Pelton Round Butte Fish Committee

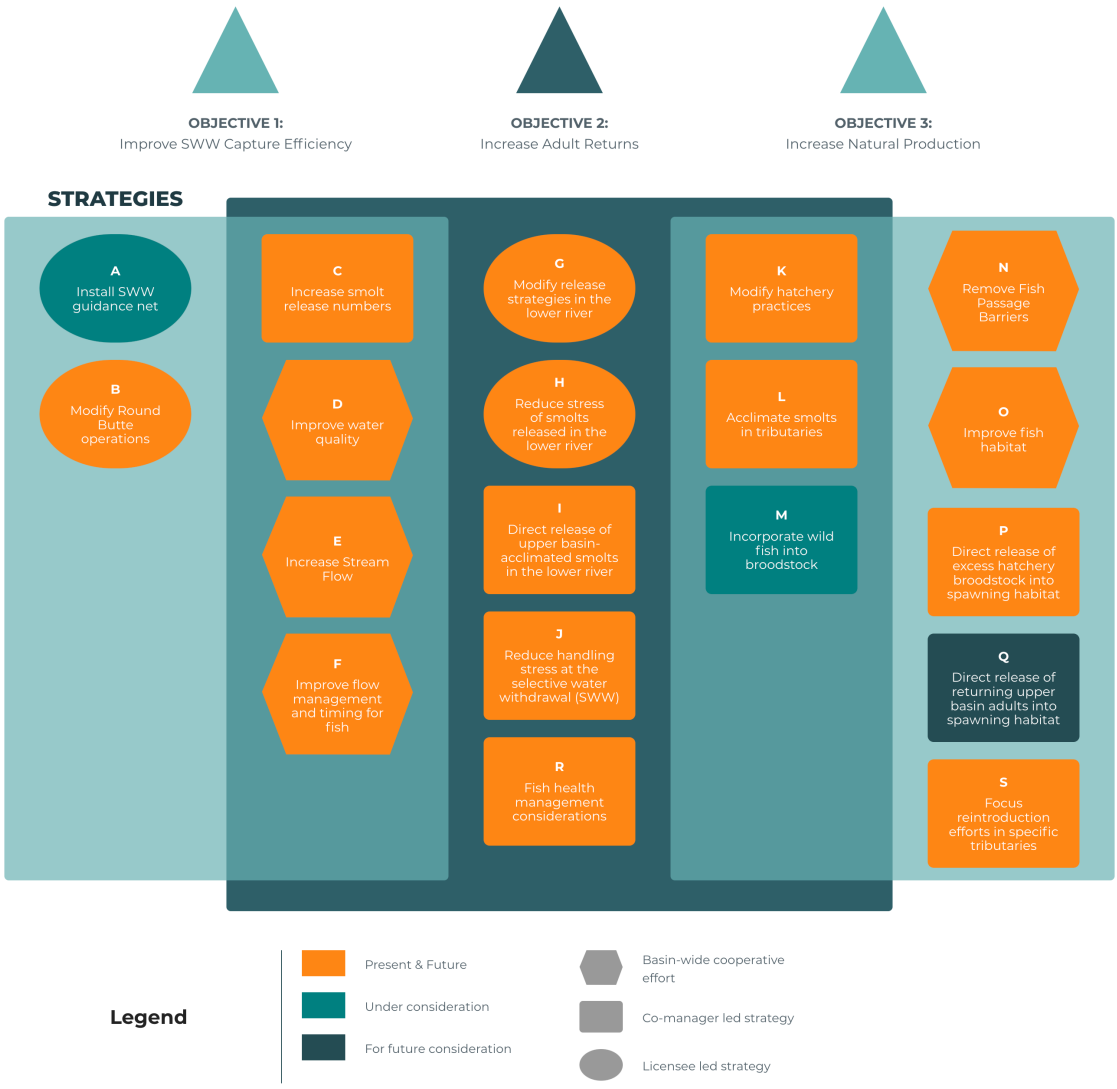
Reintroduction Road Map

The reintroduction road map is a high level guide to strategies current and future, to impact the goal of returning self-sustaining and harvestable runs of spring Chinook, sockeye and summer steelhead to the Upper Deschutes Basin. Learn more about the history and purpose of our work in the Executive Summary.

The road map is organized by objectives with each strategy represented by a shape that indicates who is responsible and a color to illustrate whether strategies are current or planned.

Overview of Reintroduction Road Map

Goal: self-sustaining and harvestable runs of Chinook, sockeye, and steelhead.



