

# Stream Team News

**FREE**

OLYMPIA • LACEY • TUMWATER & THURSTON COUNTY

EDUCATE • PROTECT • RESTORE



## Inside...

**FALL EDITION**  
Sept–Oct–Nov 2014

Volunteer Spotlight: Megan Brennan | 2  
Forage Fish—New Opportunity & Workshop | 3  
In Memory of David Jamison | 4–5  
Nisqually Watershed Festival | 4  
Hot Tubs & Swimming Pools:  
TIP for “Best Management Practice” | 5  
Featured Stream: East Fork McLane Creek | 6

Fall Planting & Preparing for Winter | 7  
Adopt a Storm Drain! | 7  
See Salmon—Pull-out Guide | 8–9  
Elwha River Salmon Restoration | 10  
Fungus Among Us! | 11  
Featured Creature: Beaver | 12–13

Stormwater Pollutants Cause  
of Fish Mortality in Pilot Study | 13  
Kids’ Corner | 14  
Calendar of Events | 15  
Naturescaping for Water & Wildlife | 16



## Volunteer Spotlight:

### Megan Brennan

Meg got involved with Stream Team when she was still in high school. She first attended the *Meet the Trees of Washington* event because many trees looked the same to her and she wanted to learn about their individual characteristics. After this hands-on experience she was hooked! Meg states that many exciting doors have been opened to her as she has been exposed to new areas of interest such as benthic macroinvertebrates and other new subjects that she previously did not know existed. This has helped her narrow her field of study.

What does Meg like about Stream Team? Involvement with Stream Team offers her a chance to have hands-on experience, while learning new things and promoting an interest in the environment. This is important to her, as it has given her the opportunity to be involved in the community, providing her with both social and educational benefits.



She appreciates being able to learn from experts in the field, which has opened up internships and career opportunities.

Currently, Meg is working with the Department of Ecology's Washington Conservation Corps as a field crew member where she works on public lands to improve fish and wildlife habitat. She spends much of her time removing

invasive weeds and planting native trees and plants. This fall she will start her junior year at The Evergreen State College.

Does she have a favorite Stream Team event? "It is hard to choose just one of them but maybe hunting for amphibian egg masses..."

**ON THE COVER:** Allison Springs chum. 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:



### STREAM TEAM INQUIRIES

360-438-2672 or [streamteam@ci.lacey.wa.us](mailto: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](mailto:kbenedic@ci.lacey.wa.us)

#### IN OLYMPIA:

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

**Attn: Patricia Pyle**

Tel: 360-570-5841  
[ppyle@ci.olympia.wa.us](mailto:ppyle@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](mailto: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  
TDD: 360-754-2933  
[maunc@co.thurston.wa.us](mailto:maunc@co.thurston.wa.us)  
[pearcea@co.thurston.wa.us](mailto:pearcea@co.thurston.wa.us)

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**DESIGN & LAYOUT:** Azure Summers Graphic Design, [design@azuresgd.com](mailto:design@azuresgd.com)

## Forage Fish:

**Pacific sand lance and surf smelt essential species to Puget Sound's marine food web.**

Six different species of small schooling fish live in the waters of Puget Sound. All of these fish are critically important to our local ecosystem because they provide a food source, or forage, for larger species of fish, birds and marine mammals. Forage fish play an essential role in the life of local Pacific salmon, as they are the major prey species which salmon depend on for survival.

## NEW STREAM TEAM OPPORTUNITY

### Forage Fish Surveys:

**Pacific sand lance and surf smelt population surveys**

Do you love the beach and being outdoors? Would you like to know more about the forage fish species that spawn on our local Puget Sound beaches?

## Forage Fish of South Sound Beaches Workshop

Workshop instructors, Kira Kranzler, Scientific Technician with Washington Department of Fish and Wildlife (WDFW) forage fish team and Geoffrey Mayhew, Washington Conservation Corps intern with Washington Department of Natural Resources Aquatic Program will introduce us to forage fish ecology and forage fish beach spawning survey methods.

