

Stream Team News

FREE

OLYMPIA • LACEY • TUMWATER • THURSTON COUNTY

EDUCATE • PROTECT • RESTORE



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FALL EDITION
Sept–Oct–Nov 2016

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Become a McLane Creek Nature Trail *Salmon Steward!*

If you are interested in being a Salmon Steward at the McLane Creek Nature Trail, Stream Team will be hosting a three-part training in November. (No prior experience is necessary.)

To register for this workshop, visit www.streamteam.info and click on "register". For more information, contact Chris Maun at maunc@co.thurston.wa.us or 360-754-3355 ext. 6377.

**The Basic Classroom Session is for Salmon Stewards who did not complete the basic trainings held last summer, or for anyone who would like a refresher on the salmon life cycle, the 4 H's and salmon docent skills.*



SALMON STEWARD 3-PART TRAINING •••••

PART 1: BASIC TRAINING CLASSROOM SESSION*

- Wednesday, Oct. 26
- 6 – 8 p.m.

PART 2: CHUM SPECIFIC CLASSROOM SESSION

- Wednesday, Nov. 2
- 6 – 8 p.m.

PART 3: FIELD SESSION

- Saturday, Nov. 5
- 10 a.m. – Noon

ON THE COVER: Chum spawning at McLane Creek. Photo by Michele Burton Photographer

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](https://www.facebook.com/ThurstonStreamTeam)

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STREAM TEAM INQUIRIES

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Thurston County Water Resources Program
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DESIGN & LAYOUT: Azure Summers Graphic Design, design@azuresgd.com

Share the Wonder of the Wild Spawning Chum!

You won't want to miss this natural wonder, whether it's your first time viewing chum spawning in McLane Creek or your tenth time!

The magnificent and colorful chum return to Thurston County to spawn every fall in McLane Creek (and its tributaries). The McLane Creek Nature Trail, located off of Delphi Road, offers excellent viewing of this natural wonder. With their dark purplish coloring, they are truly a sight to see as they dig their nests and vie for optimal spawning positions.

Thousands of people trek to the nature trail every year to see this annual spawning display. Every fall, Stream Team trains Salmon Steward volunteers to greet people at salmon viewing locations along the nature trail and answer questions they may have about this wild run of chum salmon. The chum return to spawn in early November through mid-December, once the rains have helped the water levels to rise.



Chum Salmon & Cider **Celebration at McLane Creek**

Enjoy free hot spiced cider and snacks while learning from trained Salmon Stewards about the wild chum salmon run at McLane Creek.

***Note: The McLane Creek Nature Trail is part of the Capitol State Forest and is a WA State Dept. of Natural Resources (DNR) Recreation Site. A Discover Pass is required when visiting state recreation lands managed by the WA State DNR and WA Dept. of Fish & Wildlife. For information about how to purchase a \$10 day pass or \$30 annual pass, visit www.discoverpass.wa.gov (Salmon Stewards are granted temporary parking passes.)*

CHUM SALMON & CIDER CELEBRATION AT MCLANE CREEK •••••

■ **Sunday, Nov. 13**

■ **11 a.m. – 1 p.m.**

■ **McLane Creek Nature
Trail****

The Return of the *Chinook*

As summer ends, one sure sign of fall approaching in South Sound is the return of the “king” of salmon, Chinook, to lower Puget Sound. The Chinook that return to Budd Inlet and migrate back up into the Deschutes River are the offspring of adult Chinook salmon that returned to the Deschutes River three-five years ago.

As they acclimate back to fresh water from salt water, the salmon stop eating and lose their bright silver ocean color and adopt their green and red spawning colors. Chinook salmon are the largest of all salmon species. They truly are “king” of salmon. Come see these magnificent creatures before they’re gone for another year!

When and Where:

- ▶ 5th Avenue Dam late August until mid-September
- ▶ Tumwater Falls Park from early September to mid-October

Stream Team Salmon Stewards will be at these locations on weekday evenings from 4 to 6 p.m. and all day on weekends from 10 a.m. to 6 p.m. to answer questions about the salmon. They can also answer questions about the human impacts on salmon and actions individuals can take to protect water quality and salmon.

Salmon Stewards will also be present at Tumwater Falls on Monday, Wednesday and Friday mornings from late September to mid-October. Visit during these times to see the “egg-taking” operation where eggs and milt are removed from the salmon and then transferred to a hatchery. (Be forewarned that the salmon are killed with a blow to the head before the eggs and milt are extracted.) The carcasses are sold to a vendor, sorted by quality, and used for food bank donations, pet food or fertilizer.



SALMON & CIDER SUNDAY AT TUMWATER FALLS ••••

■ Sunday, Oct. 2

■ 10 a.m. – 4 p.m.

■ Tumwater Falls Park

Stream Team will be celebrating the return of the Chinook with a family-friendly event featuring salmon-themed arts and crafts activities. Salmon Stewards will be on hand to answer questions about the Deschutes Chinook salmon run. Volunteers needed to work in the Stream Team booth, please see event listing on the calendar page.

This event will be held in conjunction with the Tumwater Homesteaders’ Cider Sunday event in Tumwater Falls Park. Visitors to the park will be able to try their hand at pioneer activities such as rope making and log cabin building. Middle school youth will be dressed in pioneer garb and will be on hand to press apples into cider. (Bring your own apples and containers.)



