



Johnson Creek Watershed Council

# Within Your Reach

reach: a) a portion of a stream or river b) an extent, esp. of knowledge or comprehension

## New Zealand Fish Passage Technology... It's Baffling! - Chuck Lobdell, JCWC



Culvert at 262nd Avenue  
pre-baffle installation.

Last November, JCWC completed one of two culvert retrofit projects in the North Fork of Johnson Creek as part of our Open Migration Project. The fish passage barrier we addressed is a culvert under 262nd Avenue in Gresham owned by Multnomah County; the culvert is a barrier at both low and high flows.

When the creek is running high, the culvert (which is slightly undersized and overly steep) increases flow velocity and essentially creates a fire hose effect downstream. The creek below the culvert outlet has scoured out a large plunge pool which partially backwaters the cul-

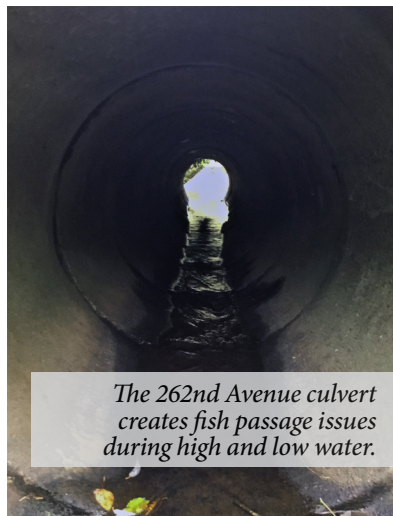
vert, however during these higher flows velocity makes the culvert impassable to fish. Conversely, at low flows the water flowing through the culvert is too shallow for fish to swim through.

Working with our engineer at Ecological Restoration Services and Oregon Department of Fish and Wildlife we have been working on a design solution to address fish passage in the short term while we work with Multnomah County on a long term solution that may involve replacement. Our quest for the short term solution took thinking outside the box to a whole new (geographic) scale! A company in New Zealand (ATS Environmental) specializes in creative solutions for not only fish passage, but shellfish passage as well. ATS has devised a method of retrofitting culverts using a pliable, molded plastic-type material that is intended to be low maintenance, semi-flexible, easy to install and inexpensive... Sounds too good to be true? We were about to find out.

The first thing we learned is that ordering materials from down under takes a little time; shipping via ocean cargo container isn't quick or predictable but we allowed a couple months for delivery. Funding for the design and implementation of this project was made possible by a grant from Metro.

Our discussions with ODFW biologists and fish passage experts led us to an experimental application of this new technology, in fact our culvert retrofit in Gresham is the FIRST ever use of this technology in the western United States! On November 7, 2018, we installed 5 of these flexible baffles inside the 40-foot long culvert, and the effects were immediate and impressive. Prior to installation, the water entering the culvert from upstream was about 1 inch deep, and at the outlet about 6 inches deep.

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The 262nd Avenue culvert  
creates fish passage issues  
during high and low water.

## Welcome Back Jack!

We are happy to have Jack Halsey as our Confluence AmeriCorps member! Jack was a Fish Passage Intern with the Council in the Summer of 2013, surveying over 100 culverts in the watershed.

In his new role as Outreach and Riparian Specialist, Jack has been planning and implementing riparian restoration projects, volunteer events, and environmental education for student groups and watershed residents. This position is generously funded in part by Clackamas Soil and Water Conservation District, Herbert A. Templeton Foundation, East Multnomah Soil & Water Conservation District, Clackamas Water Environment Services, and the Community Watershed Stewardship Program. In his first 5 months, Jack has worked with over 500 students!



Jack (second from left) returns to JCWC!  
Photo: Colin Durfee

Jack received his Environmental Analysis degree from Pitzer College (Claremont, CA), and conducted thesis research on fire ecology. He was a seasonal Park Ranger at Tryon Creek State Natural Area for two years, working to improve recreation opportunities, educate visitors, and restore degraded habitat. He is especially passionate about environmental justice, and has enjoyed getting students from underserved communities outside and excited about nature! In his free time, Jack enjoys hiking, cooking, going to concerts, and making ceramic art.



