Stream Team News

FREE

OLYMPIA • LACEY • TUMWATER • THURSTON COUNTY

EDUCATE • PROTECT • RESTORE

SUMMER EDITION
June–July–August 2015

Inside...

STORM DRAIN MARKING BLITZ

- **Sunday, July 12**
- **1 p.m. – 3 p.m.**
- **Lacey, Olympia, Tumwater and unicorporated Thurston County neighborhoods**
- **Everyone Welcome!**

Storm Drain Marking Blitz!

With summer almost upon us, it's that time of the year again – time to remind folks to keep pollutants out of our storm drains by marking them with the message of, "No Dumping - Flows to Waterways." This message is a reminder that old paint, oil, soap and cleaning products should never be dumped down storm drains. Many people do not realize that our storm drains (with the exception of a small area in downtown Olympia) flow directly into a stream, lake or other surface waterbody or into a neighborhood stormwater pond where it infiltrates back into the groundwater aquifer. Pollution that is carried by stormwater can harm fish, wildlife, shellfish and our drinking water.

Easily installed and highly visible, these storm drain markers will not only remind people for many years of "No Dumping" but, they can also help people locate clogged drains during periods of flooding.

If you want to get involved in protecting local streams and groundwater, installing storm drain markers is a fun community project for individuals, families or community groups. Remember, only rain should go down storm drains!

To register for the one-day Storm Drain Marking Blitz, go to www.streamteam.info and click on "Register". You can register for storm drain marking in one of four jurisdictions: Lacey, Olympia, Tumwater or Thurston County. For more information, contact streamteam@ci.lacey.wa.us

ON THE COVER: Beach seining event reveals important nearshore species such as forage fish.

STREAM TEAM MISSION

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

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.

SPECIAL NEEDS?

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

FIND US ON FACEBOOK:

ThurstonStreamTeam

STREAM TEAM INQUIRIES

360-438-2672 or streamteam@ci.lacey.wa.us

IN LACEY:
City of Lacey Water Resources Program
420 College St. SE, Lacey, WA 98503

Attn: Kim Benedict
Tel: 360-438-2687
TDD: 1-800-833-6388
kbenedic@ci.lacey.wa.us

IN OLYMPIA:
City of Olympia Water Resources Program
P.O. Box 1967, Olympia, WA 98507-1967

Attn: Michelle Stevie
Tel: 360-753-8336
mstevie@ci.olympia.wa.us

IN TUMWATER:
City of Tumwater Water Resources Program
555 Israel Road SW, Tumwater, WA 98501

Attn: Debbie Smith
Tel: 360-754-4148 TDD: 1-800-833-6388
dmsmith@ci.tumwater.wa.us

IN THURSTON COUNTY:
Thurston County Water Resources Program
929 Lakeridge Dr. SW, Olympia, WA 98502

Attn: Chris Maun or Ann Marie Pearce
Tel: 360-754-3355 EXT 6377
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Remembering Patricia Pyle

By Stream Team volunteer Valarie Elliot

In this world there are people that take the initiative to make life and the environment better for others. On February 21, Olympia and Thurston County lost an amazing person who was committed to taking action to improve our environment and enhance its living conditions. On that day, Olympia Stream Team Coordinator, Patricia Pyle, passed away unexpectedly.

Patricia was a "doer" and loved getting others involved in her projects and programs. Patricia had enough energy, ideas, enthusiasm and intelligence for all to share, which she did openly. She was a professional among professionals, always with a smile, a good attitude and thinking power that was always generating ideas. Her vivacious personality was always a pleasure to be around.

Patricia enriched the Stream Team community with her passion, creativity and intellect. She educated many people who have and will continue to benefit from her talents for years to come. Patricia enjoyed walking along Percival Landing while coaching Stream Team volunteers and answering questions. She would help volunteers visualize how Budd Inlet is the southernmost part of Puget Sound's fjord-like estuary. She guided us as we collected samples of zooplankton from the bay for on-site microscope examination. She would then remind us of how Olympia's ocean inlet was driven by tides, gravitational forces and degraded freshwater flows, primarily from the Deschutes River.

Patricia would then take us to stand on top of the 5th Avenue dam. She'd look out over Capitol Lake and lament how the lake is rapidly filling with sediment and how its current shallow conditions and growing plant life cause low dissolved oxygen rates and high water temperatures. She would explain how this dammed portion of the Deschutes River is now a choke point for salmon and cutthroat as they head out to sea and upon their return. Foremost among her many contributions to Stream Team were the enhancement of Salmon Stewards, Sound Stewards and her amazing Haunted Hikes that she would both write and direct.

Besides the City of Olympia, Patricia worked for the Baltimore Public Schools and the Parks and People Foundation (a non-profit organization) in Baltimore, Maryland. While working as a staff member at the Parks and People Foundation on the Vacant Lot Restoration Program, Patricia's hard work and commitment was seen in the Foundation's publication entitled "Neighborhood Open Space Management: A Report on the Vacant Lot Restoration Program in Baltimore," which was sponsored and funded by the Baltimore City Department of Housing and Community Development. The report included a section on defining program success. The section stated that a successful program is a community driven idea, is accepted as part of the community, has many doers and some planners, is where people-power comes from community, is where community takes the initiative, evolves through stages and seasons, improves the environment, gains official recognition and shares knowledge with others. These parameters are indicative of Patricia's work in Olympia and elsewhere, and it demonstrated that she knew what to do and how to do it to accomplish success in all the many endeavors she undertook.

