Stream Team

WINTER 2025–2026 December–February

Creature Feature: Washington Dragonflies

Embrace Your Wild Side: Create Your Own Secret Garden with Go Green!

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

Blue-eyed darner
(*Rhionaeschna multicolor*)

Contents

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.

The Salish Sea

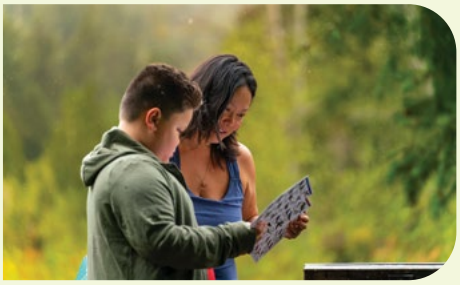
If the Salish Sea is a new term to you, let us introduce you! The Salish Sea includes the Puget Sound, the Strait of Juan de Fuca, and the Strait of Georgia. At Stream Team, we've adopted "The Salish Sea" in place of "Puget Sound" in our publications. By choosing "Salish Sea," we honor the Coast Salish people who have inhabited these lands since time immemorial. This vibrant body of water reaches from Olympia, WA, to the Campbell River in British Columbia. It supports thousands of species of animals and plants, and approximately 9 million humans.

Burt Webber, a marine biologist from Western Washington University, coined the term "Salish Sea" in 1988 in response to a growing need to protect it from oil spills and growing trends of stormwater pollution. In 2009, the governments of Washington State and British Columbia adopted the name. Coast Salish Nations and Tribes followed during a Coast Salish gathering naming ceremony in July 2010.

The Salish Sea is the jewel of our Cascadian ecoregion. Carved by glaciers, it is a complex system of fjords, islands, sounds, wetlands, bays, inlets, deltas, streams, and straits. Mountain ranges on both sides—the Cascades to the east and Olympics to the west—nourish the Salish Sea with glacier-fed rivers and snowmelt. The Pacific Ocean refreshes it daily with cold water flowing in through the Strait of Juan de Fuca. Marine mammals, birds, fish, shellfish, and macroinvertebrates all rely on the Salish Sea as their habitat, including endangered species, like the Southern Resident Killer Whale (Orca). People living in this area depend on the Salish Sea for a healthy economy and culture. If we want these waters to continue sustaining us, we must reduce the pollution flowing from our built environment to the Salish Sea.

Recognizing the Salish Sea connects us to the maritime traditions of the First Peoples. It provides a hopeful future for generations that follow. Thanks to cooperation among Tribal Nations, stewardship of this shared resource that transcends political boundaries is a reality.

Stream Team is proud to participate in this regional movement. Do you have memories or moments spent interacting with the Salish Sea that have shaped who you are or left you in awe? We'd love to hear them! Send testimonials along with a photo to **hello@streamteam.info** by December 15, 2025 for a chance to be featured on our social media pages AND get entered to win a swag bag!