Working Together - Daniel Newberry, JCWC Executive Director

Partnerships. Collaboration. In the field of watershed restoration, this is how projects happen. When multiple organizations design more regionally-sized restoration efforts together, the result is often that they can attract regional and national funding sources.

We had this experience with the North Fork Johnson Creek Open Migration project, where eight partners and funders (East Multnomah SWCD, Multnomah County, Metro, Portland Parks & Recreation, ODOT, PGE/TNC, National Fish & Wildlife Foundation, JCWC) came together to address seven barriers that impeded salmonid passage. The first three projects were completed in 2016, the last two will finish up this summer.

We're excited to be part of an even larger effort: the Clackamas Partnership. Comprised of four watershed councils and a dozen agencies, we've been preparing a plan and fundraising for three years. The goal is to restore native fish population in the genetically distinct Clackamas Population of coho, steelhead, and chinook, as well as lamprey and bull trout. This population is a specific designation under the federal Endangered Species Act. Our partnership covers projects in tributary basins and the mainstem Willamette from Johnson Creek in the north to the Clackamas River and Abernathy Creek in the south.

Three other councils—Clackamas River Basin, North Clackamas Urban Watersheds and Greater Oregon City—are also core members of this partnership, along with ODF&W, Confederated Tribes of Warm Springs, Metro, Clackamas W.E.S., Clackamas SWCD, US Forest Service, North Clackamas Parks & Recreation, and Oregon Parks & Recreation.

On January 17, the Oregon Watershed Enhancement Board (OWEB) awarded our Partnership a two-year \$3.5 million grant, primarily for fish habitat and passage improvement projects. This is part of an \$8.7 million planned investment by OWEB over six years. The OWEB funding comes from a relatively new program, the Focused Investment Partnership. OWEB is committed to regional solutions, recognizing that with multiple councils and agencies planning, vetting, and prioritizing projects, the result will be stronger and will address larger fish runs/populations.

Funding for Johnson Creek Watershed Council in this grant is for a dam removal this summer on Kelley Creek, a habitat enhancement project in 2020 in Milwaukie on mainstem Johnson Creek near a cold water tributary input, and a stormwater planning project. Funding in the subsequent biennium—which now has a good chance of being awarded—includes a habitat enhancement project in Gresham and partial funding for three culvert replacement/removal projects in upper Mitchell Creek.

We are excited to get started and grateful to be working with so many dedicated agency and council partners!



NEW GRANTS

**Clackamas Soil and Water Conservation District** – (\$10,000) – Annual general support that will help fund our outreach, watershed education and volunteer and landowner engagement in Clackamas County.

**City of Gresham** – (\$12,500) – General funding that supports our volunteer stewardship and education/outreach work and specific funding for our riparian efforts in the City of Gresham.

**City of Portland Environmental Services** – (This year's amount: \$25,000) – Funding for Watershed Protection and restoration, community science programs and optional watershed restoration projects for a 5-year period.

**The Minteski Family Fund of the Oregon Community Foundation** – (\$30,000) – Supports our volunteer program manager position.

**City of Milwaukie** – (\$7,500) – Funding for a CreekCare program for residents along Johnson Creek in the City of Milwaukie.

**Oregon Watershed Enhancement Board** – (\$295,000) – as part of The Clackamas Partnership Focused Investment Partnership (FIP) Implementation grant of \$3.5 million for the next two years. JCWC is a core partner with \$295,000 designated for JCWC projects and planning.

