

# CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

## Policy Session Worksheet

**Presentation Date:** 5/8/2018      **Approx. Start Time:** 10:30am      **Approx. Length:** 30 min

**Presentation Title:** Watershed Councils and Soil & Water Conservation District of Clackamas County Annual Report

**Department:** Business & Community Services

**Presenters:** Rick Gruen, County Parks & Forest Manager; Cheryl McGinnis, Executive Director, Clackamas River Basin Council; Andrew Collins-Anderson, Executive Director, North Clackamas Urban Watersheds Council; Asako Yamamuro, Executive Director, Molalla River Watch Watershed Council

**Other Invitees:** Rita Baker, Greater Oregon City Watershed Council  
Daniel Newberry, Johnson Creek Watershed Council  
April Olbrich, Tualatin River Watershed Council  
Anna Rankin, Pudding River Watershed Council  
Terri Riggsby, Tryon Creek Watershed Council  
Steve Wise, Sandy River Basin Council  
Lisa Kilders, Clackamas Soil and Water Conservation District

### WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

Informational update from the Watershed Councils and Soil and Water Conservation District (SWCD) of Clackamas County

### EXECUTIVE SUMMARY:

Over 20 years ago, the Oregon Legislature established the Oregon Plan for Salmon and Watersheds. Motivated by the conviction that Oregon must devise its own response to listings of coho and other salmon species under the federal Endangered Species Act (ESA), the plan quickly developed into an unprecedented statewide program to preserve and benefit from Oregon's natural resources. Since then, Watershed Councils have become an important component of watershed restoration and natural resource management in Oregon.

The Board of County Commissioners (BCC) provides recognition of local needs for watershed council formation to the Oregon Watershed Enhancement Board (OWEB). Currently, there are ten Watershed Councils and one Soil and Water Conservation District actively engaging landowners and community members in stewardship throughout Clackamas County. In addition to protecting and restoring fish, these organizations also encourage voluntary protections for water quality and habitat. As the source of drinking water throughout the County, the health of these watersheds is vital to the well-being of its residents.

Clackamas County and the Watershed Councils have partnered on many recreation and natural resource projects over the years. A few examples of project types include hosting river clean ups, making park improvements at Barton, Carver, and Metzler Parks, as well as transportation system improvements. Together, these organizations have worked to restore over 200 miles of fish passage under county road crossings (e.g., Porter Road at Delph Creek and Spring Creek).

Watershed Council Directors and SWCD Staff come before the Board annually to provide updates on current recreation and management planning, volunteer activities, as well as ongoing economic and social benefits of this continued natural resources work.

**FINANCIAL IMPLICATIONS (current year and ongoing):**

Is this item in your current budget? N/A

What is the cost? N/A

What is the funding source? Various (see below)

Funding for these Councils and SWCD come from a number of sources, including Secure Rural Schools Act Funding (Title II), federal and/or state grant awards (Retained Receipts, OWEB, etc.) as well as charitable donations from individuals and businesses in Clackamas County.

**STRATEGIC PLAN ALIGNMENT:**

- Honor, Utilize, Promote and Invest in our Natural Resources

**LEGAL/POLICY REQUIREMENTS:**

N/A

**PUBLIC/GOVERNMENTAL PARTICIPATION:**

BCS's County Parks & Forest division, the watershed councils and SWCD partner on a variety of projects that promote and enhance outdoor recreation and natural resource management in Clackamas County, including water quality protection and improvements.

**OPTIONS:**

N/A

**RECOMMENDATION:**

N/A

**ATTACHMENTS:**

1. Annual Reports from Watershed Councils and Soil & Water Conservation District
2. Watershed Councils and Soil & Water Conservation District of Clackamas County Presentation

**SUBMITTED BY:**

Division Director/Head Approval

Department Director/Head Approval

County Administrator Approval



*For information on this issue or copies of attachments, please contact Rick Gruen at 503-742-4345*



# Clackamas River Basin Council 2017 Annual Report

*We foster partnerships for clean water and to improve  
fish and wildlife habitat and the quality of life for  
all those who live, work, and recreate in the Clackamas watershed.*

# Clackamas River Basin Council

## 2017 Annual Report

*When the river thrives, we all thrive –  
especially when we work together!*

### Letter from the Board Chair & Director

Every day is a great day to be on, in or near the Clackamas River, and we see that you agree:

- Over 650 volunteers dedicated 4,131 hours volunteering with us!
- We are completing shading to cover 30 miles of streams with many enrolled property owners -- private landowners, agricultural businesses, industrial lands, public parks.
- Individuals turn out in waves as stewards of this gem of a river to plant over 140,000 trees, remove 1.9 tons of waste and recyclables from the river, and attend workshops.
- A shelter was built at the Rock Creek confluence with the Clackamas River to hold future outdoor learning opportunities. Students learn about native trees and shrubs and about water quality as they sample for macroinvertebrates.
- A record number 111 people attended the Clackamas Watershed Celebration where we raise funds to protect and restore the river and for a future Clackamas River Basin Council home office.

We are committed to continuously improve our Council's decision making and work in the Clackamas River watershed. Thank you for your involvement. We all thrive working together!

Ron Blake  
Chair of the Board of Directors

Cheryl McGinnis  
Executive Director

### 2017 At a Glance

2017 marked another successful year of restoration, education, and water quality as well as habitat protection for the Clackamas River Basin. Over the course of the last year, we:

- ~ Planted **141,765** native trees and shrubs at **24** different sites on **5** miles of streams in the Basin, graduated **28** landowners, toward reaching a goal of **30** miles in the Shade Our Streams program;
- ~ Treated **63** acres of invasive plant species (weeds that compete with beneficial native trees and shrubs that provide food for wildlife, provide natural filtering of groundwater before entering local streams and provide shade over our waterways);
- ~ Together with **248** volunteers, collected **1.9** tons of garbage during our 15th Annual Down the River Clean Up;
- ~ Distributed **3,000** Stash the Trash bags, helping to encourage users to pack it out and keep trash from making it into the river;
- ~ Hosted **6** work parties, planting over **900** native plants with the help of **293** volunteers (for a total of **1,060** volunteer restoration hours!);
- ~ Released **1,000** fish fry with assistance from **100** curious students and their teachers!



Thank you for your support over the past year, from all of us at CRBC!

The Clackamas River Basin Council (CRBC) is a local, voluntary watershed council formally recognized in 1996 by the Clackamas County Board of County Commissioners incorporated in the State of Oregon with non-profit 501(c)(3) status. The Council benefits local communities as we *foster partnerships for clean water and to improve fish and wildlife habitat and the quality of life for all those who live, work, and play in the Clackamas watershed.*



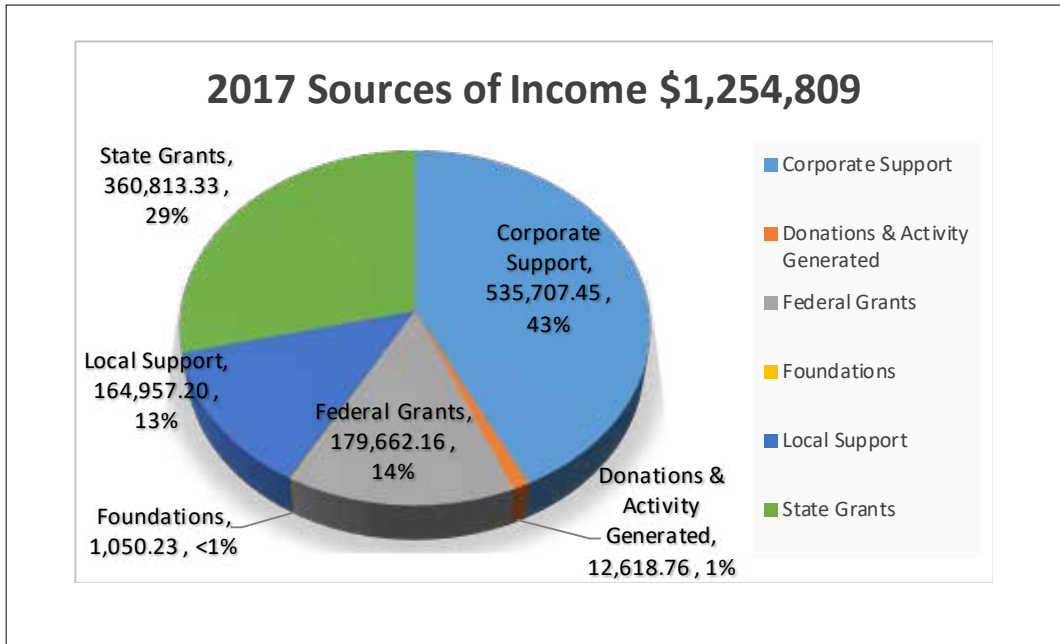
# Financial Resources

## Revenue

Work in the watershed was generously supported by corporations, donations, foundations, and grants:

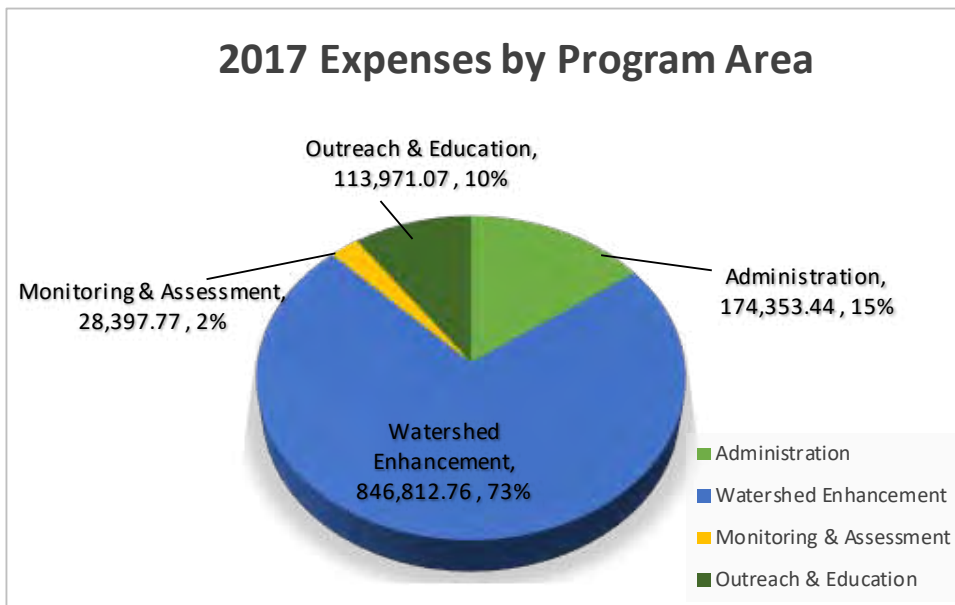
Clackamas County Water Environment Services  
 Clackamas River Water Providers  
 Clackamas Soil & Water Conservation District  
 Corporate Partners & Foundations  
 Individuals and Local Communities  
 Oregon Department of Agriculture

Metro  
 Oregon Watershed Enhancement Board  
 Pediatric Associates of the Northwest  
 Portland General Electric  
 SOLVE  
 US Forest Service

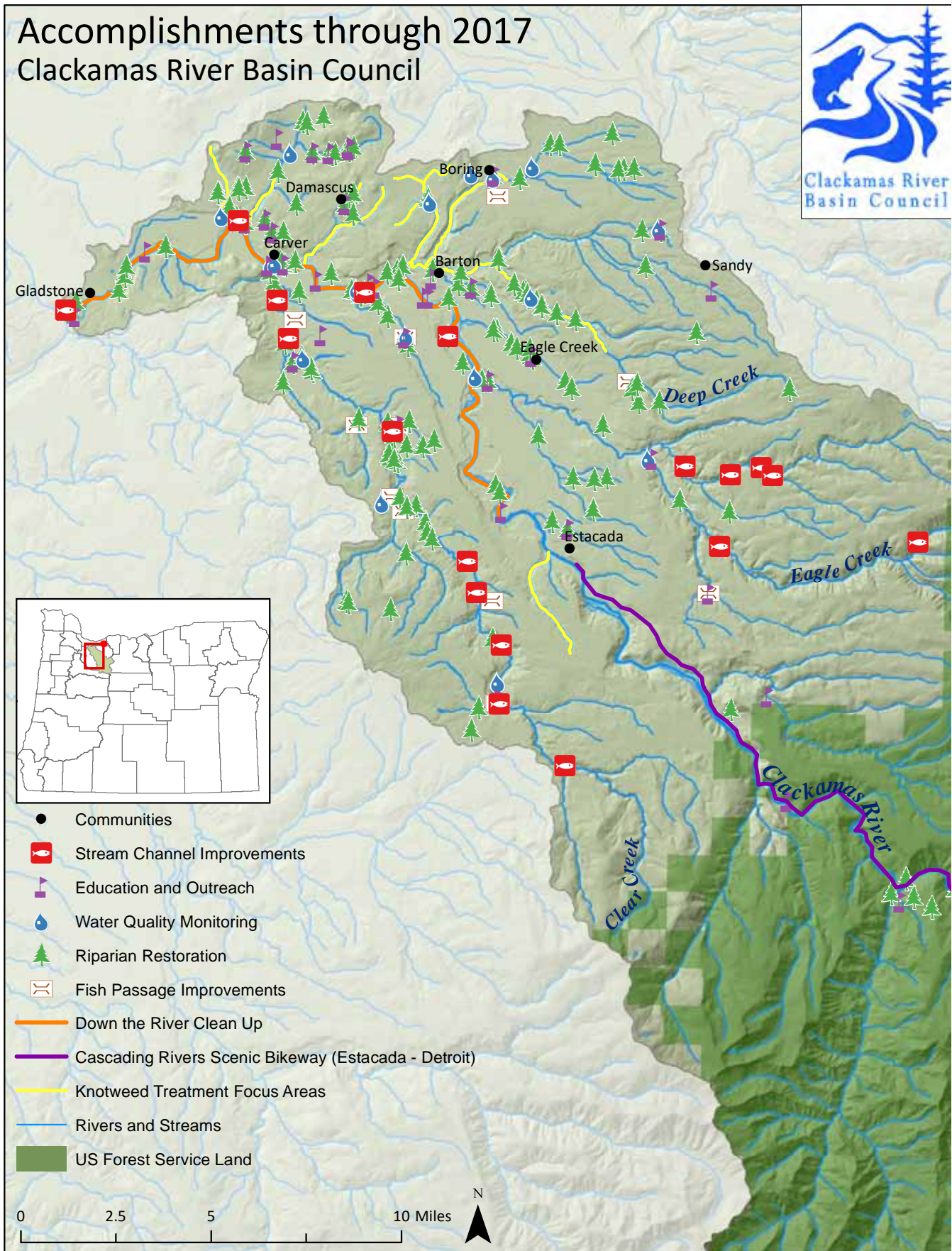


## Expenses

Our activities emphasize on-the-ground projects dedicated to watershed enhancement, water quality monitoring, and education and outreach. Administrative functions were held to 15% of all expenditures.



*The Clackamas River Basin Council  
has nearly two decades of proven results transforming the watershed*



# Watershed Enhancement

*Partnerships hold the key to the health of our river - Clackamas River Basin Council partners with public and private agencies and our community members to improve in-stream and riparian conditions.*

Clackamas River streambanks got a little greener from five miles of riparian native trees and shrub plantings through our **Shade Our Streams** program. Shade Our Streams is our signature program for partnering with streamside landowners to plant native trees and shrubs on the stream banks after ridding their properties of invasive weeds. Our goal is to complete 30 miles of streambank planting from 2012-2020 and as of 2017 over **25 miles were planted!** These planted miles provide water quality protections by filtering ground water, stabilizing soils along banks, providing shade and improving habitat for fish and wildlife. Participating landowners are helping to improve the water quality for everyone in the watershed!



During the summer we broke ground on the second phase of an important side channel restoration project at Fisher's Bend on the Clackamas River. The Fisher's Bend side channel is known to be a preferred habitat type for migrating native, ESA-listed anadromous salmon and steelhead, but this riparian habitat has been isolated from the main stem of the river except in very high flows. Habitat diversity is minimal due to the loss of large wood in the channel and minimal native plants. The restoration of this site is important to improve the process and functions of the significant habitat type along this degraded section of river.

Restoration during Phase I reconnected the main stem Clackamas to the floodplain with approximately **970** linear feet of off-channel alcove. Phase II reconnected the new alcove to the historic side channel inlet, creating a fully functioning **2,350** foot main stem side channel during high flows. Large wood structures and boulders were placed for habitat complexity, and native revegetation of the riparian area and the floodplain reconnection will decrease soil erosion. Wood was also added to a small pond at the project site to create native turtle habitat! The primary goal of the overall project was to provide refuge and off-channel rearing habitat during high flow periods for threatened juvenile salmonids at a critical stage in their life cycle.

Other 2017 restoration projects included ongoing riparian vegetation restoration at **Rock Creek Confluence** and other **Rock Creek** watershed sites. We also monitor the health of our streams and involve people in protecting water quality.

# Education & Outreach

## 2017 Local Volunteerism ~ a \$102,000 Value

*from over 650 volunteers!*

2017 was another banner year for CRBC outreach, education, and volunteer engagement. With the help of **293** volunteers, we planted over **900** native trees and shrubs, released **1,000** fry into Clackamas River tributaries, removed **63** acres of invasive plants, and removed over **1.9** tons of garbage from the Clackamas during Down the River Clean Up.

**6,000** Stash the Trash bags were distributed throughout the watershed in the 12th year of the successful program. We added **65** acres to the Parting With Pesticides Pledge program, with **10** new residents taking the pledge in 2017.



248 volunteers removed 1.9 tons of debris from the Clackamas River following the 2017 summer recreation season. Students from La Salle Catholic College Preparatory are picture above, tracking the trash as they go!



Students participate in hands-on activities in the watershed as they plant native trees, learn about the salmon life cycle, clean up the river banks, and release fry into Clackamas River tributaries.



Volunteers planting native trees and shrubs at a Fisher's Bend work party in the fall.



As part of our Parting with Pesticides Program, CRBC has launched its new Pesticide Pledge Program to educate property owners about the wise use of pesticides and the availability of alternatives.



# Our CRBC Team

## Our Board of Directors

### Officers:

Ron Blake, Chair— Water Providers  
Bill Monroe, Chair-Elect — Recreation Interests  
Jackie Tommas, Secretary — Environmental Interests  
Dave Albrecht, Treasurer — Education/Youth  
Dick Jones, Past Chair — Water Providers

### Stakeholder Representatives:

Todd Bartlett — Commerce  
John Borden — Environmental Interests  
Bryon Boyce — Tributary Property Owners  
Ris Bradshaw — Mainstem Property Owners  
Aaron Caldwell — Agriculture  
Douglas DeHart — Fish and Wildlife  
Gary Guttridge — Tributary Property Owners  
Lowell Hanna — Citizens at Large  
Michael Karnosh — Native American Tribes Interests  
Dave Kleinke — Citizens at Large  
Bill Lenon — Small Woodlot Owners  
Nick Loos — Local Utilities  
Earlean Marsh — Rural CPO  
Jim Rice — Commercial Wood Products  
Guy Rodrigue — State Natural Resource Agency  
Gail Shaloum — Special Districts  
Tim Shibahara — Local Utilities  
Ivars Steinblums — Citizens at Large  
Kelly Warren — Native American Tribes Interests  
Gwen Collier  
Jack Williamson — US Forest Service Liaison  
Bruce Zoellick — BLM Liaison



Front row: Gwen Collier, Jackie Tommas, Aaron Caldwell, John Borden, Todd Barrett, Earlean Marsh, Bill Lennon; 2nd row: Dave Albrecht, Bill Monroe, Ron Blake, Doug DeHart, Tim Shibahara, Gail Shaloum, Lowell Hanna; Back row: Nick Loos, Ivars Steinblums, Bryon Boyce, Ris Bradshaw, Dave Kleinke

## Our Staff



Jennifer Sampson, Fiscal & Administrative Assistant, Charlie Ylijoki, Field Activities Coordinator, Cheryl McGinnis, Executive Director, Zachary Bergen, Restoration Project Manager, Christine Johnson, Communication & Program Specialist, Suzi Cloutier, Outreach & Stewardship Coordinator

**For more information about the Clackamas River Basin Council, find us:**

### Online:

[www.clackamasriver.org](http://www.clackamasriver.org)

### By mail:

PO Box 1869  
Clackamas, OR 97015

### In person:

5427 Glen Echo Avenue  
Gladstone, OR 97027

### By phone:

503-303-4372

### By email:

[info@clackamasriver.org](mailto:info@clackamasriver.org)

### Attend our Council meetings:

3rd Thursday of each month  
6:00pm - 8:30pm held at:  
Mt Scott Fire Station  
9339 SE Causey Ave  
Clackamas, OR 97086

### Follow us: @ClackamasRiver



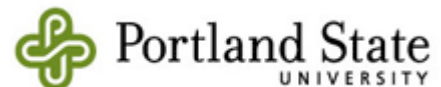
Prepared by CRBC Staff

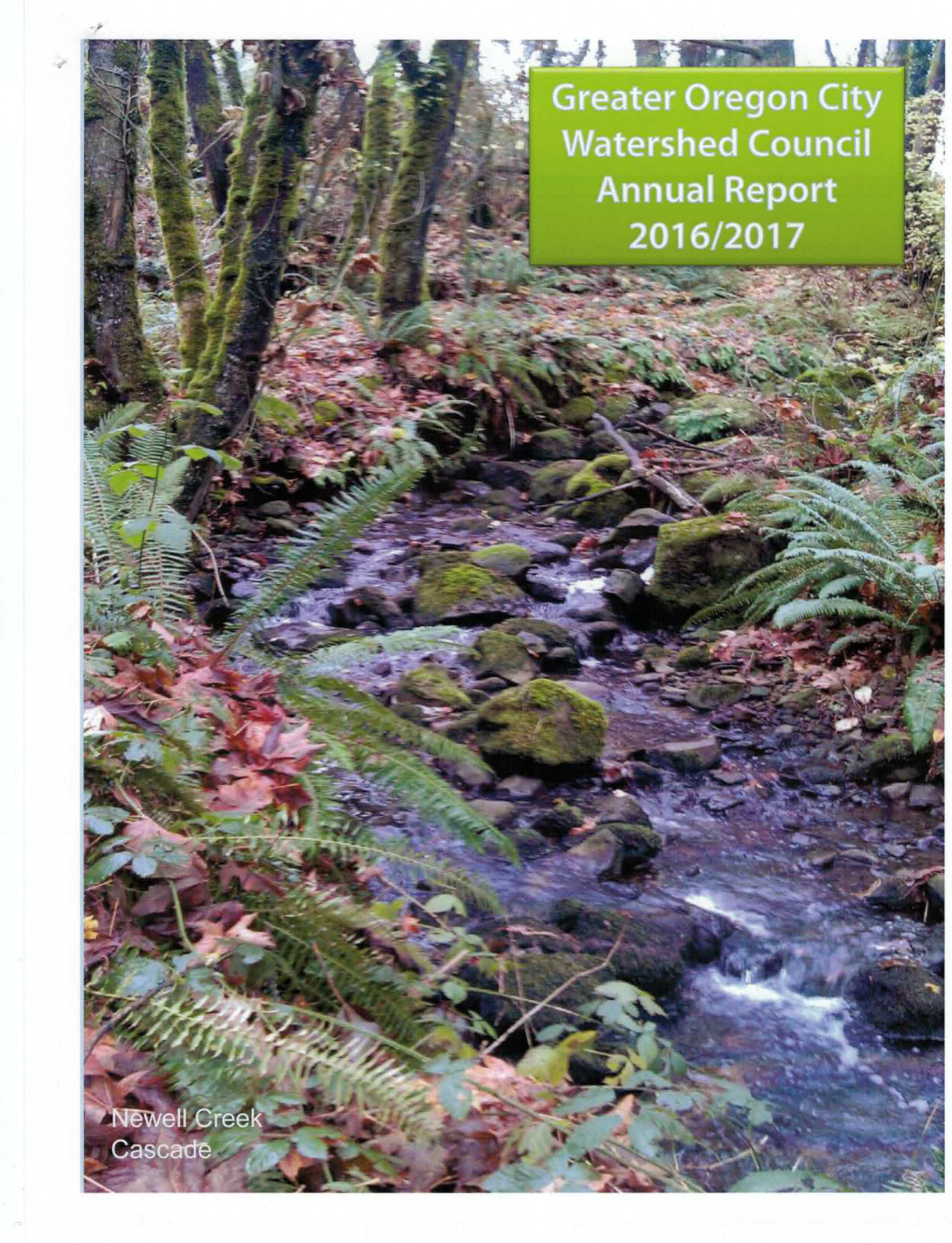


*Our Successes are Achieved with Assistance  
from Our Many Partners. Thank You!*



State of Oregon  
Department of  
Environmental  
Quality



A photograph of a forest stream with mossy rocks and ferns. The stream flows through a dense forest, with water splashing over moss-covered rocks. The surrounding vegetation includes large green ferns and fallen brown leaves. The scene is captured from a slightly elevated angle, looking down the length of the stream.