SPAWNING GROUND SURVEY TRAINING •••••

- Friday, Oct. 21
- 8 – 10 a.m.
(tide dependent)
- TBD



Spawning Ground Survey Training

Late this fall spawning ground surveys will be conducted for salmon in select tributaries of Budd Inlet. This training will familiarize volunteers with WDFW’s survey protocols. Volunteers will register to walk South Puget Sound streams each week to identify and count adult salmon returning to freshwater to spawn. Completed survey data will be submitted to WDFW as part of their stock assessment activities.

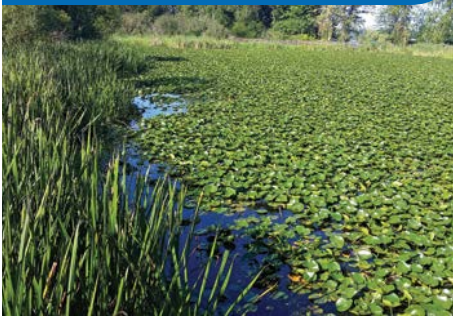
To register for this workshop, visit www.streamteam.info and click on “register”. For more information, contact Michelle at mstevie@ci.olympia.wa.us

Do You Like *Scavenger Hunts & Mysteries?*

Amphibian Road Survey Training

AMPHIBIAN ROAD SURVEY TRAINING ••••

- Tuesday, Oct. 11
- 6 – 8 p.m.
- McLane Black Lake Fire Department, 125 Delphi RD NW, Olympia. Located at the intersection of Mud Bay Rd and Delphi Rd



Join the amphibian road survey team as we track migrating frogs and salamanders. Local amphibian populations have distinct migrations: in summer/fall, they migrate from their aquatic breeding habitat back to the forest or other terrestrial habitat, and in late winter/spring, they make their migration back to ponds and wetlands to breed. When these migration routes cross our roadways, mortalities may occur. Volunteers team up with trained biologists to count individual amphibians. For the training, guest speakers Michelle Tirhi (WDFW), Bonnie Blessing and Joanne Schuett-Hames will present last season's findings and cover monitoring techniques.

For the past two seasons volunteers have been collecting information on two Thurston County roads, Champion Drive and Kaiser Road. During the past year we found five native species of pond-breeding amphibians were crossing these roads: Pacific tree frog, northern red-legged frog, rough-skinned newt, northwestern salamander and long-toed salamander, and one native terrestrial breeding salamander species, the Oregon Ensatina.

Kaiser Road, south of The Evergreen Parkway, is located in the headwaters area of Green Cove Creek which includes extensive wetland habitats. This area is being monitored so that we can learn more about how well amphibians are able to migrate from their summer breeding pond habitat across the roadway to winter forested habitats.

Champion Drive in the Scott Lake area of southern Thurston County was identified in 2014 as a "hotspot". This area has an abundance of amphibians migrating from their summer breeding area to their winter habitat. Many of these individuals ended as mortalities while crossing Champion Drive. During the 2015-2016 migration, we observed 236 total (live and dead) amphibians on the road, which was less detection than in previous years. Does this reflect a population crash or something else? Prior to fall of 2015, most detections were of flattened fauna. However, during the peak migration in fall of the 2015-2016 season, observations of live salamanders equaled 44 which outnumbered the observations of dead organisms at 40. This shift may stem from weather, survey timing, traffic volumes, lighting, salamander behavior or road surface characteristics.



Before attending this training in October, help us answer the following question: Why does the amphibian cross the road? Email your answers to froghabitat@gmail.com. We'll share your answers (anonymously of course!) in our October 11th training!

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



What are *Microorganisms*?

Microorganisms are very small life forms that live on the earth. Fungi and bacteria are two common types of microorganisms that live in soil, and are usually single-celled organisms or colonies of individual cells. They are only visible with a microscope, but their impact on soil health is huge!

When you think of bacteria and fungi, you may think of the mold and germs that you find on those leftovers you forgot about in the fridge. Gross, right? Yes, but not all microorganisms are so repulsive! The microorganisms in soil are actually very beneficial to the soil, the plants that grow in it, and us!

One to five percent of soil is living organisms. Considering how small each soil organism is, up to 200 billion (that's 200,000,000,000!!) bacteria can be found in one cup of rich top soil. These hundreds of billions of microscopic life forms work together to promote overall soil health. Did you know that microorganisms help plants get water and nutrients by attaching to their root systems? They also decompose organic litter, break down toxins, and suppress disease. When microorganisms are able to do their job, the entire ecosystem benefits, whether it's a forest, wetland, yard, lawn or garden.

Microorganisms help everyone

Not only do microorganisms help plants grow, but the physical process of working in the dirt can be healthy for you, too. Recent research in the field of microbiology indicates that exposure to soil microbes, in particular the bacteria *Mycobacterium vaccae*, greatly impacts overall human wellbeing. In trials, the use of *M. vaccae* reduced the symptoms of cancer, Crohn's disease, chronic depression and rheumatoid arthritis when integrated into the patient's regular health regimen. Additional studies have indicated that skin-to-dirt contact increases brain function and happiness, because of several microorganism's ability to trigger the release of serotonin. Serotonin is the brain chemical responsible for reducing anxiety, promoting happiness, recharging the immune system, and opening up pathways in the brain for easier learning and memory retention.

How do we get this beneficial relationship going?

It starts with your lawn and garden care. Microorganisms need food, water and oxygen just like we do. A thoughtful lawn and garden care regimen can take advantage of all the benefits microorganisms have to offer!