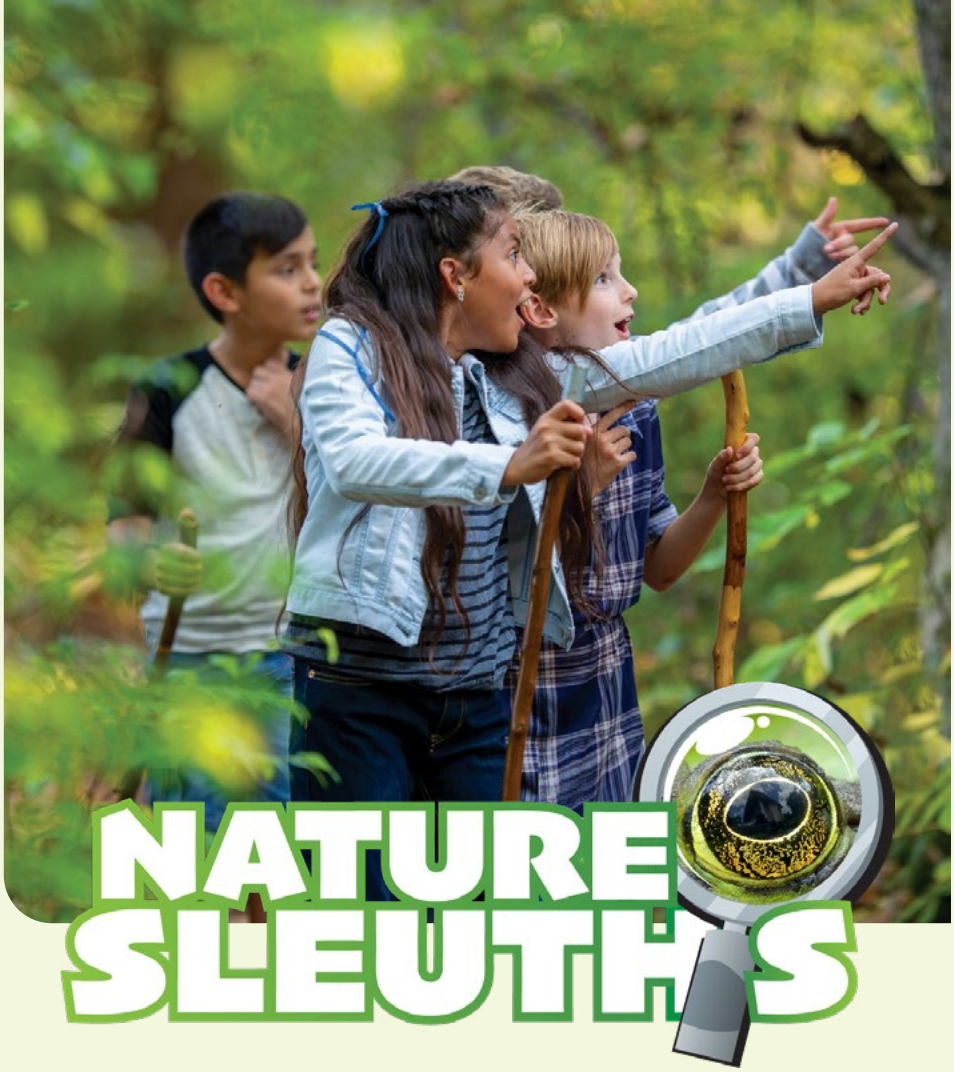


By the time you arrive at Billy Frank Jr. Nisqually National Wildlife Refuge, the sun has risen and a late-fall mist hangs low over the marsh grasses. Northern Shrikes call out from hidden perches and the air is crisp and salty. You've come here to pause—to notice and wonder. Today's mission? Be a Stream Team Nature Sleuths wildlife photographer—what can you find that makes you stop and look more closely?

You wind along the Twin Barns Loop Trail through forest and marsh. At the Riparian Forest Overlook, giant cottonwoods filter sunlight; moss gently cushions the path ahead. You crouch, lens ready, to photograph a Pileated woodpecker chiseling away on nearby bark.

Further along, you reach the Nisqually River Overlook where freshwater pushes toward the incoming Salish Sea tide. Mudflats stretch wide and Yellow-rumped Warblers dart among the beached driftwood.

To complete today's mission, you pick your favorite photo from the morning. You upload it using the Goosechase app, earning another limited-edition Nature Sleuth sticker for your growing Adventure Book of local park adventures. You can't help but wonder where you'll explore next.



Discovering Thurston County One Park at a Time

Nature Sleuths: What's New This Season?

Nature Sleuths is an all-ages treasure hunt through over 30 parks and wild places across Thurston County. Using the Goosechase app, participants complete missions from each visit and collect park-specific stickers along the way. (You can also access the text versions of each mission on the Stream Team website if you'd prefer a low-tech option.) From old-growth forests and beaver ponds to hidden urban trails and salty marine beaches, each place has its own wildlife, history, and ecology waiting to be discovered.

This season, we've added a new interactive map on our website to make Nature Sleuths trip planning easier. Now you can view all participating parks, preview each mission, and check transit access before you leave (look for the transit icon on each mission page). We will also be adding a few new missions to our list in the coming months, so stay tuned!