Her zest for life and her commitment to the environment will be missed by many people and organizations. Patricia's life was cut short with many more contributions left to make. Let us continue on with Patricia's projects and programs to protect and improve the environment making Olympia and Thurston County a better place for all.

Farewell, Patricia.

Stream Team's 19-Year History at *Woodland Creek Community Park*

Residents of Lacey and surrounding areas use Woodland Creek Community Park (WCCP) for a wide range of activities including fishing, disc golf and walking their dogs. The park looks much different today than it did 20 years ago, and a part of this is due to the hard work of dedicated Stream Team volunteers.

The property where WCCP sits today was used for cattle grazing and as a nursery with greenhouses when the City of Lacey purchased it from the Long family back in 1991. The park has seen many changes since then, with the addition of the Lacey Community Center in 1996, the fishing pier on Long's Pond in 2000, a replacement of the Lacey Senior Center in 2002 and the construction of picnic shelters and play equipment in 2007. Noticeable changes in the park over the years also include Stream Team's replanting of the area bordering the namesake of the park, Woodland Creek.

Woodland Creek flows through the heart of Lacey and is home to coho, chum, and Chinook salmon, plus anadromous coastal cutthroat trout, Olympic mudminnow and Pacific lamprey. However, being a stream in a highly developed area comes with its own set of problems. Woodland Creek is on the State Department of Ecology's list of impaired water bodies due to the high levels of fecal coliform bacteria that it picks up and carries to Puget Sound through Henderson Inlet. For many years the water quality was so poor in Henderson Inlet that the State Department of Health placed major restrictions and even closures on local shellfish growing operations. Thanks in part to the hard work of Stream Team volunteers planting thousands of native trees and shrubs along the stream banks at Woodland Creek Community Park, water quality improved enough to reopen the shellfish growing beds in northern Henderson Inlet in 2010.

Stream Team's involvement at the park dates back to 1996 when groups of students from schools, such as Komachin and Nisqually Middle Schools, came out to plant native species including snowberry, alder and fir trees along the creek to stabilize stream banks, shade the water and reduce the flow of pollution. Tom O'Brien, a teacher at Nisqually Middle School, brought a group of student volunteers to the park back in 2006 to plant trees and says it was a great experience for the kids. They enjoyed being outside and working hard for a good cause. Since the project started, the critical habitat on both sides of the creek has been filled in with thousands of plants, but the work hasn't stopped. Since 2012, more than 700 Stream Team volunteers have donated over 1,400 hours of their time planting native trees and shrubs, removing invasive plants, watering and weeding, all in the hopes of improving our environment and our community. An annual student Arbor Day planting event sponsored by Lacey Parks & Recreation and the Water Resources Department started in April of 2008 and continues to this year.

The hard work of Stream Team volunteers at Woodland Creek Community Park over the years is a testament to the dedication of our community members to protect the water and natural areas in which we live, play and work. For more information on how you can get involved, or to register for a summer watering party to water newly planted trees and shrubs at the park, go to www.streamteam.info and click on "Register".

INSET: 2003 WOODLAND CREEK PARK TREE PLANTING
CREDIT: LACEY MUSEUM

SUMMER WATERING PARTIES

- **Saturday, July 11**
  10 a.m. – 12 p.m.
- **Wednesday, July 29**
  9 a.m. – 11 a.m.
- **Saturday, August 15**
  10 a.m. – 12 p.m.

- **Everyone Welcome!**
- **Woodland Creek Community Park, 6729 Pacific Ave SE**

Meet the Trees of Washington Returns

New to the area or interested in brushing up on your tree and plant identification? Stream Team and WSU's Native Plant Salvage Project will team up to present a free field class, "Meet the Trees of Washington", on Saturday, June 20, from 10 a.m. to 4:00 p.m. After classroom instruction, participants will take a field trip to a local nature trail to learn to identify native trees, shrubs and perennials. Bus transportation will be provided for the field trip.

The class is especially beneficial for newcomers to our area or anyone else who has ever wondered about the benefits and horticultural uses of native trees and other plants. Participants will learn about different ecosystems to visit in South Sound and the plants and animals that inhabit them.

For more information and to register, go to www.streamteam.info and click on "Register".

MARINE CREATURE MONDAYS

- **Mondays, July 20 – August 24**
- **Two sessions per day: 11:30 a.m. OR 1 p.m.**
- **Registration Required. Find detailed instructions on website to register as a Group.**

Marine Creature Mondays

What does Puget Sound's marine food web have to do with crabs and barnacles? How do species such as barnacles and crabs contribute to zooplankton in Puget Sound and who eats them? *Come find out!*

Join us as Stream Team pairs with local divers for hands-on viewing of some of the wonders of Puget Sound's marine life. Divers will demonstrate their equipment prior to diving to the bottom of the Sound to collect various marine creatures for up close viewing. Biologists will talk about the different species found, their habitat needs and what is required to keep Puget Sound healthy. All the marine creatures are kept in sea water for the viewing and then released back to Puget Sound.

What isn't Cool about…BATS?

Join Stream Team and local bat expert, Greg Falxa, for a fun, fact filled bat talk and walk to learn about bat habitat needs, basic bat biology and their unique life strategies.