Greater Oregon City  
Watershed Council  
Annual Report  
2016/2017

Newell Creek  
Cascade



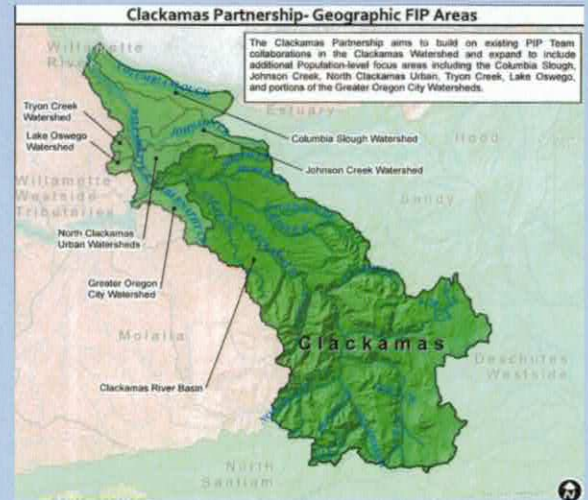
Old man  
contemplating the  
flow of water  
studies around  
sticks

*Leonardo da Vinci  
Windsor Castle Royal  
Library*

In 2015, The Oregon Watershed Enhancement Board granted a \$137,696 Focused Investment Partnership (FIP) to Clackamas area watershed councils. GOCWC is partnering with regional, tribal, state & federal agencies, PGE, Clackamas River Basin, Johnson Creek & North Clackamas Urban Watershed Councils and Clackamas Soil and Water District to guide the partnership.

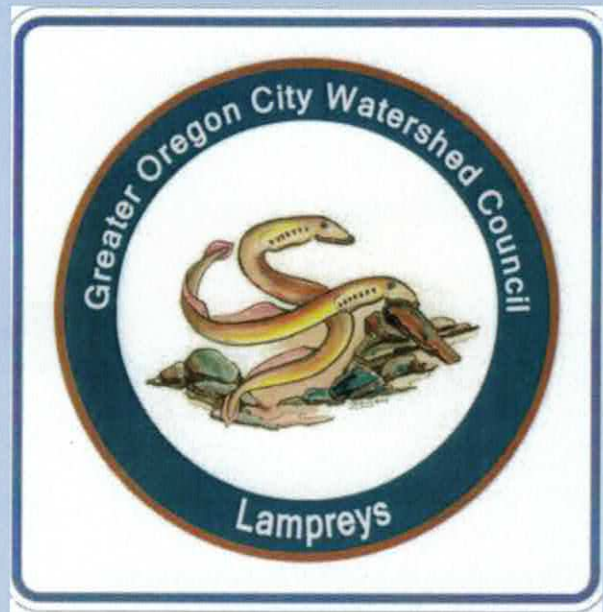
The goal of the work is to create a strategic action plan for habitat enhancement projects within the wider Clackamas area. Enhancement projects could include a wide variety of projects including moderating water temperature, fish passage, enhancing in-stream habitat or upland habitat.

GOCWC staff and council members are actively participating in project review and ranking. The FIP expects to present the projects and priority ranking to OWEB in late 2018.



Clackamas Partners meeting  
Photo credit: Craven

Signs,  
Signs,  
Everywhere  
are  
Signs!



*Water is the driving force of all nature -  
Leonardo da Vinci*

Stream Crossing

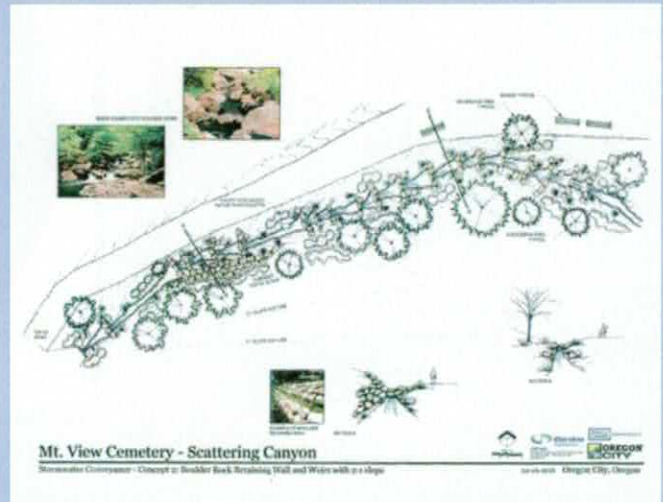
**Creating a sense of place and identity** for the creeks within the 70 square mile Greater Oregon City Watershed boundary was the inspiration for the stream crossing road signs within Oregon City. The signs are funded by the Oregon Watershed Enhancement Board and private contributions and installed in-kind by Oregon City Public Works. The signs feature the GOCWC logo, created by Oregon City artist Kathryn Kostow (retired ODFW fisheries biologist), and named creeks. The first phase of sign installations in 12 locations across the Oregon City were placed in December 2017. In researching creeks in Oregon City and Clackamas County, the GOCWC discovered that many creek segments are unnamed. The GOCWC will seek public input in the future to officially name these creeks. Additional stream crossing road signs in the county and city will be placed as funds become available.



The GOCWC sponsored an educational sign for the Environmental Learning Center at Clackamas Community College with funds from OWEB

## A Place to Heal the Soul and Watershed

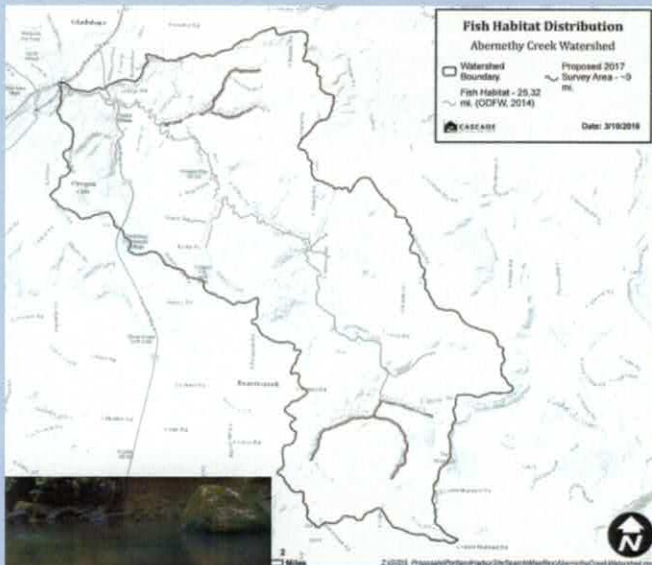
Several years ago, an idea blossomed during a walk through Mt View Cemetery to access Newell Creek Canyon. Mt View Cemetery, established in 1854, is one of the oldest on the west coast. The scattering canyon, where ashes can be disbursed, contains a seasonal creek, which is eroding due to high flows from urban stormwater runoff. For the past several years the GOCWC has worked with the Oregon City Public Works



and Oregon City Parks and Recreation to design a series of pools and cascades along the stormwater inlet, which will slow down water, improve water quality and reduce erosion. The plans also include creating access to the cascades as a place for grieving families to visit and heal.

Currently the work is in the final design phase, funded in part from GOCWC acquired grant funds from Metro Enhancement, Clackamas Soil & Water Conservation District and TNC/PGE Salmon Habitat Enhancement funds. The city of Oregon City has committed to fund construction once resources are available. The GOCWC will continue to seek grant funds for construction as well. Stay tuned for the implementation of this important project.

# Abernethy Creek Fish and Stream Habitat Assessment and Survey



Blue Heron & lamprey Photo credit: French

The GOCWC is focusing its stream habitat restoration efforts in the Abernethy Creek Watershed, but more information is required to identify and prioritize restoration actions. In summers of 2016 and 2017, the GOCWC received permission from creek side landowners to access Abernethy Creek and its tributaries. The survey collected water temperature, stream habitat and fish species and distribution information to develop stream reach-specific restoration action plans for Abernethy Creek and its tributaries. The survey will be publicly available in 2018.

This project will compliment the analysis being done for the Clackamas Partnership. The first phase of the project is funded by grants from The Nature Conservancy's PGE Salmon Habitat grant and the Clackamas Soil & Water Conservation District.

## Fur, Feathers and Shells

We are grateful to very talented naturalist landowners for sharing their talents and photographs of critters within the Abernethy Stream Survey area.



Otters Photo credit: French

One notable result of the 2017 (Feb 17-20) Great Backyard Bird Count sponsored by the Audubon Society and Cornell Lab of Ornithology, a stretch of Abernethy Creek had the highest number of Wood Ducks, 50, in the entire state. For the entire West Coast, with over 13,000 checklists submitted for California, Oregon, and Washington, only one other location, in Washington, had more.



Photo credit: French



Photo credit: Clark

## .....More Feathers



Green Heron, Hidden Lake Photo credit: Clark



Bald Eagle, Hidden Lake Photo credit: Clark



Common Merganser Photo credit: Clark

## Helping Fish Travel Up Abernethy Creek

The Oregon Dept. of Fish and Wildlife and the GOCWC worked with the Beaver Lake HOA to modify the Monpano Dam fish ladder in the summer of 2017. The benefits from this effort are for juvenile and adult upstream fish passage. Specifically, cutthroat, steelhead and lamprey species are expected to benefit from the improved passage. The dam and lake are located on Abernethy Creek off Henrici Road, in Clackamas County.



Photo credit:  
Stewart

"Leonardo da Vinci described water as 'the vehicle of nature,' believing water to be to the world what blood is to our bodies." *Professor Chris Witcombe*



## Newell Creek North

The GOCWC is continuing its work with Metro to complete the final phase of invasive removal and native planting project on approximately 66 acres in the northern portion of Newell Creek, including the confluence of Newell and Abernethy Creeks. The project is generally located north of OR-213, west of Redland Road and includes both public and private lands. Many of the invasive species include English ivy, holly and clematis.

The work will be completed in the Fall and Winter of 2018.



## Christmas Tree Sales

The GOCWC continues our successful annual Christmas tree sale with the North Clackamas Urban Watershed Council. GOCWC provides donated noble firs and the NCUWC provides live potted trees. Wreaths and other greens were also available. A tree was donated to the Stone Creek Christian Church food party to share with a family. The funds from the tree sale will be placed in the GOCWC general fund for future enhancement projects.

**What do** lamprey ornaments and beautiful noble fir trees have in common? They are ways the public supported its watershed with their purchases.



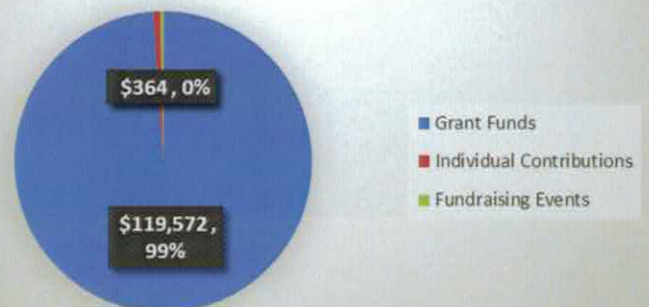
# GOCWC Financial Position 2016-17

## Greater Oregon City Watershed Council Financial Position

July 1, 2016 - June 30, 2017

	<u>Actual To Date</u>
<b>Revenues</b>	
Grant Funding	\$119,571.77
Individual Contributions	\$963.00
Contributions/Fundraising	\$363.61
<b>Total Revenues</b>	<u>\$120,898.38</u>
<b>Expenses</b>	
Salaries/ Wages	\$23,114.54
Payroll Taxes	\$9,568.13
Council Expenses	\$7,433.19
Project Expenses	\$62,284.24
<b>Total Expenses</b>	<u>\$103,400.10</u>
<b>BEGINNING NET ASSETS</b>	<b>\$13,975.47</b>
<b>NET SURPLUS/(DEFICIT)</b>	<b>\$17,498.28</b>
<b>ENDING NET ASSETS</b>	<u><b>\$31,473.75</b></u>

## Y16-17 GOCWC Funding



## Donors:

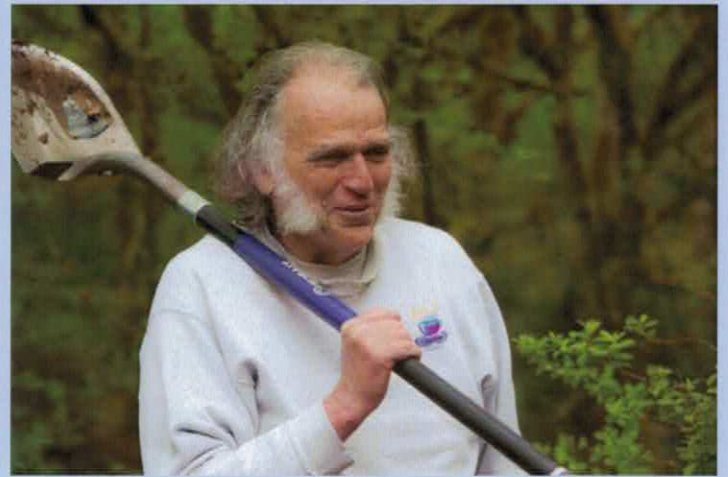
The GOCWC expresses its gratitude to donors who have contributed financially or with goods to the organization over the past year:

**American Property Management, Robert Austin, R. Baker, Backyard Bird Shop, Beavercreek Grange, Jon French and Patricia Ferrell-French, Kathryn Kostow, Tom & Janet Miller, Doug Neeley, Oregon City Brewing Company, Villa Catalana Cellars, and Vista Hills Vineyard & Winery.**

## In the Community



Coordinator Rita Baker at the Clackamas County "Flood of Information" event



Council Chair Doug Neeley volunteering at Clackamas Community College's Environmental Learning Center native species planting event.



SOLVE event OC High Jr. ROTC Abernethy Creek Park



Oregon City National Night Out

## How to support our work

You can support our work by making a charitable donation. The GOCWC is a non-profit.

Tax OD # 27-2507688

Please contact Rita Baker at (503) 427-0439 or [gocwc@aol.com](mailto:gocwc@aol.com) for more information.

### **GOCWC Council & Technical Assistance Committee Members**

Thank you to our tireless 2017 council members: Robert Austin, Richard Craven, Alison Heimowitz, Cedimir Jesic, Sarah Miller, Doug Neeley and Devin Patterson. Technical Assistance Committee members: Doug Cramer, Nathan Dasler, Doug DeHart, and Brian Monnin. Frequent participants: Dr. Renee Harber, CCC ELC and Dave Stewart, ODFW

## Join Us!

Get involved by attending Greater Oregon City Watershed council meeting.

**Date:** Second Tuesday of each month

**Time:** 7:00 pm

**Where:** First United Methodist Church

18955 South End Rd, Oregon City, OR 97045

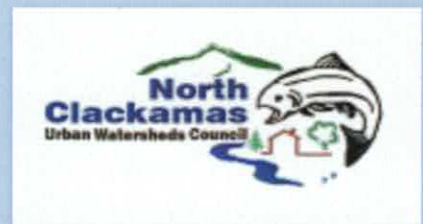
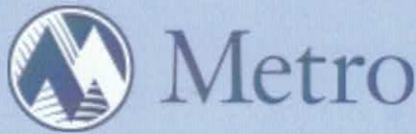
Find us on Facebook or online at [www.gocwc.org](http://www.gocwc.org)

# Partners



Each of us can make a difference. Together we make change.

Barbara Mikulski



## Clackamas Partnership

Greater Oregon City WSC  
 Clackamas River Basin Council  
 Johnson Creek WSC  
 North Clackamas Urban WSC  
 + affiliated organizations

# Youth: the future of restoration

In 2016, 25 schools and other youth groups came to us for service learning projects: tree planting, invasive plant removal, stream monitoring & job shadowing.

## Youth groups we worked with in 2016:

- |                                    |   |
|------------------------------------|---|
| Butler Creek Elementary School     | Jacob Wismer Elementary                 |
| Centennial High School             | Lewis & Clark Montessori Charter School |
| Centennial Transition School       | Milwaukie High School                   |
| Clackamas Middle College           | Mt Scott Learning Center                |
| Clackamas Web Academy              | Oregon Episcopal School                 |
| Creston Elementary School          | Pacific International Academy           |
| East Gresham Grade School          | Portland Waldorf School                 |
| Franciscan Montessori Earth School | Ron Russell Middle School               |
| Franklin High School               | Sabin Elementary School                 |
| Gresham High School                | Sabin-Schellenberg Learning Center      |
| H B Lee Middle School              | Southwest Charter School                |
| Happy Valley Elementary            | Springwater Trail High School           |
|                                    | View Acres Elementary                   |



Students at Southwest Charter School.

**Johnson Creek Watershed Council**  
1900 SE Milport Road, Suite B, Milwaukie, OR 97222

## Board of Directors

- Andrew Brown** Conservation Programs Supervisor, East Multnomah Soil and Water Conservation District  
**Tim Crawley** Attorney, Preg, O'Donnell & Gilbert  
**Katie Holzer** Watershed Scientist, Department of Environmental Services, City of Gresham  
**Roy Iwai** Water Resources Specialist, Multnomah County Road Services  
**Melanie Klym** Water Resources Engineer, Otak  
**John Nagy** Surface Water Technician, Water Environment Services, Clack. County  
**Bruce Newton** Former Director, West National Technology Support Center, Natural Resources Conservation Service (retired)  
**Vinh Nguyen** Supervisor, Engineering Design Services, Portland General Electric  
**Ken Nichols** Principal Eql Energy Systems  
**Bob Sanders** Attorney (retired)  
**Mary Ann Schmidt** Environmental Educator (retired)  
**Dick Schubert** R&D Manager (retired)  
**Lauren Senkyr** Upper watershed streamside landowner; Habitat Restoration Specialist, NOAA  
**Marie Walkiewicz** Environmental Program Coordinator, Bureau of Environmental Services, City of Portland  
**Carol Zywatkaukas** Mid-watershed streamside landowner, Design and Production Manager (retired)

## Advisory Circle

- Bill Bakke** President, Native Fish Society  
**Earl Blumenauer** U.S. House of Representatives  
**Diane Boly** Partner, Boly Welch  
**Carlotta Collette** Metro Councilor District 2  
**Robert Gootee** President and CEO, MODA Health  
**Mike Houck** Executive Director, Urban Greenspaces Institute  
**Teresa Huntsinger** Environmental Professional  
**Steve Johnson** Professor, Portland State Univ.  
**Gary Klein** Wells Fargo  
**Walt Mintkeski** Environmental and Energy Efficiency Engineer  
**Jonathan Nicholas** Vice President, MODA Health  
**Gary Rydout** Education Consultant  
**John Wrenn** Senior Vice-President, UBS

## JCWC Staff

- Alexis Barton** Outreach & Riparian Specialist, Confluence AmeriCorps Member  
**Courtney Beckel** Volunteer Coordinator  
**Cathy Geiger** Operations & Finance Coordinator  
**Janel Hull** Community Outreach Coordinator  
**Noah Jenkins** Riparian Program Manager  
**Daniel Newberry** Executive Director  
**Katie Songer** Restoration Project Manager

Annual report design by Kyung Lee (www.KyungBLee.com)

# Johnson Creek Watershed Council

Invest. Restore. Inspire.



# 2016 ANNUAL REPORT



Volunteers at Chastain Creek during Watershed Wide Event 2016

For the second year in a row, we've set a new record for the number of volunteer sign-ups: 1,955! By contributing more than 8,000 hours of their time, local residents have made a powerful statement about our mainly-urban stream. We are successful because of our volunteers.

We revamped our website—[jwc.org](http://jwc.org)—in 2016, thanks to web designer and intern Barton White. The new site includes a blog, where we often post short articles that we highlight in our monthly eBulletin. Our goal is to make our website a source for watershed science about the Johnson Creek Watershed. This includes a map of restoration sites and a listing to more than 100 scientific articles.

Our new Community Inclusion Committee undertook an organization-wide assessment of equity and diversity issues. We will release a plan for improving the Council's work. The plan will coincide with our new five-year strategic plan, which we also began to design in 2016. Our equity work is already in process: paid summer internships and workforce development training for underserved communities.