Whether you're adventuring with friends, family, or going solo, Nature Sleuths is a great way to explore new places, learn more about where you live, and spend time reconnecting outdoors.

Grab your gear, charge your phone, and let's see where your next sleuthing adventure takes you!

Learn more about Nature Sleuths, check out our new map, and start exploring at **streamteam.info/nature-sleuths**.

Embrace Your Wild Side: *Create Your Own Secret Garden with Go Green!*

Imagine stepping onto your porch, balcony, or backyard and being greeted by the flutter of butterflies, the songs of native birds, the peace and privacy of lush greenery, and the sweet fragrance of native plants. Our region is one of the most biodiverse in the country—yet conventional landscaping often disregards this. By reimagining how we design our outdoor spaces, we can turn yards, patios, and even potted gardens into beautiful, thriving habitats, that are safe for families and provide seasonal interest—brightening up those grey winter months.

The **Go Green Yard Care** program, centered on the practices of Natural Yard Care and Habitat at Home, can guide us to this vision, and it's FREE. This program offers resources, incentives, and inspiration for anyone—whether you're starting with a single plant or transforming an entire property. The program will soon feature redesigned support tools to guide you through every step, regardless of your budget or scale. Options range from eco-lawns and native plantings to rain gardens and wildlife-friendly container arrangements. The style choices are yours; the program provides the tools to bring them to life.

Why It Matters

Our local lakes and streams face increasing pressure as urban development outpaces the growth of green infrastructure. Some types of development come at the expense of biodiversity loss. Every site converted into a native pollinator-friendly landscape helps reverse this trend. By choosing native plants, adding mulch, reducing (or better yet eliminating) chemical use, and taking actions to provide food and shelter for wildlife, we are creating resilient connected habitat areas. These green spaces support human delight as well as pollinators, migrating species, and the birds and animals that have long called this region home.

Go Green also builds a like-minded community. As more of us transform our yards and gardens using Natural Yard Care techniques, we inspire neighbors, HOAs, businesses, and property managers to participate as well. Together, we can replace outdated landscaping practices, like large monoculture lawns that demand fertilizers and pesticides, with resilient landscapes that help manage stormwater.

The Benefits

The **Go Green** program isn't just good for wildlife; it's good for us. Natural Yard Care practices contribute to reductions in excessive nitrogen (bad!) and chemical-filled runoff to lakes and streams, while conserving earth's most precious and finite resource—water. Natural landscaping is safe for our family and pets, keeps harmful bug and weed killers out of the Salish Sea, reduces maintenance, lowers utility costs, and increases overall quality of life. It also helps protect aquifers (underground stores of water that both private and municipal wells tap for drinking water) by using water-wise practices, especially during our driest months. In short: healthier kids and pups, thriving ecosystems, and money saved for enjoying life!

A single yard may seem small—but together, our gardens create a patchwork of habitat that sustains the Pacific Northwest's biodiversity.