BAT TALK (REGISTRATION REQUIRED)
Fri., June 26 • 7:30 p.m. • Traditions Cafe and World Folk Art, 300 5th Ave. SW, Olympia

BAT WALK (REGISTRATION NOT REQUIRED)
Fri., June 26 • 9:30 p.m. • Heritage Park on Capitol Lake, across from Traditions Cafe and World Folk Art, Olympia

To register for this workshop, visit www.streamteam.info and click on "Register". For more information, contact Michelle at mstevie@ci.olympia.wa.us

Some Amazing Facts About Bats!

There are over 15 species of bats in Washington State. The species most often seen flying around human habitat are the little brown bat (*Myotis lucifugus*), Yuma myotis (*Myotis yumanensis*), big brown bat (*Eptesicus fuscus*), pallid bat (*Antrozous pallidus*), and California myotis (*Myotis californicus*). All of these eat insects.

- There are over 1,100 bat species in the world—among mammals, only rodents have a greater number of species. In the United States, there are about 45 kinds of bats; the three most common are the *Eptiesicus fuscus* (big brown bat), *Myotis lucifugus* (little brown bat), and *Tadarida brasilienis* (Mexican free-tailed bat). Only three species of bats are vampire bats.
- A single brown bat (myotis) lives longer than most equally sized mammals, with a life span of nearly 40 years.
- Approximately 70% of bats worldwide eat insects. The rest are *frugivores*, or fruit eaters.
- A small colony of bats can eat over one ton of insects in one year, or more than 600 million insects. A single bat can eat more than 600 insects in one hour. (This is like a person eating 20 pizzas a night.) Bats can save farmers billions of dollars a year by eating insects.
- Bats locate flying insects primarily by using a radar system known as "echolocation". The bat emits high-pitched sound waves that bounce back to the bat when they strike a flying insect, allowing them to locate the insect.
- Many bats open their mouth to call out their ultrasound echolocation signals, but others can shout through their nostrils. A bat's echolocation is so tuned that it can detect objects as thin as a human hair.
- Bats often capture insects when flying by scooping them into their tail or wing membranes, and then putting the insects into their mouth.
- The world's largest bat is the giant golden-crowned flying fox, a rare fruit bat. It has a wingspan of 5 to 6 feet (1.5 to 1.8 m).The world's smallest is the Phillippine bamboo bat that is 1.6 inches (4 cm) with a wingspan of 6 inches (15 cm).
- In West Africa, small woolly bats live in large spider webs.
- Some seeds will not sprout unless they have passed through the digestive tract of a bat. Additionally, bats spread millions of seeds every year from the ripe fruit they eat. Approximately 95% of the reforestation of the tropical rainforest is a result of seed dispersal from bats.
- In most bat colonies, all the females birth their babies at the same time.
- More than half of all bats in the U.S. are endangered or in decline. Both loss of habitat and a mysterious illness called "White-Nose Syndrome" (which has affected over a million bats) are major reasons for the decline.
- Wind turbines kill tens of thousands of North American bats every year. Rather than being struck by turbines, many bats appear to be killed by a sudden drop in air pressure near the spinning blades, exploding the tiny blood vessels in their delicate lungs.

Become a Salmon Steward

& Help Others Learn About Salmon!

Salmon are an icon of the Pacific Northwest. Many people flock to local viewing areas to witness salmon as they make their incredible journey back from the ocean. You could help people learn about the "King" of the salmon (Chinook) or wild spawning chum salmon by becoming a Salmon Steward. No prior experience is necessary!

Every summer, Stream Team trains volunteers to talk to visitors at three popular salmon viewing locations:

Late August – mid September	▶ 5th Avenue Dam
Mid September & early October	▶ Tumwater Falls Park
November & early December	▶ McLane Creek Nature Trail off Delphi Rd SW

Salmon Stewards learn specific information about the Deschutes River Chinook and South Sound chum, along with specific information about the location where salmon viewing takes place. Each location has its own story related to the history of salmon and people in South Sound. The free training is designed to give the information and props needed to be successful as a beginner Salmon Steward.

Through a series of evening trainings and field trainings, Salmon Stewards will learn about the life cycle of Chinook and chum salmon, what salmon need in order to survive, how local salmon runs are managed for harvest, salmon docent skills and specific information regarding the history of salmon and people in South Sound.

Salmon Stewards Training Dates:

Date	Time	Location	Content
Tuesday, **August 11**	6 – 8:30 p.m.	City of Olympia Maintenance Facility, Conf. Rm. 1401 Eastside St. SE	Life cycle, focus on Chinook & chum
Tuesday, **August 18**	6 – 8:30 p.m.	City of Olympia Maintenance Facility, Conf. Rm. 1401 Eastside St. SE	Harvest Management
Tuesday, **August 25**	6 – 8:30 p.m.	City of Olympia Maintenance Facility, Conf. Rm. 1401 Eastside St. SE	4 H's: Habitat, Hatcheries, Harvest & Hydro (dams)
Saturday, **August 22**	10 a.m. – Noon	5th Avenue Bridge	Docent skills, dam operation
Saturday, **September 19**	10 a.m - 1:00 p.m.	Tumwater Falls Park	Docent skills, hatchery operation, history walk

To register for the Salmon Stewards training go to www.streamteam.info and click on "Register." For questions, contact Michelle Stevie at mstevie@ci.olympia.wa.us

McLane Creek Chum training:

For trained Salmon Stewards, the Chum Harvest Management evening training will take place in late October or early November. Once the chum are in the creek, an outdoor training will be held on a Saturday morning in November. This training typically takes place the second weekend in November, after the chum have arrived in the creek.