We had several hellos and goodbyes on our board and staff in 2016. We welcomed board members Vinh Nguyen and Andrew Brown, and said goodbye to Kirk Wilson and Erik Carr. On our staff, Courtney Beckel joined us as Volunteer Coordinator, replacing Danielle Miles. Alexis Barton joined us as our new Americorps member, replacing Janel Hull, who moved to Community Outreach Coordinator.

## JCWC Board & Staff – February 2017



Rear (l to r): Bruce Newton, Dick Schubert, Andrew Brown, Ken Nichols, Melanie Klym  
 Middle: Bob Sanders, Alexis Barton, Noah Jenkins, Mary Ann Schmidt, Marie Walkiewicz, Daniel Newberry, Roy Iwai  
 Front: Cathy Geiger, Courtney Beckel, Katie Songer, Janel Hull, Katie Holzer

# Community Science

There is a hunger among watershed residents to gather scientific data that will help local land management and restoration. After five years successfully surveying streams for coho salmon, our volunteers helped in new programs to document beaver activity, dragonfly diversity in wetlands, and an Ecoblitz at Powell Butte Nature Park. We also began planning for lamprey & steelhead surveys for winter and spring of 2017. We had some important results:



- First-time ever sightings in Multnomah County of two dragonfly species: Black Meadowhawk and Autumn Meadowhawk
- First ever sighting of an Oregon Slender Salamander in the Portland City limits, at Powell Butte
- 45 beaver dams
- 23 dragonfly/damselfly species observed
- Coho salmon carcasses found in Crystal Springs and the mainstem in Gresham



These projects were funded by East Multnomah SWCD, Spirit Mountain Community Fund, Portland Bureau of Environmental Services, Jubitz Family Foundation.

# By the numbers...



8,094

volunteer hours recorded

1,955

volunteer sign-ups



1,101

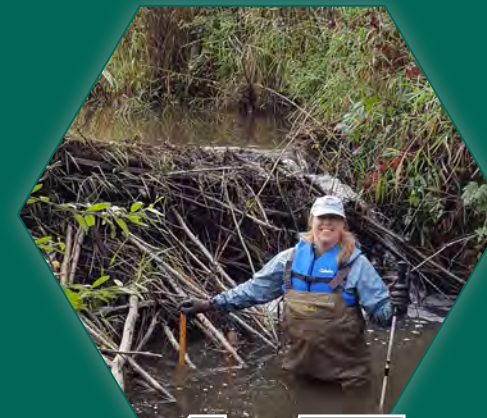
bird observations recorded on May 15th at the Powell Butte Ecoblitz

# Volunteers

Wow! We had a record setting 1,955 volunteer-days in 2016, a jump of more than 500 over our record setting 2015. Volunteers are at the core of what we do. Their 8,094 hours is a testament to how our watershed residents love their hometown stream and natural areas. Their accomplishments include:

- 19th Annual Watershed Wide Event drew 280 volunteers at 10 sites
- 8th Annual Creek Cleanup drew 160 volunteers and netted 5.1 tons of garbage
- MLK, Jr. Day of Service drew 150 volunteers at three events

Thank you, funders! Our volunteer program is supported by the Mintkeski Fund of the Oregon Community Foundation, Clackamas Water Environment Services, Portland General Electric, City of Portland Community Stewardship Program



45

beaver dams documented

5.1

tons of garbage pulled from Johnson Creek during the 9th annual Creek Cleanup



2

dragonfly species documented for the first time in Multnomah County

# Donors & Partners

## Business, Foundation & Government

\$25,000+

East Multnomah Soil & Water Conservation District  
Metro  
Mintkeski Family Fund of the Oregon Community Foundation  
Oregon Watershed Enhancement Board  
Portland General Electric & The Nature Conservancy (Blue Sky Fund)

\$10,000 - \$24,999

City of Portland: Bureau of Environmental Services  
Clackamas County Water Environment Services  
Clackamas Soil & Water Conservation District  
Spirit Mountain Community Fund

\$2,500 - \$9,999

City of Gresham  
Freeway Land II  
Friends of Trees  
Jubitz Family Foundation  
Multnomah County Transportation National Fish & Wildlife Foundation  
Portland General Electric Foundation  
West Multnomah Soil & Water Conservation District  
Wilson Family Foundation

\$1,000 - \$2,499

Aquatic Contracting  
Kroger-Fred Meyer  
New Seasons Market  
Simonds International  
Walker Emulsions, Inc.

Under \$1,000

Arcpoint Labs of Portland  
Brown & Caldwell  
Environmental Science & Assessment, LLC  
ESA Vigil-Agrimis  
Fidelity Charitable Gift Fund

Fidelity Charitable: Marcy Jacobs Charitable Trust  
Frog & Toad Are Friends Fund of the Oregon Community Foundation  
Graphic Information Systems, Inc. (GISI)  
Holy Smokes, Inc. dba Reverend's BBQ  
Inter-fluve  
J. Milford Ford, Attorney at Law  
Kern & Thompson, LLC  
Microsoft  
Otak, Inc.  
Oregon RFID  
Reed College  
Riverview Community Bank  
The Freshwater Trust

## Individuals

\$500 and above

Ed & Janet Clark  
Ken & Ann Edwards  
+Melanie & Matt Klym  
Alice & Navin Nayak  
Vinh Nguyen  
Dick & Sue Schubert  
Anonymous

\$250 - \$499

Michael Babbit  
Donald Carlson  
+Tim & Leesa Cooper  
Dan Dehen  
\*Tracy Hokanson  
\*Annette Mattson & Jeff Readon  
Daniel Newberry & Caroline Spear  
Bruce & Wendy Newton  
Don & Janet Pedersen  
\*Charles Redding  
Marty Urman

\$100 - \$249

Barbara Amen  
Stephen & Irene Bachhuber  
Lisa Batey  
Steven Berliner & Karen Bjorklund  
Bert Berney  
Viktors Berstis & Sylvia Gray  
Jon Biemer  
Ralph & Elizabeth Bodenner  
Gerry Brodsky  
Bill Burgel

+Michelle Bussard  
Sara Butcher & Christopher Canida  
Nancy Chapman  
Darlene Chirman & Savelly Chirma  
Thomas Christ & Mary McCurdy  
Marianne Colgrove  
John Davis  
Tamra & Richard Dickinson  
Frank Digregorio  
+Judith Drescher  
Thomas Dufala  
Jane Ediger  
Cathy Geiger  
+Michael Groszkruger  
Lisa Gunion-Rinker & Matthew Rinker  
Don Haaga  
Joann Herrigel  
Rose High Bear  
Bunny Hirtzel  
Anne Hogan  
Steve Johnson  
Wallace & Judith Jones  
Ted Labbe & Kelly Rodgers  
Jess Kimball  
Gary & Sharon Klein  
Dr. & Mrs. Arthur Kracke  
Edward Labinowicz  
Kaitlin Lovell  
Dean Marriott  
Robert & Abigail Marshall  
Terry Mayhew  
Nancy & John McCormick  
Bill McCracken  
Kerri Meeli & Manue Pina  
Walt & Vicki Mintkeski  
John Nagy  
Noelwah Netusil  
Susanne Newberry  
Steve Polson  
Judith Potts  
Beverley Reeves  
+Nancy Robrecht  
Rob Sadwosky  
Bob & Gail Sanders  
Mary Ann & Robert Schmidt  
+John Schuberg  
Stephanie & Tom Semke  
Dr. Timothy Shannon  
+Steve Smith & Kelsy Wirtzfield  
Bob Stern  
Wendy Stickel & Peter Olson  
Russ Stoll  
Harriet Stosur & Peter Hatcher  
Gerard & Rita Van Deene  
Robert Wederquist  
Joan Wiederspiel

Dilafruz Williams  
Marjorie Wolfe

Under \$100

Jacob Adamson  
Michael Anderson & Lori Shippy  
Tom Armstrong  
Jean Baker  
Tom & Judy Barnes  
Reva Basch & Jerry Shifman  
Kathryn Bates  
Gaylen Beatty  
Jennifer Belknap Williams  
Rebecca & Jason Binford  
Ruth Blackburn  
Chris & Cynthia Blattner  
Melissa Bockwinkel  
Diane & Andrew Bopenhagen  
Logan Lauvray & Brian Horay  
Susan Brickey  
Heatherann Brown  
Shannon Buono & Brent Walth  
Erik Button & Julia Carr  
Maria & Steven Cahill  
Annette Carter  
Janet Cartmill  
Katelyn Castellanos  
Dianna & Octavio Choi  
Catherine & Christopher Clark  
Matt Clark & Abby Sarmac  
Robin Cody  
Jeffrey & Wendy Coffin  
Maggie Collins  
Chris Davis  
James Davis & Sally Loomis  
+Kris Day  
Kristina Detjen  
Dev & Sumathi Devarajan  
Wendy Downing & Mike Cachuela  
Peregrine Edison-Lahm  
Barb Engelter & Jean Carufo  
Sarah Ferguson & Richard Van Rossum  
Jerome & Mary Fulton  
Bonnie Garlan  
Nick Gideonse & Mariam Higgins  
Claire & Gabe Giesige  
Katie & Ronald Goodwin  
Melissa Guila  
Kathleen & John Hamil  
Thomas Hansen  
John & Olivia Harrold  
Henry Haselton  
Andrew Hawley & Tanya Sanerib  
Christopher Himes  
Katie Holzer

Carlene Hopman  
Ben & Willi Horner-Johnson  
Sheryl Horwitz & Larry Knudsen  
Mart Hughes  
Lisa Huntington & Jason Meketa  
Teresa Huntsinger  
Rocco Jaconis  
Brad Jonasson, Jr.  
Mary Anne Joyce  
Lori & John Kelly  
Brett Kolver  
Clair Klock  
Arden & Joyce Knepper  
Jackie & Justin Laabs  
Dominique Lampert & Jerome Beck  
Andrea Leal  
Karl Lee & Roberta Jortner  
Ann Lemcke & David Kibby  
Moshe Lenke  
Wendy Lichtenbaum  
+Amy Lodholz  
Theresa & Doug Lovett  
Frances Lynch  
Steve March  
Rebecca Mendez & Mark Evans  
Tim Martin  
Celeste Mazzacano & Denise Searles  
Bill & Helen McCandless  
Brendan McCarthy  
Anne E McLaughlin  
Meara McLaughlin & Phillip Graham  
Cat Mead  
Dave Mendenhall  
Mat Millenback  
Michael Mills & Amie Abbott  
Alison & Charles F. Moore  
Madelyn & Matthew Morris  
Priscilla Nelson  
Marianne & Tom Nelson  
Brent & Julie Nielsen  
Kitty O'Meara  
Sheila Pastore  
Marilyn Pitts  
David Porter  
David & Nancy Pribnow  
Kristina & Mike Psaris-Weis  
Alexander & Kristina Psaris-Weis  
Joann Pullen  
Capi Reed  
Linda Robinson  
Katie Russell  
Linda Scher  
Barbara Schroeder  
Lauren Senkyr  
Gail Shaloum & Rob Gabris

Amber & Alan Shoebridge  
Stephanie Sigmon  
James Sjuln & Gay Greger  
Elizabeth Smith  
Sharon Streeter  
Noel Tindick  
Kevin Timmins  
Carolyn Tomei  
Thomas Van Raalte  
Deanne Vegge  
Dana Visse & Noah Ribner  
Jeri Walker  
Marie & Mike Walkiewicz  
Nancy Walsh  
Ann Wawrukiewicz  
Helen White  
Katherine Paxton-Williams & Brian Williams  
Bob Wilson  
Michael & Rebecca Wirth  
Sara Wist  
Cailin & Erik Wold  
Gary Wolff  
Lora Worden & Noah Jenkins  
Adam & Shelley Zucker

## Our Partners

African Youth Community Organization  
American Indian Science and Engineering Society  
AmeriCorps National Civilian Community Corps  
City of Gresham  
City of Milwaukie  
Clackamas Middle School  
Clackamas SWCD  
Clackamas Water Environment Services  
Clackamas Web Academy  
Columbia Sportswear  
Concordia University  
Confluence Environmental Center  
Courts at Eastmoreland  
Crystal Springs Partnership  
Depave  
Duniway Elementary  
East Multnomah SWCD  
Friends of Errol Heights  
Friends of Tideman Johnson Park  
Friends of Tsuru Island  
Girls Inc.  
Green Lents  
Gresham Chamber of Commerce  
H. B. Lee Middle School  
Immigrant & Refugee Community

Organization  
ImpactNW  
Lao Buddhist Center Northwest  
Lents Youth Initiative  
Lewis and Clark College  
McFarlane's Bark, Inc.  
Marylhurst University  
Metro  
Mt. Scott Learning Center  
Multnomah County Roads Department  
Native American Student and Community Center  
Network of Oregon Watershed Councils  
Non-profit Association of Oregon  
North Clackamas Parks and Recreation  
North Clackamas Urban Watersheds Council  
NW Youth Corps  
Oregon Bhutanese Community Organization  
Oregon Department of Environmental Quality  
Oregon Department of Fish and Wildlife  
Oregon Department of Transportation  
Oregon Episcopal School  
Oregon Zoo Education Center  
Overland Park Coalition  
Portland Art Institute  
Portland Bureau of Environmental Services  
Portland Parks & Recreation  
Portland State University: Indigenous Nations Studies Program  
Portland Youth Builders  
Portland Waldorf School  
Reed College  
River Network  
Sabin-Schellenberg Center  
Sellwood Middle School  
Southwest Charter School  
The Courts at Eastmoreland  
Tryon Creek Watershed Council  
Tri-Met  
U.S. Geological Survey  
University of Oregon Alumni Association  
University of Utah  
Walker Emulsions Inc.  
Wisdom of the Elders  
Xerces Society for Invertebrate Conservation

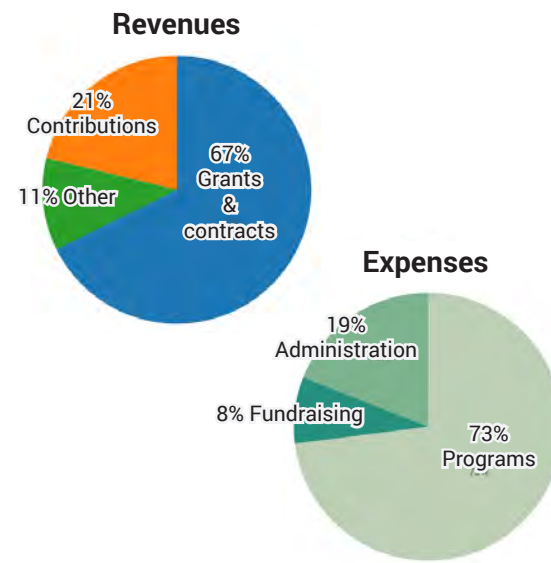
+ Monthly donor \*Employer donates matching funds

**In-Kind Donors**

1-800-Flowers	Erin Hauer	Marty Urman	Pietro's Pizza
Alan Lumpkin	Eternal Spring Massage	Mary Fereoff	Popinos Swimwear
Backyard Bird Shop	Gary Klein	Mary Ann Schmidt	Portland Timbers
Blue Kangaroo	Gary Wolff	Mona Vie	Portland Trail Blazers
Boggs	Gigantic Brewing	McMennamin's	REI
Brickhouse	Gisi Marketing	Walt Mintkeski	Sellwood Yoga
Bruce Newton	Grand Central Bakery	Justin Morrison	Senkos Farm
Carol Zyvatkaukas	Hollywood Theatre	MODA Health	Shaylynn Davis
Champoeg Nursery	Hoodview Disposal & Recycling	New Seasons	Sherrie Klein
Clackamas County Dept. of Transportation & Development	Hopworks Brewing	Next Adventure	Skamania Lodge
Columbia Sportswear	Lauren Senkyr	Olive Garden	Sunset Garbage Collection
Devil's Dill Deli	Laurelwood Brewery	OMSI	Vino
Dick & Sue Schubert	Keen	Oregon Historical Society	Walt Mintkeski
Echo Valley	Kyung Lee	Oregon Symphony	Worthy Brewing
Ed Chin Fishing Tours	Mari Brick	Oregon Worsted Company	Whole Foods
	Marie Walkiewicz	Oregon Zoo	
		Patagonia	

**Statement of Financial Position**

	2016	2015
<b>Assets</b>		
Cash	127,898	178,064
Prepaid expenses	4,824	4,962
Grants and contracts receivable	83,828	173,168
Beneficial interest in assets held by OCF	24,707	-
Furniture and equipment, net	1,680	2,520
<b>Total assets</b>	<b>\$ 242,937</b>	<b>\$ 358,714</b>
<b>Liabilities and net assets</b>		
Accounts payable	9,329	172,538
Accrued payroll & taxes	9,662	-
Accrued vacation	6,550	3,100
Deferred revenue	3,635	4,918
<b>Total Liabilities</b>	<b>\$ 29,176</b>	<b>\$ 180,556</b>
<b>Net assets</b>		
Unrestricted	177,080	123,219
Temporarily restricted	23,781	42,039
Permanently restricted	12,900	12,900
<b>Total net assets</b>	<b>\$ 213,761</b>	<b>\$ 178,158</b>
<b>Total liabilities and net assets</b>	<b>\$ 242,937</b>	<b>\$ 358,714</b>



**Statement of Activities**

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total 2016	Total 2015
<b>Revenue and other support</b>					
Grants and contracts	282,357	40,000	-	322,357	346,876
Contributions	100,629	-	-	100,629	139,160
In-kind contributions	54,180	-	-	54,180	54,180
Interest income	100	-	-	100	98
Miscellaneous	821	-	-	821	-
Net assets released	438,087	40,000	-	478,087	540,314
	58,258	(58,258)	-	-	-
<b>Total revenue and other support</b>	<b>\$ 496,345</b>	<b>\$ (18,258)</b>	<b>\$ -</b>	<b>\$ 478,087</b>	<b>\$ 540,314</b>
<b>Expenses</b>					
Program Services					
Restoration/Riparian	179,154	-	-	179,154	307,662
Outreach	67,355	-	-	67,355	78,376
Monitoring	78,132	-	-	78,132	84,746
Total program services	324,641	-	-	324,641	470,784
Supporting services					
Administration	83,184	-	-	83,184	101,729
Fund-raising	34,659	-	-	34,659	28,692
<b>Total expenses</b>	<b>\$ 442,484</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 442,484</b>	<b>\$ 601,205</b>
<b>Change in net assets</b>	<b>53,861</b>	<b>(18,258)</b>	<b>-</b>	<b>35,603</b>	<b>(60,891)</b>
Net assets, beginning of year	123,219	42,039	12,900	178,158	239,049
Net assets, end of year	\$ 177,080	\$ 23,781	\$ 12,900	\$ 213,761	\$ 178,158

# Fish Passage

We replaced three small culverts under the Springwater Trail on Badger Creek near Boring that blocked fish passage. The new ten foot diameter culvert easily passes fish and passes flood flows. This culvert had the best cost/benefit of all 273 culverts we surveyed in 2013/4. During construction we rescued an adult Pacific lamprey and several juveniles. This was the furthest upstream in the watershed this species has been documented.



Thank you to Metro, Portland General Electric / The Nature Conservancy, and OWEB for funding this project!

Design was completed on the first of three culvert projects on the North Fork Johnson Creek in 2017 & 2018. This is part of a multi-agency effort to address seven barriers on this tributary stream.



# Riparian Forests

We had some hot days last summer. To lower stream temperature for salmon, we continued planting trees along Johnson Creek and its tributaries, as we have for more than 18 years. We prioritize our plantings according to a shade model that shows where the need is greatest.

Last year we planted 21,261 native trees and shrubs. Half of our work is on private land in the upper watershed. The other half is on public property, most of which is managed by Portland Parks & Recreation and the City of Gresham. In the past year we helped to train Native American interns from Wisdom of the Elders in our new Workforce Development program.

Thank you to Metro, East Multnomah SWCD, Clackamas SWCD, Freeway Land II, and OWEB for funding this program!





# Molalla River Watch

## 2017 Annual Report



## Mission

Promoting respect & understanding of the Molalla River Watershed through education & conservation for present and future generations.

## Our Approach

Education, Trails, Cleanup, Restoration, Outreach, & Surveys.

## Molalla River Watershed



Molalla River is the **drinking water source** for Molalla & Canby.

Molalla population in 2014

**8,422**

Canby population in 2014

**17,010**

The Molalla River is the Willamette River's **longest undammed tributary**.



Molalla's **spring Chinook salmon & winter steelhead** populations are listed as **threatened** on the Endangered Species Act.

# Education



**20 Molalla R. High School Environmental Science students** learned about forest ecology, native plants, stream aquatic insects, & beaver ponds.



**20 Molalla community members** learned about native plants from a Clackamas Community College biology instructor, and aquatic insects & beavers from Molalla River Watch staff.



# Trails

**43 participants and 19 local business & club donors** helped raise **\$951 for trail improvements** in the Molalla River Corridor Trail System!



# Molalla River Cleanups



**2,580 lbs. of trash**  
picked up

**91 native trees**  
planted in Recreation  
Corridor



**3,000 ft<sup>2</sup>** invasive  
plants cleared



## Restoration

MRW continued to remove invasive plants & plant native species on a 2.5 acre riparian streambanks & floodplain project funded by Oregon Watershed Enhancement Board.

*Landowner assisted by restoration project, Cindi Buell-*



*"If we hadn't found out about the resources available through Molalla River Watch, we would have spent years trying to do what they made available to us. The information we have for maintaining a healthier property is making the work we are doing feel much more successful."*



# Outreach



Hosted **1 community presentation**, published **2 MRW newsletters** for partners & members, & created **numerous Facebook posts** for **277 followers**

# Surveys



**277** northern red-legged frog, **28** north-western salamander, & **61** chorus frog egg masses, plus **62** adult rough skinned newts observed in Aquila Vista pond in one day!



thank  
you!

**2017 was our 25th Anniversary!** What started as a group of locals concerned about all of the trash dumped into the River, Molalla River Watch has grown to become the watershed council for the entire watershed. We work to improve water quality and restore fish & wildlife habitat by focusing on on-the-ground conservation work.

We believe that the pressure on natural resources in the Watershed is an issue we must all come together to solve. With your support, we will continue to improve the health of the Watershed through education & conservation projects.

Thank you to all of our volunteers, donors, & partners for your continued support! Molalla River Watch would not be 25 years strong without your help.

