Stream, Team

SUMMER 2025 June-Augus

Shorelines as Dynamic Ecosystems!

Check Out Our New Nature Sleuths Mission!

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

Stream Team • Summer 2025 June–August

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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.



Marine Creature Mondays—Making a Splash

Set against the backdrop of the Olympic Mountains and the forests that meet Puget Sound, the weekly Marine Creature Mondays gathering is an experience showcasing the delicate balance between human activity and marine ecosystem health. While you're exploring marine creatures, you'll also learn how to help keep their homes safe and clean by preventing stormwater pollution.

What to expect from Marine Creature Monday:

- Get hands-on with local marine creatures.
- Receive an onshore intro to scuba diving.
- Watch live underwater footage captured by a drone.
- Learn what stormwater runoff is—and how to help protect our water.
- Ask a volunteer marine scientist anything you're curious about!

Pick a Monday that works for you between July 28 and August 18, and come meet the creatures at Boston Harbor Marina! This is a free, all-ages, family-friendly event for Thurston County residents only. Children under 10 must wear life jackets on the dock. We'll provide them, or you can bring your own. Register early at streamteam.info/events - space is limited and fills up fast!

Have questions? Contact Genevieve Becker at gbecker@ci.olympia.wa.us

The Responsible Boater: Protecting Our Waters & Marine Life

The South Sound is a beautiful place to boat—with freshwater, saltwater, and a wide variety of wildlife to see! But with the fun comes responsibility. By following a few simple boating tips, we can help protect marine life, stop the spread of invasive species, and keep our waters clean.

Protect Marine Wildlife

The Salish Sea is home to amazing animals like killer whales (orcas), gray whales, and sea lions. One special group, the endangered Southern Resident Killer Whales (SRKWs), needs extra protection only 74 remain as of April 2025.

If you see killer whales while boating, follow these guidelines:

- Stay 1,000 yards away and slow to under 7 knots within half a mile.
- Turn off your engine if whales come within 400 yards.
- Don't park in their path, and keep at least 200 yards of distance.
- Use whale sighting apps and reduce engine noise.

Learn more at **bewhalewise.org**

Prevent Invasive Species: Clean, Drain, Dry!

Invasive species like zebra mussels and European green crabs can spread quickly and harm local ecosystems. Help stop them by remembering: **Clean, Drain, Dry!**

- **Clean** your boat, trailer, and gear—remove plant and animal material.
- **Drain** water from bilges, live wells, and engines.
- **Dry** all equipment before launching in new waters.
- Dispose of bait properly and follow transport rules.

Stop Oil & Fuel Spills

Even small oil and fuel spills can harm fish, birds, and other marine life. To help prevent spills:

- Use oil-absorbent pads near fuel ports and in bilges.
- Fuel up slowly and check hoses and fuel lines for leaks.
- Use eco-friendly bilge cleaners and dispose of oily waste the right way.



Healthier Boating Practices

A few simple swaps can make boating better for everyone:

- Use biodegradable, non-toxic cleaners.
- Pack out all trash—especially plastics and fishing line.
- Consider solar or electric motors to reduce air and water pollution.
- Anchor carefully to avoid damaging seagrass beds.

Waste Disposal & Marina Practices

How you handle waste matters—both on board and at the dock:

- Use pump-out stations or a marine sanitation device.
- Never dump grey water in sensitive areas.
- Take old paint, batteries, and solvents to an official hazardous waste collection site.

Boating responsibly keeps our waters clean and our marine life thriving—now and for future generations. Stay safe, boat smart, and protect what you love!

Here are some additional resources to help you to be a better boater:



- bit.ly/eco-boating
- bit.ly/HazoHouse







Shoreline Dynamics: Where Water Meets Land

We learned in Part 1 of this series (found in our Spring 2025 Newsletter), much of western Washington was once densely forested all the way to the shoreline. Native trees, shrubs, birds, critters, and other wildlife thrived in this rich ecosystem. Underground, roots mingled with fungi and other biota (living organisms) to create a stable, biodiverse landscape. Stories of this thriving shoreline are found throughout Salish tribal history.

Some people and communities have understood natural shoreline processes for a long time. As a region, we're starting to integrate that knowledge into how we manage and restore shorelines—after centuries of human impacts and the consequences they've caused.

When shorelines are allowed to function naturally—and have healthy plants nearby—they support all kinds of life, from insects and forage fish to shorebirds, salmon, and orcas.

