

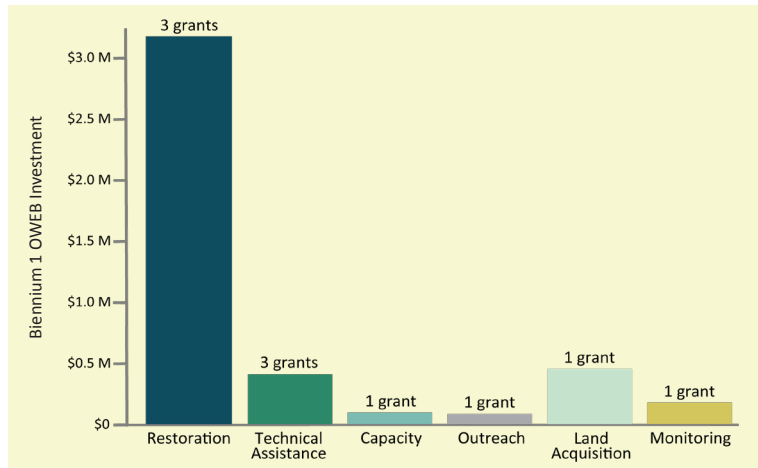


# HABITAT RESTORATION for RESIDENT and ANADROMOUS FISH in the DESCHUTES



The Deschutes Partnership is focusing on restoring habitat conditions to support the successful reintroduction of salmon and steelhead into the Whychus Creek, Metolius River, and lower Crooked River systems. Since the late 1800s, diversion of streamflow for irrigation, construction, and maintenance of irrigation infrastructure, and changes to floodplain areas and bankside vegetation have reduced the amount of habitat available to fish.

## Funding



OWEB awarded \$4,397,794 in funding that leveraged \$11,785,301 in matching funds.

## Benefits

- Protected critical spawning and rearing habitat
- Restored stream habitat
- Increased streamflow
- Eliminated fish passage barriers, allowing for greater habitat access
- Increased awareness and support for restoration through community engagement
- Coordinated monitoring approach to measure progress and quantify outcomes

## About This Report

The Focused Investment Partnership (FIP) grant program is a bold, new conservation approach that supports high-performing partnerships to strategize restoration actions and measure ecological outcomes through coordinated monitoring. In January 2016, the Oregon Watershed Enhancement Board awarded an Implementation Focused Investment Partnership grant to The Deschutes Partnership. This report documents progress made from 2016 to 2017 to meet their strategic action plan goals. Work completed under the FIP grant program is part of a much larger on-going collaborative effort of federal, state and local agencies, private landowners, partners, and non-governmental organizations to restore native fish habitat in the Deschutes Basin.

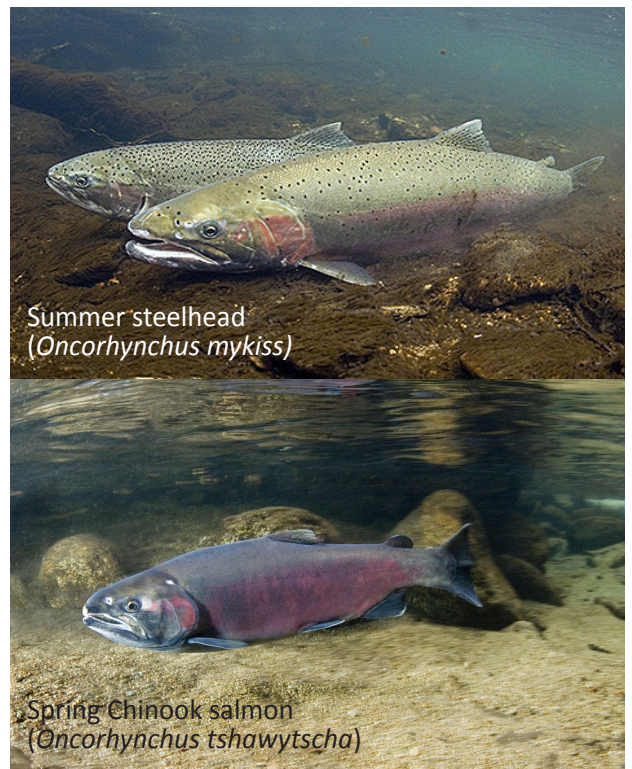


## Goal

Restore stream conditions to support the successful reintroduction of salmon and steelhead into the Upper Deschutes subbasin

## Strategies

- Protect spawning and rearing habitat through land conservation easements and fee purchases
- Restore stream habitat conditions necessary for successful spawning and rearing
- Restore streamflow sufficient to support successful spawning and rearing
- Restore volitional fish passage
- Reduce or eliminate risk of entrainment in irrigation infrastructure
- Engage local communities to increase awareness about and support for reintroduction efforts