*Asako Yamamuro*

Asako Yamamuro  
Executive Director

## Make a Difference in the Molalla River Watershed

Amazing volunteers helped us pick up trash, plant trees, pull weeds, maintain trails, cook for fellow volunteers, & mail out newsletters.

Please contact [molallariverwatch@gmail.com](mailto:molallariverwatch@gmail.com)  
to:

- Volunteer with us.
- Make a donation.
- Join our mailing list.



# North Clackamas Urban Watersheds Council



2016-2017  
ANNUAL REPORT

# Creeks and Community: Together We Thrive

What does it mean to protect and restore urban watersheds?

It means to ensure that the land and the streams that flow through our daily lives not only look beautiful, but function in a manner that supports those that have called these lands and streams home longer than most: the plants and animals, from the iconic salmon to the dragonfly larvae, that make this region unique.



For Kellogg, Mt. Scott, River Forest, Boardman, and Rinearson Creeks, this work entails a multifaceted approach to protect healthy stream reaches, transform past harms, and ensure a resilient future. At NCUWC we are doing just that. With your commitment and support we are restoring these lands and waters into vibrant ecosystems that sustain wildlife, improve our own health and wellbeing, and strengthen our sense of place. We are not passive observers, but active in our belonging and stewardship.

NCUWC is on the ground everyday working towards these ambitions. We are engaged on all fronts by **participating** in regional partnerships that address limiting factors to recover fish, **mitigating** acres of impervious surface to return streams to a more natural state, **planting** acres of native trees and shrubs, **advocating** for the removal of Kellogg Dam, **offering** solutions and protections during land use hearings, and **inspiring** our neighbors on why all this matters.

Join us as a volunteer, as a donor, as an advocate. Join us as we continue to transform our ecological and community landscapes for a resilient future.

You can help make this happen!

# NCUWC Service Area

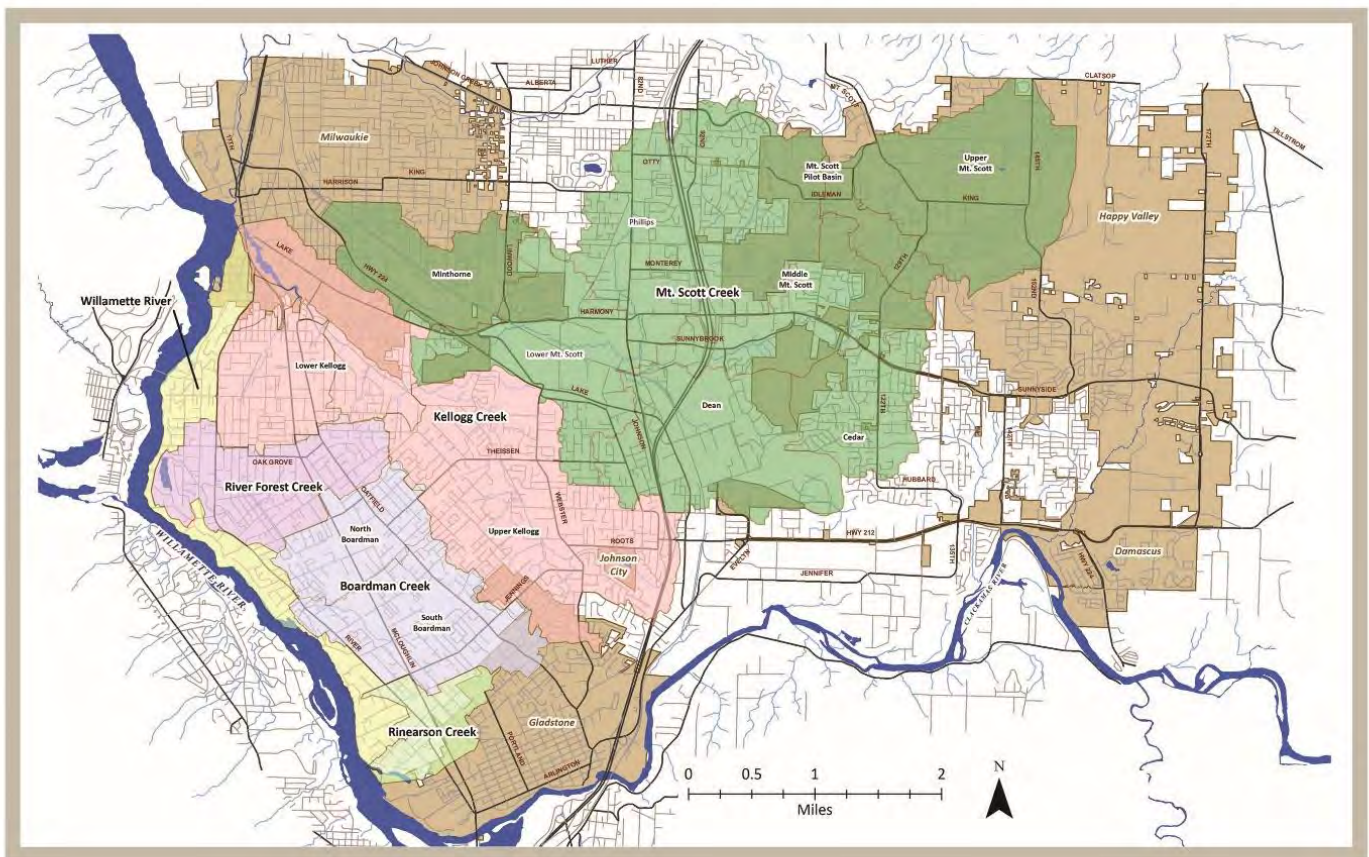
The **North Clackamas Urban Watersheds Council's mission** is to protect and enhance our watersheds' water quality, fish, and wildlife habitat. We envision people and nature flourishing in a healthy ecosystem. To achieve our mission, we advocate on behalf of the watershed, partner with public and private entities, engage in prioritized restoration projects, and foster community stewardship. The Clackamas Board of County Commissioners formally recognized NCUWC as the watershed council representing the Kellogg, Mt. Scott, Rinearson, Boardman, and River Forest watersheds on June 20, 2009.

## Watershed Areas

<b>Kellogg - Mt. Scott:</b>	10,300 acres
<b>Rinearson:</b>	330 acres
<b>Boardman:</b>	1,300 acres
<b>River Forest:</b>	800 acres

The **total** area covered by the North Clackamas Urban Watersheds Council is 12,730 acres. All of it is within Clackamas County.

## NORTH CLACKAMAS URBAN WATERSHEDS COUNCIL WATERSHED MAP



Where do you live in the watershed?

partner support by:





# NCUWC Board and Staff



Joseph Edge, Chair & Resident of River Forest Creek

Terry Gibson, Vice Chair & Resident of Boardman Creek

Cecilia Seiter, Treasurer & Resident of Milwaukie

Mona Thomason, Secretary & Lake Road Neighborhood District Association

Steve Berliner, Jennings Lodge Community Planning Organization

Dick Shook, Friends of Kellogg & Mt. Scott Creeks

Mark Fitzsimons, Resident of Alder Creek

Paul Heimowitz, Resident of Boardman Creek

Bob Bohannon, Resident & Oak Grove Community Council

Caleb Mammen, Resident of Kellogg Creek

James Cronin, Resident of Kellogg Creek

Chris Runyard, Tsunami Crew / 3-Creeks Natural Area

Tonia Williamson, North Clackamas Parks & Recreation District (NCPRD)

Lara Christensen, Oak Lodge Water Services District (OLWS)

John Nagy, Clackamas County Water Environment Services (WES)

Lisa Batey, City of Milwaukie

Chris Randall, City of Happy Valley

Andrew Collins-Anderson, NCUWC Executive Director

## Financials

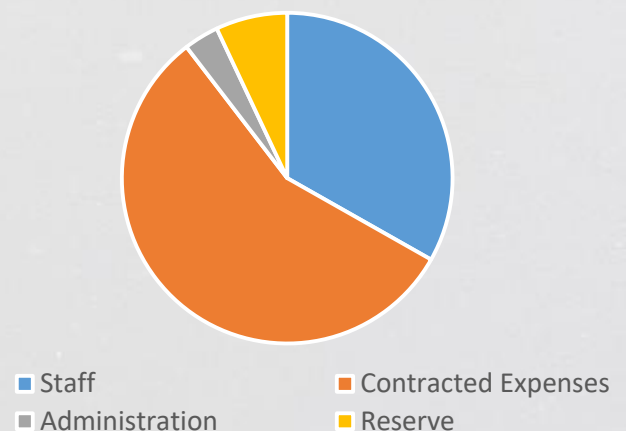
### Income:

Individual:	\$5,026
Grants:	\$134,193
Earned Revenue:	\$471
<b>Total:</b>	<b>\$142,095</b>

### Expenses:

Staff:	\$47,173
Restoration Contractors:	\$80,117
Administration:	\$4,856
Reserve:	\$7,544
<b>Total:</b>	<b>\$142,095</b>

## Expenses 2016-2017



# NCUWC Programs

## Streamside Stewards Program



The **Streamside Stewards Program (SSP)** has been the core program of NCUWC since 2011. Through the program, NCUWC recruits and partners with landowners to perform habitat restoration along creeks and in riparian areas. NCUWC works with Mosaic Ecology LLC as our restoration contractor. Our goals are to enhance riparian corridors of Kellogg, Mt. Scott, Boardman, Rinearson, and River Forest Creeks to improve water quality and habitat. In 2016-2017 the program had over 100 active properties enrolled in the program.

## Watershed Protection

The NCUWC Board sees the value of restoration of the watersheds, but is also dedicated to the protection of the creeks, natural areas, and rare and unique species and habitats that remain in the watersheds. NCUWC has an active land use committee that comments on land use proposals, and works to educate and promote best practices for the future resiliency of our watersheds.



## Planning and Monitoring



NCUWC is actively engaged in regional partnerships such as the Clackamas Partnership, is planning for a stormwater retrofit program in 2018, is continuing to work towards Kellogg Dam's removal, and is monitoring water temperatures in the creeks. NCUWC is always grant writing and pursuing new partners and projects to bring resources and opportunities to the watersheds and community.

# Outreach and Education

**NCUWC volunteers contributed over 1,000 hours in 2016 - 2017!**

## **Highlights for 2016 - 2017:**

On July 16, 2017 NCUWC produced the first Remove Kellogg Dam Community Celebration and Duck Race. The event successfully engaged community members on the importance of Kellogg Creek, why the dam should be removed, and how they can stay involved.

In 16/17 NCUWC partnered on or produced **11** education and restoration events. NCUWC also gave **6** presentations and participated in **7** outreach events throughout the watersheds.



# Funders and Partners

NCUWC would like to thank all of our partners, volunteers, and funders for their commitment to helping to improve the health of our watersheds! With so many dedicated people and multiple flourishing relationships, we are excited to move into the future as a growing and effective watershed council.

**Funders** – Oak Lodge Water Services District (OLWS), Clackamas County Water Environment Services (WES), Clackamas Soil and Water Conservation District (CSWCD), Metro, Patagonia, and Oregon Watershed Enhancement Board (OWEB)

**Nonprofits and Community Partners** – The Wetlands Conservancy, Clackamas Partnership, Schoolyard Farms, Lower Columbia Estuary Partnership, River Network, Dig In Community, Friends of Trees, Portland Audubon Society, Willamette Riverkeeper, Johnson Creek Watershed Council, Clackamas Basin River Council, Greater Oregon City Watershed Council, Free Kellogg Creek, and Milwaukie Presbyterian Church

**Agencies** – Oregon Department of Environmental Quality (DEQ), Oregon Department of Fish and Wildlife (ODFW), and North Clackamas Parks & Recreation District (NCPRD)

**Cities** – City of Happy Valley, City of Gladstone, and City of Milwaukie

**Businesses** – Mosaic Ecology LLC and Cascade Environmental Group

**Citizen Planning Organizations (CPOs) and Neighborhood District Associations (NDA)** – Jennings Lodge CPO, Oak Grove Community Council, Lake Road NDA, Island Station NDA, and Clackamas CPO



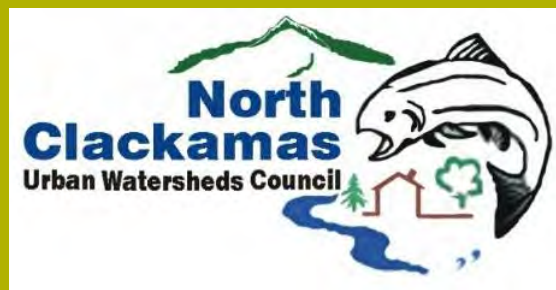
# North Clackamas Urban Watersheds Council July 2016 - June 2017 Annual Report

Annual Report by

Andrew Collins-Anderson, Executive Director

Cover Photo by Steve Berliner

Photos: Jim Cronin, John Nagy, Lauren Cary, and  
Andrew Collins-Anderson



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## PRWC 2017 REPORT

2017 was an exceptionally successful year for the Council. We owe a huge “thank you” to our volunteers and partners. People from the community worked together throughout the year collectively making a positive difference in our Pudding River Watershed.

### Accomplishments

Our board members worked together to build momentum and keep it rolling!!!

- PRWC was designated a federal 501(c)3 nonprofit.
- J Franco Reforestation began site preparation for the Silver Creek SEP.
- The Council hosted an Earth Day streamside cleanup in Woodburn. SOLV partnered with the Council and the community to collect over 100 pounds of garbage from around Mill Creek.
- The Agricultural and Commercial Pesticide Collection Event was a huge success!! 44 participants from around the community dropped off nearly 25,000 pounds of pesticides.
- PRWC collaborated with Clackamas Soil and Water Conservation District to provide a workshop for small-acreage horse owners “Horses for Clean Water.”
- Board members and friends decorated and entered floats in the Mt. Angel 4<sup>th</sup> of July parade and Hubbard Hop Festival.
- The Council put the voluntary, collaborative partnership model to the test at Wildcat Ridge Sanctuary. The wildcat sanctuary is the home of a large-scale upland reforestation project. The Youth Conservation Corps, Caretakers of the Environment, Levi’s Company Store and Training Teens for Tomorrow worked throughout the summer to clear Scotch broom and make way for planting trees during the 2017 rainy season.
- Awarded operating funds from Oregon Watershed Enhancement Board
- Awarded supplemental operating funds from Clackamas Soil and Water Conservation District



Earth Day 2018 Mill Creek Cleanup Woodburn, Oregon

## Moving Forward

The PRWC is categorized as a public charity which means it can receive tax-exempt cash and in-kind donations. Because the watershed council's mission engages the community, we strive to develop sponsorships with local businesses and private citizens. As the PRWC increases its community support base, we will rely less on state funding. We discovered organizations throughout the watershed are actively seeking opportunities to get involved improving the environment, and we will continue to develop our capacity to leverage those volunteer hours.

We are planning important projects around the watershed and advocating for citizens. Abiqua Creek is the site of an instream habitat project that will be underway in the summer of 2018. The Council is participating in the City of Molalla Wastewater Treatment Facility and Collection System Master Plan Update process. We are actively seeking landowners in lower Butte Creek, Marquam Creek, and lower and middle Rock Creek who are ready to assess the vegetation along their stream banks. PRWC and CSWCD are collaboratively focused on improving water quality in these areas. We strive to educate landowners and develop awareness about ways to prevent contaminants from reaching the river.

## Acknowledgements

### 1. Community Volunteer Groups

- Willamette Restoration Volunteers
- Youth Conservation Corps
- Boys and Girls Club
- Levi's Company Store
- Training Teens for Tomorrow
- Caretakers of the Environment International Oregon and Youth Enviro Squad

### 2. Local Partners

- City of Woodburn
- Bauman Farms
- Fir Point Farms
- Seven Brides Brewing
- SOLV
- Clackamas SWCD
- Marion SWCD
- Marion County Public Works
- Valley Agronomics
- Molalla Adult Community Center
- Wilco

### 3. State Partners

- Oregon Watershed Enhancement Board
- Oregon Department of Agriculture
- Oregon Department of Fish and Wildlife
- Oregon Department of Environmental Quality



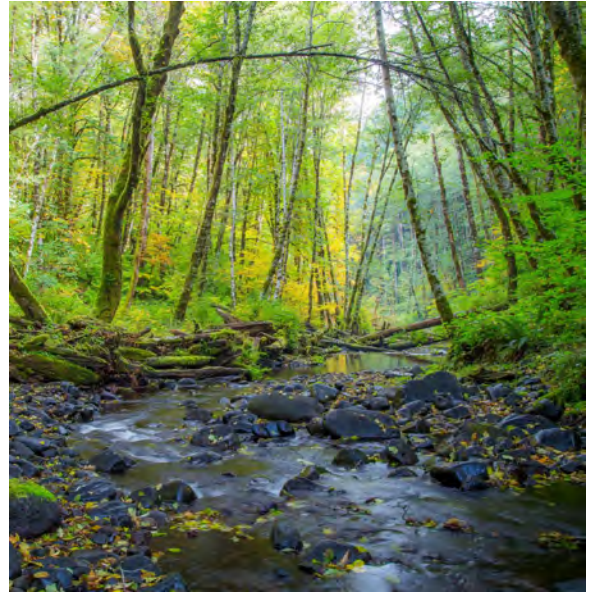
Mount Angel 4<sup>th</sup> of July Parade 2017



## Annual Report 2015-2016

### About the Council

The Tualatin River Watershed Council (TRWC) is a locally organized diverse group of volunteers from the Tualatin River Basin. The Oregon Watershed Enhancement Board (OWEB) primarily funds the coordinator salary and office expenses. By providing stewardship, education, information on watershed conditions, and doing restoration work the Council is ensuring continued improvement in watershed health. Its members represent the following interests: forestry, agriculture, urban, environmental, fisheries, educational, local citizens, business & industry and local government.



### Looking Forward

The Tualatin River Watershed Council (TRWC) celebrated its twentieth year in 2016 and we're proud of our many accomplishments over the two decades. TRWC was founded as an organization to convene stakeholders to address declining water quality that was impacting salmon and trout populations in the Tualatin River and its tributaries. Because of its efforts and those of its members, both water quality and fish have rebounded dramatically. Today we face a different set of challenges including a growing urban population that will require more clean water, storm water management, and open space to support the quality of life we enjoy. With your support in the form of donations of time and money, TRWC will be able to grow the organization and diversify our skills so we can better serve our partners and the citizens of the Tualatin Valley.



### TRWC 20th Anniversary

Council members and friends celebrated the Council's 20<sup>th</sup> Anniversary with a cake at the August 2016 meeting. The City of Tigard generously hosted the summer potluck at Cook Park. Tualatin Riverkeepers provided opportunities to paddle on the Tualatin River.

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## Thank You Council Partners

Bio-Surveys, LLC  
 City of Hillsboro  
 City of Tigard  
 Clackamas County Soil and Water Conservation District  
 Clean Water Services  
 Community By Design, LLC / Our Table Farm  
 Joint Water Commission  
 Kroger (Fred Meyer)  
 Mark DeForge family  
 Murrayhill Owner Association  
 Northwest Oregon Restoration Partnership  
 Oregon Department of Fish and Wildlife  
 Oregon Department of Forestry  
 Pacific University, Pacific University Students  
 Quail Hollow West HOA  
 Scholls Valley Native Nursery  
 SOLVE  
 The Standard Foundation  
 Tualatin Basin Partners for Clean Water  
 Tualatin Hills Park and Recreation District  
 Tualatin Soil and Water Conservation District  
 Tualatin Valley Water District  
 US Bureau of Land Management  
 US Bureau of Reclamation  
 Washington County Parks and Facilities  
 Washington County Transportation  
 Our Private Landowners and Great Volunteers



Tualatin Basin volunteer assists community members pot native plants at the annual Bird Festival.

## Staff and Officers

### Council Staff

April Olbrich, *Coordinator*

### Council Officers

Rich Van Buskirk, *Chair*

Kristel Fesler, *Vice Chair*

Bob Baumgartner & Stephen Cruise,  
*Co-Secretaries*

Jan Miller, *Treasurer*

## Council Expenses

Project Planning and  
 Implementation  
 \$44,095

Office Expenses  
 \$15,313

Education and  
 Outreach  
 \$24,397

Working with  
 Partners  
 \$36,596



Newly minted Tualatin Basin volunteer Weed Watchers examine invasive plants of concern in order to report sightings to appropriate local agencies.

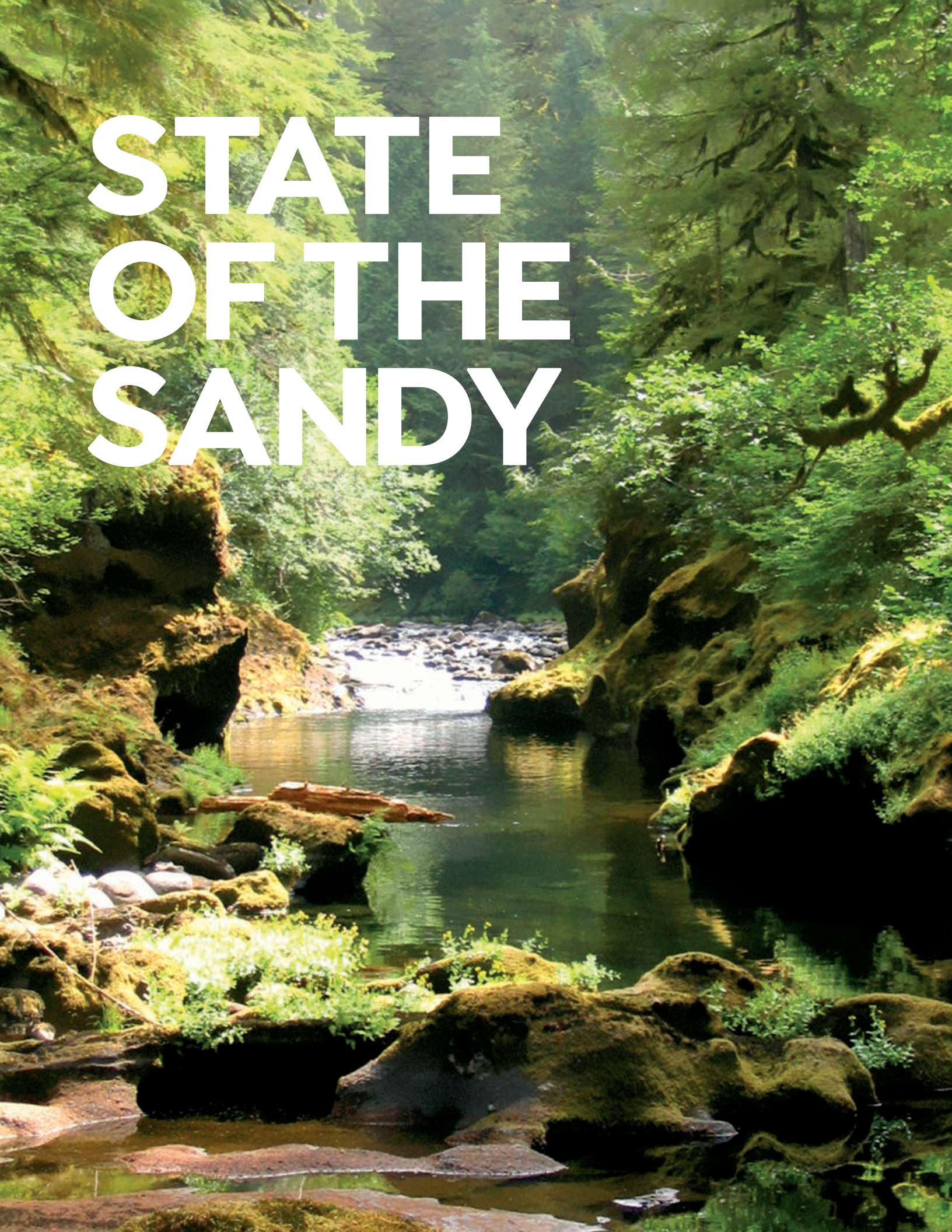
# STATE OF THE SANDY



**Sandy River Basin  
Watershed Council**

*Working together to restore the Sandy River*

# STATE OF THE SANDY



# THE SANDY UNDAMMED:

## A Dramatic View of a River and its Wild Salmon in Recovery

Removal of the Marmot dam from the Sandy River in 2007 opened a remarkable chapter in the life of this iconic Pacific Northwest river. Dramatic and unprecedented in its scale and complexity, dam removal was a pivotal leap, and only the first major step toward realizing the Sandy's potential as a wild salmon stronghold.

