

Meet the Oregon Spotted Frog

4 Must-Read Books to Warm You this Winter

EDUCATE • PROTECT • RESTORE OLYMPIA • LACEY • TUMWATER • THURSTON COUNTY

Stream Team • Winter 2024 December–February

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Did You Know? Articles marked with a damselfly icon, like the one on the left, will be posted on our website in the Reference Library.



Habitat at Home Workshops

Did you know you can create a space in your yard for wildlife to thrive? Whether you have a balcony, patio, or a yard—whether you live in an urban or suburban area, and whether you rent or own—there are plenty of ways to provide habitat for wildlife!

This winter, Stream Team and the Washington Department of Fish and Wildlife will be teaming up to offer wildlife habitat workshops. Learn the components that make up a quality habitat, the steps to creating your own, and how to foster your relationship with wildlife and habitat around you.

Participants will leave the workshop inspired to grow and nurture habitat at home! We'll collaborate with you on unique habitat plans, provide resources and tools to choose plants, and send you off with a few starter native plants and seeds.

Habitat at Home Workshops

- Sat., February 15, 12–2 pm, Community Room, Lacey City Hall
- Sat., March 1, Olympia, Location & Time TBD
- Sat., March 15, 2–4 pm, Yelm Timberland Library
- Register in advance at streamteam.info/events



Ecosystem Services— Nature's Free Gifts

When we think of nature, we often picture beautiful landscapes, animals, and plants. But nature is much more than just a nice view. It provides essential environmental functions that benefit us in countless ways. They're called ecosystem services, the natural processes that support life on Earth.

What Are Ecosystem Services?

There are four main ways that nature supports people, wildlife, and the environment:

- **Provisioning Services:** These are the things we get directly from nature, like food, water, and raw materials (wood, cotton, etc.). For example, forests provide us timber, and the ocean provides fish.
- **Regulating Services:** These services help keep the environment in balance. Trees absorb carbon dioxide and create oxygen, providing clean air, and wetlands filter water, keeping it clean for us to drink. Bees and other insects pollinate plants, ensuring crops can grow.
- **Supporting Services:** These are processes that make other ecosystem services possible. For instance, plants photosynthesize, converting sunlight into energy. This energy flows through the food chain and supports all living things.
- **Cultural Services:** Nature also gives us spaces for relaxation and recreation, like parks, beaches, and mountains. These areas provide places for hiking, camping, fishing, and inspiration for art and stories.

Why do we need Ecosystem Services?

Without them, life as we know it wouldn't be possible. Clean air and water, fertile soil for farming, and the regulation of climate are all essential for our survival. Unfortunately, many of these services are at risk. Deforestation, pollution, and climate change damage ecosystems, which could reduce their ability to provide these vital services.

What can we do to help?

There are many ways we can help protect and restore ecosystem services. Reducing pollution, conserving water, and protecting natural habitats are just a few ways. Small actions, like planting trees or creating gardens that attract pollinators can have a big impact. We can also support laws and policies that promote environmental conservation.

Ecosystem services are nature's way of taking care of us, but it's up to us to recognize this and live our lives in ways that protect them.

By joining one of Stream Team's workshops, events, or restoration projects, you can help preserve our wild spaces, ensuring that future generations will benefit from nature's incredible gifts.

Ready to get involved? Check out our upcoming events at streamteam.info/ events.

Meet the Oregon spotted frog, a semi-aquatic amphibian native to the Pacific Northwest, known for its vibrant colors and fascinating life cycle. This rare frog is vital to wetland ecosystems throughout the region, and is currently listed as threatened under the U.S. Endangered Species Act due to habitat loss and environmental changes.

Oregon Spotted Frog

(Rana pretiosa)

Distinct Features

The Oregon spotted frog gets its name from the dark spots that dot its back and legs. Adults range from 2 to 4 inches long, with smooth skin and striking coloration. Shifting from brown or olive in youth to a more reddish hue as they age, the undersides of their legs and bellies are bright orange or red, providing a stark contrast to their spotted bodies. These frogs are easily recognized by their bright eyes, and their webbed toes make them efficient swimmers. They are active mostly during the day, which is unusual for many amphibians.

Habitat Needs

Oregon spotted frogs are highly dependent on wetland habitats, such as marshes, ponds, and slow-moving streams. Requiring shallow, warm waters for breeding, they prefer areas with abundant vegetation like sedges, grasses, and cattails. In the spring, these frogs gather in shallow ponds or flooded fields, where females lay large masses of eggs attached to underwater vegetation. Warm water is key for the eggs to develop and hatch.