For example, forage fish incubate anywhere from 6-8 weeks in the nearshore, reliant on shade and snags for cooler water temperatures and shelter as well as fine sand and small gravel for their eggs. Beach wrack—the seaweed, logs, and kelp that waves deliver to marine shorelines—becomes home to tiny invertebrates like crabs. These small creatures form the base of a food web that supports juvenile salmon, trout, herons, and more.

Native plants and drift logs help absorb wave energy and protect shorelines. Without bulkheads or seawalls, shorelines erode slowly and naturally—while also gaining new sand and sediment from nearby bluffs. In contrast, hard armoring like bulkheads blocks sediment flow and disrupts the unique ecosystem processes that happen along the water's edge.

Other physical changes to the shoreline—like removing trees and plants—can throw off the natural balance. Vegetation provides important habitat, helps control water temperature, reduces wave energy and erosion, and acts as a barrier to nuisance animals like Canada geese. It also adds seasonal beauty, like colorful leaves in fall and flowers in spring.

What are Shoreline Dynamics?

Shoreline dynamics are the continuous interactions between wind, waves, woody debris, and sediment that shape our shorelines. These processes vary depending on the shoreline type (like marine, lake, or stream), but all help create healthy, protective habitats near the water's edge. Because of all the life that depends on this place where water meets land, shorelines have become a top priority for restoration in our region. Protecting this vital cultural, economic, and recreational resource helps keep our communities and ecosystems—safe and thriving.

Want to learn more? Stay tuned for Parts 3 and 4 of our Shoreline Buffers series, covering Stormwater & Site Drainage and Lake, Stream, and Marine Buffer Restoration.

Own shoreline property?



Check out **bit.ly/shorefriendlythurston** for technical support and resources for managing your shoreline property. There's also a free program available to help you grow a salmon-friendly buffer and care for your land the natural way. Learn more at **ThurstonGoGreen.org**.

The Scoop: Urban vs. Rural Dog Poop

Cleaning up your dog's mess is essential whether you live in downtown Olympia, suburban Hawks Prairie, or rural Rainier. The way you scoop pet waste can change based on where you live, but one thing stays the same: bagging and trashing pet waste protects the health of your family, your pets, your livestock, and our lakes, streams, and drinking water.

Urban and Suburban Areas

In cities and suburbs, dogs live close together—which means more poop in shared spaces. Leaving dog waste on the ground creates a health hazard, not to mention that



dreaded moment when someone steps in it! Sidewalks, parks, and playgrounds can quickly become breeding grounds for bacteria, parasites, and viruses. Rain can wash that waste into nearby water—or it might get tracked into your home.

Thurston County, along with the cities of Lacey and Tumwater, has rules that require pet owners to clean up after their dogs in public parks. The City of Olympia goes a step further—you're expected to pick up any time your dog leaves your property. Pet waste bag stations are available in many parks, making it easy to do your part. And if you don't? Well... don't be surprised if you get the stink eye from a passerby!

Rural Areas

It's a common myth that dog poop in large rural areas will just "break down naturally." While nature can handle a little waste, too much can pollute well water and throw off the balance of the environment. Dog waste creates similar health risks in rural areas as it does in the city—spreading germs that can affect wildlife, livestock, and humans. And dog poop isn't like wild animal waste. Dogs eat high-protein commercial food, which makes their poop more acidic and harder for the environment to break down. It also sticks around longer—along with any bacteria, parasites, or viruses that come with it.

No Matter Where You Live

Dog poop is not fertilizer. When it washes into local waters—like the Chehalis River, Spurgeon Creek, Summit Lake, or the Nisqually Reach—it adds extra nutrients that lower oxygen levels. Fish and other aquatic life need oxygen to survive, and low oxygen conditions can harm entire ecosystems. Algae blooms, shellfish closures, and murky water? Those are the real-life results partially linked to too much dog waste in the water.

What's Blooming in Budd?

Aimee Christy, Research Biologist with The Pacific Shellfish Institute

If you've ever looked at plankton under a microscope, you know how other-wordly and beautiful they can be. As a shellfish biologist at the Pacific Shellfish Institute, it's hands down my favorite part of the job!

In 2011, while sampling for SoundToxins with Stream Team coordinator Patricia Pyle, we came up with a way to share our love of plankton with the community. Fourteen years later, *What's Blooming in Budd?* is still going strong—and still inspiring!

Join Us!

Help collect data, dip

nets into the water, and take a closer look at the

amazing plankton that

call Budd Inlet home. You might spot polychaete larvae, dinoflagellates, barnacle or mussel sets or something completely unexpected! Every week brings new surprises. Thanks to weekly monitoring, we've built a long-term data set that helps us track seasonal patterns in both plankton and water quality—like oxygen and pH levels. It

also helps us catch unusual

blooms, like bright-green



Olympia Community Sailing camper collecting a plankton sample. August 2024.

euglenoids or red *Heterosigma* that can drop visibility to less than one meter.