The lecture portion of the workshop will explore the life history and habitat requirements of the forage fish found in south Puget Sound. You will learn how these fish are critical to the ecology of Puget Sound as a key food source in the marine food web for numerous ocean species and about their vulnerability to shoreline changes.

The second portion of the workshop will be a hands-on demonstration of forage fish survey methods to identify critical spawning habitat and to learn survey techniques. Come prepared with knee boots to learn how to survey and process spawned eggs.

Monthly survey opportunities will be available to Stream Team volunteers. Forage fish survey data will help WDFW understand the distribution and health of forage fish populations in Puget Sound.

To register online, visit [www.streamteam.info](http://www.streamteam.info) and click on "register." For more information contact Michelle Stevie at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us)

**■ Saturday, Sept. 13  
■ 9 a.m. – 3 p.m.**



### TALK••••

**■ 9 – 10 a.m.  
■ Olympia City Hall, Council Chambers, 601 E 4th Ave, Olympia**

### \* LAB TRAINING •••

**■ 10:30 a.m. – 1 p.m.  
■ Register Separately!  
■ South Sound Estuarium, 309 State Ave. NE, Olympia**

*\* You must register separately for the lab training as space is limited.*

### FIELD TRAINING ••••

**■ 1:30 – 3 p.m.  
■ Priest Point Park**



TOP: SURF SMELT / BOTTOM: PACIFIC SAND LANCE

### Where do forage fish live?

Three of the six forage fish species spawn within the nearshore zone of our beaches. These species are the Pacific herring (*Clupea pallasii*), surf smelt (*Hypomesus pretiosus*) and the Pacific sand lance (*Ammodytes hexapterus*). Surf smelt and sand lance rely on the upper, sandier beach habitat for spawning. The Pacific herring uses the blades of eelgrass in the sub-tidal zone of the nearshore to lay their eggs. In Puget Sound, forage fish occupy every estuarine and marine nearshore habitat.

### What is the concern? *Habitat loss...habitat loss... habitat loss...*

Since forage fish rely on a healthy nearshore zone for survival, they are especially vulnerable to shoreline development and pollution. Substantial loss of native shoreline vegetation, poor lawn management (application of excessive fertilizer and other chemicals) and shoreline armoring, such as the construction of bulkheads, severely impact our shorelines. These actions affect the upper intertidal zone through the direct loss of and damage to spawning habitat and the interruption of critical sediment (sand and gravel) transport.

Loss of vegetation increases localized water temperatures and dehydrates eggs spawned in upper tidal areas. Shoreline armoring cuts off the natural supply of sand and gravels that naturally erodes from cliffs and shoreline banks to make up our beaches. Without this naturally occurring supply of beach substrate, the finer beach sand and gravel erode and the substrate coarsens (smaller sands and gravels wash away leaving only larger cobbles). Eventually, only the hard pan clay or rock layer remains, leaving behind a habitat that lacks proper conditions necessary for forage fish spawning.

Less than 20% of the estuaries once found in Puget Sound exist today. Locally, over 90% of the shoreline in Budd Inlet has been modified with armoring and fill. This contributes to a substantial net loss of habitat in south Puget Sound specifically used by forage fish, which in turn, affects Pacific salmon survival.



## *In Memory of* David Jamison

### The Pied Piper of Marine Education Marine Creature Monday, Pier Peer

This summer, Marine Creature Mondays at Boston Harbor was missing an icon and advocate for Puget Sound, retired marine biologist David Jamison, the founder of Stream Team's inspiring marine education program. Sadly, David passed away in May. David would have been pleased that his passion for and dedication to environmental education continues on with other people stepping into his big shoes! Marine Creature Mondays is one of the many programs that David helped to create and his passing leaves a big void in marine education and advocacy in South Sound.

It was John Dodge of *The Olympian* who introduced South Sounders to David through his weekly articles on marine life featured on the Environment Page from May 2006 to November 2008. The following summer, David converted and expanded the material into a web site, [www.pugetsoundsealife.com](http://www.pugetsoundsealife.com) that he built and maintained.