A condensed Basic Training will be offered in the evenings (late October or early November) for new Salmon Stewards who are interested in Salmon Stewarding at McLane Creek Nature Trail. This is contingent upon having a sufficient number of volunteers interested in the training. For more information, contact Ann Marie at pearcea@co.thurston.wa.us or 360-754-3355 ext. 6857.

Stormwater & Marine Life in the Puget Sound

The stormwater that runs off of our driveways, roofs and roads picks up pollutants and flows into many different streams throughout our county. However, a majority of these streams eventually end up in the same place: Puget Sound. It can be hard to imagine how a car leaking oil on a road miles from the shoreline can have an effect on the whales, shellfish and sea stars that reside in marine waters, but there is no doubt that it does. An estimated 75% of the pollution in Puget Sound comes from stormwater runoff. Here's a look at how this runoff is impacting different marine animals:

Harbor seals in the Puget Sound, such as the ones hanging out at the 5th Avenue Bridge in Olympia, are 7 times more contaminated with PCBs than their northern counterparts in the Strait of Georgia, Canada. PCBs were manufactured for use as coolants and lubricants. Although the production of PCBs was banned in 1979, they persist in the environment and are carried to Puget Sound by stormwater runoff.

CREDIT: LAURA JAMES, BENEATH THE LOOKING GLASS LLC

Salmon, the most iconic marine and aquatic fish in Washington, can suffer greatly when they are exposed to stormwater runoff, both in streams and in the Puget Sound. A recent study linked the death of adult coho in urban streams to chemical contaminants found in runoff from highways. On the bright side, the study also found that using filtration techniques, such as rain gardens, was highly effective in purifying the polluted water and keeping the salmon alive and responsive.

Stormwater affects **sea stars** early on in their life cycle. It acts as a barrier to larval dispersal. This means their offspring may not be able to travel as far, which can lead to decreased genetic diversity within a population and ultimately less adaptability to changing conditions.

Chemicals found in stormwater runoff have been shown to affect the reproductive health and spawning of **English sole** in the Puget Sound.

South Puget Sound species of **shellfish**, including **oysters**, **clams**, and **mussels**, are filter feeders that eat by passing water over their gills to strain out food particles. This constant flow of water exposes them to the pollutants in stormwater runoff, and it can have a dramatic influence on their health. In fact, urban runoff and stormwater outfalls are the most common cause of shellfish restrictions according to the EPA.

There is no question that these incredible creatures can be negatively impacted by stormwater runoff. But the good news is that you can help! Check out streamteam.info/actions or pugetsoundstartshere.org to learn more about what we can do to protect Puget Sound and all the amazing animals that live in it.

Is it Safe to Swim in Local Lakes & Beaches?

Thurston County has a number of waterfront parks and swimming holes that are open to the public. Thurston County Environmental Health tracks some local swimming beaches and posts swimming advisories on their web page. So, before you dive in, check first to make sure there are no swimming advisories posted: http://www.co.thurston.wa.us/health/ehadm/swimming/swimming_index.html

While at the swimming page for Environmental Health, you can also find out where local swimming beaches are located, what amenities are offered at the swimming locations, potential risks and tips for safe swimming. While you cool off this summer and enjoy swimming or wading in Thurston County waters, remember there are simple actions you can take to help keep our local waterbodies clean and safe for swimming! Visit www.streamteam.info/actions to find out what you can do to keep our waterways clean!

Stormwater From Residential Lands

Results From Recent Studies

By Mindy Roberts, WA Department of Ecology

Did you know that residential lands cover 12% of the lands that drain to Puget Sound? This doesn't sound like much, but it's over 10 times the land covered by commercial and industrial lands, and nearly 3 times the land covered by agricultural lands. Many news items discuss pollutants from industry or from agriculture, but residential lands also contribute pollutants to streams, rivers, lakes, and Puget Sound. We generate these pollutants where we live.

Background

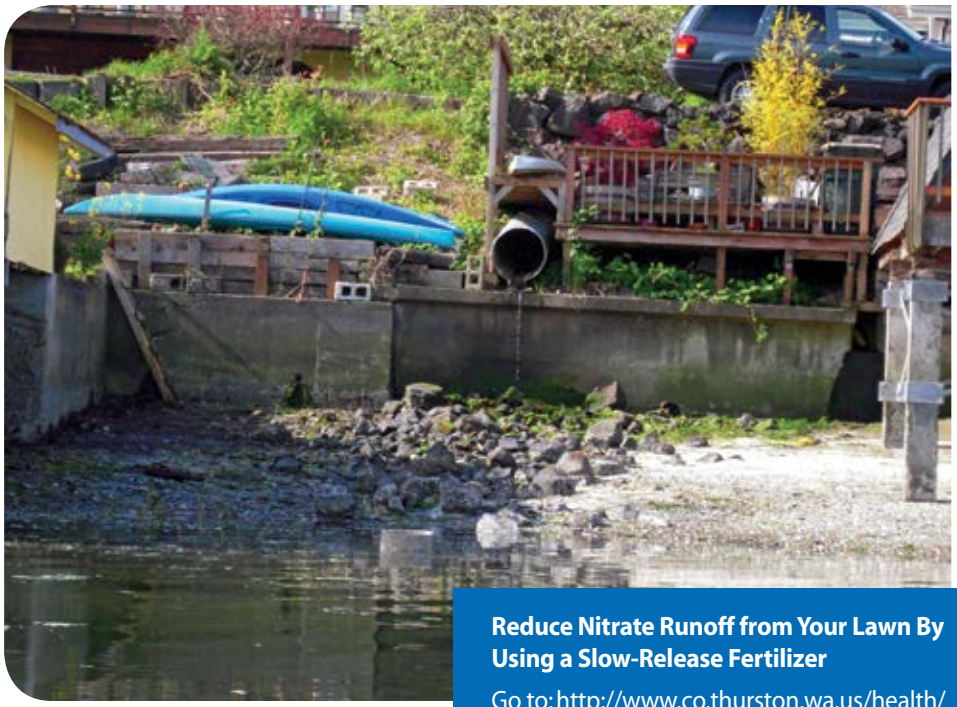
In 2009 and 2010, scientists collected water samples from small streams in the region before and during storm events. These streams drained lands that were predominantly one of four types of land cover: commercial/industrial, residential, agricultural, or forest/field/other undeveloped lands. Laboratory analyses measured levels of heavy metals, polycyclic aromatic hydrocarbons (PAHs), flame retardants, PCBs, petroleum hydrocarbons, oil and grease, phthalates, pesticides, nutrients, and more – over 400 different chemical analyses.

