



The Deschutes Partnership

Habitat Restoration for Resident and Anadromous Fish in the Deschutes

AQUATIC HABITAT FOR NATIVE FISH SPECIES

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.

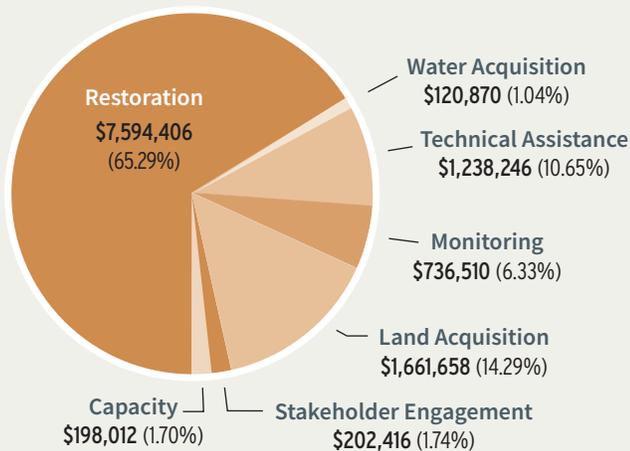


Since the late 1800s, diversion of streamflow for irrigation has reduced natural flows, and modifications to stream channels and the floodplain to support agriculture, residential development, and flood control have reduced the amount and quality of habitat available to fish.

PHOTO Deschutes Land Trust

Funding

OWEB awarded \$11,631,248 in funding with \$25,065,699 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 implement strategic restoration actions and measure ecological outcomes through coordinated monitoring. In January 2016, the Oregon Watershed Enhancement Board awarded a FIP grant to The Deschutes Partnership. This report documents projects for which funding was obligated in Biennia 2-3 (2017-2021) and cumulative progress since the FIP was initiated in 2016. Importantly, obligated funds are funds that have been awarded to a partner through a grant agreement with OWEB though in some cases the funds have not yet been spent and the work therefore has not been completed. This report documents all work that has been completed and that is anticipated through existing grant agreements.

PARTNERS

- Crooked River Watershed Council
- Deschutes River Conservancy
- Upper Deschutes Watershed Council
- Deschutes Land Trust

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 upper Deschutes Basin. **Accomplishments included in the report only reflect actions completed with OWEB FIP funding.**

GOAL

Restore stream conditions to support the successful reintroduction of salmon and steelhead into the upper Deschutes Basin.



- Protect spawning, rearing, and adult migration 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

STRATEGIES

- 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



IMPLEMENTATION ACTIONS FUNDED (2017-2021)

Restoration



17.3 MILES OF IMPROVED ACCESS TO HABITAT in the Crooked River and Whychus Creek (*total 137.3 miles*)

11.53 CUBIC FEET PER SECOND OF ADDED STREAMFLOW from canal piping and water rights transactions

38 ACRES OF FLOODPLAIN OR WETLAND HABITAT to be reconnected

Planning

1 + **3**

CONCEPTUAL DESIGN + TECHNICAL DESIGNS

completed for stream channel and floodplain restoration projects (*7 total*)

Land Protection

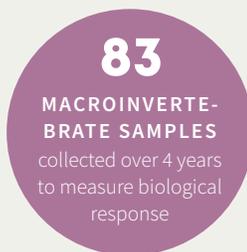
3.5 + **285**

STREAM MILES + FLOODPLAIN ACRES

protected by inclusion in Whychus Canyon and Ochoco Preserves (*total 4.5 miles*)

Monitoring

16 WATER QUALITY MONITORING SITES spanning 46.7 miles



18 SITES where streamflow and groundwater are monitored

Engagement



16 WRITTEN AGREEMENTS with private landowners resulting in 16 conceptual restoration plans completed

9 TECHNICAL & COMMUNITY REPORTS PRODUCED and 3 riparian restoration trainings hosted

25 VOLUNTEERS & TEACHERS TRAINED and enlisted to assist with future restoration activities

500

COMMUNITY MEMBERS participated in riparian restoration and stewardship (*1,400 community members total*)

(The metrics shown reflect actions that have been completed or for which funding has been obligated in Biennia 2 and 3. Metrics in parentheses include Biennium 1 accomplishments.)



OUTCOMES

Observed Near Term 0-10+ YEARS

- Increased access to 137.3 miles of aquatic habitats
- Floodwaters access 76 acres of reconnected floodplain
- Riparian vegetation is improved within 68 floodplain acres
- Instream complexity is 6x greater along 1 restored valley mile

Expected Near Term

- Sediment is reduced, improving water quality
- Increased streamflow

Expected Long Term 20+ YEARS

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

FIP Initiative Progress, Biennia 1-3

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, fish passage, and screening projects

Temperature monitoring continues to be a key metric to understand how restoring streamflow can improve temperature and therefore when and if temperature standards for salmon and steelhead are being met. Monitoring stream temperatures at a watershed scale deepens understanding about the value streamflow restoration has delivered over two decades – and how much work remains.

