



DESCHUTES
SPECIAL INVESTMENT PARTNERSHIP
**ACCOMPLISHMENTS
SUMMARY REPORT**



Deschutes River Conservancy



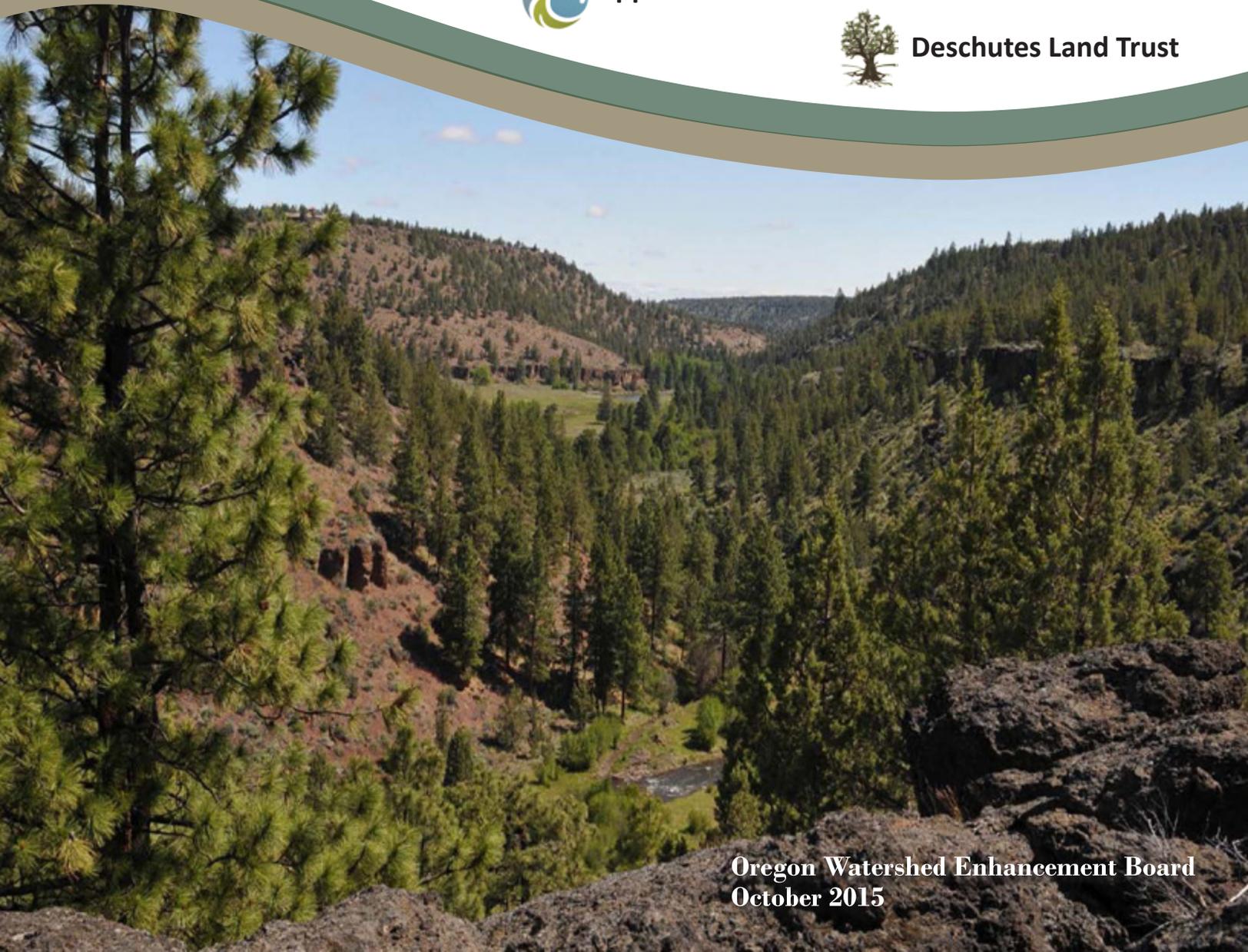
Crooked River Watershed Council



Upper Deschutes Watershed Council



Deschutes Land Trust





DESCHUTES SPECIAL INVESTMENT PARTNERSHIP

ACCOMPLISHMENTS SUMMARY REPORT

In January 2008, the OWEB Board allocated funding to initiate the Deschutes Special Investment Partnership (DSIP). The goal of the DSIP is to restore the physical and biological conditions necessary to support self-sustaining populations of wild salmon and steelhead in the Metolius River, Whychus Creek and Lower Crooked River watersheds within the Deschutes River Basin. The DSIP focuses on 226 miles of historic habitat for salmon and steelhead (see map on p. 4) because this is the target geography of the ongoing reintroduction efforts led by Portland General Electric (PGE) and the Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO) as part of the relicensing of the Pelton-Round Butte dams on the Deschutes River. Specific strategic actions focus on addressing limiting factors (low instream flow, elevated water temperatures, unscreened and impassable irrigation diversions, degraded instream habitat, limited protection of high-quality areas, and rivers disconnected from their floodplain) by increasing streamflow, improving fish migration and access to habitat,