Most importantly, we can track harmful algal blooms (HABs). These occur when certain types of phytoplankton multiply quickly, sometimes producing toxins that harm people, shellfish, and wildlife. Bivalves like oysters filter-feed on phytoplankton, which can concentrate toxins in their tissues. Our data helps us understand when these toxic blooms happen, how long they last, and how strong they are.

Diarrhetic Shellfish Poison (DSP) is a toxin produced by a naturally occurring phytoplankton called *Dinophysis*. People can get sick from eating shellfish contaminated with DSP—it causes nausea, vomiting, stomach pain, and diarrhea.

While DSP shows up across Puget Sound, *Dinophysis* seems to have a strong connection to Budd Inlet. In 2016, lower Budd Inlet set a national record for DSP toxins in mussels—250 micrograms per 100 grams tissue! The safety limit is just 16 micrograms per 100 g. Budd Inlet has had shellfish harvesting closures every year since.

Our data shows that most DSP-related closures in Budd Inlet begin in October or November. Budd is home to at least six species of *Dinophysis*, but *D. acuminata* and *D. fortii* are most often linked to closures. Closures can last anywhere from one to nine months—with the average around four months.

Independent research projects from local students shed light on the distribution of *Dinophysis* and factors associated with toxin production. Students use this data to study changes in the planktonic community composition over time and how those changes impact overall species richness.

This year marks the 14th year of *What's Blooming in Budd?*! We couldn't be more excited to continue sharing our love of plankton with you. Visit **bit.ly/bloombudd** to learn more and see lots of cool plankton images. We always welcome your participation! Interested in joining us on the dock or having a presentation in the field or classroom? Contact us at **psi@pacshell.org**

SoundToxins is a Puget Sound– wide program that monitors phytoplankton. It's co-managed by the National Oceanic and Atmospheric Administration (NOAA), Washington Sea Grant, and the Washington State Department of Health. The program provides early warning for harmful algal blooms, helping protect public health and reduce impacts on local fisheries. Watch how we sample for SoundToxins at **bit.ly/soundtoxin**.



Bloom of Ceratium fusus and Akashiwo sanguinea, August 2023.

Wish you had your own microscope?

PSI created 5 Discover Plankton! kits that are available—free of charge—from the Lacey, Tumwater, and Olympia Timberland Library branches. Learn more about Timberland Regional Libraries' Library of Things collections under the Browse tab on their homepage.

Special thanks to Stream Team, Keta Legacy Foundation, Rose Foundation and Inspire Olympia for supporting these kits!

What's Blooming in Budd? **Events**

No registration required!

(no July 3 event)



Stream Team coordinator, Patricia Pyle and PSI staff, Mary Middleton & Aimee Christy, engaging the public during one of the first "What's Blooming in Budd?" events, 2011.

Check Out Our New Nature Sleuths Mission! 📃

Summer is a great time to spend long days outside, play, and learn while exploring nature! This summer, try one of our awesome Nature Sleuths missions while adventuring at a local park. Follow clues, discover cool natural wonders, and earn fun prizes just for participating! Learn more at streamteam.info/nature-sleuths.

which happens to be a great place to dip your toes in Hicks Lake on a sunny day. You can stroll the shady trails through the nearshore forest, or watch boats zip by as you

sunbathe on the beach. To join a Nature Sleuths

code 6NRHZS.

Download Goosechase:







Salmon Hats!

A mysterious orca fad—and a preview of our 2026 4-part series on Southern Resident Killer Whales

Partying Like it's 1987?

Riddle me this: Why did the Southern Resident Killer Whale swim around with a dead salmon on its head?

Nobody knows! Seriously... Why would they do that?!

Local news channels first got word of this behavior in the 1980s, but it's likely killer whales (orcas) have been doing it much longer. Are they playing? Trying to impress a mate? Saving a snack for later? Could it be a sign of an abundant chum run?

It's unlikely our Southern Residents are wearing the salmon to make a fashion statement. And it's doubtful that they would waste food, as this group of killer whales is critically endangered. Killer Whales are extremely playful beings (they are dolphins after all!) and have been witnessed doing similar things over the years, for example "kelping", or swimming around dragging kelp on their dorsal fins or snout. Maybe they simply like to party?