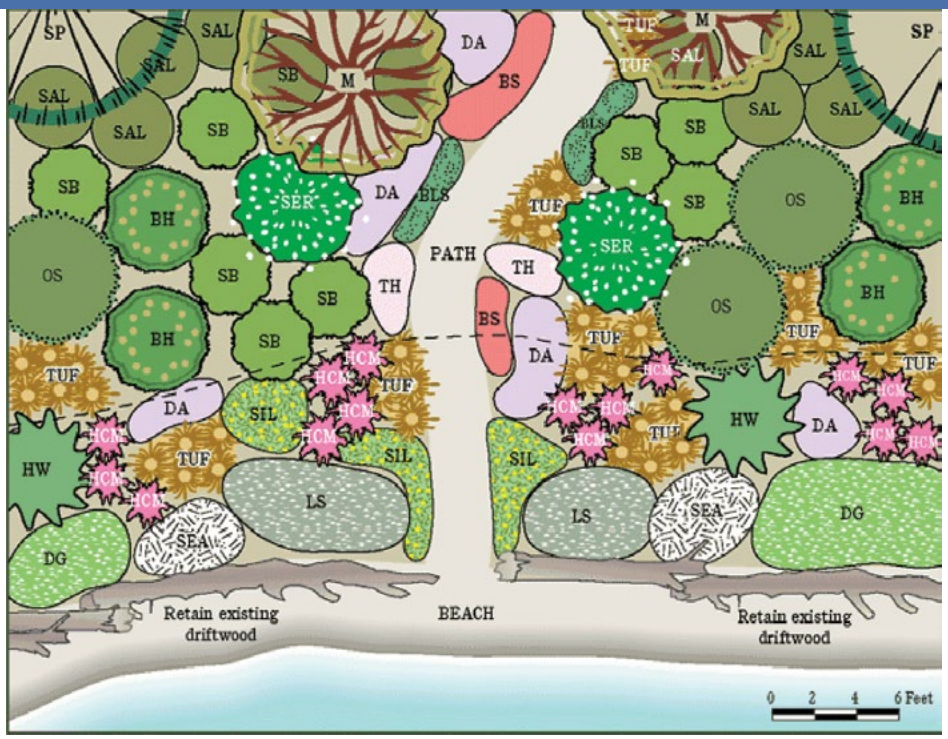
Start Your Journey

Whether you maintain a backyard, apartment balcony, or large commercial property, you can participate. Explore the program's options, learn about Natural Yard Care, attracting pollinators, and unlock the secrets of creating your own Pacific Northwest outdoor refuge.

Get started today at **ThurstonGoGreen.org**

Shoreline Buffers? Let's Get Growing

Part 4 of a 4-Part Series



In previous 2025 Stream Team Newsletter editions, we've talked about why vegetated buffers with deep-rooting trees, shrubs, plants, and groundcover are so critical to the overall health of our shorelines. We went back in time to pre-European settlement and observed how most Thurston County shorelines were thickly forested right up to the water line. Eventually, many of these trees were logged as our shorelines became busy places for commerce and industry.

These sweeping changes to the landscape drastically altered how water moves across the land. Engineers designed stormwater systems like grass-lined ditches, pipes, storm drains, and ponds throughout our communities to collect and manage water from hard surfaces. This water often accumulates on roadways and in neighborhoods, where it can threaten health and safety. Stormwater systems move that water to places where it can settle, and then eventually release it through outfalls to local water bodies or vegetated areas where it soaks into underground aquifers, our natural drinking water storage.

The move to re-vegetate our shorelines with buffers comes in response to a complex system at work. Without protective plants and trees along the nearshore, water temperatures rise, making it harder for aquatic life that depends on cool waters to survive. Without root systems to hold the soil in place, the banks become vulnerable to scouring and erosion. Runoff picks up pollution and drains it into our lakes and streams, often without treatment or filtration. As a result, the wildlife and nearshore food webs that depend on a healthy mix of native and pollinator-friendly plants and trees begin to suffer. This dangerous trend is being observed along our lakes, streams, and marine ecosystems as a result of vegetation removal along the shoreline.

Vegetated shoreline buffers provide long-term protection in several ways. The deep roots of native trees, plants, shrubs, and grasses hold the ground in place and provide homes for microbes and critters. Trees and plants perform evapotransporation: evaporating rainfall back into the water cycle while transpiring much through their plant system down to their roots. Vegetation also performs the important service of filtration, acting as a physical barrier to pollution that would otherwise drain directly to our lakes and streams. Additionally, vegetated shoreline buffers provide critical nearshore food web support. Think of a bird perched in a tree on the shore looking for food in the water or a fish hiding from a predator in the roots or branches of a fallen tree. Temperature moderation to nearby homes and water via shade and natural cooling, pollinator services, and overall beauty are also freely and efficiently provided. This list of valuable services could go on and on.