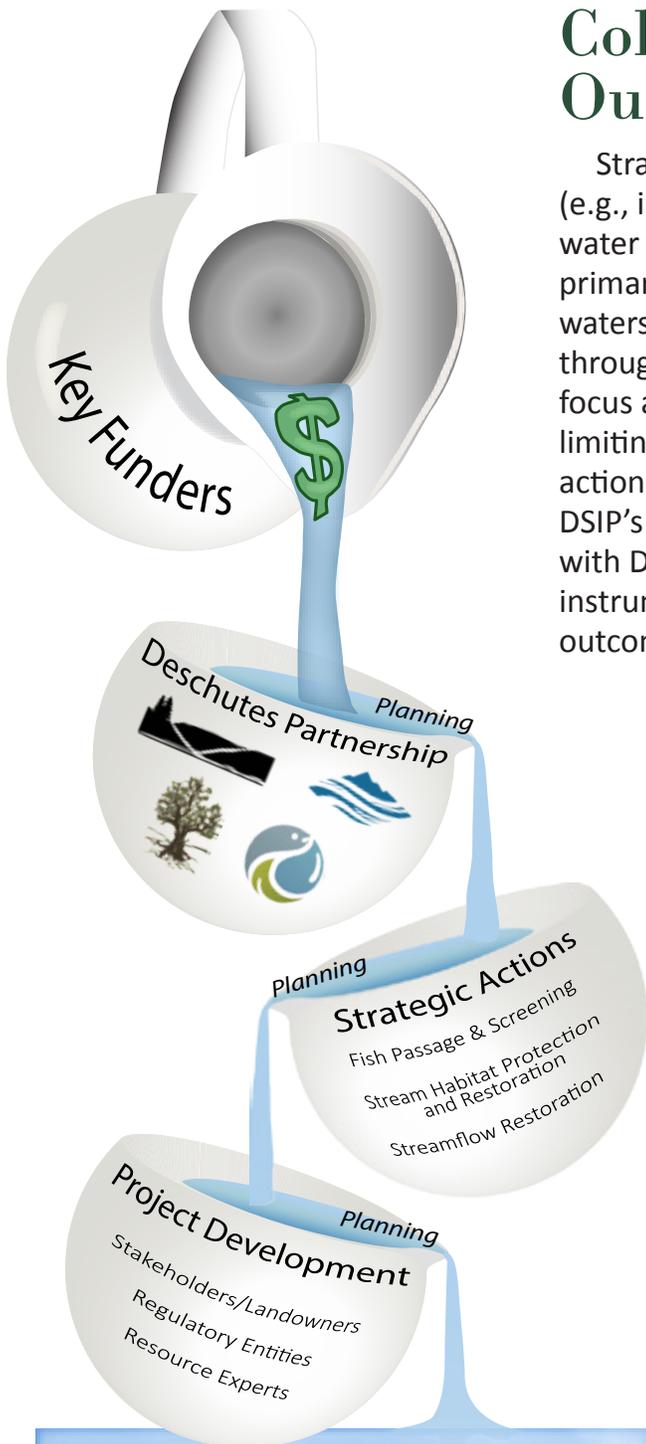
and protecting and restoring stream and floodplain habitats. This report provides an overview of the extent to which DSIP partners are making progress towards achieving their three desired ecological outcomes across the three watersheds for the reporting period 2008-2015.

Strategic Partners

The DSIP is a funding partnership between OWEB, the primary funder, and the Deschutes Partnership (DP), composed of four local implementers – Upper Deschutes Watershed Council (UDWC), Crooked River Watershed Council (CRWC), Deschutes Land Trust (DLT), and the Deschutes River Conservancy (DRC). Formalized in 2005, the DP provides the foundation for developing the mechanics of the DSIP program, including fundraising, program development and coordination, project prioritization, implementation, and monitoring. The support and participation of local stakeholders, especially landowners, is critical for project success. Key funding partners include Bonneville Power Administration, National Fish and Wildlife Foundation's Columbia Basin Water Transactions Program, the Pelton Round Butte Fund, US Bureau of Reclamation, Bonneville Environmental Foundation and the US Fish and Wildlife Service, with supplemental funding provided by other partners. The DSIP also benefits from complementary implementation work conducted by other organizations, including the Oregon Department of Fish and Wildlife (ODFW), CTWSRO, PGE, City of Prineville, City of Sisters, the Three Sisters Irrigation District (TSID), and others.

Collective Ecological Outcomes

Strategies are designed to achieve specific outputs (e.g., increased streamflow) and outcomes (e.g., reduced water temperature) that will collectively address the primary limiting factors in a given area (e.g., stream reach, watershed, etc.). The dedicated, long-term funding provided through the DSIP has drawn attention to the geographic focus area and generated momentum to address the area's limiting factors. The DP synergistically leveraged restoration actions from several entities to move towards meeting the DSIP's primary goal. The collective actions accomplished with DSIP funding and additional leveraged projects were instrumental in achieving the following ecological outcomes:



Whychus Creek Watershed

- Habitat protection and restoration efforts have improved conditions that are necessary for the reintroduction of salmon and steelhead.
- Increased streamflows are a major contributor toward lowering water temperatures an average of 3.5°F since 2002.
- The aquatic macroinvertebrate community has shifted toward a more cold water temperature-tolerant community since 2005.