Undamming the Sandy allowed threatened wild salmon and steelhead uninterrupted access to upstream spawning habitat for the first time in nearly a century. It also catalyzed a coordinated, science-driven push to boost ecological processes that help return the watershed's wild fish to sustainable levels. Historic impacts besides dams had also reduced habitat productivity in key areas. For wild fish to thrive the Sandy would need corridors of functioning floodplains and side channels, healthy streamside vegetation, and a committed community ready to care for the watershed in the long run.

A decade beyond removal of Marmot, and Little Sandy dam a year later, initial results of this conservation campaign are emerging. The collaborative restoration toward wild fish recovery in the Sandy River basin has taken major strides. The following State of the Sandy reviews key changes since dam removal, summarizing the Sandy's progress in three main areas:

- Priority restoration actions accomplished on the ground;
- Numbers of adult and juvenile salmon returning to the Sandy and its tributaries; and

- How human communities connect around stewardship, the river's role as water source and as a well loved recreation haven.

Finally, we'll look at future opportunities to further secure the Sandy's incredible ecological and social legacy, and challenges we may yet need to overcome to sustain the watershed's wild fish and biodiversity for future generations.

**The Sandy is emerging as a remarkable success story in the making, a tribute to the resiliency of rivers and the power of voluntary collaboration.**

Expert analyses point to indications that dam removal and focused restoration are moving the Sandy in a renewed direction. As the ripples clear from this groundbreaking effort to return a wild river to health, the Sandy is emerging as a remarkable success story in the making. It is a tribute to the resiliency of rivers and the power of voluntary collaboration. We thank the many thousands of individuals and organizations who have joined this effort already, and encourage you to help extend the Sandy's ecological connectivity and integrity for decades to come. ■

# STATE OF THE SANDY

## Dam Removal and Basin-wide Restoration in the Sandy

Removal of dams from the Sandy River basin reversed a historic trajectory for the basin that began when Portland General Electric (PGE) completed the Bull Run Hydropower complex in 1913. The 47-foot high Marmot dam diverted flow from the Sandy River, 30 miles from its mouth on the Columbia River. A tunnel excavated through a mountain (historically called the Devil's Backbone because of the difficulty immigrants faced hauling wagons and gear over it on the Oregon Trail) carried diverted water into the Little Sandy River, a tributary of the Bull Run. The Little Sandy dam completely dewatered the stream, sending it along miles of flume on a train-like wooden trestle to a reservoir, then into a powerhouse along the lower Bull Run. PGE built the dams to bring electricity to the growing city of Portland 20 miles east, also powering a trolley line that brought city dwellers for boating and swimming at the reservoir, called Roslyn Lake. The dam generated about 22 MW of electricity, enough to power about 16500 modern homes. In the late 1980s a concrete layer was added to the original earthen structure to strengthen the Marmot dam.

For thousands of years the Sandy and tributaries have been home to vibrant runs of wild salmon and steelhead. The Marmot and Little Sandy dams interrupted the annual fish migration, despite operation of fish passage to move migrating adults upstream. By the late 1980s, the Sandy's native spring and fall Chinook, coho, and steelhead populations were all declining. Wild fish throughout the Columbia basin were listed as threatened under the Endangered Species Act

### Sandy (and Marmot dam removal) by the Numbers

**1913**

Completion date for the Bull Run Hydropower project, including Marmot and Little Sandy dams

Marmot dam removed  
Little Sandy dam removed

**2007**  
**2008**

**56**  
**220**  
**680**

Stream miles in the main stem Sandy  
used by salmon and steelhead  
total in the basin

cubic yards of sediment released when Marmot dam was removed

**955,000**

**44**

Rare, Threatened, and Endangered Species known in the Sandy

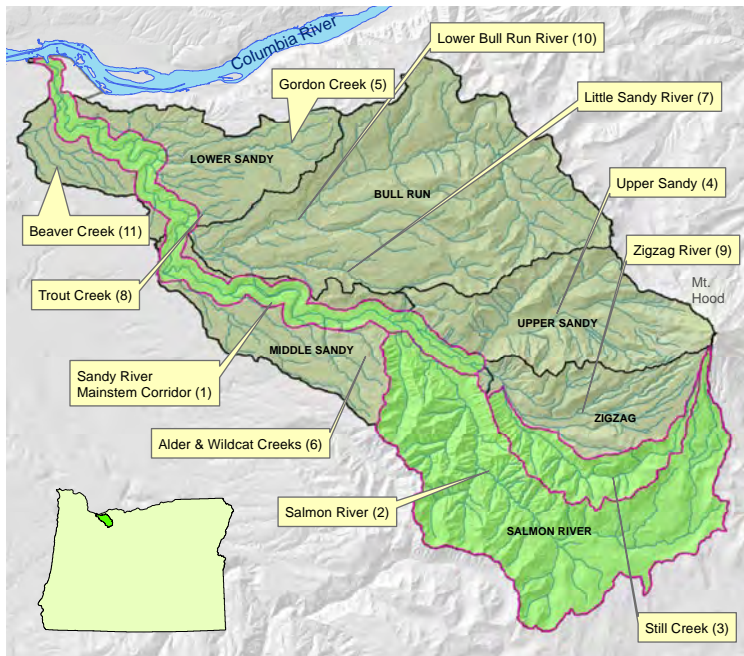


Yellow-billed cuckoo

# Restoring Fish Habitat in a Salmon Stronghold



## Priority Subbasins



Over 120 projects have been completed in the basin since 1997 (above). Of the fish species living in the basin, Chinook Salmon, Coho and Steelhead are listed under the Endangered Species Act at the federal level.

Note: One project can occur in multiple locations on the map and may have taken place over several years, or may be ongoing.

Sandy River Basin Partners analyzed which areas represent anchor habitat (left), ranking those with the highest potential for salmon and steelhead. The main stem Sandy River, Salmon River and Still Creek (shown in bright green) gained top priority.



First phase of Marmot deconstruction in July 2007.



Today Marmot is a year round recreational resource.

(ESA) in 1998-99. Sandy populations had dropped by this time to 10-25% of their historic levels.

Faced with a requirement to comply with the ESA and its prohibition to harm listed species, PGE weighed its options to renew its federal license. Continued operation of the dam would require constructing and operating fish passage. They would need both a ladder for spawning adults to safely return upstream, and a means to safely move migrating juveniles downstream across the dam. Recognizing that dam removal would cost customers less in the long run, PGE committed in 1999 to voluntarily removing Marmot and Little Sandy dams, and their associated infrastructure.

Planning for the physical dam removal took several years. A coalition of agencies and conservation groups consulted with the utility on the terms and process under which PGE would withdraw its hydropower license. No such surrender of a license had occurred before, so the extent of responsibility for river conditions once the dam removed had to be defined. PGE eventually agreed to dismantle the dams, transfer related water rights to the state as instream rights, donate much of the project's land to public ownership, prevent invasives from colonizing those lands, and monitoring river conditions for several years.

Deconstruction at Marmot began in summer 2007,

with the river diverted by a temporary earthen coffer dam built behind the once permanent Marmot. On October 19, 2007, as calculated in dam removal plans, a seasonal storm rose with enough force to wash away the temporary dam. An excavator cut a small notch in the coffer dam, releasing first a trickle and then a roaring torrent. Approximately 19 hours later, the entire structure was washed away. The Sandy flowed free for the first time in 94 years.

## Restoration Results: Piling on Priority Actions through Collaboration, Partnership, Persistence

The decision to remove dams from the Sandy catalyzed a broad, collaborative restoration campaign that leverages efforts across two counties, dozen of organizations and thousands of volunteers. Motivated by the prospect of a free flowing Sandy, a group of public and nonprofit agencies formed the Sandy River Basin Partners (SRBP) in 1999. Also around that time, the Portland Water Bureau developed a long term plan to comply with the ESA listings and habitat impacts from the water supply dams and operation in the Bull Run.



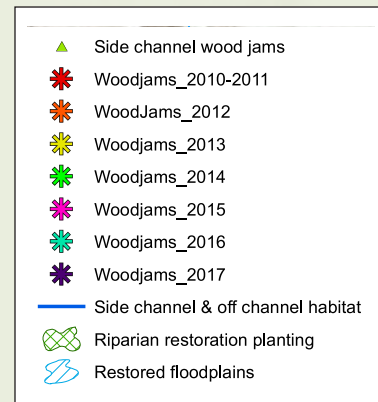
# The Salmon River: Restoration Brings Fish Response

Sandy River Partners developed a Salmon River restoration plan aimed to accelerate the recovery of naturally functioning river channels, riparian areas, and habitats key to production in the lower two miles of the river. Project objectives were to restore large wood availability, pool habitat and pool-tail area (areas with spawning-sized gravels), and off-channel habitat levels toward historical conditions estimated in earlier modeling. Actions also aimed to restore streamside vegetation.

The Salmon River is a top priority tributary in Sandy basin restoration plans, rated among the most productive spawning areas in the watershed. Located about 43 miles east of Portland, the Salmon originates from the Palmer Glacier on the southwestern slopes of Mt. Hood, draining an area of 110 square miles. The upper Salmon is within US Forest Service ownership. Portions are protected as federal wilderness, with other areas heavily used for hiking, fishing and recreation. Both Timberline Lodge and Skibowl ski areas lie within the Salmon basin, as well as other recreation sites, snow parks and trails. The lower Salmon is a mixture of federal and privately owned land, with residences, an RV park and a golf resort among its developed areas.

Historic logging, development, and channelization

## Focused Actions in a Demonstration Reach



had altered the lower Salmon River. Those actions created a flat channel with little habitat complexity. Only a single log jam was present on the 2-mile project reach. Connectivity was limited between the main channel, side channels and off channel habitats. Logging in the 1930s, and removal of large trees, logs and boulders after 1964 floods, simplified the river. These actions cut off the side channels, meanders, and wood jams that were crucial habitat for salmon and steelhead.

Implementation began in 2010, led by Freshwater Trust and Bureau of Land Management (BLM). The BLM manages extensive portions of the lower Salmon River. The Nature Conservancy led revegetation efforts as part of a broader vegetation restoration coalition. The project prioritized sites

for large wood placement that would best restore connectivity to side channel and off-channel habitats. Large wood added to side channels and off-channel areas improved habitat complexity for juvenile rearing, increased pool and pool-tail habitats. It also increased retention of spawning-sized gravels, while providing adult and juvenile cover. Native plantings and invasive species removal restored streamside plant communities, establishing sources of future large wood.

2.1 miles of main stem Salmon River was improved from 2010 to 2016. Construction of 38 main channel and 20 side channel wood jams added 1,799 pieces of large wood. This reconnected river flows to 2.1 miles of off-channel habitat including side channels, alcoves, and beaver ponds, and restored 28 acres of floodplain habitat. Invasive weeds were removed from 998 acres of riparian areas along 5.5 miles of river on both federal lands and 56 private parcels. Planting crews and volunteers installed 39,000 native trees and shrubs in treated areas, and an additional 42 acres of riparian habitat surrounding restored stream segments.

Monitoring has been completed collaboratively by The Freshwater Trust, BLM, Portland Water Bureau, ODFW, and the USFS, including cross-section and longitudinal profile measurements, pebble counts, large wood surveys, and photo points to observe post-project evolution of restored river conditions. Biological monitoring includes a 20-year commitment to monitor smolt out-migration, and annual spawning surveys for spring Chinook, coho, and winter steelhead. Snorkeling surveys every 2-4 years document juvenile fish use of side channels, off-channel habitats, and main channel wood jams. TNC annually conducted post-planting surveys of riparian plant survivorship

Three floods in four years after construction showed how the stream is responding to restoration. Pool numbers, volume, and depths increased to near historical levels in treated areas.

Side channel and off-channel lengths increased from 0.1 to 1.0 mile per river mile. Large wood numbers increased from 14 to 414 pieces per river mile. Pre- and post-project photo monitoring documented remarkable increases in spawning-sized gravels at wood jams and side channel inlets, as well as natural accumulation of large wood. Constructed wood jams increased up to seventimes their original size, snagging logs transported during floods. Riparian plantings all exceeded the goal of 60% survival.

Fish response to restored habitats was also notable. Surveyors counted over 10,000 juvenile coho (approximately half the Sandy's total annual coho offspring) and 3,300 juvenile steelhead annually in side channels restored to perennial flow. Juvenile fish densities at main channel wood jams in pools in 2014 were five times greater than that of main channel pools without large wood. Also, significantly more spring Chinook, and winter steelhead spawned in gravel patches next to constructed wood jams.

From 2012 to 2015, spawning surveys by the Oregon Department of Fish and Wildlife (ODFW) indicated that the number of wild winter steelhead spawning in the lower Salmon River increased by 365%. This compares to an average increase of 226% across the rest of the Sandy basin. The number of winter steelhead redds on the restoration reach doubled from 34 redds/mile in 2012 to 68 redds/mile in 2016.

Spring Chinook spawning on the restoration reach in 2016 (40 redds/mile) was three times the long-term average for the lower Salmon. For the second year in a row, 2016 also saw spring Chinook spawner numbers exceeding the long-term average by >150%. The number of adult coho salmon returning to the lower Salmon has increased significantly since restoration efforts began. By 2016, the number of coho spawning in restored side channels doubled, to 22 redds/mile compared to 11 redds/mile in 2009. ■

The SRBP conducted a scientific assessment of historic habitat conditions. Detailed plans identified steps to recover habitat productivity for specific salmonid species throughout their various life stages. Over 150 years of development and other changes meant that completely recreating historic habitat conditions in the Sandy River Basin was not possible. But the potential remained to recover ecological functions in important river reaches. This would give wild salmon and steelhead the places and conditions they would need to recover. Based on habitat modeling, the Sandy Partners prioritized potential restoration actions by subbasin. Recognizing that while all areas of the basin could be improved, the mainstem Sandy, Salmon River, and Still Creek were ranked as the highest priorities to support key wild fish recovery.

Various partners developed subbasin restoration implementation plans. Each plan identified specific habitat enhancements that could improve key limiting factors to wild fish productivity. Oregon Watershed Enhancement Board (OWEB) statistics show more than 120 restoration projects completed since 1997. SRBP's restoration efforts have garnered awards from the US Forest Service, BLM, American Fisheries Society, and Oregon Parks and Recreation Association.



## Passage Improvements

Dam removals at Marmot and the Little Sandy dams were just the first steps to reconnect access for wild fish. Actions to remove, replace or redesign passage blocking culverts and dams have also occurred at the Sandy River Delta, Alder Creek, Cedar Creek, Still

Creek, and the Salmon River. Additional passage improvements are underway in Beaver Creek, to be completed in 2018. Together, these improvements have reopened miles of habitat.

## Instream Habitat Enhancements: Reversing Historic Floodplain Degradations

Historic development activity, especially following the record Christmas Day floods of 1964, had reduced habitat quality and connectivity in many of the river's floodplains. In attempts to 'fix' the Sandy after the 1964 flood destroyed 155 houses, many bridges, roads and levees were built to confine the river in its pre-flood channel. Streamside vegetation was cleared on the theory that letting the water through as fast as possible was the best solution to future floods.



Those post-1964 flood responses cut off side channels and off-channel habitat that are essential for juvenile fish migration, feeding and development. Historic actions had also severely reduced the distribution of large woody debris and log jams that naturally create pools and hiding places for fish. Restoration plans called for reconnecting side channel and floodplain areas, as well as building large log jams for habitat conditions essential to salmon spawning and rearing.

Sandy River Basin Partners have completed extensive side channel and floodplain restoration, as summarized in the table on page 12.



## Bull Run Habitat Conservation Plan

The Portland Water Bureau developed the Bull Run Water Supply Habitat Conservation Plan (HCP) in 2008 to comply with the Endangered Species Act and Clean Water Act for water supply impacts in the Bull Run Watershed. The HCP describes 49 specific restoration actions and other conservation

measures the City will undertake over a 50-year period to address flow, temperature and habitat impacts that result from the City's drinking water operations and facilities.

Portland's drinking water supply has come from the Bull Run River since 1895. The Bull Run is approximately 25 miles long. Its watershed drains approximately 140 square miles, most located within the Mt. Hood National Forest. The City of Portland owns the majority of the riparian land along the lower 6 miles of the Bull Run River.

About a quarter of all Oregonians -- 966,000 in 2016 -- get their water supply from the Bull

Run, including residents of Portland, Gresham, Sandy and other surrounding communities. The City diverts approximately 20 percent of the total annual flow of the Bull Run River for water supply from two reservoirs, whose dams block approximately  $\frac{3}{4}$  of the basin's fish habitat. During the summer, the diversion had historically removed almost all of the natural flow, leaving little water in the river for fish. Reduced flow results in decreased habitat for spawning and rearing, as well as increased water temperatures. Changes in water withdrawals could rapidly change flows downstream, adversely altering spawning and rearing conditions for migrating fish. Although temperatures in the Bull Run River are naturally warm in the summer months due to the bedrock substrate and sun exposure, storage of water in the reservoirs causes further warming. Warm temperatures stress rearing and spawning fish.

Bull Run HCP implementation began in 2010, with most measures to be in place by approximately 2024. Some measures take place within the Bull Run, while the remainder address priority restoration targets in the rest of the Sandy. The estimated cost of all measures is \$93 million, estimated in 2009.

**Conservation so far in the Bull Run includes:**

- Meeting minimum flow levels in the lower Bull Run River, as well as requirements to adjust flow downramping (changes in flow);
- Culvert replacement at Walker Creek to improve fish passage in the lower Bull Run;
- Removal of a spillway rock weir below Dam 2 to improve water temperatures and fish passage;
- Placement of (how many) tons of spawning gravel for fish into streams;
- Addressing water temperature targets in the lower Bull Run – HCP targets aim to maintain cold water inflows to the lower Sandy;

- Major improvements to a withdrawal tower at drinking water Dam 2 to meet colder water temperature targets starting in 2014. The tower allows water to be mixed from colder, deeper layers in the reservoir when summer temperatures rise on the surface;
- Acquired 34 acres of land in the lower Bull Run as part of a broad program of conservation easements;
- Monitoring of juvenile fish at three fish traps, adult salmon counts, spawning gravel usage in the lower Bull Run, and habitat surveys of streams.

**Elsewhere in the Sandy River watershed HCP measures implemented so far include:**

- Conservation easements on private land for about 246 acres;
- Four projects that placed of large wood structures to improve fish habitat, with pre- and post-project stream monitoring streams to determine project effectiveness;
- Fish passage improvements including funding (\$3.7 million) to complete improvements on Cedar Creek (approximately 12 miles of stream opened to fish passage), two fish ladders on Alder Creek to open access to 5.5 miles of stream, and partnering with the U.S. Army Corps of Engineers to remove the Sandy River Delta Dam, opening over a mile of the Sandy's historic main channel where it meets the Columbia;
- Led the largest turtle rescue project in Oregon, prior to the Sandy Delta dam removal. Approximately 25 native painted turtles were successfully relocated away from construction activity.

Portland committed to create a Habitat Fund of \$9 million, dedicated to partnership habitat projects. Portland has committed approximately \$880,000 of Habitat Fund dollars through 2018 to Sandy River Basin Partners for restoration projects. ■

# Adapting Hatchery Management: Sorting out Chinook Strays

Dam removal also altered hatchery operations. With salmon already declining from overharvest, fish propagators began collecting eggs in 1887 on the Sandy and Salmon Rivers. The Sandy station moved downstream of Marmot dam in 1938, and in 1950 to the Oregon Department of Fish and Wildlife (ODFW) hatchery on Cedar Creek that remains in operation today.

Hatchery Chinook and coho released in the Sandy were imported in the 1960s-1970s from the Wilamette, Mackenzie, or Clackamas. Summer Steelhead were introduced in 1975. Releases expanded in the 1980s, reaching an annual peak of about 450,000 Chinook and more than a million smolts total.

The Sandy Hatchery program changed dramatically with ESA listings and planning for Marmot Dam removal, whose fish ladder allowed ODFW to remove hatchery Chinook straying into spawning areas. Interbreeding between hatchery and wild fish reduces genetic diversity, hampering survival of their offspring, a threat to wild fish



Oregon Department of Fish and Wildlife personnel use temporary weirs, this one on the lower Salmon River, to trap migrating spring Chinook, preventing hatchery strays from interbreeding with wild fish.

ODFW

recovery. Following dam removal, hatchery-origin Chinook spiked to over 75% in parts of the Sandy, far beyond restoration plans' 10 percent maximum.