Photos by NOAA Fisheries

## Implementation Actions (2016-17)

### Restoration

**120**  
MILES



of improved access to habitat in the Crooked River

**2.5**  
CUBIC FEET per  
SECOND



of added stream flow from an irrigation canal piping project

### Planning

**3**  
DESIGNS



for stream channel and floodplain project, pump station and pipeline, and diversion fish screening projects

### Land Protection

**1**  
STREAM MILE



protected by inclusion in the 130-acre Willow Springs Preserve

### Outreach

**900**  
COMMUNITY  
MEMBERS  
&  
**300**  
STUDENTS



took part in watershed outreach activities

## Near-Term Outcomes (0-10+ Years)

- Increased access to aquatic habitats
- Floodplain is reconnected to stream system
- Riparian vegetation improved
- Increased instream complexity
- Sediment is reduced, improving water quality
- Increased streamflow

## Long-Term Outcomes (20+ Years)

- Quantity and quality of available fish habitat increases
- Fish distribution increases
- Fish mortality in irrigation infrastructure decreases
- Fish population characteristics improve



Opal Springs Dam Fish Passage Project eliminates a barrier to fish migrating up the Crooked River, opening 120 miles of river to Chinook salmon, Middle Columbia River steelhead, and other fish.

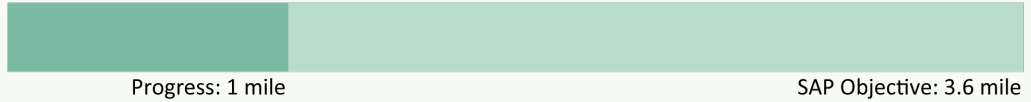


# Strategic Action Plan (SAP) Progress, Biennium 1

## Strategies

Protect instream fish habitat through conservation easements and fee purchases

River Miles Protected



Protect floodplain habitat through conservation easements and fee purchases

Acres Protected



Restore streamflow sufficient to support successful spawning and rearing

Streamflow Restored (cfs)



Remove or modify barriers to restore year-round volitional fish passage

Barriers Removed/Modified



Progress on metrics reflects implementation supported by OWEB funding, and does not represent all progress achieved via other funding sources.

## Monitoring Approach

- Focuses on the core monitoring required to document progress of investments in achieving restoration outcomes at individual project sites
- Identifies indicators in response to hypotheses about the ecological outcomes of each restoration action, including stream habitat restoration, streamflow restoration, and fish passage and screening projects
- Assesses change over time through baseline and post-project data collection and analyses to determine if ecological outcomes linked to restoration actions are being achieved





# Adaptive Management in the FIP

	Restoration		Monitoring		Engagement
Challenges	Funding availability, local support, and project readiness all play a role in project prioritization. These factors can be challenging to balance.	The role of Technical Review Teams in selecting and evaluating FIP projects was not clear at the program's inception.	Linking biological responses to changing physical conditions from stream restoration projects is difficult given the inherent uncertainties in ecological systems.	Adding capacity to collect, analyze, and report data for a robust monitoring program is a challenge.	Undergoing leadership transitions at partnership organizations creates uncertainty among partners.
Lessons Learned	The accelerated timeline for the Opal Springs Dam fish passage project allowed for habitat restoration to occur 3 years ahead of schedule in the Crooked River.	It is important to clarify the roles of reviewers and applicants in the FIP project review process.	Watersheds with unique characteristics require more specialized results chains that more accurately model their system.	There is an opportunity to advance the practice of monitoring in complex stream habitat restoration projects.	A strong commitment to the FIP and effective governance guidance contributed to a smooth transition in FIP leadership.
Adaptations	The scope of the Strategic Action Plan was changed to include Crooked River habitat restoration for Biennium 2 project funding.	Collaboration with OWEB's FIP staff helped refine the Technical Review Team process to match the unique funding model of the FIP program.	Local experts were engaged to develop a results chain for McKay Creek, an intermittent stream, and helped select appropriate outcomes to that system.	Methods to efficiently measure biological and hydrological conditions were identified through stakeholder engagement and leveraging funding outside the FIP program.	The monitoring strategy was presented at three conferences to contribute to a growing body of knowledge on emerging methods to monitor large, multi-faceted restoration projects.



The Three Sisters Irrigation District Main Canal Piping Project began in 2010 prior to the FIP, conserving 13.3 cfs to Whychus Creek. FIP funding enabled the partnership to complete later phases, returning an additional 2.5 cfs more to the creek.

## For More Information

Andrew Dutterer, OWEB Project Manager  
503.986.0034, [andrew.dutterer@oregon.gov](mailto:andrew.dutterer@oregon.gov)

[www.deschutespartnership.org](http://www.deschutespartnership.org)  
[www.oregon.gov/oweb](http://www.oregon.gov/oweb)