- 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

The partnership continues to monitor biological metrics including juvenile fish density, adult fish habitat use, macroinvertebrate richness and abundance, and riparian and wetland vegetation conditions and physical metrics including depth to groundwater, channel morphology and amounts of wood and pools.

Monitoring Lessons Learned

- Monitoring efforts have created an opportunity to focus on other results that will increase knowledge about the value of restoration work. For example, the depth to groundwater monitoring has led to questions about groundwater interactions with surface water and if there might be temperature benefits from floodplain restoration that may be studied and discovered over time.
- The partnership will explore setting up benchmarks or milestones that can be distributed over a timeframe of 25 years or more to provide direction and a sense of intermediate progress that can be effectively communicated.
- The partnership focused more energy and resources toward evaluating the effectiveness of a new restoration methodology called “Stage 0” restoration.

Adaptive Management

Restoration

CHALLENGES / OPPORTUNITIES

Projects have been delayed or encountered complications that have forced them to be pushed further out in time than planned



LESSONS LEARNED

More complex projects require greater coordination with multiple partners and regulatory or management agencies

Habitat restoration projects on private land often require a higher degree of patience - it is not unusual to delay an action due to landowner uncertainty

Wildfires, wildfire risk, or extreme flooding can delay project schedules for multiple years

Securing non-OWEB funding can cause delays to the partnership's implementation schedule

New and existing permitting requirements have caused delays

The pandemic has exacerbated most of the above listed challenges

Land ownership changes across the FIP geography are unpredictable but common



ADAPTATIONS

The partnership has learned how to adaptively manage individual projects and the larger project queue in response to the dynamic funding and implementation environment

Partners are exploring how to revise management plans to better incorporate wildfire response and wildfire management

Funding

CHALLENGES / OPPORTUNITIES

Predictable, sustained funding required to meet Strategic Action Plan objectives



LESSONS LEARNED

The partnership has had consistent success enlisting other funding sources and partners into projects, programs, and reporting

OWEB FIP funding and leveraged match represents a significant financial investment - however, the cost to fully meet objectives across the FIP geography is still very high

The FIP program eliminated competition for funding among the partners and allowed for the strategic pursuit of restoration actions in the SAP that would not have been possible through OWEB's open solicitation

The partnership had to frequently adapt as funder program policies changed



ADAPTATIONS

The partnership will endeavor to increase the resources available to increase the pace and scale of needed change in the geography to benefit native fish and other desired outcomes.

Planning

CHALLENGES / OPPORTUNITIES

Progress Monitoring Framework (PMF) value to the partnership



LESSONS LEARNED

The PMF has provided limited value over a 6-year timeframe due to the very long time-scales of ecological restoration

The results chain was a useful visual tool to communicate the partnership's work with others



Strategic Action Plan changes

The Strategic Action Plan has not evolved over the course of the FIP initiative given the initial set of priority projects was in place at the beginning - the partnership did not have the capacity to do more than what was committed



ADAPTATIONS

The results chain process was applied during the initiative to identify the most important parameters for monitoring a new initiative priority

The partnership plans to revisit and update the Strategic Action Plan to identify priority actions beyond the initial 6-year FIP implementation period

Adaptive Management, continued

Partnership Capacity

CHALLENGES / OPPORTUNITIES

Partnership staff retention and turnover



Relationships with non-FIP organizations

Open Solicitation Grants are not available to non-partnership organizations operating within the FIP geography



LESSONS LEARNED

One of the four people that developed the Strategic Action Plan and other partnership documents now remains as part of the partnership

Turnover has created opportunities for new staff to bring new and creative ideas for how to accomplish the shared work of the partnership

An established functioning partnership and OWEB as a funder have helped maintain momentum despite staffing changes

Having a strategic action plan and governance documents helps organize the partnership despite change in representation for various partners

Consistent and predictable FIP program funding and continued successful project proposals helped maintain program director and project manager positions at partner organizations

One of the biggest challenges the partnership faced was the question of how to incorporate the restoration priorities of organizations that are not part of the partnership



ADAPTATIONS

The partnership will continue to adhere to procedures outlined in the partnership's Operations Manual to address staff turnover

The partnership will seek greater coordination with organizations currently outside of the partnership as it makes post-FIP plans