Beyond breeding season, Oregon spotted frogs continue to rely on wetland environments for feeding and shelter. They mostly eat insects, but their diet can also include small aquatic invertebrates and even other amphibians. Their aquatic lifestyle means they rarely stray far from water. Even during winter, they hibernate at the bottom of ponds, burrowing into mud for warmth and protection.

Threats and Conservation

Sadly, the Oregon spotted frog's wetland habitats have been shrinking. This is due to agricultural development and urbanization. The introduction of invasive species like bullfrogs, which prey on native frogs, are another major threat, and

these factors have contributed to a drastic decline in their population over the past century.

Conservation efforts focus on preserving and restoring habitat specific to the Oregon spotted frog. Organizations and government agencies are working to maintain water levels in wetlands, remove invasive species, and manage land use to ensure these frogs have the environment they need to thrive. You can help by supporting local conservation initiatives and staying informed about wetland preservation in your area.

Stream Team invites you to learn more about the Oregon Spotted Frog and many of our other Pacific Northwest amphibian species by joining us for our Amphibian Life Talk and amphibian monitoring surveys. Both of these exciting opportunities will be offered at the beginning of the year. Look for posted workshop times at **streamteam.info/** events.



Birds, Beavers, and Amphibians...Oh My!



Researchers with the Washington Department of Fish and Wildlife (WDFW) recently wrapped up the first year of a multi-year project studying the potential for stormwater ponds to provide suitable habitat for Washington's native wildlife. Working together with city and county partners from Olympia, Tumwater, Lacey, and up to Bellingham, the goal was to learn how stormwater ponds can be created and managed to help address biodiversity loss, especially in urban areas.

The research team surveyed amphibians, birds, and beavers in over 200 stormwater ponds throughout the Salish Sea watershed. Birds, from waterfowl to warblers, were identified visually or by their calls and songs. The researchers captured frogs, salamanders, and fish using dip-nets or small minnow traps, then identified, counted, and released them. Native amphibian species like northwestern salamanders and northern red-legged frogs were encountered frequently; however, so were invasive species, including the American bullfrog and green frogs, which were introduced from the east coast.

Certain habitat characteristics influence the survival of wildlife in stormwater ponds, creating "good" or "bad" habitat for reproduction. In particular, the team recorded pH, oxygen, temperature, water depth, and plant diversity to learn which pond characteristics benefit wildlife.

One of the most striking ponds

monitored by the team is at The City of Olympia's Yauger Park. In the Yauger Park pond, researchers found many native fishes including threespine stickleback and Olympic mudminnows. They also found a diversity of amphibians—including paedomorphic northwestern salamanders (meaning they have juvenile characteristics like gills as adults—just like axolotls!). The biodiversity at this

pond is partly due to its impressive capacity to hold stormwater during the rainy season. Researchers monitor this with scientific equipment that continuously records water levels and temperature throughout the year.

In addition to learning more about the wildlife living in stormwater ponds, WDFW is interested in the potential biodiversity in these sites and improving public access to them. To do this, researchers selected stormwater ponds in neighborhoods along a range of socioeconomic and demographic attributes, including racial makeup and housing affordability. This aspect of the study aims to acknowledge and improve inequitable access to nature and wildlife for urban and suburban communities in the Puget Sound region.

Now that the field season is over, the research team is taking a closer look at the data collected from the project's first year. Preliminary results are encouraging, showing that conditions in many of our local stormwater ponds promote healthy populations of amphibians, fish, and birds. The research team will continue to collect data over the next several years, which will help us understand how green stormwater infrastructure may promote pond biodiversity and access to wildlife for Puget Sound residents.



2024 Volunteer Spotlight & Appreciation Gathering

As we wrap up 2024, Stream Team extends a huge **THANK YOU** to the individuals who make up our volunteer base. Together, we conserve habitat, protect water quality, improve equitable access to nature, and build community. Stream Team turns 35 years old in 2025! We love hearing that our community enjoyed Stream Team as a child and is returning to give back as an adult!



Let's celebrate 35 years together!

To recognize our volunteers' hard work and dedication, we will be hosting our

Annual Volunteer Appreciation Gathering

on

Saturday, Jan. 11, 2025, from 11 a.m. to 1 p.m. Stay tuned for location!