What have we learned?

Overall, pollutants are higher during storms compared to baseflow between storms. This pattern held for all four land cover types, including residential lands.

Stormwater from residential lands contained higher levels of many toxic chemicals compared to stormwater from forested lands. The difference? Our homes and yards. Residential lands release far more toxic chemicals than undeveloped lands. And while pollutant levels from each acre of residential land are not usually as high as pollutant levels from commercial/industrial lands, we have more residential land in the region, and that adds up.

One pollutant is dissolved copper, which is toxic to fish and other aquatic organisms even at very low concentrations. Copper sources in residential lands include pesticide use on urban lawns and gardens and also leaching from roofing materials. The samples from streams draining residential lands had much more dissolved copper than those draining undeveloped lands. At least some of the copper we use in our homes and yards reaches the streams around us.



Reduce Nitrate Runoff from Your Lawn By Using a Slow-Release Fertilizer

Go to: http://www.co.thurston.wa.us/health/ehcsg/fertilizer.html

A second pollutant is nitrate, a form of nitrogen. Nitrogen is an important nutrient for plant growth and a component of most fertilizers. However, while this has a beneficial effect on our yards and gardens by spurring plant growth we want, it can also lead to excess plant growth in the form of algae in our fresh and marine waters. In addition, human and animal waste contains very high levels of nitrogen that can reach streams and Puget Sound from our onsite sewage systems or fertilizer applications.

What can we do about it?

Collectively, our actions may be impacting what we value in streams, rivers, lakes, and Puget Sound. We can now measure the difference in streams draining residential lands. Studies show that our actions have impacts.

Several organizations, including the Thurston County Stream Team, design outreach programs to get the word out about our impacts and what we can do to mitigate or avoid these impacts. Helpful information from ***Puget Sound Starts Here*** and other efforts certainly apply to residential lands and homeowners.

This recent study confirms many of the recommendations already circulating. Our choices in our homes and yards matter. People can reduce overall impacts by paying close attention to yard care practices, choosing green building materials, and maintaining our wastewater systems. As we discuss impacts to places like Puget Sound, consider that these same actions and choices can also impact our streams, rivers, and lakes.

For more information:

Puget Sound Starts Here campaign—http://www.pugetsoundstartshere.org/

Focus sheet on the Toxics in Surface Runoff project—https://fortress.wa.gov/ecy/publications/summarypages/1103025.html

Stream Team's "Actions for Clean Water"—http://streamteam.info/actions/

Featured Creature

Opalescent nudibranch
(Hermissenda crassicornis)

Puget Sound Beauty: Opalescent nudibranch

Opalescent nudibranchs are a type of sea slug, and are one of the most abundant nudibranchs on the Pacific Coast.

Geographic range	Alaska to Baja California, Mexico.
Habitat	Common in the intertidal zone, from the low tide line down to 133 feet (40 meters) deep. Found in both rocky and sandy shores, bays and estuaries. It occupies rocks, pilings, mudflats, bays, estuaries and tide pools.
Description	Opalescent nudibranchs are one of the prettiest and most colorful species of nudibranchs. The body is bluish white with neon blue edges and a yellow or orange midline stripe. The body is broadest just behind the head, tapering to a fine point at the rear. There are numerous bright orange, white-tipped projections, called cerata, in two clusters on each side of back. The tips of the cerata are armed with nematocysts, or stinging capsules, which they use for defense. The cerata are brightly colored to warn predators. The opalescent nudibranch has four antennae, of which, the first pair has blue lines and is widely spaced and the second pair is bluish with raised rings. The opalescent nudibranch can grow to a length of 3 inches (83 mm).
Biology	The opalescent nudibranch primarily feeds on hydroids, but may also eat anemones, bryzoans, sea pens, sea squirts, sponges, corals, small crustaceans and other nudibranchs. They are aggressive fighters and are likely to battle with others, with the winner consuming the loser. Opalescent nudibranchs are predated upon by fish and other sea slugs. The life span of opalescent nudibranchs is less than one year, and, therefore, it has to grow and reproduce quickly. They are hermaphroditic, possessing both male and female reproductive organs, although they rarely self-fertilize. During mating, sperm is exchanged and eggs are deposited onto eelgrass or algae. Water temperature influences the time it takes the eggs to mature. Once the eggs mature, they develop into a larval stage called a veliger. Veligers float around the ocean floor, settle and develop into adults. Reproduction occurs year-round taking approximately 2.5 months.