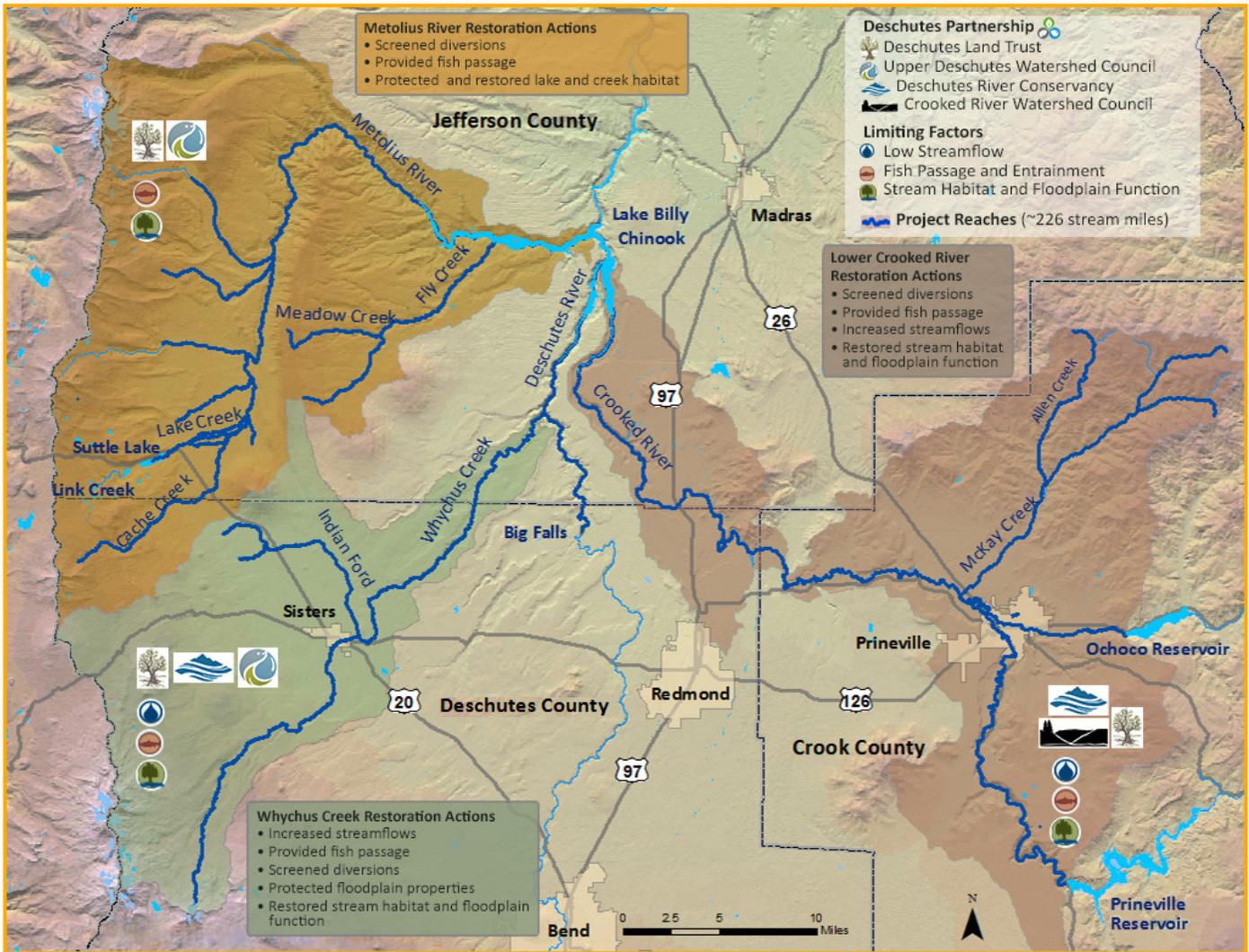
Lower Crooked River Watershed

- The restoration of 21 cubic feet per second (cfs) and the removal of three fish passage barriers on the mainstem Lower Crooked River have reconnected key river and tributary habitat to give Chinook salmon and steelhead the ability to access 107 miles of habitat. In 2014, adult steelhead were observed for the first time since reintroduction efforts began in the Crooked River downstream of Bowman Dam and the first steelhead redd was documented in McKay Creek, confirming that fish are successfully accessing these upstream habitats.

Metolius River Watershed

- Removing fish passage barriers will allow sockeye salmon to reach Suttle Lake, spawn in its upper tributaries, rear in the lake, and migrate downstream to complete its life cycle. This is one of only two historic sockeye populations in Oregon.





The DSIP emphasizes on-the-ground restoration actions, which are prioritized and selected based on a combination of factors, including ecological need, project readiness, the role of partners, political support, funding availability and strategic sequencing. The selected actions are intended to address limiting factors within each watershed, rather than take a single approach across all watersheds. For example, the DP chose to focus a majority of their restoration actions in the Lower Crooked River on addressing low streamflows and unscreened/impassable irrigation diversions even though other limiting factors, such as degraded instream habitat and disconnected floodplains, are present in the watershed and would not be addressed by these types of projects. Instream and riparian habitat restoration will occur in the future, once fish passage and screening is complete. In contrast, in Whychus Creek the DP pursued all of these project types concurrently because the conditions, capacity and opportunity allowed them to move forward simultaneously. The table below summarizes the restoration actions undertaken in each DSIP watershed by comparing the ecological need within the watersheds to the funding emphasis placed on the selected restorations.

Deschutes SIP Action Matrix

Watershed	Streamflow/Water Quality Restoration	Stream Habitat Protection & Restoration	Fish Passage & Screening
Whychus Creek	●●●	●●●	●●●
Metolius River		●●	●●●
Lower Crooked River	●●	●	●●●

Legend

Level	Ecological Need	Funding Emphasis
Low		●
Medium		●●
High	●●●	●●●

Fish Passage and Screening

Limiting Factors

Impassable and unscreened irrigation diversions pose significant threats to successful anadromous fish reintroduction efforts because they block upstream and downstream migration and threaten to trap fish in irrigation canals.

Objectives

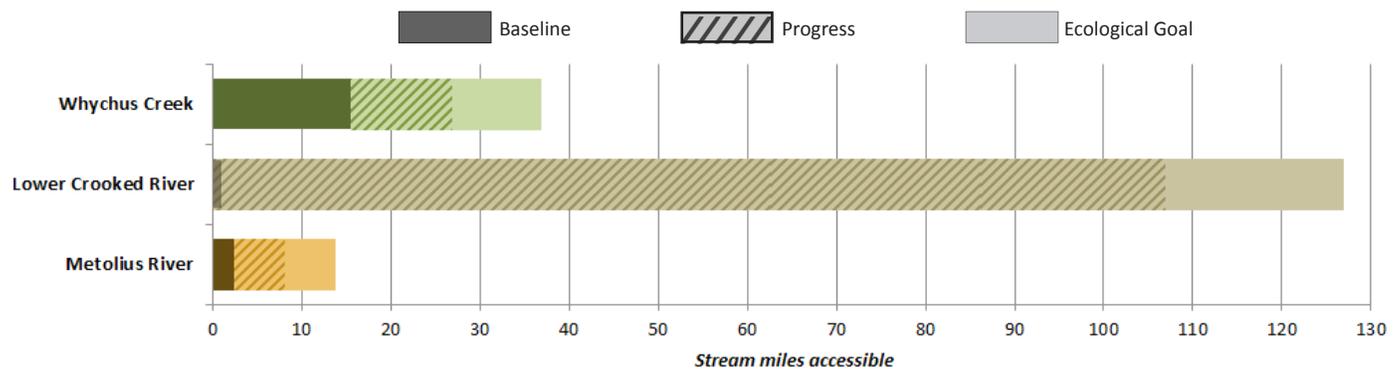
- Provide unimpeded, volitional fish passage at artificial barrier sites.
- Eliminate threats of fish entrapment in unscreened diversion conveyance systems.

Actions Taken

- Improved passage at diversions, road crossings, and dams.
- Removed diversion dams.
- Screened or decommissioned pumps and diversions.

Progress Towards Project Outputs and Ecological Outcomes

Providing fish passage



Whychus Creek Watershed

The UDWC has improved passage at 5 of the 6 existing fish barriers, creating access to an additional 11.3 miles of habitat. Beginning at its confluence, fish can now swim from the Deschutes River 26.8 miles up Whychus Creek.