- Make sure to **water deeply, but don't overwater**. When only the surface is dampened, the water evaporates quickly and never reaches the life in the soil. Microorganisms live best when soil is thoroughly damp, but not soggy.
- **Aerate** your lawn once a year. Aerating pokes hundreds of holes into the thatch of your lawn, so that oxygen can reach the microorganisms. Microorganisms help break down excess thatch. Aeration also helps with water filtration.
- **Top dress lawn with a ½" inch layer of compost** and mulch garden beds with 3" of compost. This can beneficially alter your soil structure, enhance nutrient content, and give microorganisms food. These factors help plants grow stronger and quicker, including grass, flowers and vegetables.
- **Avoid tilling**, because the weight and force of the machinery destroys the microorganism community and soil structure.
- **Maintain a healthy soil pH** between 6-6.5. You can get a soil test through Thurston Conservation District (www.thurstoncd.com) to have your soil pH level analyzed, as well as the type and condition of your soil. If your pH is below the recommended level, you can **add lime** to the soil gradually to bring up the pH.
- **When fertilizing, use slow-release organic fertilizer** because it does not have the harmful chemicals that can kill microorganisms and affect human health. Avoid "weed and feed" products.



Quick Composting Tips

From Trash to Treasure... **How Compost Creates Nutrient Rich Soil**

Composting yard and food waste has tremendous environmental benefits for both the planet and your yard. Valuable nutrients can be returned to your yard through closed loop nutrient recycling. From bacteria and fungi to insects and worms, composted soil is rich in nutrients that support healthy soil organism populations.

How Does Compost Work?

Bacteria break down organics into simple nutrients that support plant vitality, such as nitrates. Some nitrogen-fixing microorganisms even convert nitrogen from the air into plant-available nutrients. Nitrates compound in the soil with help from nitrogen-fixing microorganisms.

Compost also helps build good soil structure, which is essential for healthy plant growth. The organic matter present in compost increases water retention, air circulation and root penetration in the soil. Pacific Northwest soils generally have low pH due to our annual rainfall. Compost buffers the soil, neutralizing acid soils. This brings pH levels to the optimum range for nutrient availability and uptake to plants. Materials that may be acidic when added to a compost pile will become almost neutral in pH when the composting process is complete.

Compost Helps Prevent Water Pollution

Adding nutrient-rich compost to your garden improves soil quality and reduces the need for chemical fertilizers. When compost is added to soil, or top-dressed on lawns, nutrients are released slowly over time. Compost holds nutrients tight enough to prevent nutrients from washing out, but loosely enough for plants to use. This reduces harmful nutrient and pesticide runoff into our wetlands, rivers, lakes and Puget Sound.

Compost Reduces Soil Erosion

When soil erodes, sediment particles act as a conveyor for pollutants such as oils, metals and chemicals. Our surface waters become threatened when stormwater runoff containing contaminated sediment flows into our waterways. Compost increases soil's ability to retain water and decreases runoff. Adding compost to soil or mulching with compost helps prevent soil erosion.

Composting with Worms

Don't have room for a compost pile in your apartment? Vegetable and fruit scraps can be converted into a rich decomposed soil called humus with the help of redworms in a process called vermicomposting. Worm bins can be kept indoors under the sink or tucked away in a corner. You can use your worm castings at the local community garden, for your container gardens or give it away as a wonderful gift!

Select a convenient place
near your garden and kitchen to
locate your compost pile

.....
**Compost only kitchen scraps
and garden waste,**
no meat, bones, grease or pet waste

.....
**Use 1 part high-nitrogen green
waste** (grass clippings, weeds,
kitchen scraps, manure) **to 4 parts
high-carbon brown waste**
(fallen leaves, sawdust, straw)

.....
**Alternate layers of green and
brown waste to make a pile @
3 ft. x 3 ft. x 3 ft.,** wetting (not
soaking) each layer with a hose and
ending with a **brown** layer

.....
**Turn the pile with a digging
fork or pitch fork every few
weeks to aerate**

.....
**Add new clippings, leaves or
kitchen scraps** into the center of
the pile or when you turn it

.....
**Cover the pile with a tarp
during winter**

Featured Creature

American Dipper (*Cinclus mexicanus*)



American Dipper (*Cinclus mexicanus*)

North America's only truly aquatic songbird swims underwater to feed!

Range

Alaska to Mexico

Description

Stocky medium-sized gray bird with a large head, short neck, long legs, short tail and thin dark bill. Eyelids are white and visible when it blinks. Dippers constantly bob their body up and down.

Habitat

American dippers are typically found in unpolluted streams in mountain, coastal and desert habitats. Dippers favor cold, clear streams with gravel substrate and overhanging vegetation, just like Pacific salmon!

Diet

Most food is caught underwater as dippers forage in streams with rocky gravel substrates and use over-hanging stream banks for cover and nesting. American dippers do not migrate south but will relocate to larger rivers in winter and follow stream insect hatches in summer. Dippers are common year-round and can be found in the mountains and forests of Western Washington and along larger rivers east of the Cascades.

Dippers feed on aquatic insects and their larvae, which include mayflies, beetles, mosquitoes and dragonflies. They also eat small fish and fish eggs and often feed at salmon spawning areas. When looking for their stream-dwelling prey, American dippers duck their heads into the water, often up to 60 times per minute. Recent research on the Elwha River has shown that dippers with access to salmon have higher survival rates, and they are 20 times more likely to attempt to raise two broods in a season.