(Continued from page 1)

We began installing the baffles working from the downstream end, and by the time the 4th baffle was in, the lower three were already altering flow patterns and increasing water depth slightly. Shortly after completing the installation, we stood in the creek upstream of the culvert and noticed that the creek itself was experiencing a backwater effect from the baffles, and flows inside the culvert were dramatically slower with water stacking up behind each baffle before slowly flowing around the end of each baffle. I, for one, did not expect to see such obvious alterations of flows.

However, being first comes with big responsibilities. During the fish passage permitting review we volunteered to monitor the effects the baffles have inside the culvert, and report on our findings. With funding from The Nature Conservancy, through PGE, we will conduct several days of visual monitoring and attempt to measure flow velocities inside the culvert.



We are currently working on developing our sampling protocol, and look forward to evaluating the potential for this new technology to perhaps be a viable triage for fish passage projects during the lengthy funding and permitting processes.

Winter Appeal Wrap-Up

Thank you, thank you to the many individuals and businesses who gave during our annual winter fundraising appeal. We raised a total of \$27,500, which includes \$12,500 in match from the Mintkeski Fund of the Oregon Community Foundation, the Wilson Family Foundation, Freeway Land II and MODA Health. These donations fund many items not covered by grants!

Growing Relationship With The Blueprint Foundation

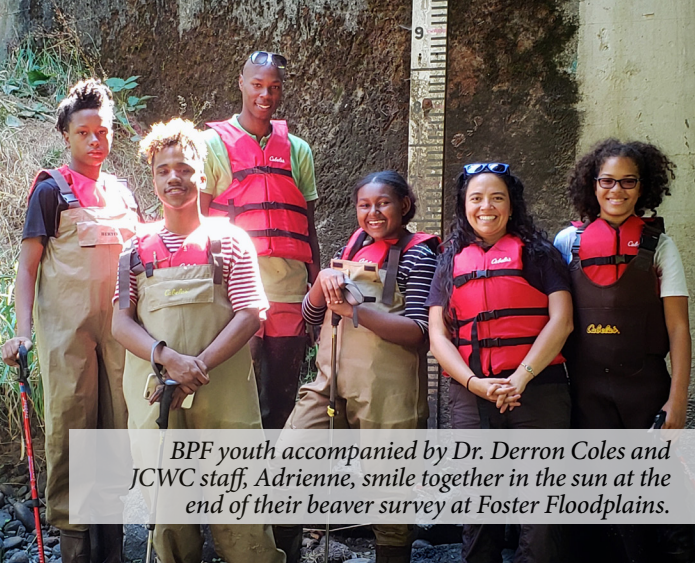


The Blueprint Foundation (BPF) is a non-profit organization that aims to eliminate the opportunity gap for underrepresented youth in the Portland area. Begun by members of the historically Black Fraternity, Phi Beta Sigma (Portland Chapter), their mission is to expose Black urban youth to learning opportunities that they may not otherwise be able to access. By providing youth with culturally-specific resources and mentors, BPF supports their personal and professional development in ways that lead to family-sustaining careers in sectors where Black-identified individuals are historically underrepresented.

Working with The Blueprint Foundation on wildlife monitoring projects has been a highlight of our partnership over the last year. Students from BPF Grounding Waters and Constructing Careers Programs joined JCWC as part of our Beaver and Salmon surveying projects in 2018.

Today, we are thrilled to be planning a multi-year project with BPF at Leach Botanical Garden that will continue this line of work doing community science and monitoring, as well as environmental restoration. We will be restoring and monitoring 4.5 acres along Johnson Creek to native habitat, while providing ongoing environmental education and stewardship opportunities.

Thank you so much to the Blueprint Foundation staff, board, mentors, students and community- we are honored to be working with such a dynamic and impactful organization!





# Stormwater Monitoring in Pleasant Valley

- Katie Holzer

Old-growth Douglas fir trees loom overhead as a 10-inch Pacific giant salamander slides through the cold, clear water: this is the headwaters of Kelley Creek at the edge of Gresham on Bliss Buttes. This exquisite little stream segment is a reminder of what much of the watershed used to look like before European settlement, and it gives us an image to strive for in protection and restoration of the creek.