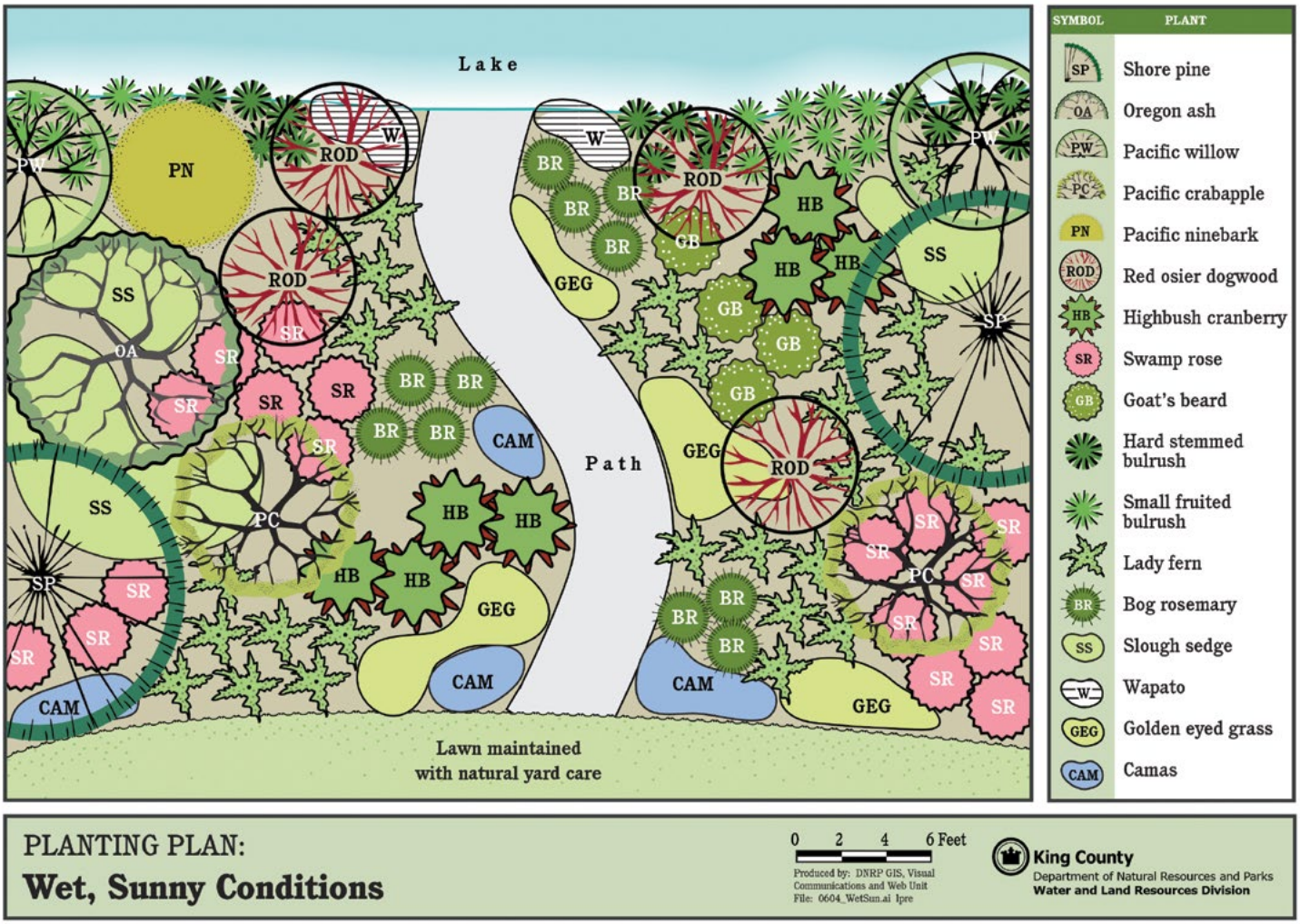
Whether your home or business is on a lake, near a stream, or along a marine shoreline, here are some steps to creating a vegetated buffer.