Nesting

American dippers build nests close to fast water but outside the flood zone. They will build nests on cliff ledges, behind waterfalls, on boulders, stream banks or under bridges. It is thought that the female builds the dipper's domed, ball-like nests, often in freezing temperatures. She dips the materials into water before weaving them into two layers: one, an outer shell, made of moss, and the other an inner chamber made of grass, leaves and bark. Once the nest is finished, the mossy shell absorbs moisture and the coarse grass keeps the inside dry. Spray from the nearby stream keeps the moss alive. Inside the nest the female incubates 4-5 eggs which hatch in approximately 13-17 days. Young leave the nest within 25 days and are ready to swim and dive almost immediately.



Cool Facts

The American dipper chooses a nest site along a stream

that provides security from floods and predators. Availability of suitable nest sites appears to limit its populations.

To survive in cold waters during the winter, **the American dipper has a low metabolic rate, extra oxygen-carrying capacity in its blood and a thick coat of feathers.**

Unlike most other songbirds, but similar to ducks, **the American dipper molts its wing and tail feathers all at once** in the late summer and is flightless during this time.

<https://www.youtube.com/watch?v=cV6IDY1TSC0>

Rake-a-Drain!

Storm drains are an integral part of the municipal stormwater system which prevents localized flooding and watershed pollution in Thurston County. Help your stormwater utility keep storm drains flowing by clearing leaves and other debris off the storm drains located in front of your home and in your neighborhood.

Before the heavy rains return in the fall, inspect storm drains and clear your neighborhood grates of accumulated dirt, leaves and trash. Discard the organic matter in a yard waste bin or compost, and put the remainder in the trash. Continue this practice throughout the year as needed. After a snowfall, remove accumulated snow and ice from around storm drains to allow snowmelt to drain.

Beneath the storm drain grate there is generally a sump, or pit, designed to capture sediment, debris and other pollutants before the stormwater is piped to your local stormwater pond or a nearby stream, lake or Puget Sound. City and County crews routinely use a vacator (vacuum) truck to clean the sump in public storm drains (privately owned storm drains require private contractors to clean their storm drains). City and County crews routinely clear leaves and debris that accumulate on the storm drain grates when streets are swept, but debris can accumulate rapidly between sweepings.



If flooding does occur during heavy rain events, you can often locate submerged and clogged grates by finding a storm drain marker on the curb. These markers have been placed by stormwater utilities and Stream Team volunteers to remind people that “only rain down the drain”! Be safe! When clearing drains, use extreme caution around traffic. Please call your local stormwater utility to report clogged storm drains on public streets or if you notice a storm drain in need of attention. Emergency crews are on call 24-hours per day to assist with dangerous flooding situations.

To Report a Problem With a Public Storm Drain Call 24 hours/7 days a week

Lacey.....360-491-5644
Olympia.....360-753-8333
Tumwater.....360-754-4150
Thurston County.....360-867-2099

NISQUALLY WATERSHED FESTIVAL

- Saturday, Sept. 24
- 10 a.m. – 4 p.m.
- Billy Frank Jr. Nisqually
National Wildlife Refuge



Celebrate with Stream Team at the *Nisqually Watershed Festival*

This year's festival activities include a large variety of educational exhibits and hands-on activities for kids of all ages, including salmon fish printing (bring a clean, light colored T-shirt), plywood fish painting, a marine invertebrate organism touch tank and much, much more! The festival main stage will feature live animals including reptiles, majestic Raptors of the Watershed including peregrine falcons and hawks, plus music and dancing. The Red Salmon Story Tent will be back, along with Fin, the giant Wild Olympic Salmon.

Bring your appetite; there will be a variety of delicious treats available for sale. This event is FREE, except for the food, so come out and celebrate the history and culture of the Nisqually Watershed! For more information, including parking information go to: <http://nisquallyriver.org/>

Stream Team is looking for a few volunteers to help staff the Stream Team table and help kids make Salmon Stamper calendars and other activities. If you can help, please register online for a two-hour shift.

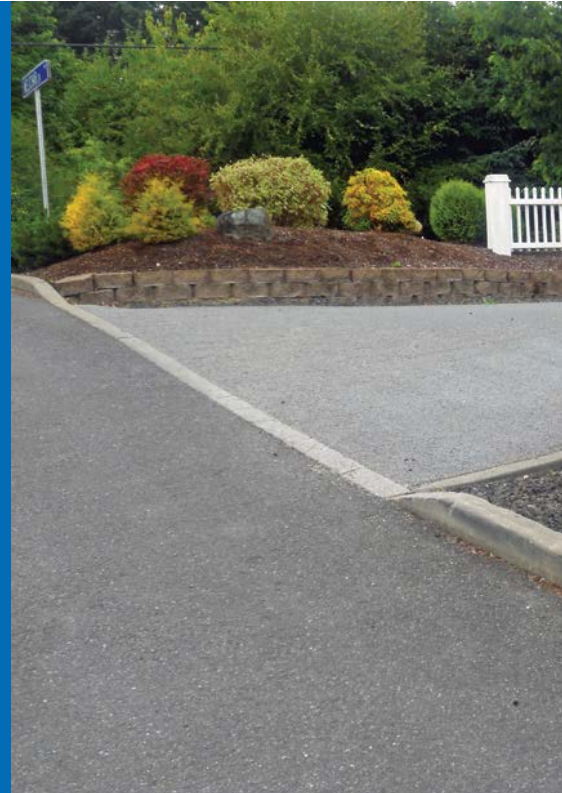
..... *Low Impact Development Code Updates*

Taking Place Throughout the Region

Some content provided by WSU Native Plant Salvage Foundation

When rain falls on undeveloped land, most of the water percolates into the ground to recharge groundwater aquifers or is used up by plants in the area. When rain falls on developed land with hard surfaces such as driveways, parking lots and roofs, much of the water puddles up or runs off to lower points becoming stormwater runoff. Less than 1% of rain that falls on undeveloped land becomes stormwater runoff, but 20-30% of rain that falls on developed land ends up as stormwater runoff.