BEACH SEINE

- **Wednesday, July 29**
- **6 – 8 p.m.**
- **Main beach trail past Shelter #2**
- **Priest Point Park: East Bay Drive, Olympia**

Priest Point Park Beach Seine

The Riches of Puget Sound: Puget Sound is a complex estuarine ecosystem that supports more than 200 species of fish, 100 species of marine birds, 26 kinds of marine mammals and 1000's of smaller organisms. A vital part of the health of Puget Sound is its rich food web that is critical to all marine life residing in it. From the smallest plankton to the largest marine mammals, all organisms depend on the productivity of Puget Sound for their survival.

Join Stream Team and Larry Phillips, special guest biologist from Washington Department of Fish and Wildlife, for a beach seine at Priest Point Park to experience a part of this critical food web. Often we see individuals from the forage fish species, surf smelt or Pacific sand lance as well as perch, staghorn sculpin and Chinook salmon. Come see what wonders will be found!

Participants may help pull the seining net to shore to see the different species caught. Larry will identify and talk about the individual species found in the net and discuss their importance to the health of our nearshore ecosystems and the challenges they face to survive.

To register for this workshop, visit www.streamteam.info and click on "Register". For more information, contact Michelle at mstevie@ci.olympia.wa.us

STREAM BUG MONITORING TRAINING DATES

- Wed., June 17 OR Mon., June 29
- 6 – 8 p.m.
- McLane Creek Nature Trail*

Make a Splash This Summer

Help Gather Stream Bug Samples From Local Streams!

What is a Stream Bug?

Stream bugs are small critters that live all or part of their lives in the bottom of a stream.

Did you know that some stream bugs (aka benthic macroinvertebrates) are tolerant of pollution and habitat disturbance while others are sensitive to disturbance and pollution? Every summer Stream Team gathers stream bug samples from local streams to be used as indicators of stream health.

You can join Stream Team in stirring things up this summer! No experience is necessary! Simply sign-up for one of the training sessions listed at left.

At the training, you will learn how and why "stream bugs" are used as indicators of stream health, plus you'll have a chance to observe the monitoring protocol used to gather the samples. The training sessions will be held at McLane Creek Nature Trail, during which Dave Spiller, a local fly fishing expert will share his observations regarding "stream bugs."

After the training volunteers can sign up to monitor at one or more sites. Trained Stream Team staff will accompany volunteers at each monitoring location. Monitoring dates are scheduled for varying days of the week to help accommodate busy schedules. Youth under the age of 14 must be accompanied by an adult. Monitoring usually takes between 3 – 5 hours per site, depending on the site and location. The monitoring window begins in late June and runs through mid-August.

To register, go to www.streamteam.info and click on "Register". For more information, contact Ann Marie at 360-754-3355 ext. 6857 or pearcea@co.thurston.wa.us.

**Please note: The McLane Creek Nature Trail is managed by the Department of Natural Resources. A Discover Pass is required for parking at this trail. A vanpool will be available for this training, or you can purchase a one-day or annual Discover Pass. For information about purchasing a pass, go to: www.discoverpass.wa.gov. To register for the vanpool, go to www.streamteam.info and click on "Register" or contact Ann Marie at 360-754-3355 ext. 6857 or pearcea@co.thurston.wa.us.*

Saving Water in Your Garden!

The days are getting longer, the temperatures are getting warmer, and many Washingtonians find themselves spending more time in their gardens. This also means more water is being used for our plants. In Thurston County, water use is about three times greater in the summer than in the winter. Water conservation is always important, but this summer it is more critical than ever. Washington experienced its warmest winter since dust bowl years, which has had a dramatic effect on snowpack in the mountains- leaving us with about 20% of normal levels! This snowpack acts like a frozen reservoir for our river basins, and, with so little of it, we are likely to experience low-flowing rivers and drought-like conditions. Follow these easy steps to conserve water in your garden and protect our natural resources while still keeping your landscape beautiful!

1. Install Drip Irrigation

Drip irrigation systems can water planting beds more efficiently compared to sprinklers. The drip system eliminates the waste that comes from evaporation and spraying by delivering the water directly to the root-zone of the plants in the soil. All of the supplies needed to convert sprays to drip can be found at a local home improvement store, and the parts can be hooked up to a hose spigot or an existing sprinkler system. Tubing with pre-determined water emitters at 12-inch intervals can be used, or you can set the irrigation so that water is released only at specific locations near your plants. Bonus? By delivering water directly to your plants, you will keep other areas of your garden dry which helps limit weed growth. For more information, check out www.dripirrigation.com

2. Mulch Your Garden

Mulching around your plants is a great way to retain soil moisture and save water. A 2-4" layer of mulch can cut water needs drastically by blocking the growth of thirsty weeds and reducing evaporation on hot days. Different mulches include bark, compost, shredded leaves, grass clippings, and even shredded newspaper.

3. Pick the Right Plant!

When planning your garden, go for plants that are naturally found in Western Washington. Native plants require less water and maintenance because they have adapted to local soils and climate. Native plants can be successful during a dry Pacific Northwest summer. A great resource for choosing native plants for your garden is the Washington Native Plant Society. Visit their website at wnps.org/landscaping/index.html. Or, look for one of Stream Team's free *Sustainable Landscaping & Naturescaping for Water and Wildlife* workshops held in winter, spring and fall.