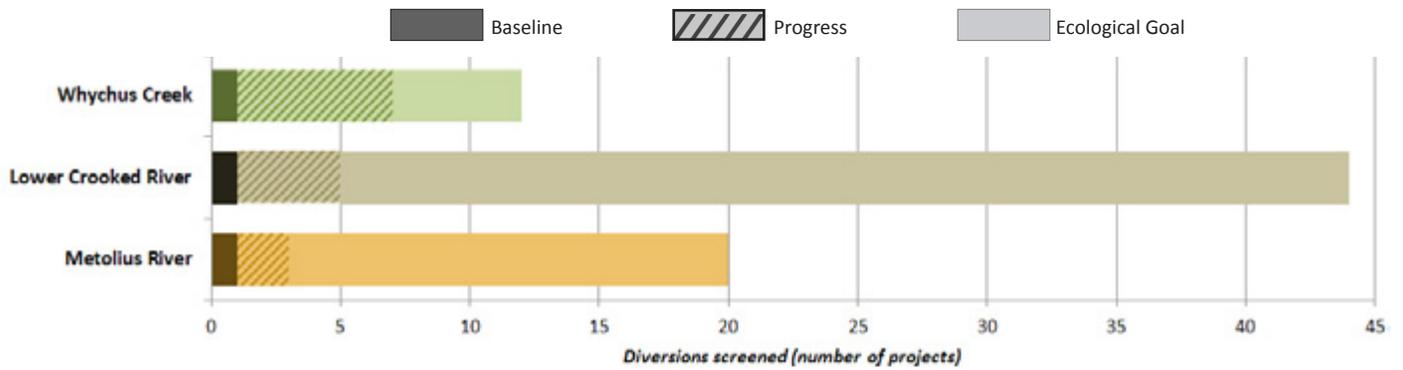
Lower Crooked River Watershed

The CRWC has improved passage at 8 of the 12 fish barriers in the Crooked River, McKay and Ochoco Creeks, creating access to an additional 107 miles of habitat.

Metolius River Watershed

The UDWC has improved passage at four fish barriers on Lake Creek, allowing access to Suttle Lake and Link Creek which contain native spawning grounds for sockeye salmon. Removing these barriers has increased the accessible habitat by 5.8 stream miles.

Screening diversions



Whychus Creek Watershed

The UDWC has decommissioned or screened a total of 7 of 12 irrigation diversions, thus reducing the flow rate through unscreened diversions by 87%.

Lower Crooked River Watershed

The CRWC has retrofitted 4 of 44 irrigation diversions with fish screens including the two largest diversions in the mainstem Lower Crooked River.

Metolius River Watershed

The UDWC has retrofitted 2 of 20 irrigation diversions with fish screens, thus reducing the flow rate through unscreened diversions by 20%.



HIGHLIGHT:
Suttle Lake
 in the Metolius Watershed

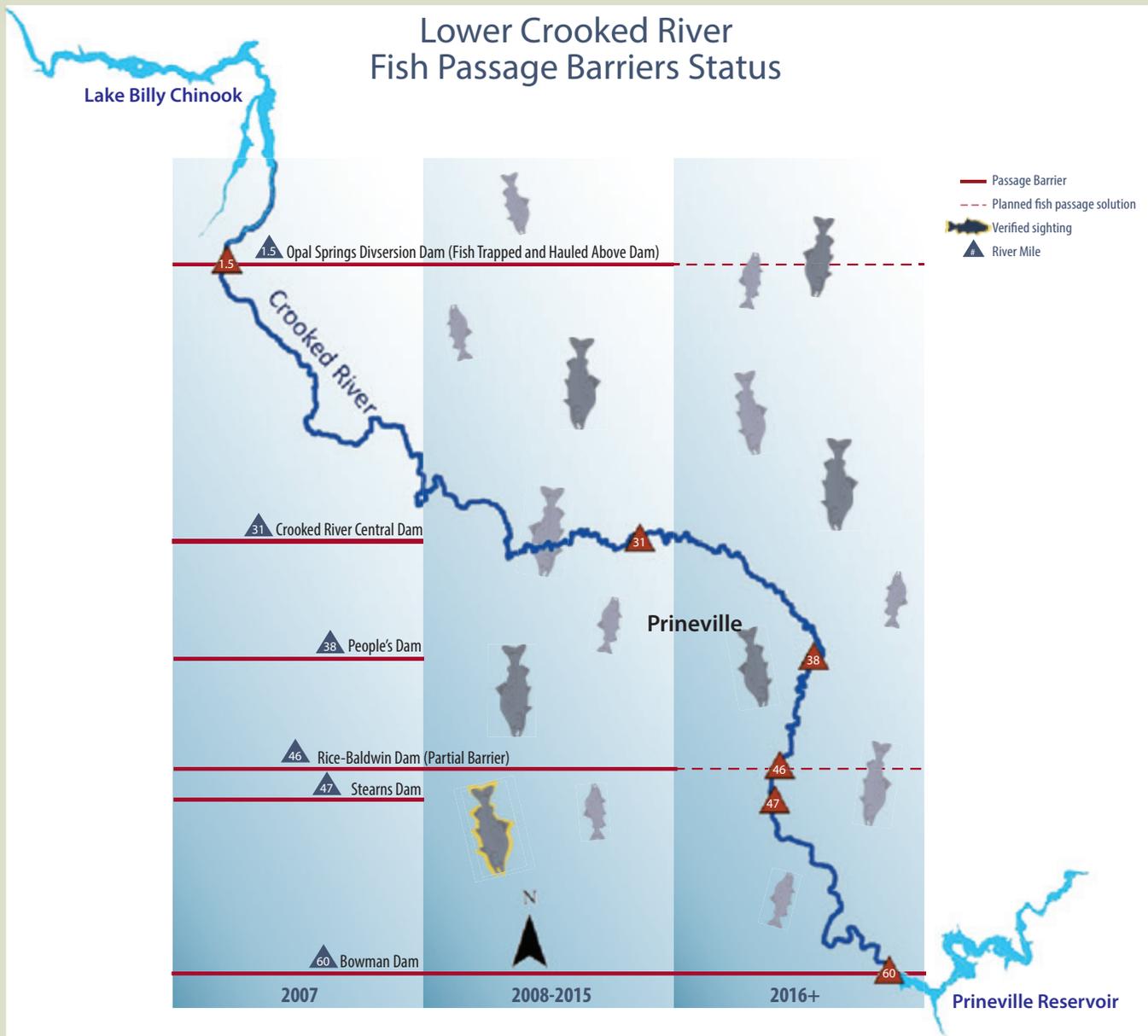
The UDWC partnered with the Sisters Ranger District to retrofit a decades-old dam to improve juvenile and adult passage in one of only two lakes in Oregon that historically supported native sockeye runs. In addition, the DLT and USFS worked together to improve passage and habitat conditions downstream of the lake to allow sockeye salmon to reach vital lake habitats to complete its life cycle.