Stormwater runoff not only causes urban flooding, it is also the largest source of pollution entering Puget Sound. Lacey, Olympia, Tumwater and Thurston County are updating their development codes and stormwater manuals to include mandatory Low Impact Development (LID) approaches for new development. LID allows rain water to infiltrate on the property and prevents stormwater runoff from developing, therefore significantly reducing pollution entering our stormwater system and ultimately, Puget Sound.



Installing a New Driveway or Patio?

Consider these LID options!

Are you thinking about sprucing up your outdoor spaces? If you're looking to add or rebuild your patio, walkway or driveway, consider using permeable materials instead of concrete or asphalt. Permeable paving systems are a great way to improve the look of your property while helping to protect our stream, lakes and Puget Sound.

Permeable Pavements Let The Rain Soak In!

Permeable pavements allow water to infiltrate into layers of gravel placed below the paving surface and then into soil and groundwater below. By infiltrating most of the storm water on-site, the amount of water and pollution flowing into storm drains and potentially impacting rivers and streams is greatly reduced. This, in turn, protects water quality, maintains more stable base flows to streams, reduces flood peaks, and reduces stream bank erosion. With infiltration, groundwater is recharged and streams are replenished with cool, clean groundwater in a more natural way.

Permeable pavements are just one component of LID. Permeable pavements must be maintained differently than conventional pavements. A critical component of successfully maintaining permeable pavements is regular removal of sediment, debris, and excessive moss from the pavement surface to prevent clogging of the surface.



Water poured on permeable pavement quickly soaks in.

LID code updates must be completed by the end of 2016. If you'd like to know more, please contact your jurisdiction's LID Code Update Coordinator.



Why are we doing the LID code updates?

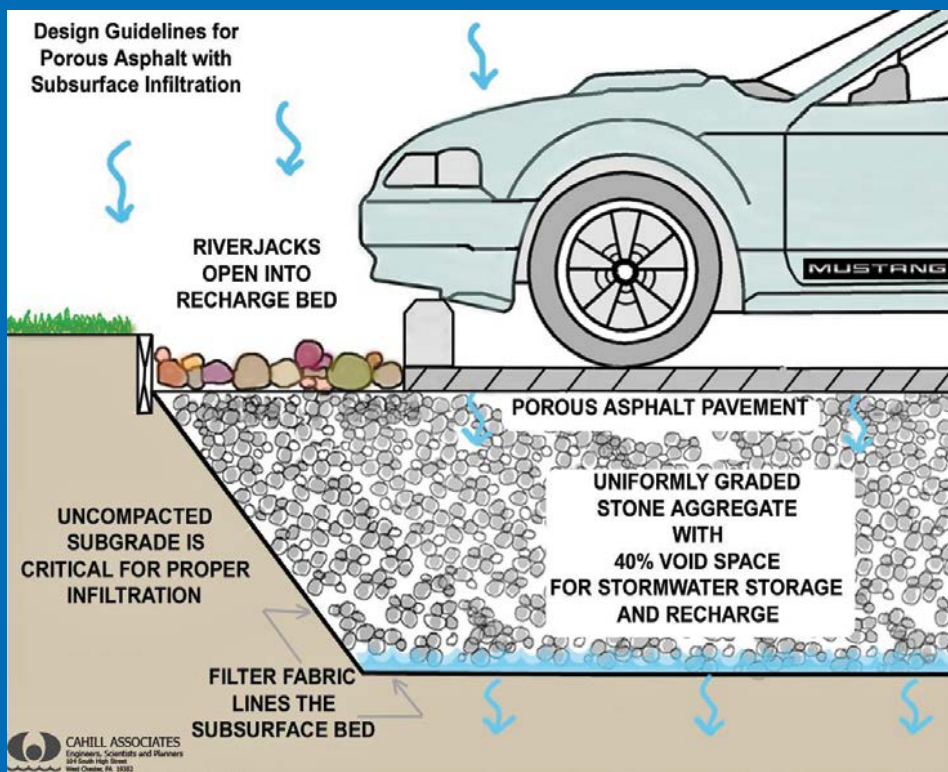
Washington State Municipal Stormwater Permits, administered by the Department of Ecology, govern how cities and counties manage stormwater runoff. There are three separate permits covering different parts of the state. Lacey, Olympia, Tumwater and Thurston County fall under the Phase II Permit for Western Washington. All Washington cities and counties that have a Municipal Stormwater Permit have a legal obligation to prevent pollution from rainwater that washes over roofs, driveways and developed areas. The Phase II Permit requires cities and counties, including Lacey, Olympia, Tumwater and Thurston County, to enact codes incorporating LID measures by the end of 2016.

LID techniques imitate the natural processes that help rainfall absorb into the ground, instead of running into pipes and large holding ponds that drain to streams and water bodies. LID measures, such as rain gardens, bioretention facilities and permeable pavements, treat and retain stormwater at the source.

How does LID affect new business or new construction in our area? How does LID affect homeowners?

In Lacey, Olympia, Tumwater and Thurston County most new developments that create 2,000 square feet of hard surface area or disturb more than 7,000 square feet of land will have some LID requirements. Projects will have two options for complying with LID requirements: choose from a prioritized list of LID Best Management Practices (BMPs), or meet the "Low Impact Development Performance Standard". Additional standards, such as limits on hard surfaces or landscaping, might apply.

What Are The Options?