Please join us for food, cake, and beverages. There will be fun activities, awards, and the opportunity to reflect on 35 years of stewardship. We hope you can make it because we wouldn't be able to do what we do without you! Please RSVP at **streamteam.info**.













Restoration Projects!

Second Saturday Restoration at Sapp Road Park, located in the City of Tumwater, officially kicked off in March of 2024 and has proven to be a big hit. This 12-acre park plays a crucial role in the overall health of Percival Creek, a stream system home to juvenile salmon. A combined **total of 380 volunteer hours** have helped transform a once unhealthy forest understory into a place where new plants, insects, and animals now find homes to thrive. This work will continue as 2024 transitions into 2025, with a focus on weed barrier material removal throughout the park as well as native plant restoration events. Volunteers have the opportunity to provide input on the park's proposed restoration vision.

In addition to all this great work, volunteers from the community are using this time to make new friends, network, and learn about careers in the environmental sciences field. If you're interested in joining this growing community of stewards, keep an eye out and register for the next Second Saturday Restoration event at **streamteam.info/events**.

Martin Luther King Jr. Day of Service, hosted by Stream Team and the City of Lacey, is a service project in observation of the great Martin Luther King Jr.'s legacy of servitude to the community. It is an honor to donate our time to host our incredible community members and put our hands to good work. Last year, 45 awesome volunteers pulled over 80 yards of invasive blackberries. That's over five dump trucks full of blackberries in only three hours!

We look forward to sharing background on the restoration work that has been done along Woodland Creek, as well as plans downstream in our future Cuoio Park. Please, join us again this year on Monday, Jan. 20, 2025, from 10 a.m. to 1 p.m. for another Martin Luther King Jr. Day of Service.



Save the date!

Martin Luther King Jr. Day of Service

Monday, Jan. 20, 2025, ^{from} 10 a.m. to 1 p.m.

4 Must-Read Books to Warm You this Winter

As winter settles in and we cozy up indoors, it's the perfect time to dive into some thought-provoking environmental literature. Whether you're passionate about conservation or want to learn about sustainable practices, these four books come highly recommended by our Stream Team coordinators.





Ali Brown, City of Lacey

A Field Guide to Fishes of the Salish Sea, Theodore Wells Pietsch & James Wilder Orr, illustrations by Joseph R. Tomelleri

Genre: Non-fiction, field guide **Ages:** All

As a student at UW's School of Aquatic & Fisheries Sciences, I loved visiting the Burke Museum's fish library almost as much as being out on the water. Two of their distinguished

professors published a three-volume illustrated guide to fishes of the Salish Sea. The Field Guide is a condensed version of that set, handy for taking out on the water or just daydreaming about all of the wonderful fishes who call Washington's salty waters home. (My favorite is the Bay Pipefish!)



Kelsey Crane, Thurston County

Eager Beavers: The Surprising Secret Life of Beavers and Why They Matter, Ben Goldfarb

Genre: Environmental Journalism

Ages: Adult

This book reconnects you to a landscape and history that we rarely, if ever, hear about, one of wild meandering rivers, lush biodiverse wetlands and millions (billions?) of beavers. It is incredible to think (and

learn) how European fur traders and early settlers eradicated such an impactful water engineer—the beaver—for hats! This book is a beautiful articulation of an incredible species that leaves you feeling hopeful for great restoration possibilities, in partnership, of course, with the beaver.



Genevieve Becker, City of Olympia

The Highest Tide, Jim Lynch

Genre: Fiction Ages: 13 and up

I love that The Highest Tide is set right here in Olympia! Jim Lynch does a fantastic job capturing the beauty and uniqueness of the South Sound region. Through the eyes of the young protagonist, Miles, we get to experience the wonders of marine life in a way that's both educational and

deeply engaging. Lynch vividly describes the fascinating aquatic creatures that inhabit these waters, making you appreciate the natural world that's right in our backyard. A captivating read for nature lovers and anyone who enjoys a heartfelt story!



Grant Gilmore, City of Tumwater

Silent Spring, Rachel Carson Genre: Non-Fiction Ages: 15+

Carson's Silent Spring is a landmark work that revolutionized how we think about the environment and our impact on it. Her scientific rigor and clear, passionate writing give the book immense depth and credibility, making it a compelling read that sparked widespread debate within both the scientific

community and the general public. As we increasingly embrace eco-friendly yard care and make conscious decisions about the products we use, this book offers an even deeper appreciation of how those choices affect not just our gardens, but the entire natural world. It's a powerful reminder of our role in protecting the environment and the delicate balance of life. A must-read for anyone committed to sustainable living!