HIGHLIGHT:

Lower Crooked River Watershed

The fish passage projects implemented by the CRWC in the mainstem Lower Crooked River are essential for fish to access key habitats in the mainstem and tributaries. Stearns Dam was completely removed, a fish ladder and screen were installed at the Crooked River Central diversion, and a bypass channel was built at the People's Irrigation District's diversion dam to allow returning adult fish and downstream migrating juvenile fish to complete their life cycle.



Stream Habitat Protection and Restoration

Limiting Factors

More than 150 years of human intervention has resulted in many miles of channelized streams and disconnected floodplains, causing the loss of wetlands, riparian areas, and instream fish habitat.

Objectives

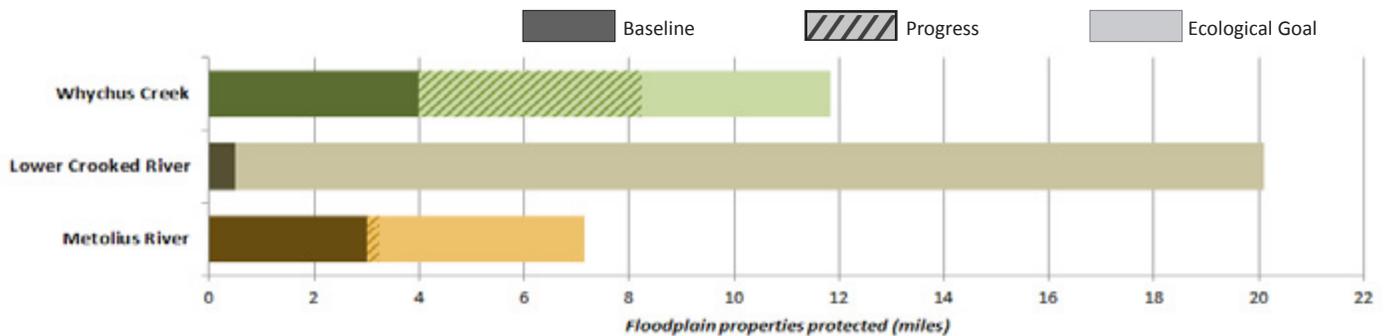
- Reverse the effects of historic channel manipulations and prevent future degradation by utilizing permanent land conservation tools.
- Restore stream and floodplain habitat to support spawning and rearing of salmon and steelhead.
- Acquire lands to provide land base to restore important habitats.

Actions Taken

- Developed conservation easements and purchased land.
- Restored instream and riparian habitat by adding large woody debris and reconnecting floodplains and side channels.
- Increased riparian area plant diversity, cover, and potential for large wood recruitment by planting trees and shrubs.

Progress Towards Project Outputs and Ecological Outcomes

Stream Habitat Protection



Whychus Creek Watershed

The DLT has protected 2,200 acres of land and 8 miles of stream, including 6 contiguous miles on 3 properties. SIP-funded projects have protected a total of 936 acres and 4.25 miles on 3 preserve sites.

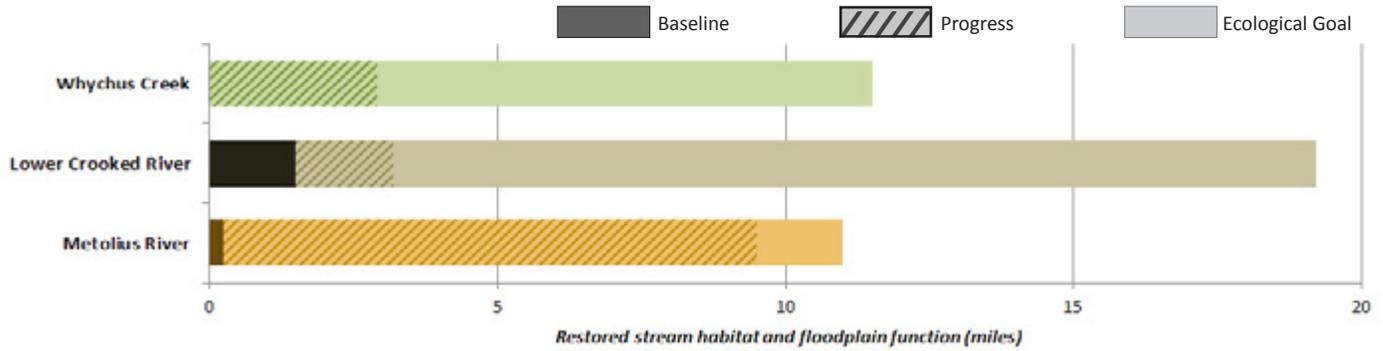
Lower Crooked River Watershed

Currently, no riparian or floodplain habitat has been permanently protected through acquisition or conservation easement as part of the DSIP. However, DLT is working with local farmers and ranchers to implement working lands conservation easements. This innovative tool will keep existing farms and ranches intact while providing economic incentives to dedicate appropriate floodplain areas for fish and wildlife habitat.

Metolius River Watershed

The DLT protected the headwaters of Spring Creek, a stream that contributes one-third of the Metolius River's flow and provides important spawning habitat.

Stream Habitat Restoration



Whychus Creek Watershed

The UDWC has restored 2.9 miles of previously channelized stream and floodplain habitat, including the addition of more than 250,000 native plants and construction of 4.5 miles of side channels critical to rearing salmon and steelhead.