Kelley Creek is a large tributary of Johnson Creek that has seen a lot of changes in the past and is beginning to experience another abrupt change. Most of Kelley Creek's sub-basin, known as Pleasant Valley, was logged and farmed for generations, and most of the land (except Bliss Buttes) is currently used for nurseries and pastures. This area has been part of the urban growth boundary for years, but it wasn't until recent demand for housing in Portland and Gresham that developers began building hundreds of houses there.

Although urban growth often conjures up images of degraded and polluted creeks, the Pleasant Valley plan incorporated an ambitious proposal to protect and enhance the health of the creek as this area transitions from rural to urban. This plan, adopted into Gresham code, requires setting aside large buffers around the creek to be restored from pasture/agriculture/blackberries to riparian forest. It also requires managing stormwater from the new homes and roads with extensive green stormwater infrastructure such as rain gardens, infiltration chambers, stormwater planters, and constructed stormwater ponds. Throughout the recent construction, the City of Gresham has undertaken comprehensive scientific monitoring of the new green stormwater infrastructure to assess and modify the design and management of these facilities.

The monitoring includes water level sensors to measure infiltration, flow meters to assess detention, water quality testing at the inlet and outlets of facilities to understand pollutant removal, and long-term stream monitoring of pollutants and stream life upstream and downstream of the urban growth to assess the ultimate effects on the stream. We have come across many challenges in these new neighborhoods, such as steep slopes and clay soils which infiltrate water slowly. Conducting these studies has allowed us to continually update and improve our strategies to reduce negative impacts on the creek.

It's working! We are still early in the process of the urbanization of Pleasant Valley, but the initial few years of data are showing that green stormwater infrastructure is infiltrating, detaining, and cleaning stormwater runoff well. We watch as dirty water enters the stormwater pond and comes out clean at the other end before making its way to the creek. We observe native plants in street-side stormwater planters penetrating into the underlying clay soils with their long roots to carry stormwater down to where it can soak into the ground and re-emerge in the creek during the hot, dry summer months when it is needed the most.

The positive effects have gone beyond stormwater treatment. On a winter evening, a chorus of frogs fills the neighborhood, replaced in the spring by abundant wetland birds and dragonflies. They have all found the new pond, even though the wetlands that used to be in this area were drained for farming decades ago. And on a sunny day, the bike path along the new stormwater pond is filled with families en-

joying the wildlife with whom they share their new neighborhood.

Gresham looks forward to continued evaluation of this area, as we continue to implement a development plan that aims to improve stream health while increasing urbanization of the watershed.

Katie Holzer is a Watershed Scientist for the City of Gresham's Department of Environmental Services and current JCWC Board Member.

*Photos (clockwise from upper-left): collecting a water sample at the pristine headwaters of Kelley Creek located just upstream of the new development; sampling water quality in a stormwater pipe in a newly-constructed Pleasant Valley neighborhood; taking readings in Kelley Creek; using a multiparameter instrument to gather temperature, pH, conductivity, and dissolved oxygen measurements; collecting water from a pond that helps mitigate storm-related issues like flooding, erosion, and runoff pollution while also recharging the groundwater and providing wildlife habitat and aesthetic enjoyment for new neighbors; run-off that is not infiltrated ends up in constructed stormwater ponds, some of which have an installed a surface water gage and ground water monitoring well under a large rain garden to measure water levels and groundwater recharge.*



Photos by BruceMacGregorPhotography.com

Within Your Reach

Katie measures turbidity of stormwater flowing from a rain garden into a stormwater planter in a newly-constructed Pleasant Valley neighborhood.