What are Human Sources of Nutrients in Lakes & Marine Shorelines?

Humans can inadvertently contribute phosphorous, nitrogen and other nutrients and pollutants to lakes, streams, marine shorelines and groundwater through a variety of activities, such as using quick-release fertilizers or not picking up pet waste. Nutrients and other pollutants can be picked up and carried by stormwater runoff into surface waters or groundwater. Below is a list of actions you can take at home to help reduce the amount of nutrients and pollutants that can flow into lakes, streams and marine shorelines:

- Inspect your septic system every year, pump the tank and make repairs when needed.
- Bag and trash pet waste.
- Do not feed ducks and geese.
- Use slow-release fertilizers—Do not spread fertilizers within 75 feet of surface waters or wetlands.
- Never dump yard waste or grass clippings in ravines or into any waterway or water body. Compost yard waste away from shorelines.
- Do not remove native vegetation near or along shorelines—Replant shorelines with native or drought-tolerant plants.
- Take cars to commercial car wash—Washing cars in driveway/road can send polluted runoff into stormdrains that lead directly to waterbodies.

For more information on actions to protect lakes and shorelines, go to: http://www.ecy.wa.gov/programs/wq/plants/algae/lakes/BestManagementPractices.html

Blue-Green Algae & Stormwater:
How are They Connected?

Have you ever seen what looks to be green paint floating on the surface of water in a lake? It may have been a blue-green algae bloom. Most algae blooms are harmless, but some algae blooms can be toxic to people, pets and livestock.

What is an Algae Bloom?

Algae are non-flowering plants, ranging from single-celled forms to seaweeds, which lack true stems, roots, leaves and vascular tissue and contain chlorophyll. Algae use photosynthesis to produce food and grow when they have the right conditions, such as abundant sunlight and nutrients.

Typically, the more nutrient-rich a lake is, the more algae will grow in the lake. The same is true along marine shorelines. Phosphorous and nitrogen are two nutrients that contribute to algae growth. These nutrients can be carried by stormwater runoff or groundwater flow into local waterbodies.

Algae grow rapidly when sufficient amounts of nutrients (nitrogen and phosphorous) and sunlight are available and temperatures are adequate. When algae reproduce rapidly and accumulate in a water system, it is called an algae bloom. Algae blooms can occur in both fresh water and marine environments. Algae can turn a clear lake cloudy within a few days. Algae blooms occur mostly in summer or fall, but can occur anytime.

What is Blue-Green Algae?

According to the WA Department of Ecology, blue-green algae is really a bacteria called cyanobacteria, which produces blue-green pigments. Several species of cyanobacteria can produce toxins that are harmful to people and animals, but they may not produce toxins every time they grow. Even if a blue-green algae bloom does not test toxic, it has the potential to become toxic. Therefore, people, pets and livestock should avoid contact with any suspected surface scum that may be a blue-green algae bloom.

If You See an Algae Bloom:

- **Avoid contact** with water containing algae.
- **Keep pets and livestock away** from the water.
- **Report the algae bloom** to Thurston County Environmental Health: 360-867-2626

When algae die off in large numbers they decompose, which can deplete dissolved oxygen levels in the water. **Low dissolved oxygen levels are harmful to fish and other aquatic animals.**

Kids' CORNER

Storm Drain Pollutant Word Scramble

Storm drains or catch basins may drain directly to our waterways without being treated. You can prevent water pollution by making sure nothing but rain goes down the storm drain. For this activity, **unscramble the different kinds of pollution that we don't want ending up in our streams, lakes, and Puget Sound**. You can help prevent pollution by participating in a storm drain marking event this summer! Go to page 2 or streamteam.info

OLI __ __ __

Leaky cars drip this and cause a rainbow sheen that is not pretty to fish and other creatures that live in the water.

TPE ATWES __ __ __ __ __ __ __ __

Always scoop this, or else many bacteria may wash into our water, making it unfit for both humans and wildlife.

OASPSSUD __ __ __ __ __ __ __ __

If you wash your car on the street, this will end up going down the storm drains. Instead, go to a commercial car wash.

CLSIHMAEC __ __ __ __ __ __ __ __ __

Using these in your yard to kill unwanted pests or plants has a harmful effect on water quality.

GABGRAE __ __ __ __ __ __ __

Plastic, cans, cigarette butts are all examples that are often seen on the side of the road, waiting to be washed down with the next heavy rain. Yuk!

ANSWERS: OIL • PET WASTE • SOAPSUDS • CHEMICALS • GARBAGE

HOW TO REGISTER FOR EVENTS

Visit: www.streamteam.info and click on "Register"

Select the event for which you plan to register

Click on the register button near the bottom of the "Event Detail"

Follow the instructions to either log in as an existing volunteer or create a new secure profile

EARN YOUR FREE "P.S. I LOVE YOU" BAG

by participating in four types of Stream Team events:

Macro, Amphibian or Forage Fish Monitoring

Salmon or Sound Stewarding

Tree Planting or Maintenance

Educational Workshop

Earn your own tote bag and show everyone that Puget Sound is in your heart! Look for the "P.S. I Love You" stamp next to the events in our calendar for qualifying events.

Stream Team Events

For additional events, event details, or to register, please visit our website and click on "Calendar" or "Register": **www.streamteam.info**

For maps and directions to any of these events, go to: **streamteam.info/getinvolved/directions/**

JUNE

Stream Bug Monitoring Training

Wed., June 17
OR Mon., June 29 • 6 – 8:00 p.m.
McLane Creek Nature Trail
Dephi Road, Olympia
See page 11 for details. Register online.