Beginning in 2011, ODFW stationed traps each summer at the Zigzag, Salmon, and Bull Run rivers to remove hatchery Chinook, allowing wild fish to pass. Hatchery managers mixed wild fish into breeding, and reduced Chinook releases by two thirds following a legal challenge. Hatchery managers release smolts to the Bull Run River, after weeks imprinting in tanks there, to draw returning adults away from the Sandy. In 2016 the stray rates of hatchery Chinook in the upper Sandy decreased to 10%, with the vast majority of hatchery Chinook caught by anglers or trapped in the Bull Run weir at Dodge Park.

## Instream Restoration by the Numbers

Subbasin	Side channel miles restored	Miles of main channel treated	Large wood jams	Total large wood pieces
Salmon	2.1	2.25	67	1,976
Still Creek	8	7.5	240	2,300
Upper Sandy	0.5	1	5	150
Lower Sandy	3.3	4.4	35	406
<b>Totals</b>	<b>13.9</b>	<b>15.15</b>	<b>347</b>	<b>4832</b>

## Restoring Streamside Forests

Alongside functioning stream channels and floodplains, the forests surrounding the river are critical to watershed health. Diverse native riparian vegetation helps protect water quality, shades streams to maintain cooler temperatures that wild fish need, and supports food webs. Sandy Partners have extensively restored native vegetation, aligning riparian efforts with subbasin habitat priorities to reduce the spread of invasive plants, and maintain healthy forests that will contribute woody debris to restored streams in the long run.



Crews work to restore riparian vegetation.

Members of the Sandy Basin Vegetation Restoration Coalition (SBVRC), a subset of Sandy Partners led by the Nature Conservancy and coordinating with East Multnomah and Clackamas Soil and Water Conservation Districts, ranked 64 sites throughout the basin and prioritized restoration actions. Ten sites were chosen for their proximity to large blocks of undeveloped forested lands within the top two ranked watersheds (Sandy River and Salmon River). Multiple weed treatments reduced the spread of Clematis, ivy, holly, Himalayan blackberry and Knotweed. Followup plantings of native trees and shrubs established dense native understory to resist further establishment of invasive vegetation.

Complementary programs have enhanced streamside vegetation in other Sandy subbasins. East Multnomah Soil and Water Conservation District's *Streamcare* program assisted rural landowners to replant in Beaver, Big and Smith Creeks. Participating residents covered between a fifth to more than half of each stream's length.

SRBWC and CSWCD's Weed Smackdown collaboration has targeted emerging invasives in the lower Salmon and upper Sandy, working with

youth crews and volunteers to steward restored riparian zones, hand-pulling thousands of weeds over seven miles of the lower Salmon.

On the Sandy River Delta, the US Forest Service, Ash Creek Forest Management, Confluence, SRBWC, Friends of Trees, Friends of Sandy River Delta, and others have combined to restore 1,000 of 1,500 acres, planting about 1.1 million trees and shrubs.

### Riparian Restoration by the Numbers

Program	Acres treated	Trees/natives planted	Stream miles planted
SBVRC	2619	215,000	19.1
Smackdown	175	400	.25
Sandy Delta	1000	1,066,996	-
Streamcare	597.75	305,893	20.07
<b>Totals</b>	<b>4391.75</b>	<b>1,588,289</b>	<b>39.42</b>

With about 23 percent of the Sandy's area in private ownership, participation from private landowners was critical to the success of these projects. Sandy Partners bring know-how, plants and assistance, but ultimately it is area residents who must sustain stewardship.

Volunteers and youth crews reduce the spread of invasive species along the Salmon River by cutting flowering Policeman's helmet, which can crowd out native plants near streams.





## FISH POPULATIONS BEFORE AND AFTER DAM REMOVAL

# Signs of Increased Adult Spring Chinook, Steelhead, and Coho; Slower Response in Fall Chinook

A 2010 study of ways to measure the effect of habitat restoration arrived at a contrary conclusion: “Fish? Don’t go there.” Wild salmon and steelhead populations are affected by a range of factors beyond habitat connectivity and function. So improvement in habitat, while one driver of wild fish recovery, alone may not propel changes in target populations.

Yet any trends in the Sandy’s threatened wild fish populations are essential in evaluating habitat

function. State, federal, and local agencies have collaborated to develop comprehensive monitoring of the Sandy’s wild fish. Annual counts track spawned carcasses and redds, the gravel nests where salmon spawn, to estimate adult returns. Sampling outmigrating smolts with large metal floating traps produces annual estimates of juvenile fish exiting each tributary. Together, the monitoring opens a view into the otherwise unseen cycle.

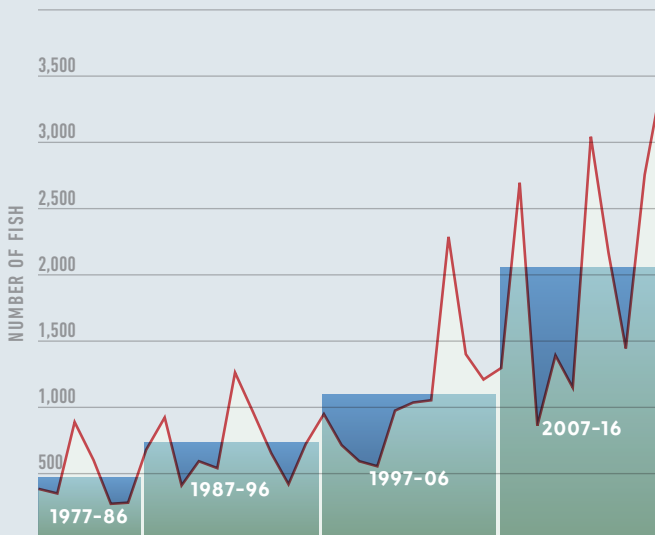


# Tracking the Sandy's Wild Fish Populations

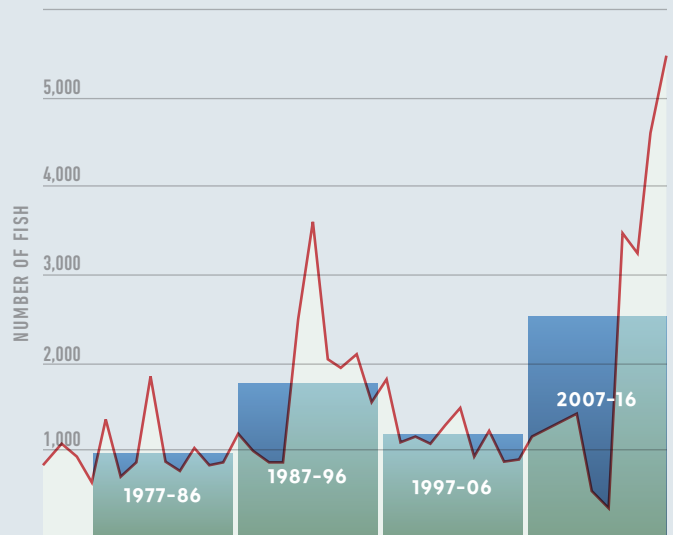
Annual monitoring crews in the Sandy count adult salmon and steelhead carcasses and redds, the gravel nests where fish deposit their eggs while spawning. Those samples are the basis of estimated adult wild fish counts, shown in the graphs below.

A variety of factors affect fish populations, including habitat, hatcheries, harvest, dams, ocean conditions, variations in rain, snow, temperature and climatic factors affecting stream flow, among others. Those factors can lead to significant variations from year to year. The figures below also calculate 10-year averages, comparing the trends over longer periods of time. Three threatened Sandy wild populations, spring Chinook, coho and steelhead, show increases in their 10-year average populations, particularly in the second generation of adult fish returns after dam removal.

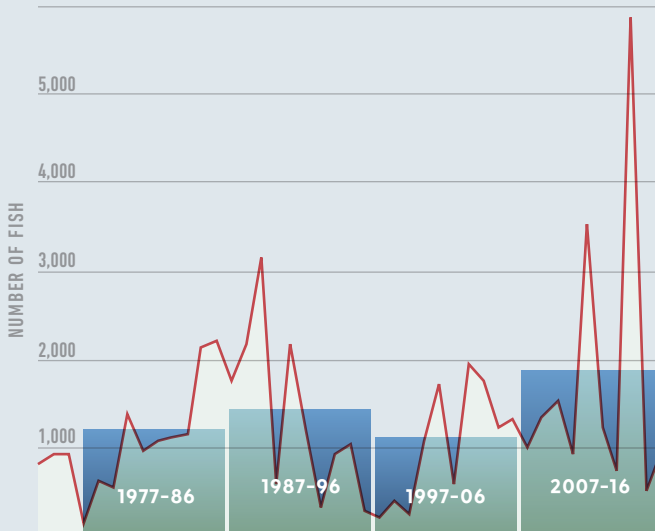
## SPRING CHINOOK



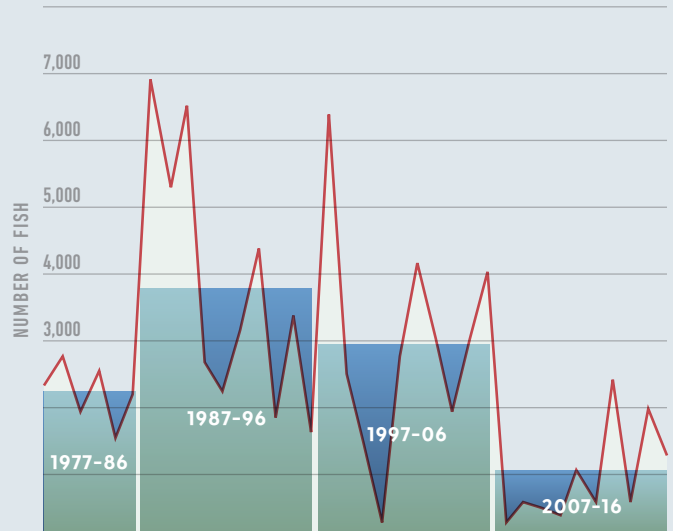
## WINTER STEELHEAD



## COHO



## FALL CHINOOK



For the Sandy, three populations of target wild salmon and steelhead show measurable growth since dam removal, and subsequent restoration actions, reconnected much of the basin's habitat. According to Oregon Fish and Wildlife Department estimates, adult wild spring Chinook, Coho, and Steelhead in the free-flowing Sandy have increased compared to the decades before their federal threatened listing. Fall Chinook have continued to decline.

For spring Chinook, Coho, and Steelhead, populations have roughly doubled or more in the average since dam removal, compared to the decade before dam removal. Chinook increased by 90 percent; Coho by 137 percent; Steelhead by 123 percent.

Sandy steelhead nearly tripled compared to the decade before their 1998 listing. The most recent

four years, representing the second generation of returns since dam removal, have averaged over 4,200 wild steelhead, compared to an average of 1,272 in the 3 previous decades. Analysis comparing the trend in Sandy steelhead numbers with other wild steelhead populations shows stronger growth in the Sandy following dam removal than in nearby dammed rivers and the Oregon coast.

Populations of Fall Chinook have continued to decline since dam removal, although survey conditions make estimates less accurate. Fall Chinook in the decade since dam removal averaged only 978 wild adults, about a third of their population in the decade 1996-2006.

Chum are considered extirpated in the Sandy, although one adult chum was identified in Beaver Creek in 2010.





## Where are the Kids? Counting Migrating Juveniles

Several agencies collaborate to sample juvenile salmon migrating out of spawning tributaries, another indicator of population trends from spawning fish. Using large floating “screw traps,” biologists identify species, measure, and take scale samples from migrating smolts entering the trap, releasing them after quick data capture.

Conducted for coho and steelhead, smolt monitoring primarily indicates the location, distribution and freshwater production of the species. Streams selected for smolt sampling total 106 miles (56 percent of the total habitat in the Sandy River accessible to anadromous fish). Over 80 percent of the clear water stream miles are included. Smolt monitoring covers nearly the full range of environmental conditions that salmon and steelhead encounter in the Sandy

River Basin and is considered by the Sandy River Basin Partners monitoring group to constitute a representative index for the entire basin for steelhead and coho.

Juvenile estimates included here are based on the first eight of a planned 20-year monitoring effort. Because smolt trapping covers 11 separate subbasins, an emerging notion of where the Sandy’s fish emigrate from comes through. The movements of juvenile salmon and steelhead within the Sandy basin, between emergence as fry and emigration as smolts, is not yet fully understood but is also the target of investigation.

Smolt monitoring has identified areas with intriguing productivity. Beaver Creek, the Sandy’s lowermost tributary, has measured as many as 9% of all of the Sandy’s coho juveniles in some years. The Bull Run represents about half the watershed’s juvenile steelhead emigration, but only a small proportion of habitat miles available below drinking water dams.

# Still Creek: A Stream Restored in Five Years

Aside from the Salmon River, Still Creek provides the highest densities of spawning and rearing habitat for salmonids in the Sandy River basin. Those characteristics ranked Still Creek a top SRBP priority and a focus within the Forest Service's Watershed Condition Framework, leading to a subbasin action plan for restoration completed in 2017.

Still Creek originates below the Palmer Glacier and a series of springs on Mt. Hood's west side, fed by year-round snowpack at the highest elevations. About 98% of the watershed's 14,412 acres is located within National Forest. Bisected by Highway 26, the watershed is a popular area for hiking, fishing, and camping. Private lands within the watershed include parts of the communities of Government Camp, Rhododendron, and the Faubion/Zigzag areas. Additionally, 129 recreational residences line the lowest 3 miles of the stream.

From 2012 through 2017, the Forest Service, Freshwater Trust, and Sandy partners worked through a list of 19 projects, 8 essential instream elements, and 11 supporting actions to mitigate the effect of roads and other sources of sediment and contaminants. Instream restoration work occurred in 8 stream segments with similar



Log jams help deposit gravel that salmon use to build spawning nests, called redds.

characteristics, between river mile 0, Still Creek's confluence with the Zigzag River, to river mile 8.01. A ninth project area enhanced the lower 0.65 miles of Still Creek's largest tributary, Cool Creek.

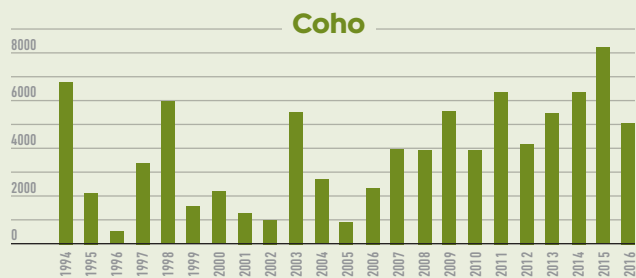
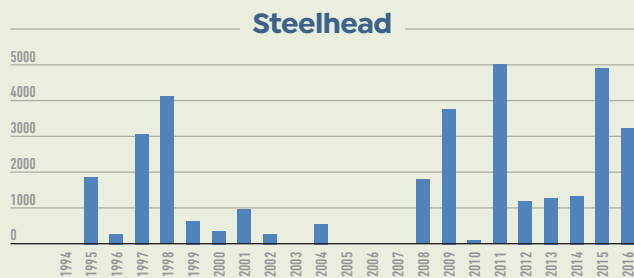
Though specific restoration actions varied for each project area, three objectives guided instream actions:

- (1) increase large woody debris (LWD),
- (2) enhance aquatic habitat, and
- (3) restore floodplain connectivity.

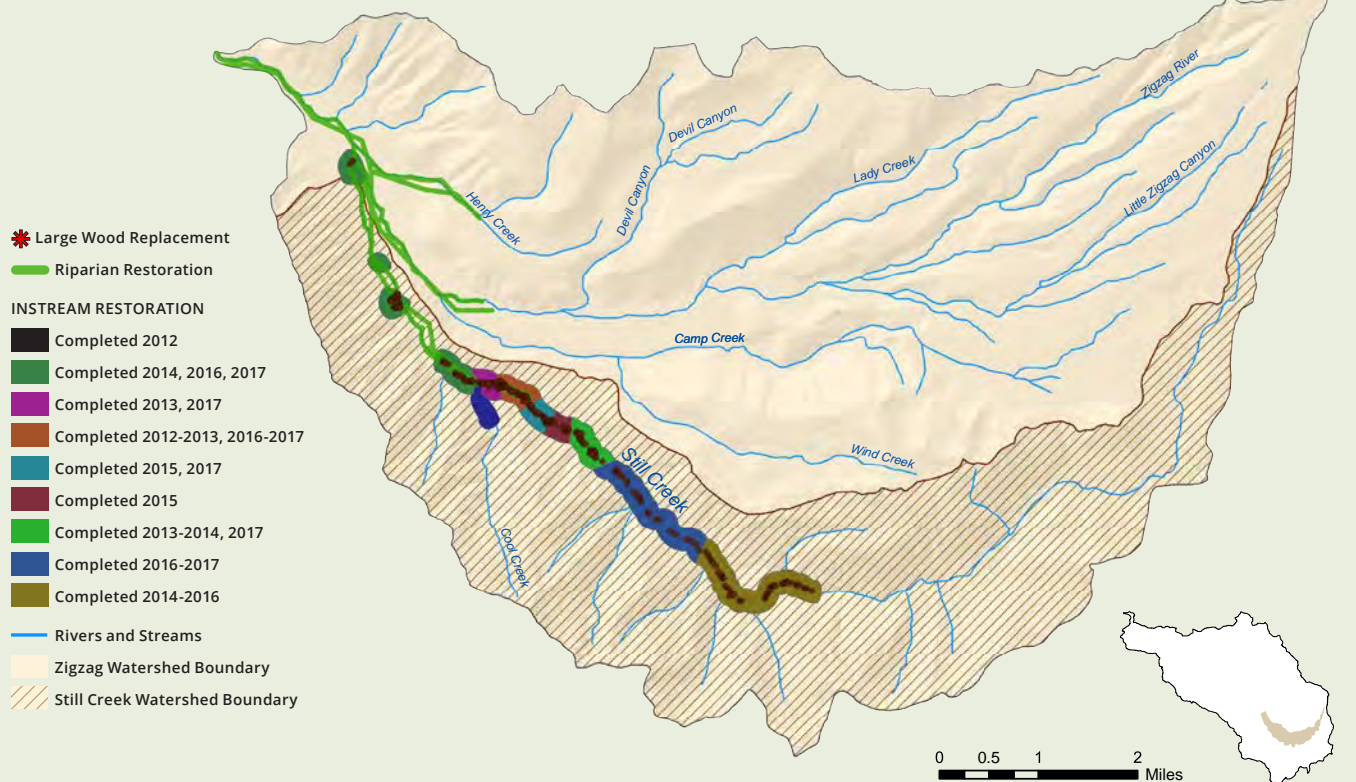
Key instream restoration accomplishments included the addition of 2,300 pieces of large

## Two Decades of Juvenile Monitoring

Still Creek juvenile smolt counts from recent years reflect growth after habitat restoration.



## Still Creek Restoration 2012–2017



woody debris (LWD) to the stream, the creation of 240 log jams, the reconnection of 6.5 miles of side channel habitat, and the formation of 62 main channel pools. Additionally, the removal of 5 log weirs in Cool Creek opened 0.65 miles of previously unavailable habitat to migrating salmonids

Other restoration actions reduced impacts from logging and other human activities, increasing Still Creek’s resiliency for future climate change. Over 700 feet of berms were removed to allow the stream to spread across the floodplain during flood events. About a third of a mile of skid trails have been replanted with native trees and shrubs. Schools and community groups brought 225 volunteers, who contributed 45,000 volunteer hours to supporting work like tree planting, invasive weed removal, and salmon carcass distribution.

Pre and post project habitat surveys show substantially increased large wood and log jam densities in the creek and side channels. Survey

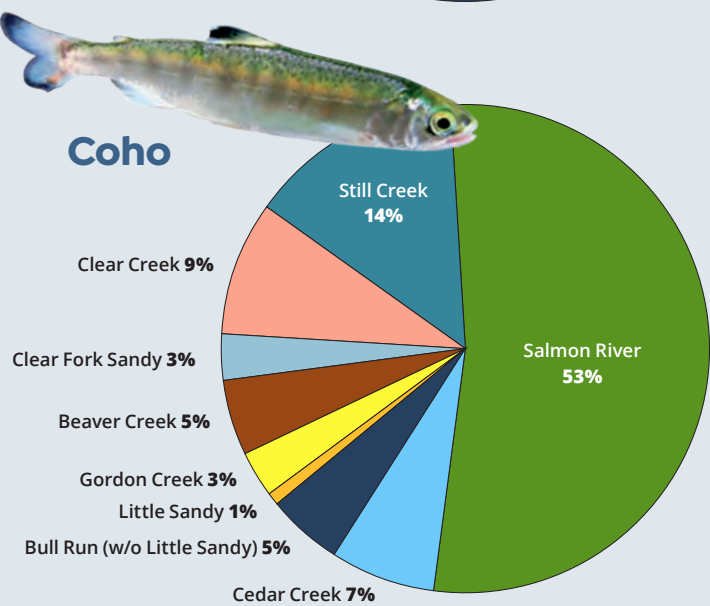
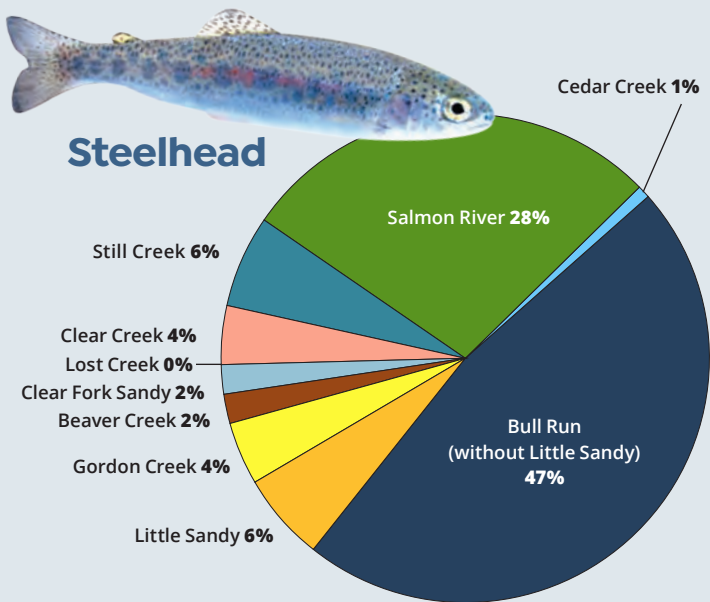
crews found 62 additional main channel pools had formed — a 70 percent increase from pre-project conditions — the vast majority caused by additions of LWD. The total length of side channel increased from an estimated 1 mile prior to restoration to nearly 7.5 miles after restoration. Surveyors also measured increased gravel deposition around installed log jams.

