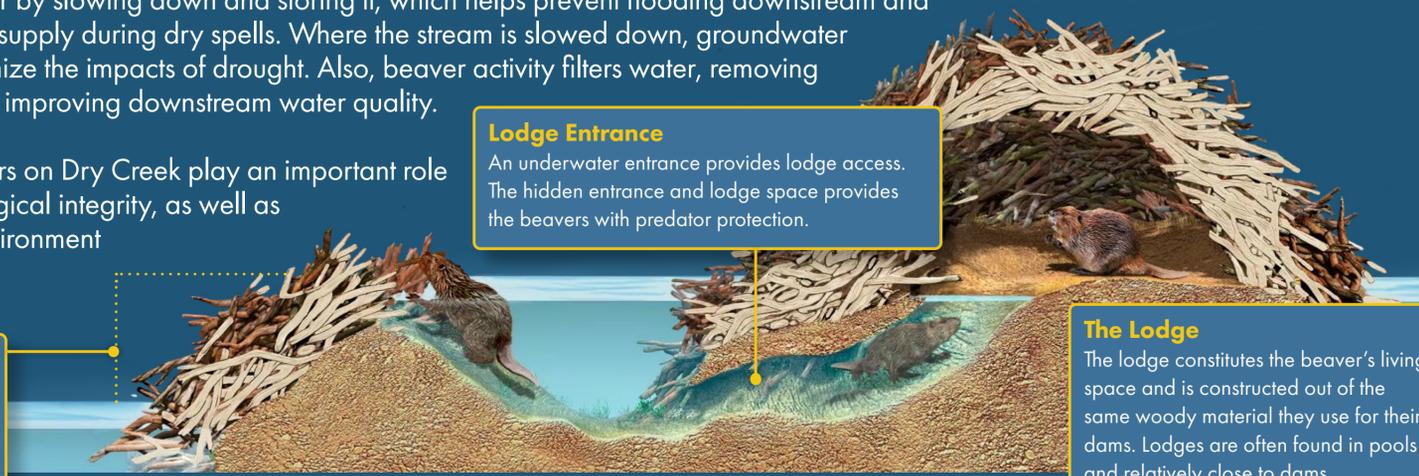
Engineering the Beaver Way

Beavers' unique ability to engineer ecosystems by building and maintaining dams creates habitat, making them a keystone species. A keystone species helps define an entire ecosystem, and without its keystone organism, the ecosystem would either be dramatically different or cease to exist.

When a beaver dams a creek, the water backs up and gradually spreads outward, eventually forming ponds or wetlands. These ponds enhance nutrient cycling by trapping sediment and organic matter. The buildup of trapped material creates fertile conditions for aquatic vegetation and promotes the growth of various organisms. Serving as biodiversity hotspots, beaver ponds attract other animals to feed and reproduce.

Beaver dams help regulate water by slowing down and storing it, which helps prevent flooding downstream and ensures a more consistent water supply during dry spells. Where the stream is slowed down, groundwater can recharge, which helps minimize the impacts of drought. Also, beaver activity filters water, removing pollutants and sediment, thereby improving downstream water quality.

As nature's engineers, the beavers on Dry Creek play an important role in maintaining the stream's biological integrity, as well as the health of the surrounding environment and its inhabitants.