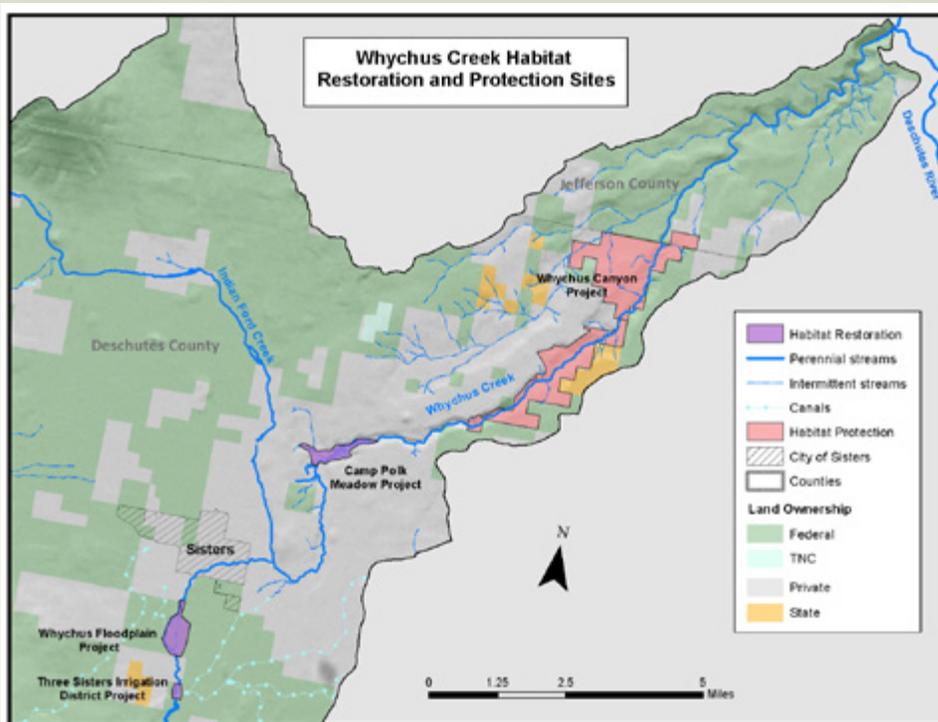
Lower Crooked River Watershed

The CRWC has restored nearly 1.7 miles of stream and floodplain habitat on McKay and Ochoco Creeks. Additional restoration along the mainstem Crooked River is proposed to be completed with the last round of DSIP funding.

Metolius River Watershed

The UDWC has completed two key stream habitat and floodplain restoration projects to improve habitat along 9.5 miles of the Metolius River and in its tributary streams.

HIGHLIGHT: Whychus Creek Watershed



Working toward connecting important habitat along the creek downstream of Sisters, DLT has protected more than 8 miles (3,041 acres) of stream and floodplain habitat, adding to 7.8 miles of already-protected federal land. UDWC stream and floodplain habitat restoration projects have added to the network of protected lands to improve the conditions that are necessary for resident and anadromous fish.

Streamflow Restoration

Limiting Factor

Low instream flow is a primary limiting factor for fish throughout the reaches targeted by the DP for restoration. Low streamflow is linked to elevated stream temperatures, limited opportunities for the establishment of healthy riparian plant communities, reduced fish access to instream and off-channel habitat, and reduced fish spawning and rearing habitat availability during spring and early summer.

Objectives

- Increase streamflows during critical periods to meet ODFW's instream water right target.
- Decrease stream temperatures to meet Oregon Department of Environmental Quality's (ODEQ's) standard to protect migrating and rearing fish life history stages.

Actions Taken

- Acquired irrigation water rights from urbanizing lands.
- Leased water rights from municipal and agriculture water users.
- Piped and lined leaking irrigation canals and permanently protected the conserved water instream.
- Developed management agreements with local irrigation districts to ensure the effectiveness of streamflow restoration efforts.



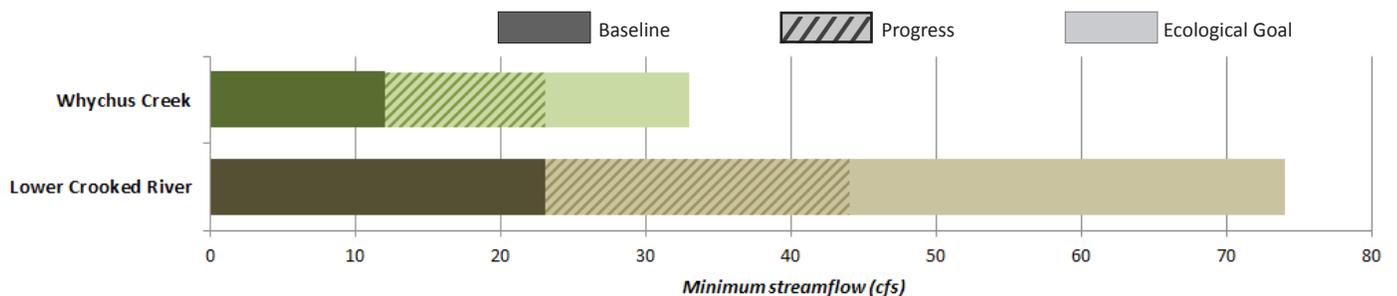
Irrigation diversion dam in the Lower Crooked River



Whychus Creek after removal of the Leithausen Dam

Progress Towards Project Outputs and Ecological Outcomes

Increased Streamflow



Whychus Creek Watershed

Between 1960 and 1999, Whychus Creek ran dry an average of two of every three years.

Minimum streamflows during the DSIP period have increased from 12 cfs to 23 cfs. These increased streamflows have facilitated extensive floodplain and instream restoration along the creek, contributing to a reduction in summer water temperatures by an average of 3.5°F.

Lower Crooked River Watershed

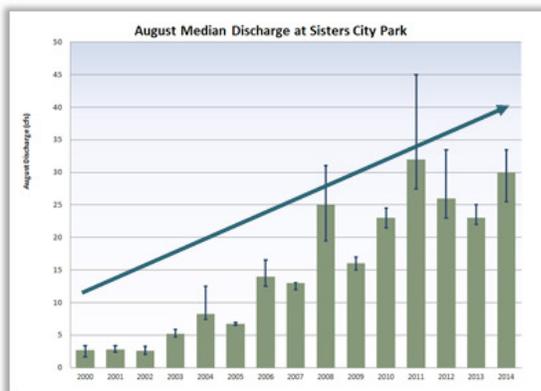
The North Unit Irrigation District and the DRC developed a program to increase streamflows in the river by incrementally replacing the district's Crooked River water rights with Deschutes River water rights and protecting the associated Crooked River water rights instream. Since 2010, the DSIP has funded two projects and permanently restored 21 cfs of streamflow to benefit resident and anadromous fish in the Crooked River.

Metolius River Watershed

There is relatively little water diverted for irrigation in the Metolius subbasin and flow is not a limiting factor.