## Collaboration and Commitment Transform Tideman Johnson Natural Area - Marianne Colgrove



Bruce MacGregor Photography.com

You might miss Tideman Johnson Natural Area if you're cruising by on the Springwater Trail, but for many of us -- people and wildlife alike -- it is a treasured urban oasis in inner SE Portland. Though only 6 acres, Tideman Johnson hosts numerous ecosystems surrounding Johnson Creek, including a beaver-enhanced riparian zone, spring-fed wetlands, a shady woodland, and drier upland zones. Each of these habitats presents opportunities to restore distinct plant communities and associated wildlife. Besides the beavers, we know the creek hosts endangered salmon and steelhead, otters, and numerous aquatic macroinvertebrates. Tideman Johnson is also frequented by coyotes, deer, and a tremendous array of birds, including screech owls, barred owls, herons, hawks, eagles, and many of the woodpecker tribe.

The Ardenwald-Johnson Creek Neighborhood Association has long cared for Tideman Johnson Park through periodic community events. In 2007 we sought to establish a permanent community stewardship group to build on the restoration work completed by the Bureau of Environmental Services through the Lents Interceptor project. That project reversed decades of erosion that had swept away five feet of creek bed, exposing the sewer pipe beneath and destroy-

ing healthy stream habitat. Benefits of the project included reintroducing tons of boulders, logs and gravel to restore natural creek habitat, reconnecting Johnson Creek to flood channels, and building a boardwalk path through sensitive wetlands.

While the BES restoration brought critical improvements to Tideman Johnson, months of earthmoving with heavy machinery left soils bare and compacted. Swaths of the park that were outside the project scope were smothered by English ivy, Himalayan blackberry, and other invasive species. The time was ripe for the Friends of Tideman Johnson. Lisa Gunion-Rinker and I partnered with community members, Portland Parks & Recreation, and the Johnson Creek Watershed Council to write a successful Community Watershed Stewardship Grant and launch our fledgeling Friends group.

The Friends of Tideman Johnson gather 8 months a year on the first Saturday. We've developed a natural rhythm to our work: remove invasives, plant natives, mulch to preserve moisture and suppress weeds, and repeat. Through ongoing management and persistence, we make real and steady progress. In the twelve years since our start, the Friends of



Volunteers transform this...



...into to that.

Tideman Johnson have successfully transformed the park into a thriving natural ecosystem. Ivy that carpeted the woodland has been replaced by sword ferns and trailing blackberry, and an abundance of native wildflowers have emerged. Free-standing conifers now have a diverse understory of flowering shrubs that provide sanctuary for wildlife and food for pollinators. Creekside plantings reduce erosion and help cool the creek. Native ash and alder have volunteered in the engineered channels created by BES, which helps slow down flood waters after storms.

Several factors contribute to the success of the Friends of Tideman Johnson, but most importantly:

Collaboration is critical. We collaborate with Portland Parks & Recreation to develop an annual stewardship plan that guides our work. PP&R provides native plants by the thousands, mountains of mulch, and snacks & tools for our restoration events. The Johnson Creek Watershed Council provided fiscal sponsorship for our early grants, as well as ongoing recruiting and event support.

Volunteers are our lifeblood. We make volunteering fun! On any given month we'll have a mix of regulars and "drop-ins": neighbors, JCWC stalwarts, students, and families who want to expose their children to the great outdoors in a fun and supportive environment.

Spring is a wonderful time of year to enjoy our beautiful blooming natives, including skunk cabbage, flowering currant, Oregon grape, thimbleberry, and numerous woodland wildflowers.

We hope you'll consider joining us!

**Thank you Moda!**

We would like to express our gratitude to Moda for printing our newsletters.



## Welcome To Our New Board Members

We said goodbye recently to two Board members. Bob Sanders is the longest serving member, having joined in 2009. Bob is a career attorney, retired, specializing in maritime law. Most recently, he served on our Facilities, Governance, Land Use and Executive Committees and was formerly Board Treasurer. We also said farewell to Ken Nichols, Board member since 2015, and a member of our Fundraising Committee. Ken is a principal in the energy consulting firm of EQL.