● POROUS ASPHALT

A flexible solid surface similar to standard asphalt that uses a binder to hold aggregate together. The fine material (sand and finer) is reduced or eliminated in porous asphalt, resulting in the formation of space between the aggregate in the solid surface that allows water to infiltrate to the underlying rock and soil.

LID—Installing a New Driveway or Patio: What Are The Options?



● PERVIOUS CONCRETE

The sidewalk pictured above is made of pervious concrete. A rigid solid surface similar to conventional concrete that uses a cement-like material to hold aggregate together. Fine aggregate (sand) components are reduced or eliminated in pervious concrete resulting in the formation of spaces between the aggregate in the solid surface that allows water to infiltrate to the underlying rock base.



● INTERLOCKING SOLID or PERVIOUS PAVER BLOCKS

Surface with joints, installed on a rock and sand base, constructed with pavers. Joints are filled with sand, gravel, or topsoil and/or vegetation. The vegetation can include a variety of nonturf-forming grasses or low-growing groundcovers. Pavers can be solid or permeable. Permeable pavers are made of naturally occurring porous rock or pervious concrete or asphalt.



● OPEN-CELLED PAVING GRID with gravel or grass

Concrete or plastic grids that are filled with gravel and sand or planted with a variety of nonturf-forming grasses or low-growing groundcovers. The system is installed on a rock and sand base.

LID Contacts

Lacey

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<http://www.ci.lacey.wa.us/city-government/reports-plans/currently-under-review>

Olympia

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nfloyd@ci.olympia.wa.us
<http://www.olympiawa.gov/LIDcode>

Tumwater

Public Works Department
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Thurston County

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FORAGE FISH SURVEY TRAINING ••

- Saturday, Dec. 3
- 10 a.m. – 3 p.m.
- The Evergreen State College beach,
Sunset Beach Drive, Olympia



Forage Fish Survey Training

Join us and guest Washington State Department Fish and Wildlife biologist, Erin Dilworth, to learn forage fish sampling techniques and lab identification. We will collect beach samples in the morning and in the afternoon, conduct lab analysis of the collected samples to identify forage fish eggs and their developmental stages.