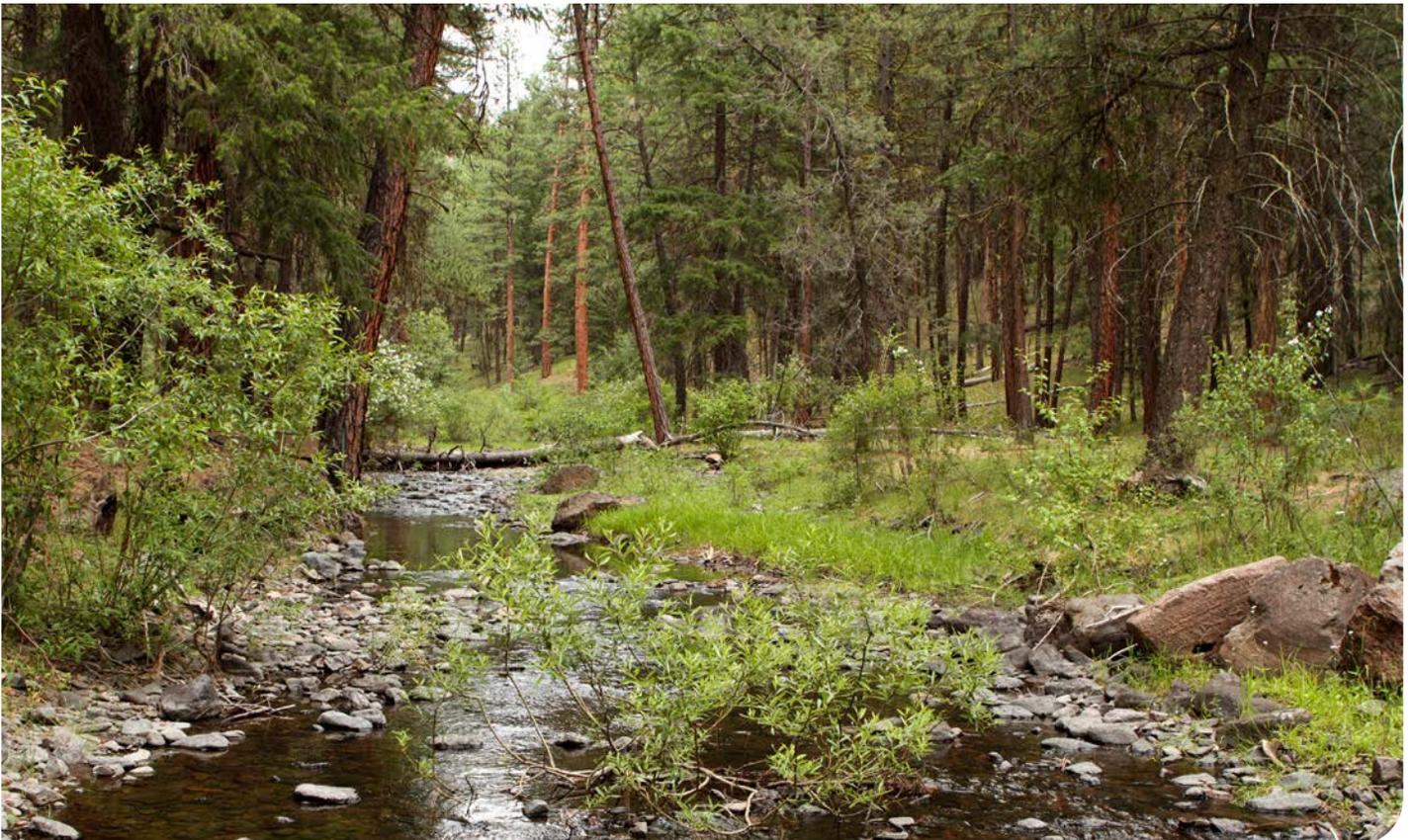


PHOTO Deschutes River Conservancy

Addressing Climate Change

The partnership's SAP does not specifically address climate change. However, each partner organization has integrated climate change information into their work.

- The Upper Deschutes Watershed Council, Deschutes River Conservancy, and the Deschutes Land Trust provided comments in the drafting of the Deschutes Basin Habitat Conservation Plan to encourage the development of a stream temperature goal instead of a specific streamflow target.
- In order to address the expanding threat of climate change, the partnership has shifted focus toward restoration projects that store water to mitigate a reduction in average annual snowpack and faster melt rates. For example, floodplain reconnection projects and beaver dam analogs (BDAs) can lead to greater groundwater storage in areas with high infiltration rates.
- Some project types have required a second look. For example, planting projects have suffered from less water availability and plant survival rates have decreased compared to the last decade. The risk/benefit evaluation does not support significant planting unless there is some assurance that available water will be sufficient to support plants.
- The current SAP does not specifically address climate change and a more robust integration will be part of future revisions to the plan.
- The Land Trust will prioritize conserving lands that are resilient and adaptable to the changing climate by using climate resilience as a screening tool in selecting ecological and community projects and developing funding and capacity for working farm, ranch and forest projects that support sustainable agriculture and have potential to sequester carbon.
- The Land Trust seeks to demonstrate stewardship practices that mitigate and support adaptation to climate change on their preserves. The Land Trust completed a Climate Change Strategy in 2017 and is in the process of updating it. This strategy is implemented across all programs within the organization.

Constraints on the partnership's ability to incorporate climate change considerations into initiative or project planning.

- The partnership lacks sufficient funding and capacity to evaluate or incorporate climate change adaptation strategies as well as any relevant benefits resulting from their implemented actions.
- The unpredictable nature of climate change impacts occurring from one year to the next challenges partner organizations' ability to plan appropriate actions. This is mostly a scale problem where the partnership cannot determine what level of 'buffer' against impacts to pursue, develop, and apply. The partners attempt, with the best available information, to build resiliency into each project, but whether these efforts are effective or appropriate is very difficult to evaluate.



PHOTO Deschutes Land Trust/Jay Mather