Monitoring crews observed juvenile salmonids utilizing log jam structures as early as two weeks after their construction. Snorkeling surveys have documented the use of off-channel habitats by juvenile coho and steelhead, increased spawning, and an growth in coho smolt out-migration over the past two years. Still Creek’s restored large wood, log jams, and re-established side channels, pools, and habitat diversity will continue to provide important habitat, promote complex channel dynamics, and recruit additional large woody debris into the future.

# Examining the Exodus

Smolt monitoring shows a large proportion of steelhead emigrating from the Bull Run, and about half the juvenile coho departing the Salmon River. Figures represent the average percentage of all smolts over five years surveys.

## Where are Smolts Coming From?



Smolt traps sample juvenile migrating salmon and steelhead in 11 streams around the Sandy each year, including this one in Beaver Creek.

Juvenile monitoring also shows what happened where the second dam was removed. Recolonization of the Little Sandy River by steelhead after the removal of Little Sandy Dam in 2008 appears to have been immediate and sustained, although steelhead production decreased in 2016. The first year that steelhead smolts were expected to result from the first steelhead adults spawning in the newly reopened portion of the stream was 2011. The Little Sandy 2011 steelhead smolt population was comparable in terms of smolts per stream length and area to streams of similar size that were never blocked to steelhead, like Gordon Creek or Still Creek.



Removal of the Little Sandy Dam in 2008 allowed rapid repopulation by wild steelhead.

# PEOPLE AND THE SANDY

## A Crossroads for Fish, Wildlife and Culture

As long as people have lived in the Northwest, the Sandy has been a crossroads of human, fish and wildlife populations. Ancestors of Columbia Basin Tribes, from today's Confederated Tribes of Grand Ronde and Confederated Tribes of Warm Springs, lived, hunted, fished and gathered in the area. Local Chinookan people greeted Lewis and Clark's expedition when it arrived at the Sandy Delta in 1805, and on its return in 1806.

When the Barlow Road established a land route for immigrants around Mt. Hood and through the Sandy, the state territorial legislature's authorization in 1845 recognized native presence in the area. The territorial legislature acknowledged the role of Tribal people who provided essential aid to arriving settlers: "That nothing in this act shall be so construed, to exempt persons from paying toll, who may employ Indians to drive their cattle, horses, &c., along said road."

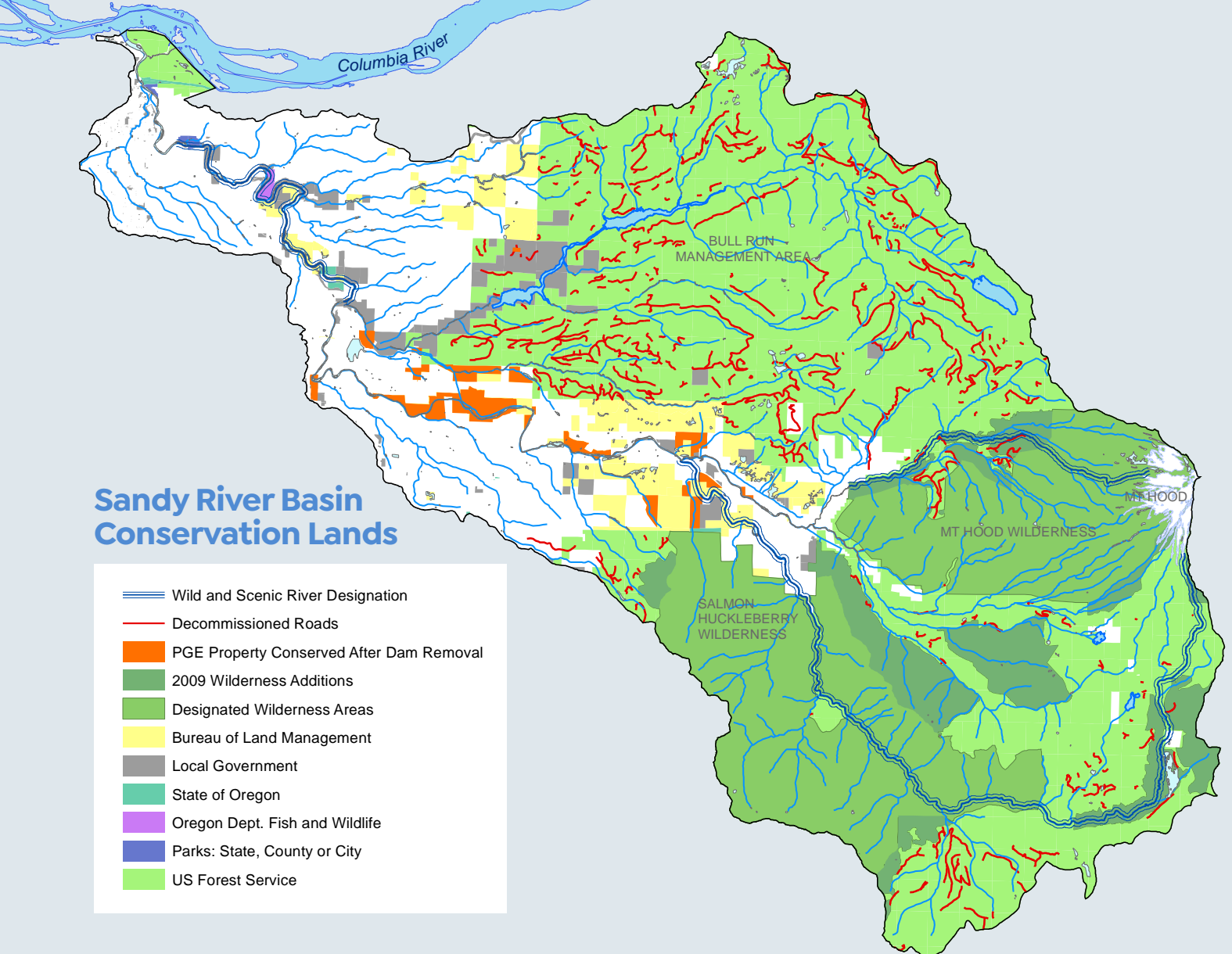
Communities in and around the Sandy now support an increasingly diverse population of about 145,000 people. The communities of Corbett, Troutdale, Gresham, Sandy and Mt. Hood Villages together have grown almost 25 percent since 2000, particularly Sandy (98%) and the unincorporated areas of the Villages of Mt. Hood (66%).

The Sandy serves far more people than those who live within the watershed boundaries, playing a key role in the region's economy, above and beyond its potential as anchor habitat for wild fish. The Bull Run represents water supply for nearly a quarter of Oregon's population. Breweries, coffee



shops and other water-dependent businesses have become signature elements of the region's quality of life, and major contributors to the local economy.

Millions visit the Sandy year round for recreation, relaxation, beauty and solace. Public land agencies have counted significant growth in year-round use. A study of the area known as Mt. Hood villages, including trails, ski areas Timberline and Skibowl, and other popular venues, estimated 34,000 average day-use visitors in fall months, rising to 129,000 in winter months. Overnight visitation ranges from 11,000 per fall month, peaking at 34,000 people per summer month. Visitation and popular sites also reflects the Sandy's central



Actions since dam removal extended the Sandy’s conservation corridor. As part of its dam license surrender, PGE donated its Sandy holdings to Western Rivers Conservancy, which conveyed them to the Bureau of Land Management. Forest service wilderness was extended in the Sandy, adding protection to areas in the Salmon, Zigzag and Upper Sandy. Extensive Forest Service road decommissioning removed or disconnected miles of former logging roads.

The former Marmot Dam site is now a recreation area open from May through October and operated by the Bureau of Land Management.





# Habitat Where the People Are: Restoration in the Main Stem Sandy

The main stem Sandy gained top ranking as anchor habitat for salmon and steelhead, serving as the migration corridor for all fish species, whether juveniles heading downstream toward the ocean, or adults returning to spawn. The main stem Sandy is also home to the most people. Private ownership extends from unincorporated villages and neighborhoods along the Mt. Hood National Forest, through portions of Sandy, Gresham, and Troutdale. The main stem represents a corridor of protected local, state, federal and Metro recreation lands that serve thousands of visitors each year. Restoration in the main stem Sandy must work where people are, alongside homes, parks, roads, bridges and infrastructure.

Efforts in the Lower Sandy grew from Metro's 2010 habitat assessment, prioritizing five key actions in an 8-mile reach between Dabney State Park (six miles from the Columbia) to Oxbow Regional Park (river mile 14). Beginning in 2012, Metro, Bureau of Land Management, SRBWC, and the Portland Water Bureau began implementing the five projects. The Happy Creek project reconnected a perennial stream that had been blocked when Oxbow was built, guiding flow into a side channel with large engineered log jams. Two years later, SRBWC and Metro restored a side channel alongside nearby YMCA Camp Collins, a facility that serves 12,000 visitors every year. In 2016, Metro and Portland Water Bureau completed two additional projects, across from Oxbow.

SRBWC also identified four instream restoration opportunities in the upper and middle Sandy, between the former Marmot dam site (river mile 30) and the Zigzag River confluence. Working with the Columbia Land Trust and neighboring homeowners at Timberline Rim, SRBWC completed the first floodplain reconnection in 2016. Actions



Levee removal and log jams steered flow into the Columbia Land Trust floodplain, reconnecting habitat and reducing erosion risk to downstream homes in Timberline Rim.

removed 200 feet of post-1964 levee and built five large log jams to guide water into the a side channel most of the year. With 500 homes immediately downstream, the project was also calculated to absorb a portion of the river's erosive force during flood events, reducing potential flood risk.

At the Sandy Delta where the river meets the Columbia, removal of a small 1935 dam in 2013 reconnected 1.2 miles of channel, combining efforts by the U.S. Army Corps of Engineers, Bonneville Power Administration, and Portland Water Bureau. Lower Columbia Estuary Partnership removed historic water control structures that reconnected another 1/3 mile of channel to the Columbia, and placed 100 large pieces of wood over 1.8 miles of wetland channel that will provide habitat in high flow periods.

Like other priority sub-watersheds, extensive invasive species removal and native streamside vegetation restoration surrounded main stem instream restoration projects. Oxbow project areas re-vegetated 115 acres. At the Delta, replanting has covered two-thirds of the Delta's 1,500 acres of forest, clearing blackberry and other invasives and installing over a million native trees, shrubs and other plants. ■

# Where Fine Refreshments Flow

The Portland metro area holds a well-earned reputation as a craft beer and coffee mecca. Essentially, every pint brewed in Beervana and every coffee in coffeetopia begins with Sandy basin water from the Bull Run. Conservation, efficiency and changes in population show that consumption had declined slightly even as population grows. Clean water from the Sandy's healthy forests is the vital fluid of the area's lifestyle and economy. Drink up! ■



**38.105** Craft Beer brewers in the Portland Metro area  
in 2007 in 2017

Number of coffee shops in Portland (600 independent) **737**

in 2007-08 **884,300** Total people served by Portland Water Bureau  
in 2015-16 **966,600**

Gallons consumed **35.5 billion** in 2007-08  
**33.5 billion** in 2015-16



role as an outdoor destination. Use at the Sandy Ridge bike trail, opened in 2012, grew from 30,000 its first year to nearly 93,000 in 2016. The Sandy Delta's over 100,000 annual visitors makes it the second most popular site in the Columbia Gorge National Scenic Area, behind only Multnomah Falls.

People also play critical roles in the Sandy's restoration and stewardship. Thousands have participated in native tree planting, invasive species removal, trash cleanups and other activities to care for the Sandy. For the State of the Sandy to remain strong for biodiversity, residents and visitors will need to continue the long tradition of caring for the watershed as the basin and region's populations grow. ■

Community planting days at the Sandy River Delta bring hundreds of volunteers, essential part of restoration in the basin.



# SEVEN STEPS: Sustaining the Sandy's Future

The Sandy's first free flowing decade has witnessed major strides toward ecological reconnection and recovery. But it will take more than one decade to reverse impacts from more than a century of development. Further action in restoration, stewardship and the social commitment to a healthy watershed will be necessary to advance the progress since dam removal, build on the river's positive trends, and cope with broad ecological and social forces affecting the basin.

## Next Restoration Priorities

**1** With instream work in Still Creek largely completed, restoration partners will need to complete remaining Salmon River tributaries and main stem Sandy priority actions. The US Forest Service will pursue additional work in Upper Sandy tributaries, including the Sandy's Clear Fork, Lost Creek, and Cast Creek.

## Completing the Connections

**2** Culvert improvements in upper Sandy tributaries Conway Creek and Henry Creek would improve impeded fish passage, reconnecting several miles of coho and steelhead spawning habitat. Mt. Hood Community College is considering dam removal at Kelly Creek in Gresham, where an artificial pond adds as much as four degrees — to stream temperature in summer months, a level potentially lethal to fish. Culvert improvements scheduled on Beaver Creek and Kelly Creek above the pond will also improve the Sandy's lowermost tributaries.

## Restoration Effectiveness: Digging into Sandy Science

**3** The Sandy's extensive monitoring will yield more learning about how rivers recover. Smolt monitoring is planned for 20 years to identify trends and distribution by 2029. Genetic samples collected during adult and juvenile population surveys represent a living research library, holding the potential to relate parentage and productivity: how many smolts fish does each sampled spawning pair produce, and how do areas of the basin support various species?

## Not Just for Fish: Supporting other vulnerable wildlife

**4** The Sandy is home to a full range of Pacific Northwest fish, wildlife, birds, and plants. The 2010 Oregon Natural Heritage Survey identified 31 fish, bird, amphibian, reptile and plant species in the Sandy that are rare, threatened or endangered. Pacific Lamprey and Eulachon (smelt) have been added to the threatened aquatic concerns. The Sandy Delta is among a handful of





sites that have seen a threatened Yellow-billed cuckoo, recently listed threatened. The Delta's rare western painted turtle population, discovered in wildlife rescue efforts prior to dam removal there in 2013, is also a target for habitat conservation in an area with increasing recreational use.

## Coping with Continued Development

**5** Regional population growth and development will continue to affect the Sandy. A Clackamas County study of erosion risk from channel migration estimated that at least 450 current homes in the upper Sandy lie within a high risk zone, likely to be impacted by future storms. Potential changes to riverside development rules, and application of green infrastructure to manage rain such as that planned at the Mt. Hood Community College campus stormwater retrofit, may be necessary to reduce urbanization's effects as population grows.

## Adapting to Climate Change

**6** Climate modeling predicts changes in precipitation patterns, rising snow levels, warmer summer temperatures, and lower and warmer stream flows that could stress salmon and other aquatic life. Climate may raise the value of the Sandy's connected, free-flowing corridor in the Lower Columbia. Compared to the Columbia, the Sandy runs three degrees Celsius cooler in summer, making Sandy river a cold water refugia for migrating salmonids. The good news:

modeling from the Columbia River Intertribal Fish Commission shows intensive riverside forest restoration can offset some or all of the predicted stream temperature increases associated with climate change.

## Extending the Fellowship of the Undammed

**7** The Sandy and its restoration is a living case study in community-based collaboration. This effort holds the potential to prove that dam removal and prioritized, collaborative, voluntary restoration at watershed scale can make a measurable, lasting difference. In the Sandy, this potential exists alongside and in the face of rapid metropolitan growth. More than 1,100 dams have been removed in the U.S. over the past four decades. A scientific review showed that that rivers recover quickly, and that migrating fish will recolonize undammed rivers given the chance. The Sandy has been and can continue to be a pioneer in an extensive, nationwide corps of rivers and their living communities that are renewed through dam removal and a broad community commitment to ecological recovery. ■



# ACKNOWLEDGEMENTS



The ***State of the Sandy*** was made possible by generous support from East Multnomah Soil and Water Conservation District, Portland General Electric’s Habitat Support Program, and Clackamas Soil and Water Conservation District. The report was written by SRBWC Executive Director Steve Wise, with maps created by SRBWC’s Katherine Cory. SRBWC would particularly like to thank Oregon Department of Fish and Wildlife’s Jim Brick and Todd Alsbury, and Portland Water Bureau’s Burke Strobel for assistance compiling biological data, Bureau of Land Management’s Bruce Zoellick for information on Salmon River restoration, and U.S. Forest Service’s Greg Wanner and Matthew Deangelo for information on Still Creek, and Bryan Potter Design for graphic and production assistance.



## The Sandy River Basin Watershed Council

The Sandy River Basin Watershed Council (SRBWC) is a leader in collaborative habitat restoration throughout the Sandy River and its tributaries. Watershed residents and land management agencies organized the SRBWC in 1997 to gather community efforts around conservation and restoration of the river’s ecological, cultural and historic values.

## Sandy River Basin Partners

In 2000, a partnership of public and private organizations convened an effort to coordinate recovery of anadromous fish species in the Sandy River Basin. This effort was prompted by two significant events: (1) the 1998 and 1999 listings of steelhead and Chinook as threatened species under the federal Endangered Species Act; and (2) Portland General Electric’s 1999 announcement of their intent to remove the Little Sandy and Marmot dams. The partners recognized that the basin was changing and that the effort in the coming decades would best be accomplished by coming together to define common restoration goals and to leverage each other’s resources.



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**Sandy River Basin  
Watershed Council**

*Working together to restore the Sandy River*

[sandyriver.org](http://sandyriver.org)



CLACKAMAS SOIL AND WATER

# CONSERVATION DISTRICT

Good dirt. Clean water.



**2016-2017**

**Annual Report**

We see the District as a place where our communities, environments, and economy thrive together. Our mission is to help create that future. We provide technical service and support designed to help people use natural resources sustainably today and for future generations.





## Message from the General Manager

From all of us at the Clackamas Soil and Water Conservation District, thank you for another great year of conserving natural resources. Inside this report you'll find highlights of our work with people and organizations who share our interest in assuring that natural resources in Clackamas County are available for future generations.

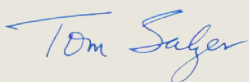
Our professional staff provides technical advice about management of water, wildlife habitat, soil, and invasive weeds. These services are free. Our WeedWise program is a leader in addressing priority invasive species. In this capacity, we employ many tools to reach the landowners who make our work successful.

Clackamas SWCD is fiscally healthy through the careful management of the financial resources provided primarily by Clackamas County taxpayers. We work hard to leverage and supplement tax revenue by obtaining grants to help landowners implement conservation actions. We also support the work of partners where their activities align with our mission and goals.

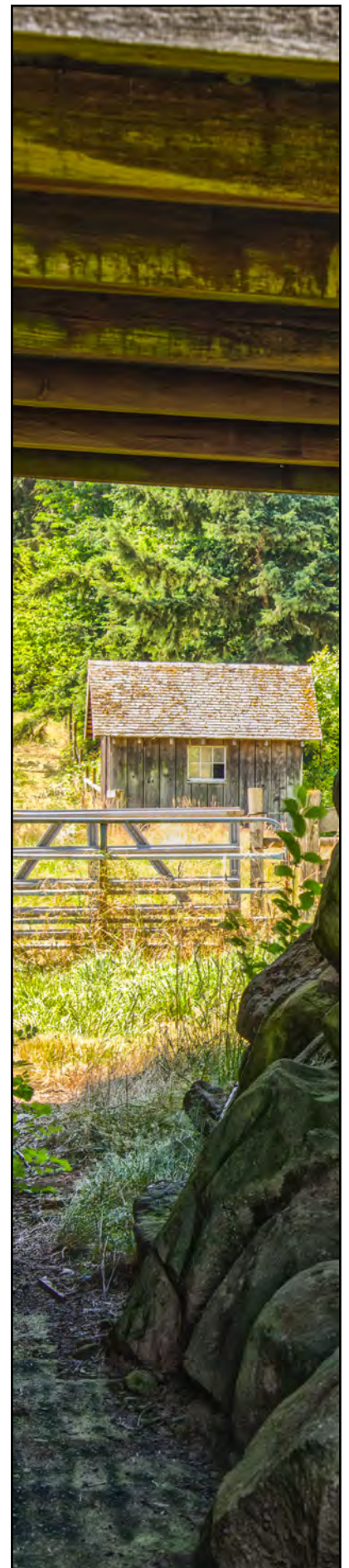
What this report does not spell out is the quality of our Board members. The Clackamas SWCD Board of Directors is a high-functioning team. Their decision making is informed by citizen concerns, customer feedback, and information from staff. The staff team is a group of professionals with the common goal of working well with people to conserve natural resources.

Our work touches the creatures and communities in Clackamas County. In the city or in the country, our work improves natural resource conditions for everyone. We know we could not do this work without the landowners who chose to work with us this year. We are both proud and humbled by your confidence in us. Thank you!

Yours for conservation,



Tom Salzer  
General Manager



## Successes in Conservation Planning

**Our planning team** works with landowners across a wide variety of land uses and conservation issues.

From small rural residential properties to full scale agriculture, our planners provide technical resources to help landowners make informed decisions about managing their land.

**A great example** of our services is highlighted in our assistance to irrigators in 2016-17. We helped five growers convert to more efficient drip irrigation systems on a total of 229 acres of hazelnuts, nursery stock, and berries.

The cumulative annual water savings from these conversions is estimated at 327 acre-feet, equivalent to 106 million gallons! These systems also significantly reduce energy and labor costs.

Our planners strive to provide solutions on local farms that benefit all of Clackamas County.

**Urban conservation** efforts were bolstered by a significant investment of District funds for the

expansion of the popular Backyard Habitat Certification Program into West Linn, Milwaukie, Oak Grove, Johnson City, and Jennings Lodge. The District will continue to fund the expansion in 2018.

This program assists urban residents in restoring native wildlife habitat by address five issues which reflect District concerns and values:

- Invasive Weeds
- Native Plants
- Pesticide Reduction
- Stormwater Management
- Wildlife Stewardship

**The District is very interested** in the movement of wildlife, including pollinators, and the importance of the habitat connectivity between existing natural areas in our urban centers with those in our rural communities

By supporting the expansion of the habitat program, landowners will have the technical assistance they need to improve that connectivity for wildlife.