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

Hazard Lake,

Hardly a Hazard at All

Featured Waterbody

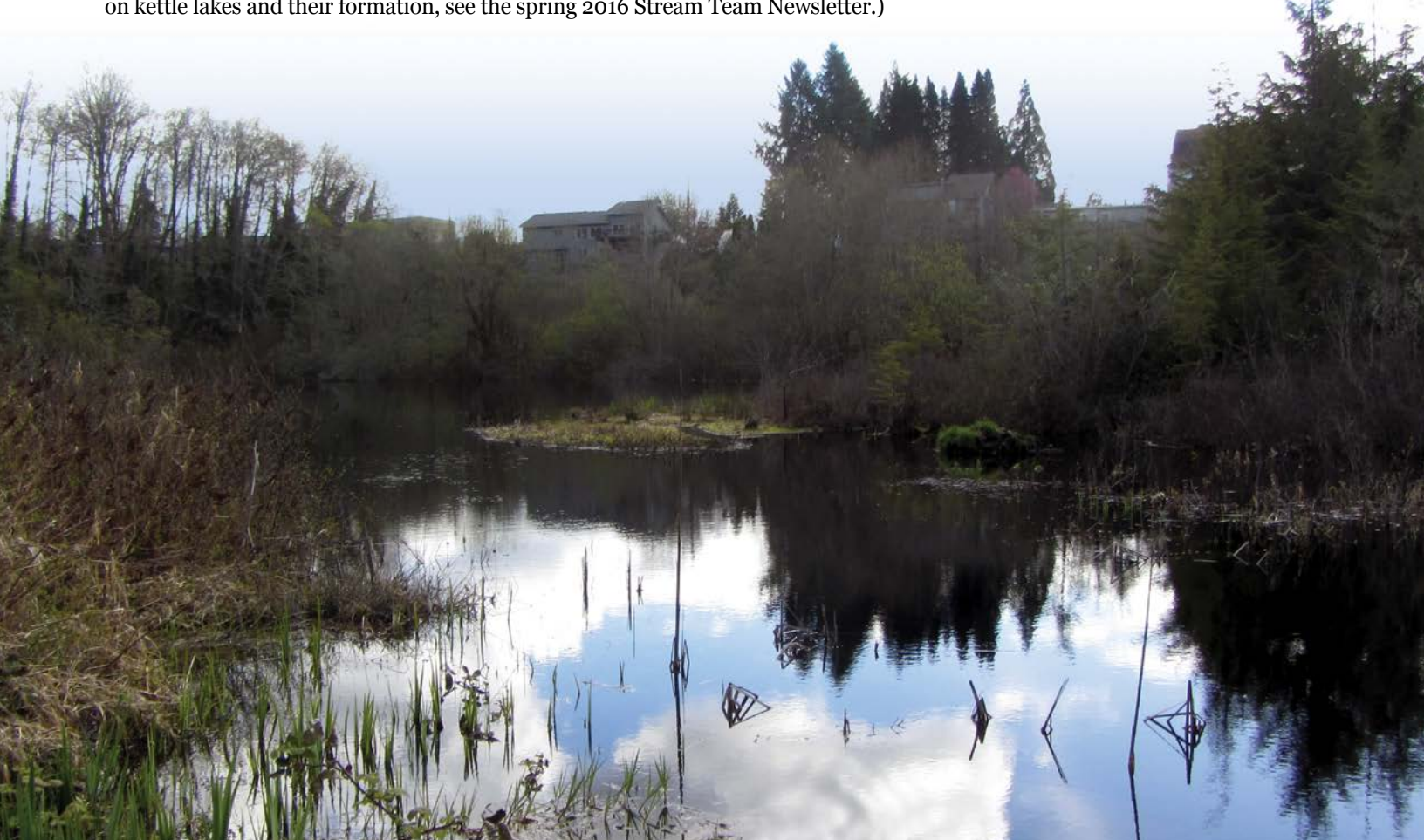
Hazard Lake

Thurston County contains many large, prominent lakes such as Black Lake, Summit Lake, Long Lake, Offut Lake and Skookumchuck Lake. It is also dotted with many small, obscure lakes tucked away and hidden from view even as hundreds of cars whisk by on a daily basis. Hazard Lake, located within Olympia city limits, is one such a lake.

Just 1.8 acres in open-water surface area, Hazard Lake lies between Carlyon Avenue and Eskridge Boulevard in a quiet Olympia neighborhood just blocks from Capitol Way. Hazard Lake is not called so due to any dangers it presents but is named after prominent early Olympia citizen Hazard Stevens, son of Isaac I. Stevens, the first territorial governor of Washington. Hazard Stevens was witness and participant in many important aspects of American, Washington State and Olympia history. As a young boy, he was present at the signing of the Medicine Creek Treaty which his father negotiated with local Native American leaders, was awarded the Medal of Honor for bravery in the Civil War, and was the co-leader of the first party to summit Mount Rainier in 1870.

But it was later in life, around the turn of the century, upon returning to Olympia from time spent in New England, that Stevens established a model dairy farm between Olympia and Tumwater he named Cloverfields Farm. Cloverfields Farm contained the small kettle lake (sometimes referred to as potholes) now known as Hazard Lake. Kettles were created by detached blocks of ice left behind by retreating glaciers around 12,000 years before present. These small waterbodies dot Thurston County. Hazard Lake is shallow, approximately 31 feet in depth at its deepest point. The lake has no public access and, even though it is not stocked by WDFW, it contains several non-native species of fish, including small mouth bass, sunfish and catfish.

On this farm, Stevens grazed cows, planted extensive orchards, built barns and erected a prominent Dutch Colonial Revival-style farmhouse perched on the rim of Hazard Lake. After Steven's death, in subsequent decades, his family developed residential homes on Cloverfields' property. Eventually, Olympia High School was built where the dairy barns once stood. Today, where Carlyon Street bends sharply, the General Hazard Stevens house, now on the National Register of Historic Places, stands above the small, urban kettle lake that bears his name, its presence unknown to many who pass by it every day. (For more information on kettle lakes and their formation, see the spring 2016 Stream Team Newsletter.)



Kids' CORNER

"In nature nothing exists alone." ~ Rachel Carson

Pacific Salmon Coming Home Again

Imagine....

...you're standing on a bridge over McLane Creek. You can hear water splashing below your feet. Cold wind rustles the western redcedars. A bald eagle soars overhead. You look down into the water. You see a flash of green and purple. There are Pacific chum salmon swimming against the current. The salmon are on a mission. Fall is spawning season.

Salmon are born in streams, and then they migrate to the ocean where they feed and grow. After 3-5 years, the salmon are ready to lay eggs. When salmon lay eggs it's called spawning. The salmon return to the stream where they were born, or their natal stream, to lay eggs. When salmon return to their natal stream, they carry the nutrients from the ocean into the stream. After salmon die, they begin to rot, releasing nutrients that bugs, fungus and plants use to grow. Without the salmon, the stream would not get these nutrients from the ocean.

Salmon are anadromous fish. Anadromous fish are fish that travel from freshwater, rivers, lakes and streams, to saltwater and then return to freshwater. The western redcedars and bald eagles living along the stream rely on the nutrients the salmon bring with them. Over 130 species rely on the nutrients the salmon bring.

Bears, wolves, orcas, eagles and other animals depend on salmon for food. Plants depend on salmon too. When salmon die, they rot and insects and fungus make their bodies into nutrients available for plants to use. Remember those cedars near the stream? The trees create shade that keeps the water cool. Salmon need cool water to swim in. Without trees, the water would be warm and the salmon would die. The salmon depend on the trees for shade. Without salmon, the trees would have fewer nutrients to grow tall. Trees depend on salmon and salmon depend on trees.

How do salmon rely on you? What can you do at home to make sure salmon have clean and healthy rivers to swim in?

When and Where to See Salmon

SALMON	WHEN	STREAM	VIEWING LOCATION	<p>* These locations will be staffed with knowledgeable Stream Team Salmon Stewards on most weekend days from 11 a.m. – 3 p.m. Tumwater Falls will also be staffed most weekday evenings 4-6 p.m.</p> <p>** For more information: http://spsseg.org</p>
Chinook	September	Deschutes River*	5th Ave Bridge	
Chinook	September	Deschutes River*	Tumwater Falls Park	
Chum	November	Kennedy Creek**	Kennedy Creek Trail	
Chum	November	McLane Creek*	McLane Creek Nature Trail	



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/

SEPTEMBER

What's Blooming in Budd?

Thurs., Sept. 1, 8, 15, 22 • 2 – 2:45 p.m.
Port Plaza dock Plankton Tow

Thurs., Sept. 1, 8, 15, 22 • 3 – 4 p.m.
LOTT Wet Science Center classroom
No registration necessary!

Great Yards Get-Together: A Backyard DIY Fair

Sat., Sept. 10 • 10 a.m. – 2 p.m.