Whatever the reason, people are definitely curious—and for good reason. This salmon-on-the-head trend has been seen in all three Southern Resident pods: J, K, and L! In 2024, the behavior resurfaced with at least two new sightings in the Salish Sea.

Knowing what we do about Tahlequah of J Pod—how she carried her deceased calf for 17 days and over 1,000 miles in 2018, and repeated a similar act of mourning in 2025 it's easy to wonder: could the salmon hat behavior be more than play? Could it be a deeper expression from a wise and grieving species? A kind of warning call, tied to the health of salmon in the Salish Sea?

No one knows for sure what the salmon hat trend really means, but it sure gives orca fans something to get excited about—and there's still so much more to discover.

Orcas are incredibly intelligent. Part of their brain—the paralimbic region—is more developed than it is in humans! With complex social lives, deep emotional capacity, and culture passed from generation to generation, killer whales continue to amaze us.

Stay tuned for our 2026 4-part series on Southern Resident Killer Whales, where we'll dive into what makes these creatures some of the most fascinating animals on Earth.

Until then, happy celebrating—July 14 is World Orca Day!



Monterey Bay Whale Watch

Stormwater Management: We Have a Plan!

We often talk about stormwater runoff and what you can do to help protect our local waters. But have you ever wondered what your city or county is doing? Each year, our stormwater teams create a Stormwater Management Program Plan (SWMP Plan). These plans lay out the actions we take to protect our streams, rivers, lakes, wetlands, and the Salish Sea from polluted runoff. Think of it like a roadmap—it helps us plan ahead and shows how we're meeting the requirements of our Stormwater Permit, updated every five years and regulated by the Washington State Department of Ecology.

What is a Municipal Stormwater Permit?

Since 2007, stormwater that flows through thousands of local catch basins, pipes, ditches, and ponds has been managed under the Western Washington Phase II Municipal Stormwater Permit. This Permit is authorized by the federal Clean Water Act (1972) and the Washington Water Pollution Control Act (RCW 90.48). It lays out specific actions we must take to reduce stormwater pollution and



Our Stormwater Programs

As municipal "permitees" we must conduct programs and activities in the following areas:

- Planning ahead to protect local waterways
- Community education and outreach (like Stream Team!)
- Involving residents and volunteers in local projects
- Mapping and tracking our stormwater system
- Preventing pollution from new construction and redevelopment
- Finding and stopping illegal dumping or leaks (spill response included)
- Helping businesses reduce pollution through inspections and support
- Inspecting privately owned stormwater systems
- Managing runoff from existing developments
- Maintaining jurisdiction-owned stormwater systems
- Meeting clean water requirements (like Total Maximum Daily Load—TMDLs)
- Monitoring progress and making improvements

Oops... We Messed Up!

In our Spring 2025 Stream Team Newsletter (page 10), we mistakenly credited a group of volunteers as early Stream Team members. In truth, the photo showed volunteers from WSU Extension's Native Plant Salvage Project, taken around 1994 or 1995. While Stream Team and Native Plant Salvage have long been "sister" programs, it's important to acknowledge our volunteers uniquely. Here's a photo of an actual early Stream Team crew working hard on a riparian cleanup—thank you to all who support local restoration work! protect rivers, lakes, and marine waters for people and wildlife. The current 2024–2029 Permit went into effect on August 1, 2024 and includes several new and updated program areas.

Collectively our Stormwater Utilities inspect and maintain thousands of stormwater infrastructure features within Thurston County. These features help capture, carry, and sometimes clean stormwater runoff from roads, parking lots, sidewalks, and rooftops to our streams, lakes, and marine waters.



The Bigger Picture

The programs and activities listed here are part of a larger strategy to manage stormwater, reduce flooding, protect clean water, and restore aquatic habitats. This work is a community effort—done in partnership with residents, local businesses, and other agencies—to keep Thurston County safe and healthy for people, pets, and wildlife.

Stay tuned for our Fall 2025 Stream Team Newsletter where we will look closer at our our stormwater management programs and activities.... AND we will let you know how you can provide feedback and ask questions about our work!



Stream KIDS' Team CORNER

MAKE IT RAIN!

create Your own Water cycle in a Jar Learn how water moves through and around our environment with this fun. hands-on experiment!

WHAT TO DO:



A large glass jar or clear plastic container (reused is best!).



WHAT

YOU'LL

NEED:

Lid or plastic wrap. If using plastic wrap, a rubber band will help secure it.

Small cup or lid to act as a collection point inside the jar.



Blue food coloring (optional, to make the water more visible).





Sunlight or a lamp.





4. Seal the jar: Secure the lid or plastic wrap with

band.