#1 Site Observation, Soil Balancing & Prep

- Test your soil. Thurston Conservation District provides analysis and recommendations of soil tests at low cost.
- Understand how sun, wind, and water move across your site.
- Inventory existing plants.
- Remove invasive weeds (consult with Thurston County Noxious Weeds to ensure you are removing safely and have proper permits).
- Consider aeration, balancing pH, and dethatching (based on soil sample results).

#2 Site Planning

- Map out your area with different uses/activities (storage, raised beds, compost, wildlife corridors, seating, bird bath, temporary firepit, trails) as well as the location and density of plants and trees.



#3 Add Groundcover, Plants, Shrubs, Trees*

- Consider prepping planting areas with compost.
- Plant in the fall to take advantage of seasonal rains.

***Need help?** Several local organizations can assist you! Here are a few:

- Sound Native Plants: **bit.ly/soundnative**
- Shore Friendly Thurston: **bit.ly/shorefriendlytips**

Groundcover ideas: Clover, Bunchberry, Kinnikinnick, Coastal Strawberry

Plant ideas: Nootka Rose, Sword or Deer Fern, Douglas Spirea

Shrub ideas: Salmonberry, Salal, Tall Oregon Grape, Red Flowering Currant

Tree ideas: Western Red Cedar, Pacific Madrone, Douglas Fir, Hooker's Willow, Big Leaf Maple

#4 Maintain & Enjoy

- Consider becoming obsessed with attracting hummingbirds and butterflies! Can you get one to land on your finger? Is that a challenge?
- Remember every site is different. Buffers along lakes and creeks differ from marine buffers.
- If you live on agriculture lands or acreage, cover crops are a critical piece to managing stormwater on your site! Where there is bare ground, plant a mix of nitrogen-fixing, ground-stabilizing grasses and legumes to reduce erosion, enhance infiltration, build soil structure, and provide habitat.

Practicing Natural Yard Care on the landscape is the safest and smartest way to keep your family safe and our waters clean.

- This includes NOT USING quick-release fertilizers, weed-and-feed products, or harmful bug and weed killers. It also means considering eco-lawns and groundcovers instead of conventional lawns, and applying mulch throughout the site. Other strategies include using water-wise practices to conserve and hold water efficiently, and choosing native, drought-tolerant, and pollinator-friendly plants whenever possible!

Learn more: **bit.ly/gogreennative**

CREATURE FEATURE

Washington Dragonflies

Blue-eyed darner (*Rhionaeschna multicolor*)

Photo credit: Michele Burton Photographer

Winter in the Pacific Northwest feels like nature pauses, quietly preparing for spring. Look in the right places, though, and you will see life overflowing at every pond, mossy forest, and stream. Dragonflies in the early phase of life are one example of life humming along here in the winter.

We see adult dragonflies in the summer, flying around water, hunting for food. These colorful, flying insects don't migrate. Instead, we see them as they search for the best spots to find mates and lay eggs. Dragonflies lay their eggs in ponds, streams, and rivers in the summer. Adults die soon after reproducing, but their eggs and eventual larvae live on.

Dragonflies spend most of their lives underwater as larvae, or nymphs. In this stage, they are swimmers, not the flying wonders we see. They can live as nymphs for one or two seasons, since their transformation to mature dragonfly depends on water temperature. As nymphs, they eat small bugs and larvae. When they mature, nymphs crawl onto rocks or vegetation, shed their exoskeleton, and emerge as the flying adults we see in late spring into summer.

Washington is home to many species of dragonflies, who live in riparian areas where fresh water meets land. Some examples include the Pacific and Columbia clubtail dragonflies, common green darners, various meadowhawks, and assorted skimmers. Refer to online guides to help identify these and other water bugs while you're near the water. Below are a few examples.

Dragonflies are key players in the ecosystem, serving as both predators and prey. As predators, they help regulate insect populations. If you've ever gone camping without getting a mosquito bite, you have dragonflies (and bats) to thank for that! As prey, they provide food for important animals like salmon and Peregrine Falcons. This makes dragonflies essential for a balanced ecosystem.