**Drip Irrigation:** Low pressure systems reduce pump wear and repair costs.



Joy Viola, Northeastern University, Bugwood.org

**Acorn Woodpeckers:** Improved habitat help native bird populations.

In 2016-2017 the Conservation Planning Program provided:

- » technical resources and assistance to **207 landowners**;
- » Walked and visited with landowners on **124 properties**;
- » Prepared **23 conservation plans** to help guide land management;
- » Implemented **14 conservation projects**. We assisted with these practices:



**Livestock water system**

Fence – 4,710 feet	Gutters and Downspouts – 4 systems	Heavy Use Areas – 15,575 square feet
Underground Outlet – 150 feet	Tree and Shrub Establishment – 6 acres	Forest Stand Improvement – 4 acres
Forest Site Prep – 7.6 acres	Irrigation Tail Water Recovery – 1 system	Irrigation Pipeline – 23,460 feet
Micro-irrigation and Water Management – 200.3 acres	Irrigation Pumping Plant – 1 system	Brush Management – 5.6 acres
Prescribed Grazing – 5 acres	Livestock Water System – 2 systems	

## WeedWise Highlights

The WeedWise program's initiatives focus on the active management of priority invasive weeds as well as providing assistance to Clackamas County residents.

In the past year the WeedWise program has:

- » Evaluated and **updated the Clackamas Weed List** with 217 weeds and 90 priority weeds;
- » Provided assistance to **2,888 residents**;
- » Maintained permissions with **1,862 landowners** for **109,338 acres** of property;
- » Surveyed **230 properties** totaling **3, 809 acres**;
- » Carried out **287 weed treatments** on **283 infested acres**;
- » Sent targeted mailings to **2,101 households**;
- » Partnered with **54 public and non-profit organizations**
- » Administered **2 Cooperative**

### Weed Management Areas

- » Tracked **42,902 weed observations**.  
Over the last year the WeedWise program has also been working on a number of large scale projects including:
  - » County-wide *Rapid Response* weed control effort that targets all high priority Oregon class A noxious weeds in Clackamas County;
  - » Development of the **Clackamas River Invasive Species Partnership (CRISP)** for weed control efforts in the Clackamas River Basin;
  - » Continuation of our *Weed Smackdown* in conjunction with the **Sandy River Basin Watershed Council** to survey and control priority weeds in the Sandy River Basin;
  - » Coordinating and sponsoring the expansion of the *Backyard Habitat Certification Program* to target invasive weeds in the urban areas.



**Goatsrue:** A new priority weed discovered on the Clackamas River



**Japanese knotweed:** A primary target for weed control efforts



**Before (left) and After (right) :** The WeedWise program recently assisted a resident with a large milk thistle infestation in a horse pasture. The results above were realized after only one year of active management.

## Outreach Highlights

In 2016-2017 our outreach events focused on a wide variety of topics for a wide variety of audiences. We hosted:

- Dealing with Mud and Drainage (for horse owners)
- Introduction to Soil and Water Conservation Districts (for local realtors)
- Soil Health Workshop for School and Community Garden Educators
- Taking Advantage of Beneficial Insects to Control Crop Pests (for producers reduce pesticide use)

We also participated in **Small Farmer and Rancher Day** at the Capitol with local high school students. District staff helped them learn about agricultural legislation and how it affects local farms.

**New outlets** for circulating conservation information were developed in 2016-2017 including space in:



Beneficial insect field day

- *Oregon Horse Country* (e-newsletter for horse owners)
- *Forest Tree Leader* (Clackamas Farm Forestry Association quarterly newsletter)
- *Citizen News* (a quarterly newsletter from Clackamas County)

**Our social media** presence increased tremendously this year. In 2017 we reached 400 followers

on our facebook page.

**Our website** posts and events were on average updated weekly. Posts are packaged up and sent as a monthly newsletter to 128 subscribers.

**Oregon white oak restoration** was a hot topic this year. Outreach and planning this year prepares for projects next year.



Farmer and Rancher Day at the Capitol



Even One Oak Matters



Alayne Bickle workshop speaker

## Financial Summary

**Our equipment rental program** began in 2001 with the 7' no-till drill. Today we have eight pieces of equipment to offer, but the 7' no-till drill is still the favorite. It was rented this year by seven landowners to seed 93 acres. These numbers were significantly down from last year due to an extremely wet spring.

**Watershed Council Support Grants** were offered again in 2016-2017 with \$95,000 awarded to nine watershed councils in Clackamas County.

**Farmers Market support grants** totaling \$39,343 were also awarded to nine farmers markets.

**The District loan program** made \$45,624 in payments this fiscal year on three loans. The loans were awarded to help pay for two irrigation projects and one livestock exclusion fencing project.

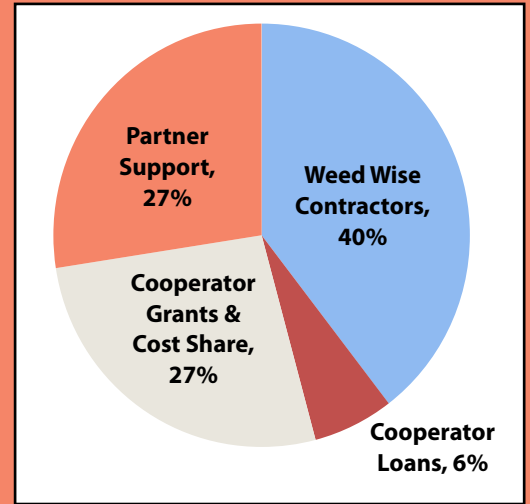
**Grants to landowners this year** totalled \$194,318 to help install many conservation practices.

## How Our Conservation Fund Dollars Return to the Community



**Pesticide collection events** held in November and April safely disposed of 21,587 pounds of restricted or unusable pesticides. The District, Clackamas River Water Providers, and state agencies paid for the safe disposal.

**Academic Scholarships** were awarded to three students in 2017. Scholarship amounts were \$1,500 each for the 2017-2018 school year.



*Congratulations scholarship winners!*



Rebecca Whitlock and Adan Vasquez  
Missing: Julia Barnes

## Conservation Fund Expenditures

Accrual Basis	General Fund	Conservation Grants Fund	Conservation Loans Fund	Building Reserve Fund	Working Lands Fund
<b>Beginning Balance 7/1/2016</b>	1,078,983	552,879	0	94,536	57,686
Income	2,712,146	106,732	93,170	1,928	0
Expenses	1,802,555	726,423	48,430	93,333	53,253
Transfers Out of Fund	517,882	134,000	0	0	0
Transfers Into Fund	0	490,882	134,000	0	27,000
<b>Ending Balance 6/30/17</b>	2,506,456	558,070	178,740	3,131	31,433

## Board of Directors

Chair  
**Jeff Becker**  
Zone 3

**Ron Oberg** (thru 12/31/16)  
**Jim Johnson** (1/1/17 - 6/30/17)  
Zone 2

Vice Chair  
**Jesse Nelson**  
Zone 1

**Joan Zuber**  
Zone 4

Treasurer  
**Roger Fantz**  
At-Large

**Jan Lee**  
At-Large

Secretary  
**Don Guttridge**  
Zone 5

## Associate Directors

Jackie Hammond-Williams      Mark Sytsma

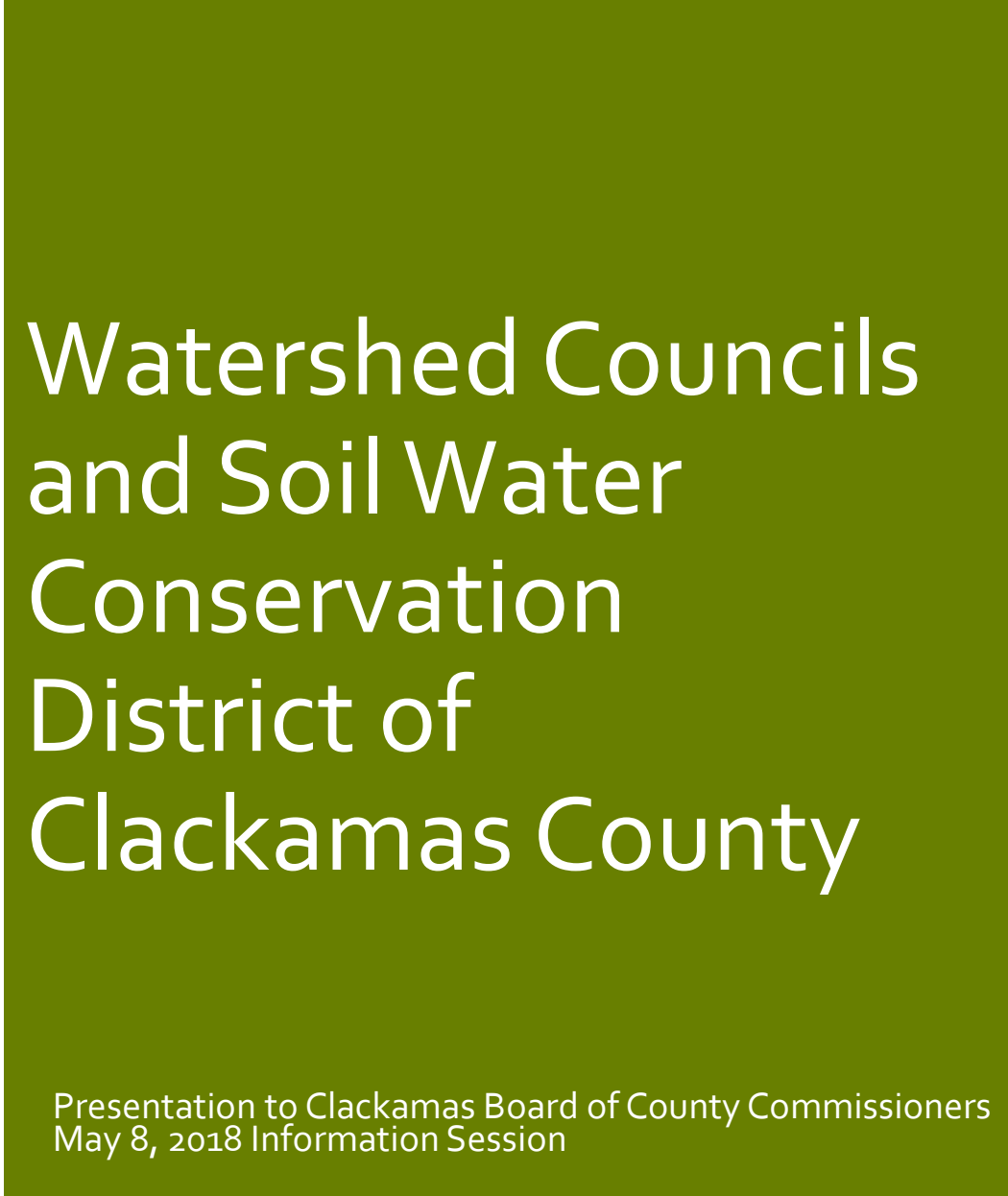
PK Melethil      Jim Toops

## Director Emeritus

Michael Weinberg



The Clackamas Soil and Water Conservation District prohibits discrimination against its customers, employees, and applicants for employment on the basis of race, color, national origin, age, disability, sex, gender identity, religion, reprisal, and where applicable, political beliefs, marital status, familial or parental status, sexual orientation, or all or part of an individual's income is derived from any public assistance program, or protected genetic information in employment or in any program or activity conducted or funded by the District. The District is an Equal Opportunity Employer.



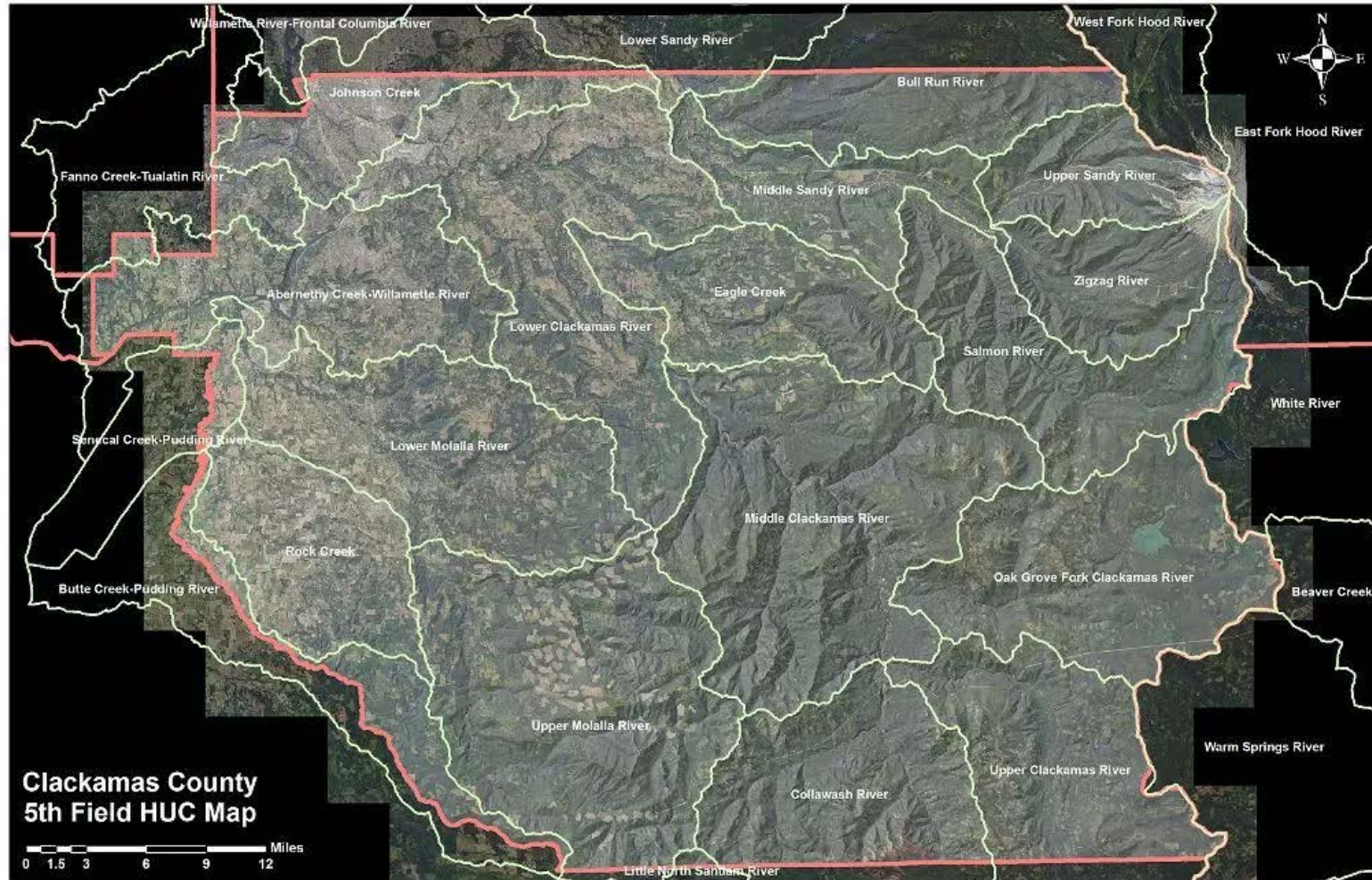
# Watershed Councils and Soil Water Conservation District of Clackamas County

Presentation to Clackamas Board of County Commissioners  
May 8, 2018 Information Session



# Clackamas County: 1 SWCD and 10 Watershed Councils

- [Clackamas River Basin Council](#)
- [Greater Oregon City Watershed Council](#)
- [Johnson Creek Watershed Council](#)
- [Molalla River Watch](#)
- [North Clackamas Urban Watersheds Council](#)
- [Oswego Lake Watershed Council](#)
- [Pudding River Watershed Council](#)
- [Sandy River Basin Watershed Council](#)
- [Tryon Creek Watershed Council](#)
- [Tualatin River Watershed Council](#)





# Clackamas County: 1 SWCD and 10 Watershed Councils

- Involve public in stewardship activities
  - Independent Sector Values Volunteer  
Time=\$24.69/hour
- Complete projects: riparian, fish passage, aquatic habitat, water quality, agriculture programs
  - Miles of Streambank Planted, Fish Habitat Opened, Water Quality Protected
- Funding from federal and state, corporations and foundations along with individual donations support local jobs and communities
  - >\$2,115,328 Federal, State, Corporate & Local Funding Supported Watershed Councils in 2017

University of Oregon study (2010) reports:

**\$1m** restoration work = **20 local jobs**

**For every \$1** spent on restoration, an average **additional \$2.10 to \$2.40** is generated in spending within the county





# Riparian Planting for Water Quality and Aquatic Habitat Benefit

8.87 Miles of Streambank Buffer Planted (>158,200 Plants)



# Streambank Vegetation Filters Groundwater, Controls Erosion, Shades Waterways

## Drinking Water Sources

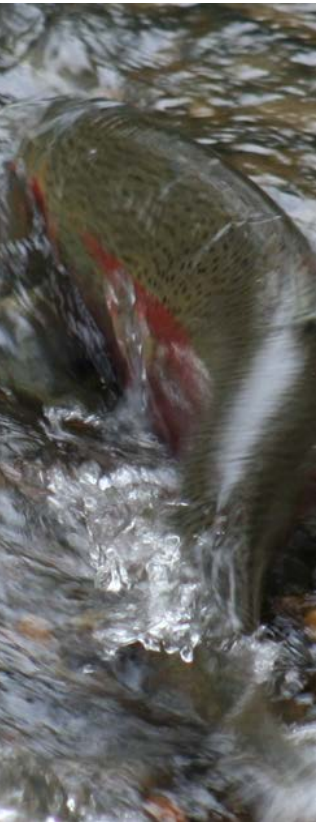
- Bull Run in Sandy Basin supplies drinking water to City of Portland
- Clackamas River is the drinking water source for nearly 400,000, 10% of Oregonians!
- Molalla River provides drinking water for Molalla and Canby



Carver Boat Ramp & Park

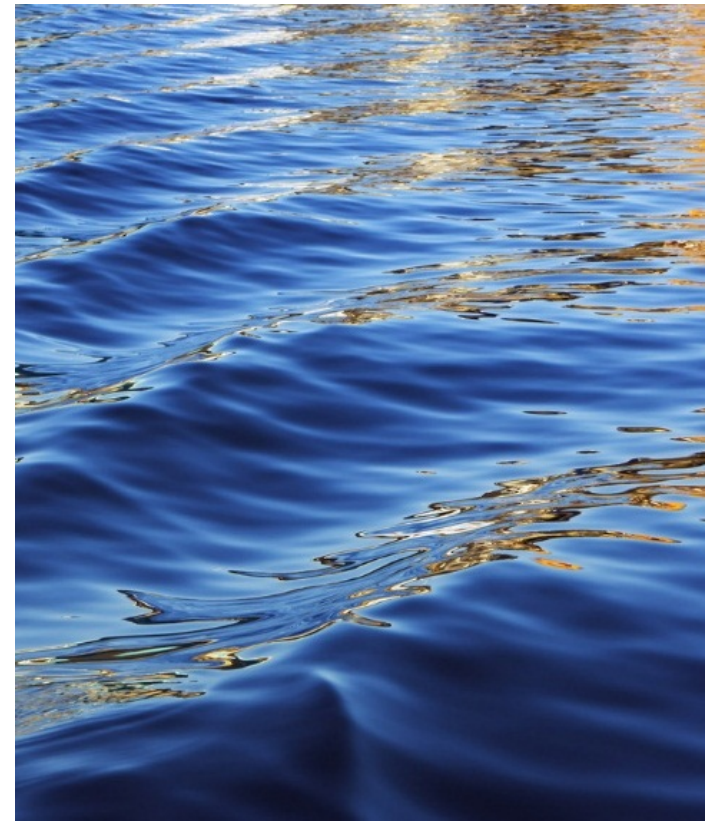


Tualatin River Watershed Council



# Instream Habitat Enhancement & Fish Passage

>1 Mile Opened and Enhanced



# Side Channel / Floodplain Reconnection, Fish Passage Opened and Habitat Enhancements



Greater Oregon City Watershed Council



Partnerships with County: DTD, Parks, WES, OWEB

- GOCWC fish passage on Potter Creek
- .63mis Fishers Bend Phase I Alcove and Phase II Side Channel Connection

WES & ODFW Tour of Rock Creek Confluence Habitat Enhancements



Fishers Bend Phase I Alcove

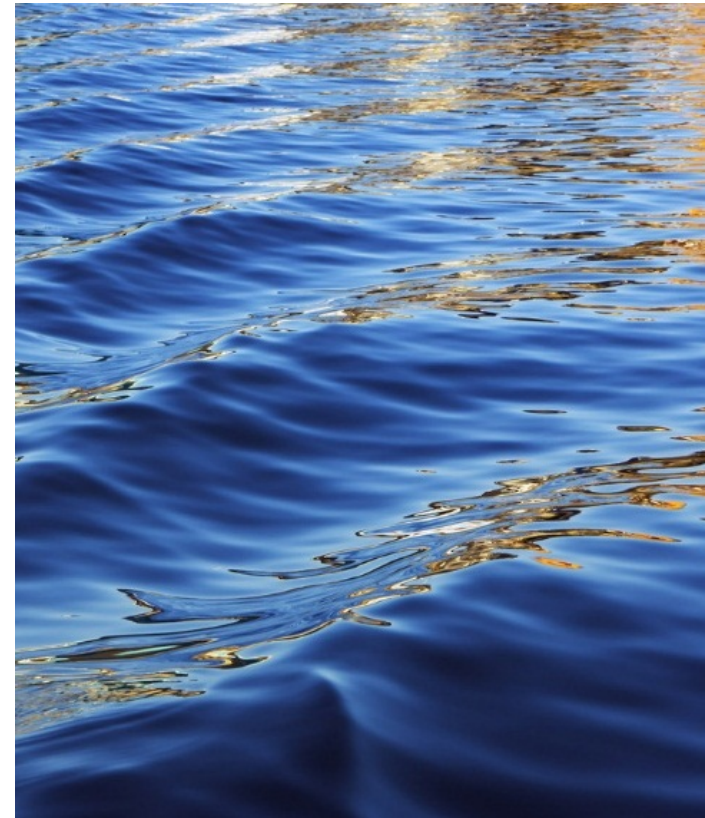


Since 1997, Oregon Watershed Enhancement Board Awarded \$9,003,935 for Restoration Activities in Clackamas County \$2,941,051 Is for Projects in 2015-18



# Community Volunteerism & Events

>2,970 Volunteers, 14,206 Total Hours Dedicated = \$350,746 Value



# Community Volunteers & Events



Rock Creek Watershed Volunteers



## Clean Up Events Protect Water Quality

- 1.3 tons trash removed – Molalla
- 1.9 tons removed during Clackamas River Clean Up
- Removal of 33 shopping carts from Newell Creek Canyon
- 100 lbs removed by volunteers with Pudding River around Mill Creek
- 5.1 tons – Johnson Creek



Pudding River Watershed Council



Greater Oregon City Watershed Council