5. Place in sunlight Set the jar in a warm,

z. Create the "land":

Place a small, empty cup

or lid inside the jar to

act as a

collection

basin for

"rain."

sunny spot or under a lamp.



3. Add the "clouds":

Stick cotton balls or pieces of recycled paper towel to the inside of the jar lid or plastic wrap-these will absorb moisture like clouds!

6. Watch the water cycle!

CONDENSATION

EVAPORATION

GROUND WATER

Over time, vou'll see condensation form on the inside of the jar (like evaporation), collect on the "clouds" (condensation), and eventually drip into the cup (precipitation)

PRECIPITATION

RUNOFF

What's happening?

This experiment shows how water evaporates, condenses into clouds, and returns to the earth as precipitation—just like in nature! Stream Team protects our local water by keeping pollutants out of streams, maintaining healthy riparian zones, and restoring habitat for wildlife.



Calendar of **Events Summer 2025**

Stream Bug Monitoring | Various Dates & Locations | Recommended for ages 7 & up McLane Creek Trail Maintenance | Friday, June 6 & 27, 9:30 a.m.–12:30 p.m. | McLane Creek Nature Trail Dog Days | Saturday, June 14, 10 a.m.–2 p.m. | Pioneer Park What's Blooming in Budd | Thursdays, June 19 & 26, 10 a.m.–Noon | Port Plaza Dock

Second Saturday Restoration @ Sapp Road Park | Saturday, July 12, 10 a.m.-2 p.m. | Sapp Rd Park What's Blooming in Budd | Thursdays, July 10, 17, 24 & 31, 10 a.m.-Noon | Port Plaza Dock World Orca Day | Monday, July 14 | Salish Sea McLane Creek Trail Maintenance | Friday, July 25, 9:30 a.m.-12:30 p.m. | McLane Creek Nature Trail Marine Creature Mondays | Monday, July 28, 11:30 a.m.-2 p.m. | Boston Harbor Marina

AUG

JUN

Marine Creature Mondays | Mondays, August 4, 11 & 18, 11:30 a.m.-2 p.m. | Boston Harbor Marina What's Blooming in Budd | Thursdays, August 7, 14, 21 & 28, 10 a.m.-Noon | Port Plaza Dock Second Saturday Restoration @ Sapp Road Park | Saturday, August 9, 10 a.m.-2 p.m. | Sapp Rd Park McLane Creek Trail Maintenance | Friday, August 15, 9:30 a.m.-12:30 p.m. | McLane Creek Nature Trail Salmon Steward Training 5th Ave Bridge | Saturday, August 16, 11 a.m.-1 p.m. | 5th Ave Bridge, Olympia

Scan for complete event info & registration!

Visit StreamTeam.info and click Register



ON THE COVER: Tidepool with abundant sea life.

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

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

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Pressure Washing & Our Waterways: What You Should Know

Summer is all about being outside—walking the beach, swimming in lakes and rivers, and enjoying fresh seafood.

Protecting the things we love most about summer starts at home, especially when it comes to outdoor clean-up projects like pressure washing. The good news? Choosing a low-impact method is easy, affordable, and better for people, pets, wildlife, our local lakes and streams.

Whenever possible, sweep instead of pressure wash—it saves water, saves money, and even counts as exercise!

If you do pressure wash, backyards are usually safer than driveways. Patios and decks are often surrounded by grass or plants, which can help soak up and filter wash water.

No matter where you're cleaning, it's important to keep dirty wash water out of storm drains, which often lead to streams and lakes. Here are a few easy steps to help protect our water while you clean:

Before Washing

- Use kitty litter or another absorbent to clean up oil spots.
- Sweep or brush the area well and throw debris in the trash.

While Washing

- Direct wash water to grass or landscaped areas where it can soak in.
- Use fabric filters, gravel bags, or boom pads to protect nearby storm drains.
- Use light pressure to reduce runoff.
- Don't use any soaps or chemicals—not even biodegradable ones.
- Stick to cold water only.

After Washing

- Sweep up and dispose of any leftover debris.
- Remove any storm drain protections you set up (like filter fabric or gravel bags).

<image>

Hiring a contractor?

Ask how they'll protect the storm drain before they start the job.

Did You Know?

Buildings built or renovated between 1950–1980—especially commercial, industrial, or multi-story residential ones—are the most likely to contain PCBs (a harmful chemical).

New state and local rules now require these buildings to be assessed before any pressure washing to make sure PCBs won't enter storm drains, ditches, swales, or ponds.

Good news: These rules don't apply to single-family homes.