Four main threats to dragonflies include:

1. Polluted water from too many nutrients (from quick-release fertilizers and leaking septics).
2. Habitat loss or degradation.
3. Invasive species that compete with them for food and space.
4. Climate impacts, which can make water too warm or change their habitat.

The good news is that everyone can help protect dragonflies and maintain healthy waterways!

Resources for Identification:

- Washington Trails Association: **bit.ly/bringthebugs**
- Insect Identification: **insectidentification.org**
- Dirt Time—Dragonflies: **bit.ly/dirtdragonflies**
- Seek (app by iNaturalist)

You can make a difference by trying one—or all—of the following actions:

Volunteer

Join Stream Team to help maintain vital habitat at local sites like McLane, Percival (Sapp Road), and Woodland Creeks. Your efforts directly improve and expand the places where dragonflies live.

Reduce Fertilizer

Use slow-release fertilizer or none at all in your yard. Try adding compost or mulch instead to keep your soil healthy naturally. This prevents excess nutrients from washing into streams, which keeps water healthy for dragonfly nymphs.

Clean Your Gear

Invasive species can hitch a ride on boots, boats, and fishing gear. Always clean your gear before entering a new body of water to keep aquatic habitats safe. You can find more information on practices to clean your outdoor gear here: **bit.ly/decontaminationflyer**

Amphibians: Who? What? When? Where? Why?

Are you familiar with the amphibians of the Pacific Northwest? Do you know why we survey them every year? What are we looking for, what does the data reveal, and how can you get involved?

What Should You Know?

Let's start with the star players. Amphibians such as the Pacific Northwest salamander, long-toed salamander, rough-skinned newt, red-legged frog, Pacific tree frog, Oregon spotted frog, and ensatina salamander are essential to the health of Thurston County's ecosystems. Because they breathe through their skin, they are highly sensitive to pollution, habitat loss, and declining water quality. This makes them excellent clues to the health of an ecosystem. The presence or absence of amphibian species can tell us so much and often will serve as a warning call.

Their presence signals healthy wetlands, streams, and forest habitats, while their absence often points to pollution, drought stress, or a lack of connected wild areas, or corridors. For example, the Oregon spotted frog—officially listed as threatened at the federal level—depends on shallow wetlands with clean, stable water, while red-legged frogs and long-toed salamanders rely on a network of wetlands and upland forests, emphasizing the importance of continued connection between aquatic and terrestrial ecosystems.

Amphibians regulate insect populations and provide food for birds, fish, and mammals, serving as critical links in the food web. Their decline directly threatens the health of many other species. Protecting them safeguards water quality, habitat diversity, and the region's overall health.

What's in the Data?

Amphibian surveys, which occur in early spring at select locations throughout Thurston County, including Lacey, Olympia, and Tumwater follow a simple method. Surveyors visit ponds during breeding season to record egg masses, species presence, abundance, life stages, and habitat conditions. They are also observing and recording information such as water clarity, vegetation cover, and how long the area remains saturated in water, or its hydroperiod. Multiple visits to each site annually allow researchers to monitor for site-specific trends.

In 2026, Stream Team will assess more than two decades of data to bridge knowledge gaps and better assess amphibian populations and habitats. Early findings already show valuable insights. For instance, at the Tumwater Valley Golf Course, survey data revealed that poorly timed pond maintenance disrupted breeding cycles and reduced productivity. In response, the city is developing a detailed management plan that accounts for each species' lifecycle and emphasizes a seasonal maintenance calendar. With nearby wetlands and the Deschutes River creating vital habitat corridors, these adjustments will strengthen local populations and promote genetic diversity.

As researchers and community partners continue to share knowledge, we'll discover more ways to protect amphibians and coexist with species that have thrived here for millennia.

How Can You Get Involved?

Each January, Stream Team offers an amphibian workshop in partnership with Washington Department of Fish & Wildlife and U.S. Fish & Wildlife Service. Participants learn about local species, their habitats, as well as the science behind surveys. It's a chance to engage with experts, ask questions, and receive hands-on training to participate in volunteer surveys, which take place from February through April during peak breeding season.