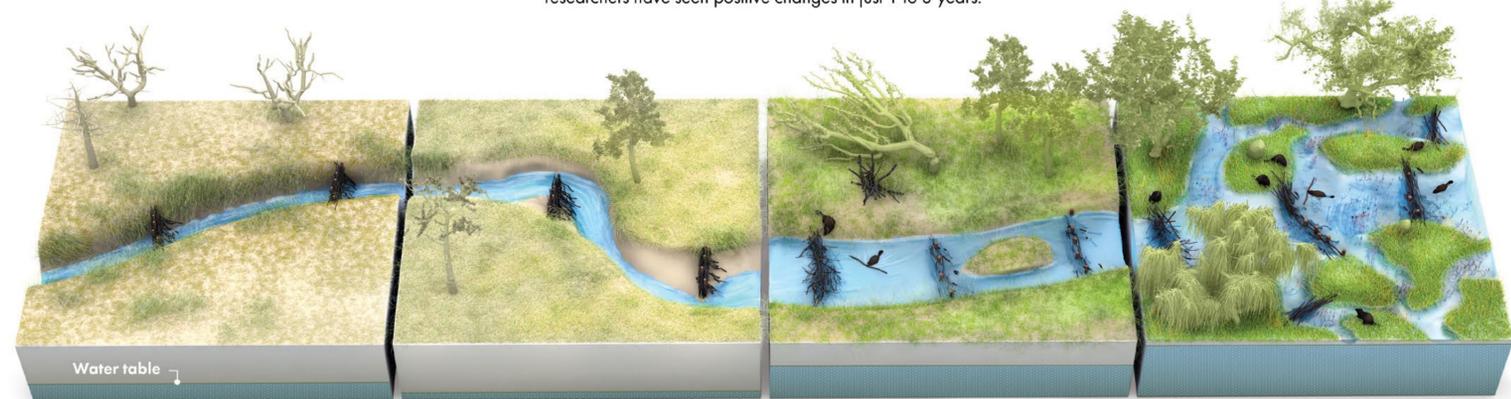
Lodge Entrance
An underwater entrance provides lodge access. The hidden entrance and lodge space provides the beavers with predator protection.

The Lodge
The lodge constitutes the beaver's living space and is constructed out of the same woody material they use for their dams. Lodges are often found in pools and relatively close to dams.

Beaver Dam
On the upstream side, beaver dams cause water to back up, creating deep pools and diversifying habitat. Notice the difference in water level with a beaver dam present.



A stream comes back to life
Across the U.S. West, scientists and land managers are using beaver dam analogs (BDAs) to heal damaged streams, re-establish beaver populations, and aid wildlife. In some cases, researchers have seen positive changes in just 1 to 3 years.



Adding dams
Beaver trapping and overgrazing have caused countless creeks to cut deep trenches and water tables to drop, drying floodplains. Installing BDAs can help.

Widening the trench
BDAs divert flows, causing streams to cut into banks, widening the incised channel, and creating a supply of sediment that helps raise the stream bed.

Beavers return
As BDAs trap sediment, the stream bed rebuilds and forces water onto the floodplain, recharging groundwater. Slower flows allow beavers to recolonize.

A complex haven
Re-established beavers raise water tables, irrigate new stands of willow and alder, and create a maze of pools and side channels for fish and wildlife.

Other Keystone Species

Other keystone species you might encounter here are:



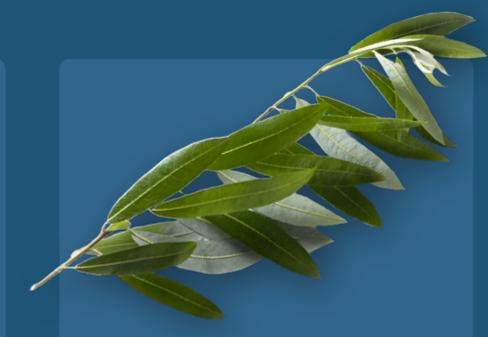
oak trees
Quercus spp.



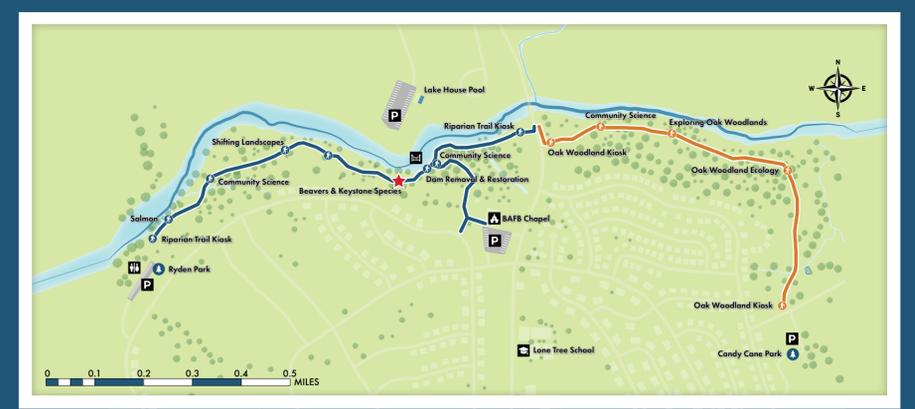
mountain lion
Puma concolor



chinook salmon
Oncorhynchus tshawytscha



willow trees
Salix spp.



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