Stream Team News —Now Printed on 100% Post-Consumer Recycled Content Great news! Stream Team is taking significant steps to practice what we preach. We've transitioned to 100% post-consumer recycled content for our newsletter. While most of our newsletters are shared electronically, you can still find printed copies at local libraries, city halls, and other community spots. Be sure to check one out the next time you see a printed copy! Together, we're making a positive impact on our resources with this switch.

Neighbors Helping Neighbors

Utility Assistance Programs

At Stream Team, we often say small actions make a big difference. Usually, these are actions we can all do to protect our rivers, lakes, streams, and the Salish Sea, such as using a commercial car wash, bagging and trashing pet waste, or volunteering to restore aquatic habitat.

Small acts of kindness can also make a big difference. Kindness is the fabric of our community, bringing us together and inspiring us to do better.

This holiday season, Stream Team presents our utility assistance programs. It's a way to give back to our community and support our neighbors struggling to make ends meet.

In Olympia:

Helping Neighbors

Program collects voluntary donations to help lowincome customers pay their utility costs. The program is a partnership with the Community Action Council. They determine eligibility and administer funds to qualified low-income households. It has two components:

- **Donate:** Look for the remittance slip on your Olympia utility bill to donate to the fund. 100% goes to helping your neighbors in need!
- Request Assistance: Contact the Community Action Council at 360-438-1100 to ask questions and schedule an appointment.

Lifeline Rate Program helps qualified utility customers with a 50% discounted rate. Customers must be lowincome and disabled or low-income and over age 62. For more information about Olympia's utility assistance programs, visit: olympiawa. gov/services/utility_billing/ utility assistance.php

In Tumwater:

The Utility Hardship Program is available to Tumwater utility customers whose household income is less than 150% of the Federal Poverty Level and who have experienced a recent hardship. It is administered by the Tumwater Finance Department. Please contact Utility Billing at 360-754-4133.

Helping Neighbors in Need is supported with voluntary donations from customers, businesses, and community members. The Community Action Council administers this program. Three ways to donate:

- Online donations can be made with a Visa. MasterCard or Discover card.
- Donate by adding a little extra to your next bill payment-just specify the amount on your payment stub and write one check.
- Write a separate check and send it in with a completed Utility Assistance Donation Form.

Life-Line Program offers discounted utility rates (sewer, stormwater, and LOTT) to lowincome seniors (62 and over) and low-income residents with disabilities who qualify. Visit bit.ly/4eDRfpd for more details.

In Lacey:

Lacey Utility Discount **Program** offers a 50% discount on residential City utility services (water, sewer, and stormwater) for customers who qualify as low-income and disabled or low-income and over 62 years old. The City's Utility Department handles this program. Visit bit.ly/3Bhu2uw to learn

more and apply.

Fund is a donationsupported fund helping low-income families and individuals with their water bills. Individuals and families who qualify can get up to \$75 twice a year if the program has funds available. The Community Action Council administers this program. To learn more, visit cacImt.org, call 360-438-1110 or email info@caclmt.org.

Thurston County:

Visit thurstoncountywa. gov/departments/publichealth-and-social-services/ social-services/officehousing-and-homeless/ community-resources





Stream KIDS' Team CORNER

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Winfer Creafures of the Pacific Northwest

Across

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- 2 Cat-like predator, known for its stealth in snowy forests.
- 4 Hardworking rodent known for building lodges in wintery ponds.
- 7 White bird that is native to the Arctic regions and is sometimes spotted during winter in open fields.
- 9 Amphibian that can survive winter, often found in the damp forests.
- 11 Masked nighttime forager that scavengers for food even in the snow.
- 13 This large forest dweller with antlers is active even in winter's snow.
- 15 Large animal that hibernates but may wake up on warmer winter days.

Down

- 1 Dog-like animal known for its howls during cold nights.
- 3 Long-legged, long-necked, freshwater and coastal bird.
- 5 Fish that swims upstream to spawn.
- 6 A creature that occupies coastal woodlands in the Pacific Northwest.
- 8 Dark-colored, semiaquatic, carnivorous mammal.
- 10 Apex predator with thick fur, sometimes spotted in Washington's snowy regions.
- 12 Majestic bird of prey often spotted soaring through winter skies.
- 14 Semi-aquatic mammal that spends time in water and on land.