Workshops and surveys are open to all who are eager to experience the season's first signs of spring while doing critical conservation work. As survey efforts expand, more volunteers will be needed. This is a fun and meaningful way to explore the natural world, connect with wildlife, and make a meaningful impact.

For details on workshops, survey dates, or volunteer opportunities, contact your local Stream Team representative or visit us at **StreamTeam.info**. We look forward to seeing you out in the field—waders on, data sheets in hand, and ready to witness the excitement of new life emerging in our ponds.

WINTER WORD SEARCH

B O S I D D X K P T S F T T Z
H H E Q U I N Z T R A C K S L
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WORD BANK

Snowmelt
Icicle
Salmon
Hibernation
Tracks
Frost
Otter
Eagle
Wetlands
Pond
Aquifer
Recycle
Habitat
Amphibian

Calendar of Events Winter 2025

DEC

Second Saturday @ Sapp Road Park | **Saturday, December 13, 10 a.m.–2 p.m.** | Sapp Rd Park *(weather dependent)*

Habitat at Home Workshop | **Saturday, December 6, 1–3 p.m.** | Olympia Timberland Library

JAN

Stream Team Volunteer Appreciation Party | **Saturday, January 10, Noon–2 p.m.** | Location TBA

Amphibians of the Pacific NW Life History Talk | **Saturday, January 31, 10a.m.–Noon** | South Puget Sound Community College Building 32

Amphibian Egg Mass ID Field Training | Time & location TBA *(weather dependent)*

Second Saturday @ Sapp Road Park | **Saturday, January 10, 10 a.m.–2 p.m.** | Sapp Rd Park *(weather dependent)*

Habitat at Home | **Saturday, January 24, 9 a.m.–Noon** | Yelm Community Center

FEB

Amphibian Egg Mass Surveys | Time & location TBA *(weather dependent)*

Second Saturday @ Sapp Road Park | **Saturday, February 14, 10 a.m.–2 p.m.** | Sapp Rd Park *(weather dependent)*

Habitat at Home Workshop | **Saturday, February 14** | Time & location TBA

Scan for complete event info & registration!

*Visit **StreamTeam.info** and click Register*

ON THE COVER: Washington Dragonfly. Photo credit: Michele Burton Photographer

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 contact one of the coordinators listed at least one week prior to an event to make special arrangements.

Follow Us

Thurston Stream Team
thurston_stream_team
Thurston County Stream Team

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Design & Layout

ASGD Brand Strategy + Design, AzureSGD.com

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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Stream Team

EDUCATE • PROTECT • RESTORE

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Stormwater Systems Training: Prevent Flooding, Protect Local Waters

Stormwater systems are vital to our community's health and safety. They help prevent neighborhood flooding and, in some cases, clean polluted stormwater runoff before it enters our local lakes, rivers, and the Salish Sea. These systems are all around us yet are often unnoticed or overlooked. The storm drain along the road and the fenced-in "pond" in your neighborhood are critical components in managing stormwater—protecting homes, property, and our local waters.

Like any infrastructure, stormwater systems need regular inspections, maintenance, and investment. Routine care helps prevent costly flooding and ensures these systems work as intended.

Take some time this winter to learn more by taking our **FREE online Stormwater Facility Inspections and Maintenance Training**. The course covers:

- What stormwater facilities are and why they are important
- What different stormwater facilities look like and how they function
- How to plan and budget for maintenance
- What type of reporting and documentation is required by your city or county
- Methods for treating invasive and noxious weeds
- How to report a spill
- Resources for managing stormwater pollution

Course content is designed for residents, HOAs, professional landscape companies, property management companies, and stormwater contractors. Upon completing the course, you will receive a certificate demonstrating your commitment to protecting our water resources! The course is go-at-your-own pace and available year-round. Check it out at: **tinyurl.com/stormwateredu**

Stormwater Facility Inspections & Maintenance Training

- Online – go at your own pace
- Available year-round
- **tinyurl.com/stormwateredu**
- Free

Your opportunity to help protect and enhance the water resources, habitats, and wildlife in Thurston County.