STRATEGY

D: Improve Water Quality

Description: Water quality in the Deschutes Basin is affected by a number of human activities. These range from discharge of pollutants from point sources, as well as more diffuse sources such as agriculture and forestry operations. Water quality is also affected by groundwater extraction the storage and release of water from reservoirs, and the diversion and return of water from out-of-stream uses. Water quality poses some challenges for reintroduction, but the nature of these challenges varies by location and includes concerns relating to temperature, dissolved oxygen, pH, algal blooms, turbidity, and hydromodification.

Water quality concerns by waterbody:

- Lake Billy Chinook experiences harmful algal blooms and exceedances of chlorophyll and pH criteria in the summer which, in turn, may affect water quality in the lower Deschutes River.
- The Metolius River has cold, clear water that generally meets Oregon's water quality standards for anadromous fish rearing, spawning, and migration.
- The accessible reaches of the Deschutes River, and its tributaries, exhibit temperature exceedances in the summer and pH exceedances from May through September. If anadromous fish spawning were to occur on the Deschutes River, temperature and dissolved oxygen concentrations would be a concern in May.
- Whychus Creek experiences temperature exceedances in the summer, related to irrigation withdrawal-induced low flows.
- In the Crooked River, temperature and dissolved oxygen concentrations are a concern in the summer and pH is a concern year-round. Total dissolved gases can cause gas bubble disease in fish below Bowman Dam when Prineville Reservoir releases exceed 600 cfs. Temperature, pH, and E. coli are concerns in the tributaries in summer.

Oregon Department of Environmental Quality (ODEQ) will develop a Total Maximum Daily Load (TMDL) for the upper Deschutes Basin in the next few years. This TMDL will establish limits on pollutant sources and expectations for implementing improvements. ODEQ will also continue to work with stakeholders throughout the basin to improve water quality, with the expectation that doing so will lead to improved habitat quality.

Anticipated Outcome: Gradual improvement of water quality and better support of habitat needs for fish and other aquatic life.

Evaluation Method: Ongoing monitoring and mathematical modeling of waterbodies in the basin to establish water quality condition. Cooperation with other monitoring entities to correlate water quality and habitat conditions.

Timeline: Present and Future.

Lead Organization/Agency: ODEQ is responsible for monitoring and assessing water in the Deschutes Basin and throughout Oregon. ODEQ maintains an impaired waters list (303d) that includes waterbodies that do not meet water quality standards. Other stakeholders provide monitoring information used to characterize individual waterbodies, including The Confederated Tribes of the Warm Springs Reservation of Oregon, watershed councils, and Oregon Department of Fish and Wildlife.

Fish Committee Role: No decision-making role, excluding the Project. The Fish Committee will still provide input to DEQ and help prioritize implementation of water quality restoration.

Related Studies/Actions Decisions:

2021 – Water Quality Working Group completed graphic that showed basin-wide water quality issues, where ongoing collaboration to solve them was taking place, and where the highest priority areas and gaps for future work were.

2021 – Completed Final Report on Lower Deschutes River Water Quality Study. The report (https://portlandgeneral.com/about/rec-fish/deschutes-river/water-quality) summarized 2015-2017 water quality monitoring in the three tributaries to Lake Billy Chinook, two sites in each impoundment and numerous sites along the lower Deschutes River and tributaries to the lower river. Monitoring results were then used to calibrate numerical models that allowed forecasts of possible changes to the lower Deschutes River water quality that could result from operational changes at Pelton Round Butte Project.

2019 – Water Quality Workgroup, a subcommittee of the Pelton Round Butte Fish Committee, was formed and tasked with developing management recommendations out of Lower Deschutes River Water Quality Study and increasing public education about water quality issues in the Deschutes River Basin.

2018 – Predicted Impacts of Bowman Dam Fish Passage and Remediation of Gas Bubble Disease on Redband Trout Production in the Crooked River Basin. 2018. Mount Hood Environmental, Boring, OR and Biota Pacific Environmental Sciences, Bothell, WA.

2012 – 303(d) list. https://www.oregon.gov/deq/wq/Pages/2012-Integrated-Report.aspx. Oregon Department of Environmental Quality.

2008 – Lower Crooked River Watershed Assessment. 2008. Crooked River Watershed Council. http://crookedriver.deschutesriver.org/Publications/Technical_Resources/Lower+Crooked+River+Water shed+Assessment+1/default.aspx.

2003 – Upper Deschutes Subbasin Assessment. 2003. Upper Deschutes Watershed Council. https://www.upperdeschuteswatershedcouncil.org/publications/technical/.

Ambient Water Quality Monitoring System. https://www.oregon.gov/deq/wq/Pages/WQdata.aspx. Oregon Department of Environmental Quality.