2. bald eagle, 13. elk, 14. seal, 15. black bear.

Alswers: 1. coyote, 2. bobcat, 3. herron, 4. beaver, 5. salmon, 6. blacktailed deer, 7. snowy owl, 8. mink, 9. rough skinned newt, 10. gray wolf, 11. raccoon,



Calendar of **Events Winter 2024**

Eagle Kayaking Tour | Saturday, December 7, 10 a.m.–2 p.m. | Allison Springs | Register online at http://apm.activecommunities.com/olyparksartsrec/Activity_Search/11962, course number 13024 Stream Team 35th Anniversary Celebration & Volunteer Appreciation Party

| Saturday, January 11, 11 a.m.–1 p.m. | Stay tuned for location!

Olympia MLK Day Event | Saturday, January 18, 10 a.m.-1 p.m. | Squaxin Park | volunteer.olympiawa.gov

Lacey MLK Day Event | Monday, January 20, 10 a.m.-1 p.m. | Woodland Creek Community Park

Amphibians of the Pacific NNW Life History Talk | Saturday, January 25, 9:30–11:30 a.m. | South Puget Sound Community College, Bldg. 32

Amphibian Egg Mass ID Field Training | Saturday, January 25, 12–1:30 p.m. | Hansen Elementary Stormwater Pond

Amphibian Egg Mass Surveys | Febuary 1, 8, & 16 | streamteam.info/events

Olympia Habitat Restoration | Saturday, February 8, 10 a.m.–1 p.m. | Karen Fraser Woodland Trail, Frederick Road Entrance

Second Saturday at Sapp Road Park | Saturday, February 8, 10 a.m.-2 p.m. | Sapp Road Park Habitat at Home Workshop | Saturday, February 15, Noon-2 p.m. | Community Room, Lacey City Hall Habitat at Home Workshop | Saturday, March 1 | streamteam.info/events

Scan for complete event info & registration!





Visit StreamTeam.info and click Register

ON THE COVER: Oregon Spotted Frog

Stream Team Mission

To protect and enhance the water resources and associated habitats and wildlife in Thurston County through community action and education.

Special Needs

Participants requiring special accommodations can call one of the coordinators listed at least one week prior to an event to make special arrangements.

Follow Us

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Stream Team is funded and jointly managed by the stormwater utilities of the Cities of Lacey, Olympia and Tumwater and Thurston County. Stream Team programs meet the requirements for the National Pollutant Discharge Elimination System (NPDES) permit for stormwater.

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Watersheds & How Water Nourishes Landscapes

Water flows from the tops of our highest mountains, around 3,000 feet above sea level, down through alpine lakes and into forests, farms, neighborhoods, and cities.

In Thurston County, we have three main watersheds: 1) Nisqually, 2) Deschutes, and 3) Chehalis. These areas, also known as drainage basins, collect all the rain and snow that falls, letting the water drain down to lower ground. Water moves between trees and clouds through evaporation and circulates through plants via transpiration. It flows as rivers, branches into smaller streams called tributaries, and forms lakes. Eventually, this water reaches sea level and merges with the ocean. Along the way, it nourishes the landscape. Farms rely on this water for crops, and salmon need healthy water flow in rivers and streams to return upstream.

Infiltration, or water soaking into the ground, is more important than ever. With more hard surfaces like roads and buildings in our communities, rainwater often gets captured and moved away instead of soaking into the ground. This limits the recharge of water to the land and the underground aquifer below. Much of the water ends up in our marine waters without being absorbed by the soil first. Without this recharge, rivers, streams, and lakes, which depend partly on aquifers, can run low. Just like our veins need to carry oxygenated blood to our bodies, streams and rivers are the earth's veins, delivering water—or life—to keep the entire ecosystem healthy.

Recognizing that natural systems work best, there is a growing movement in the Puget Sound region to restore the ecological functions that were damaged when our communities were built. This includes creating decentralized water retention landscapes

with projects that bring back natural processes using green stormwater infrastructure (GSI), also known as Low Impact Development (LID). This approach can greatly benefit entire watersheds by replacing hard surfaces with vegetated designs, allowing more opportunities for nourishment and recharge throughout the watershed.

Find out how you can use these types of stormwater management options on your landscape at thurstonstormwateredu. org/courses/privatestormwater-systemsinspections-maintenance.