Bob Sanders



Ken Nichols

We have welcomed three new Board members in the past few months: Samantha Sharka, Peregrine Edison-Lahm and David Gruen.

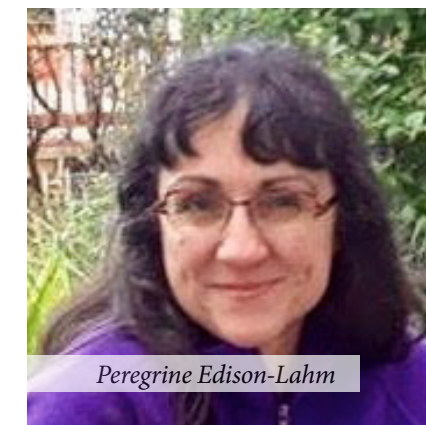


Sam Sharka

Sam Sharka currently works for Portland Parks & Recreation as a Botanic Specialist. She has worked in the environmental field since 2014 and holds a Bachelor of Science in Wildlife Conservation and Management from the University of Arizona.

Peregrine Edison-Lahm is a long-time watershed resident of the Woodstock neighborhood. She has worked in the environmental field since 2003, including two stints as a temporary staff member with JCWC. She holds a Masters in Environmental Science and Engineering from the Oregon Graduate Institute.

David Gruen is new to the Portland area and currently works with the USEPA as a water quality contractor. He holds a Masters of Environmental Management from UC Santa Barbara and has worked in the environmental field since 2010.



Peregrine Edison-Lahm



David Gruen





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## Upcoming Events

For details and to sign up for any of these events, contact us at [info@jcw.org](mailto:info@jcw.org) or call 503-652-7477.

### **Watershed Wide Event – RESTORATION EXTREME!**

Sat, March 2nd, 8:45 AM - 12 PM  
10 Projects in 1 day!  
Various locations

### **JCWC Board Meeting**

Mon, March 11th, 5:30 PM - 7:30 PM  
JCWC Office, 4033 Woodstock Blvd, Portland

### **Invasive Species Removal**

Sat, March 16th, 9 AM - 12 PM  
Errol Heights Park

### **Invasive Species Removal**

Sat, April 6th, 9 AM - 12 PM  
Tideman Johnson Park

### **Restoration Event Hosted By A JCW Landowner**

Sat, April 13th, 12 PM - 3 PM  
Location TBA

### **Invasive Species Removal**

Sat, April 20th, 9 AM - 12 PM  
Errol Heights

### **Earth Day Event**

Mon, April 22th, 8:45 AM - 12 PM  
Mulching & invasive species removal  
Gresham

### **Bird and Plant Surveys**

Sat, May 4th, time TBD  
Errol Heights Park

### **Plant Care**

Sat, May 4th, 9 AM - 12 PM  
Tideman Johnson Park

### **JCWC Board Meeting**

Mon May 13th, 5:30 PM - 7:30 PM  
JCWC Office, 4033 Woodstock Blvd, Portland

### **Restoration Events**

Sat, May 18th, 9 AM - 12 PM  
Wetland planting in Gresham and  
Invasive species removal at Errol Heights Park

### **Save The Date For JCWC's Annual Celebration!**

Thu, May 23rd, 5 PM - 8 PM  
Reed College



**Johnson Creek**  
Watershed Council

4033 SE WOODSTOCK BLVD,  
PORTLAND, OR 97202  
503-652-7477



**JohnsonCreekWC**



#### **Courtney Beckel**

*Volunteer Program Manager*

#### **Cathy Geiger**

*Operations & Finance Coordinator*

#### **Jack Halsay**

*Outreach and Riparian Specialist  
Confluence AmeriCorps Member*

#### **Noah Jenkins**

*Riparian Program Manager*

#### **Chuck Lobdell**

*Restoration Project Manager*

#### **Adrienne Moat**

*Community Outreach Coordinator*

#### **Daniel Newberry**

*Executive Director*