HIGHLIGHT: Whychus Creek Watershed

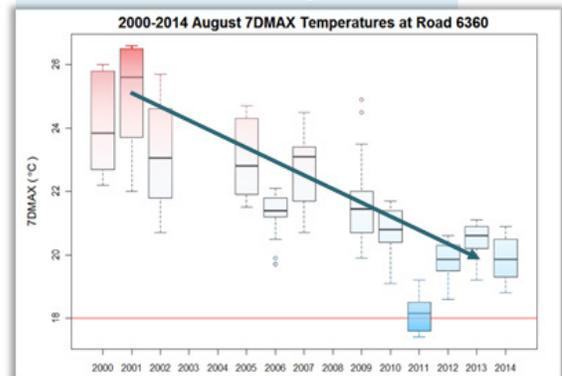
Monitoring data allowed partners to describe what measurable ecological outcomes were achieved when restoring streamflow in Whychus Creek.



Output:
Increased Streamflow

Action:
Streamflow Restoration

Outcome:
Reduced stream temperatures



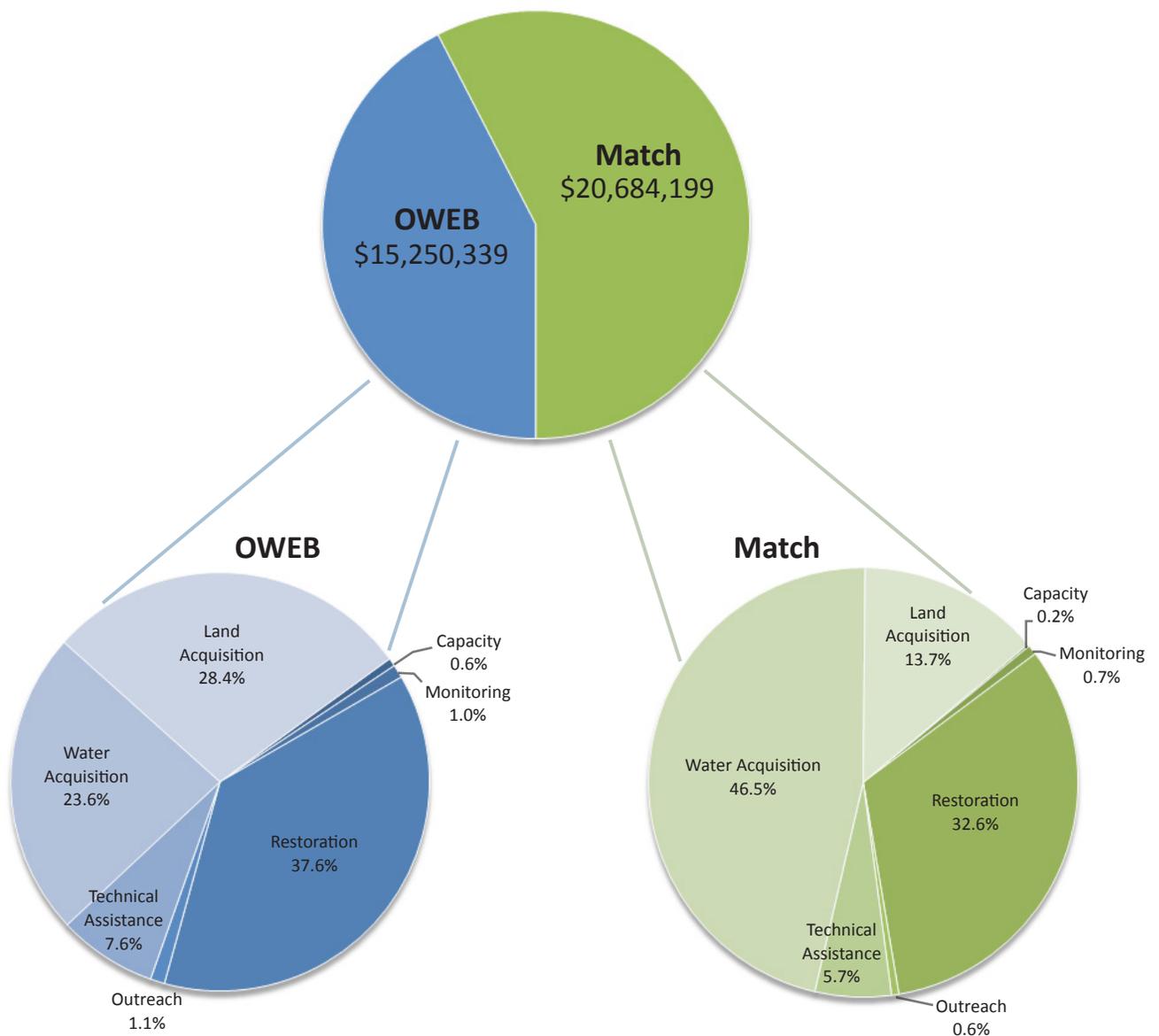
Outcome:
Thriving cold-water bugs!



Summary of Contributions

As of September 2015, OWEB has awarded over \$15 million in funding to the DSIP, with the partners leveraging another \$20 million through matching funds. The OWEB funds have been allocated in relatively equal proportion across the three main strategic actions: increasing streamflow, improving fish migration and access to habitat, and protecting and restoring stream and floodplain habitats. OWEB has also provided more than \$1 million in technical assistance funding used to plan and develop designs for stream restoration and fish passage projects. There is \$2,115,494 remaining in the Deschutes SIP account, which includes the \$1 million allocated by the Board in April 2015 for transitional funding. These remaining funds are scheduled to be awarded by the end of 2015 to pending grant applications that are currently under review and in a final grant application cycle that will occur in the fall of 2015. After these funds are spent, OWEB's investment in the DSIP will total \$17,365,833.

**DSIP Funding
(Grants Awarded 2008 - Present)**



Separately Leveraged Projects

The underlying premise behind the DSIP of focusing efforts on specific restoration actions in particular geographic areas helped generate momentum to accomplish related projects not planned for within the DSIP timeframe. These “separately leveraged projects” are key to reaching collective ecological outcomes. Below are several examples of such projects:

- The Ochoco Irrigation District and ODFW contributed to meeting the DSIP’s fish passage objectives by separately implementing the Jones Dam Fish Passage project in McKay Creek.
- The DSIP’s assistance in piping the main canal in the Three Sisters Irrigation District has allowed TSID to extend piping work to the rest of the district by upgrading laterals and on-farm systems. This will lead to a fully piped district that will use water very efficiently.
- Trout Unlimited and volunteers planted native trees and shrubs, built water breaks, installed steps, and completed other low-impact trail improvements to reduce erosion and sediment impacts along the Metolius River.