Meet the Trees of Washington Field Class

Sat., June 20 • 10 a.m. – 4 p.m.
Olympia
Participants will be introduced to the magnificence of our native trees and four South Sound ecosystems. After the morning classroom session, we'll travel by bus to a local nature trail to learn to identify native trees, shrubs, ferns and perennials. Bus travel for field portion provided. Register online.

Bat Talk

Fri., June 26 • 7:30 p.m.
Traditions Café and World Folk Art
300 5th Ave SW, Olympia
See page 6 for details. Register online.

Bat Walk

(No registration necessary)
Fri., June 26 • 9:30 p.m.
Heritage Park Capitol Lake
301 5th Ave. SW, Olympia
No registration necessary. Meet at Heritage Park, Capitol Lake.
Bring binoculars if you have them. Bat detectors will be on hand to listen to the bats around the lake.

MON TUES WED

Check online at **www.streamteam.info/getinvolved/calendar/** for up-to-date events, including additional tree planting events.

JULY

Woodland Creek Community Park Summer Watering Parties

Sat., July 11 • 10 a.m. – 12 p.m.
Wed., July 29 • 9 – 11 a.m.
Woodland Creek Community Park
See page 4 for details. Register online.

Storm Drain Marking Blitz!

Sun., July 12 • 1 – 3 p.m.
Various neighborhoods in Lacey, Olympia, Tumwater & unincorporated Thurston County
See page 2 for details. Register online.

Stream Team 25th Year Anniversary BBQ

Sun., July 12 • 4 – 6 p.m.
Wonderwood Park, Lacey
Come celebrate 25 years of Stream Team at this family-friendly potluck BBQ.
See page 16 for details. Register online.

Marine Creatures Mondays

Mon., July 20 OR July 27
11:30 a.m. OR 1 p.m.
Boston Harbor Marina
312 73rd Ave NE, Olympia
Registration is necessary to keep the group size small. This event is popular so please only sign up for one event. Register online. If you are registering multiple people, please register as a **Group** by following the guidelines at: http://streamteam.info/getinvolved/calendar/register-steps.php
See page 5 for details.

Priest Point Park Beach Seine

Wed., July 29 • 6 – 8 p.m.
Priest Point Park: East Bay Drive, Olympia
Main beach trail past Shelter #2
Register online. For Group registration please follow the below guidelines. See page 10 for details.

To Register a Group
go to: http://streamteam.info/getinvolved/calendar/register-steps.php

AUGUST

Marine Creatures Mondays

Mon., Aug. 3, 10, 17 OR 24
11:30 a.m. OR 1 p.m.
Boston Harbor Marina
312 73rd Ave NE, Olympia
Registration is necessary to keep the group size small. This event is popular so please only sign up for one event. Register online. For Group registration please follow the below guidelines.
See page 5 for details.

Woodland Creek Community Park Summer Watering Parties

Sat., Aug. 15 • 10 a.m. – Noon
Woodland Creek Community Park
See page 4 for details. Register online.

Salmon Stewards Basic & On-Site Trainings

Several Dates in August & September
See page 7 for details. Register online.

COMMUNITY EVENTS

2015 South Sound HOA Academy

Sat., June 13 • 9 a.m. – 4 p.m .
Lacey Community Center
This conference-style event is for volunteer board members from local homeowner's associations. Learn about maintenance and reporting requirements for your stormwater facility and other common issues facing HOA board members. Visit www.ci.lacey.wa.us/hoa to register, $30 for the first Lacey or Lacey UGA board member and $20 for each additional board member.

Tumwater 4th of July Festival

Sat., July 4 • 6 – 10 p.m.
Tumwater Valley Golf Course
Volunteer for a shift at the Stream Team booth and receive a FREE Stream Team T-shirt.
Register online.

Stream Team
EDUCATE • PROTECT • RESTORE
Olympia • Lacey • Tumwater • Thurston County

2000 Lakeridge Dr SW
Bldg 4 #100
Olympia, WA 98502
www.streamteam.info

Join Stream Team as We Celebrate 25 YEARS!

1990-2015 Stream Team CELEBRATING 25 YEARS

Sunday, July 12 • 4 – 6 p.m.
Wonderwood Park, Lacey
FREE • Family-Friendly Event • Open to Public

It's hard to believe, but the Water Resources Departments of Lacey, Olympia, Tumwater and Thurston County have brought you Stream Team since 1990! That's 25 years of partnering to bring citizens a variety of ways to learn about and to protect water resources throughout Thurston County. (For an in-depth timeline of Stream Team go to www.streamteam.info , click on newsletters and see the Spring 2010 edition.)

Stream Team will host its 25th Anniversary celebration on Sunday, July 12th from 4 p.m. to 6 p.m. after the Storm Drain Marking Blitz (see pg. 2). The celebration is free and open to all Stream Team volunteers and their families, both past and present! Included in the family-friendly festivities will be pot-luck barbeque, with Stream Team providing the burgers and hot dogs, as well as vege-burgers.

Volunteers will also be recognized and, of course, cake will be served! Come join us as we celebrate 25 years of water resources stewardship and as we look forward to many more years!

Please RSVP online at www.streamteam.info, then click on "Register". For more information, contact Chris Maun at maunc@co.thurston.wa.us or 360-754-3355 ext.6377.