Heritage Park, 330 5th Ave, Olympia
See pg. 16. For more info., contact Susan at smcleary@ci.olympia.wa.us Register online for Capitol Campus Sustainability Tours

27th Annual Nisqually Watershed Festival

Sat., Sept. 24 • 10 a.m. – 4 p.m.

Billy Frank Jr. Nisqually National Wildlife Refuge

Volunteer for a two-hour shift at the Stream Team booth and receive a FREE Stream Team t-shirt.

See pg. 9 for details. Register online.

OCTOBER

Grass Lake Nature Park Native Planting Preparation

Sat., Oct. 1 • 10 a.m. – Noon

Grass Lake Park Entrance,
814 Kaiser Road NW
Come help prep the Lake Louise site for winter restoration planting. Tools and gloves will be provided.

For more info., contact Michelle mstevie@ci.olympia.wa.us Register online.

Salmon & Cider Sunday at Tumwater Falls

Sun., Oct. 2 • 10 a.m. – 2 p.m.

Tumwater Falls Park

Volunteer for a shift in the Stream Team booth and receive a FREE Stream Team t-shirt!

See pg. 4 for details. Register online.



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

OCTOBER

Amphibian Road Survey Training

Tues., Oct. 11 • 6 – 8 p.m.

McLane Black Lake Fire Dept.,
125 Delphi Rd. NW, Olympia
See pg. 5 for details. For more info., contact Michelle at mstevie@ci.olympia.wa.us Register online.

Work Party at Woodland Creek Community Park

Sat., Oct. 15 • 10 a.m. – Noon

6729 Pacific Ave. SE, Lacey
For more info., contact Kim at kbenedic@ci.lacey.wa.us Register online.

Forage Fish Surveys

Mon., Oct. 17 • 9 a.m. • Priest Point Park
Thurs., Nov. 17 • 10 a.m. • West Bay Park

TRAINING: Sat., Dec. 3 • 10 a.m.

The Evergreen State College

Survey various beaches for sand lance and surf smelt eggs. Trained and untrained volunteers welcome!

See pg. 13. For more info., contact Michelle at mstevie@ci.olympia.wa.us Register online.

Spawning Ground Survey Training

New citizen science opportunity!

Fri., Oct. 21 • 8-10 a.m. (tide dependent)

Location: TBD

See pg. 4. For more info., contact Michelle mstevie@ci.olympia.wa.us Register online.

Chum Salmon Stewards Training

Basic Salmon—Classroom Session: Part 1

Wed., Oct. 26 • 6 – 8 p.m.

Thurston County Bldg. 4,
929 Lakeridge Dr. SW, Olympia
See pg. 2 for details. Register online.

Deschutes River Revegetation Project

Sat., Oct. 29 • 10 a.m. – Noon

Capitol Blvd. and E Street, Tumwater
Plant some trees along the banks of the Deschutes River!

For more info., contact Debbie at 360-754-4148 or dmsmith@ci.tumwater.wa.us Register online.

NOVEMBER

Chum Salmon Stewards Training

Chum Run—Classroom Session: Part 2
Wed., Nov. 2 • 6 – 8 p.m.

Thurston County Bldg. 4,
929 Lakeridge Dr. SW, Olympia
See pg. 2 for details. Register online.

Chum Salmon Stewards Field Training

Sat., Nov. 5 • 10 a.m. – Noon

McLane Creek Nature Trail*

See pg. 2 for details. Register online.
*A Discover Pass is required to park here. Go to www.discoverpass.wa.gov for more info.

Chum Salmon & Cider Celebration at McLane Creek

Sun., Nov. 13 • 11 a.m. – 1 p.m.

McLane Creek Nature Trail*

See pg. 3 for details. No registration required.

*A Discover Pass is required to park here. Go to www.discoverpass.wa.gov for more info.

Mission Creek Nature Park Wetland/Forest Understory Planting Event

Sat., Dec. 3 • 10 a.m. – Noon

San Francisco Street Entrance,
1700 San Francisco Ave NE

Come help plant Mission Creek nature park and restore the wetlands. Wear your boots! Tools and gloves will be provided.

For more info., contact Michelle at mstevie@ci.olympia.wa.us Register online.

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 log in as an existing volunteer or create a new secure profile

To Register a Group

go to: <http://streamteam.info/getinvolved/calendar/register-steps.php>



Stream Team

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

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

GREAT YARDS GET-TOGETHER

- Saturday, Sept. 10
- 10 a.m. – 2 p.m.
- Heritage Park,
509 Water St. SW, Olympia



Volunteers are needed to help staff a Stream Team and an informational booth at this event. Find out more and register for volunteer shifts online at www.streamteam.info.



Great Yards Get-Together: **A Backyard DIY Fair!**

Join us for the first annual Great Yards Get-Together! Enjoy local music, food trucks, games, presentations and giveaways at this fun, family friendly event!

Booths will include:

- Demonstrations by local lawn care professionals
- Tours of Capitol Campus landscapes
- OlyWild: Backyard Habitat
- Pacific Shellfish Institute
- Olympia Parks, Arts & Recreation
- Stream Team
- Thurston Noxious Weed Control Board
- Black Hills Audubon Society
- Olympia Coalition for Ecosystem Preservation
- Washington Native Plant Society
- And much more!

Also, as part of the Great Yards Get-Together, Capitol Campus will be hosting a Sustainability Landscape Tour, register online. Capitol Campus horticulturists will talk about the recently implemented sustainable landscape management practices, including stormwater treatment, organic weed control and bee hives at the Governor's mansion.