Local Economy and Community Outcomes

OWEB’s investments have supported the regional “restoration economy.” Local restoration-related businesses in the area are opening or expanding and specifically focusing on providing services needed for completing restoration projects. Examples include:

- Implementation of irrigation efficiency and fish passage/screening projects allowed TSID to invest in additional equipment and staff.
- Local heavy equipment contractors have assembled crews and equipment specifically reserved for implementing stream restoration projects during the in-water work period.
- Specialized consulting firms addressing water, natural resource management, and engineering needs for restoration projects have been established in the region to respond to the emerging demand for these services spurred by DSIP investments.

Outreach efforts have engaged stakeholders on several fronts and community outcomes are quickly being realized.

- As a result of their children’s involvement in UDWC outreach programs, the owners of the Clearwater Art Gallery in Sisters selected the UDWC to be the beneficiary of its Wild River Art Show.
- As a result of the highly successful Sisters High School Stewardship Program, Sisters Middle School recently began piloting a similar program to connect younger students to local rivers and streams through hands-on stewardship projects.
- As a result of the Sisters City Manager’s children participating in the Sisters High School Stewardship Program, he asked the UDWC to offer hands-on opportunities for students to participate in riparian restoration activities at Creekside Park. Sixty-five students planted hundreds of native plants for riparian restoration along Whychus Creek.

Reflections

Funder's Perspective

Much of what has been learned in the DSIP has been incorporated into the development of the Focused Investment Partnership (FIP) process. For example, the FIP program provides a specific funding process for capacity building to assist in strengthening existing partnerships prior to receiving dedicated implementation funding. Another lesson learned was the requirement for partnerships to develop a completed strategic action plan that sets clear and measurable targets relative to achieving ecological outcomes prior to FIP selection and implementation.

Funders and partners recognize that ecological outcomes are achieved over time and may not be realized immediately after project implementation, making long-term monitoring necessary. A comprehensive monitoring plan needs to be developed at the outset of the funding initiative and data should be collected for a period of time before and after restoration actions are completed for accurate documentation of ecological response. The Whychus Creek Monitoring Plan is a good model for replication in future strategic investments because it utilized these principles, and also because OWEB and other partners provided the long-term funding commitments necessary to complete the monitoring activities. As a result, the Whychus Creek Monitoring Plan has been integral to the DP's success in documenting DSIP ecological outcomes.



Whychus Creek

Feedback to the OWEB Board from the Practitioners' Perspective

After securing reliable funding for conservation and restoration, the DSIP became more efficient and increased their collaborations. This significantly changed the pace at which projects advanced from concept to implementation. In a similar fashion, the partners benefited from having more funding available for technical assistance. For example, designs for the Opal Springs Fish Passage project could not have been completed as quickly and as efficiently under OWEB's Regular Grant Program, in which technical assistance funding is capped at \$50,000. The larger, generally more complex SIP work frequently required a greater investment in technical assistance.

Being among the first recipients of focused funding from OWEB, DSIP practitioners offer the following lessons learned and recommendations.

Partnerships

- Organize the partnership structure and governance early in the initiative, paying particular attention to defining and coordinating partners' roles. This makes for smoother transitions through inevitable changes.
- Identify core competencies that represent each partner's greatest potential contribution to the overall goal of the partnership, which reduces confusion, inefficiencies, overlap, and unnecessary competition.
- Recognize that the success of each organization is dependent on the success of the others, requiring a commitment to an integrated approach to fundraising, planning, implementation, and monitoring.

Projects/Programs

- Engage the partners in strategic action planning prior to implementing projects.
- Identify what will be monitored and why. Start monitoring before implementing actions.
- Focus on big-picture outcomes instead of on smaller-scale outputs.
- Focus on building strong, resilient programs that can survive change (e.g., staff turnover).
- Be flexible and creative when dealing with setbacks, such as delays in funding and permitting (e.g., have back-up plans and projects).

Funding and Administration

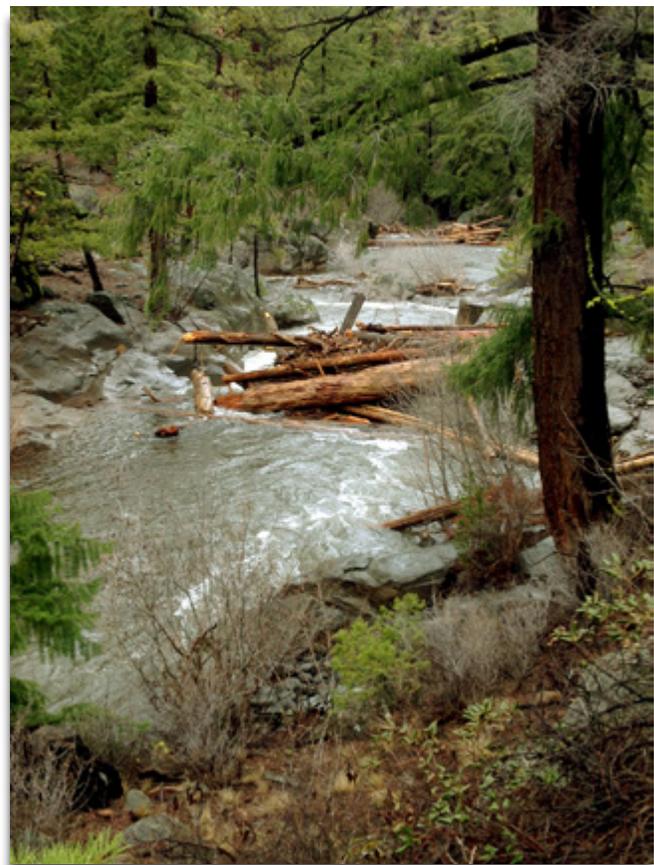
- Allocate adequate time for coordinating partners, administering grants, and reporting to funders.
- Keep excellent records and track communications, which provide essential historical context as changes occur.
- Develop a system and protocols for reviewing each organization's applications to OWEB to ensure consistency across all programs, geographies, and organizations.

Looking Ahead

The accomplishments of the Deschutes Special Investment Partnership will continue to be realized as ongoing projects are completed and the last round of OWEB-funded projects are implemented. The Deschutes Partnership will continue operating to achieve their desired ecological outcomes by strategically addressing limiting factors in the Whychus Creek, Lower Crooked River, and Metolius River Watersheds.



Fish ladder in the Lower Crooked River



Fish habitat restoration in the Metolius

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Oregon
Watershed Enhancement Board
October 2015