Around the same time Anne Mills, formerly of South Sound GREEN, approached David to help with marine and nearshore education of school students. David teamed up with diver Phil Sconce and the students were bussed



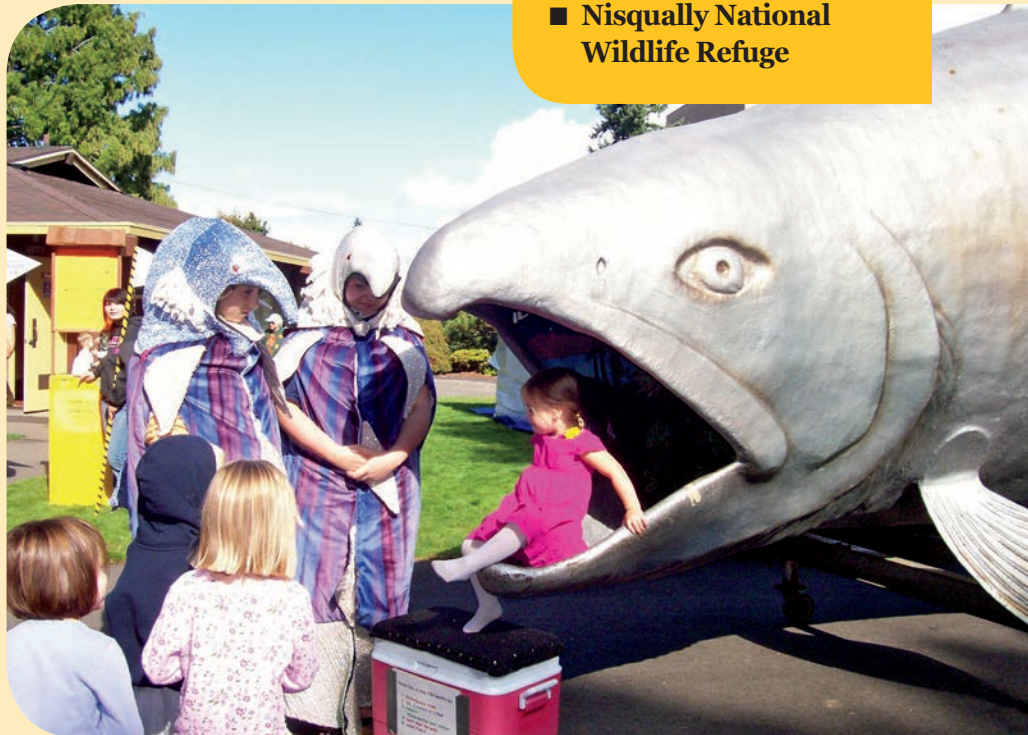
## Celebrate with Stream Team 25 years of the Nisqually Watershed Festival!

This year's festival will be held on Saturday, September 27 from 10 a.m. to 4 p.m. at the Nisqually National Wildlife Refuge. 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 color T-shirt), plywood fish painting, a marine invertebrate organism touch tank and much, much more. The festival's 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 there along with the City of Olympia's Drain Dare trailer for kids. Of course Fin, the giant Wild Olympic Salmon, will also be there.

Bring your appetite! There will be a variety of delicious treats available for sale. This event is FREE, so come out and celebrate the history and culture of the Nisqually Watershed! For more information go to <http://nisquallyriver.org/>. Stream Team is looking for a few volunteers to help staff the Stream Team booth. If you can help, please register online for a two hour shift. See calendar for details.

### NISQUALLY WATERSHED FESTIVAL••••

- Saturday, Sept. 27
- 10 a.m. – 4 p.m.
- Nisqually National Wildlife Refuge





out to Boston Harbor Marina for lessons in marine life, water quality and habitat. Stream Team adopted the idea for a summer time program for the general public. In the summer of 2009, Marine Creature Mondays started with only three dates. The popularity of the program skyrocketed and the number of dates were expanded. Over the last four years, approximately 1,000 people have participated in the Marine Creature Monday program!

In the meantime, David was also the marine biologist for the evening educational series, Pier Peer's at Boston Harbor Marina (formerly sponsored by People for Puget Sound and continuing as a program of the South Sound Estuary Association). David was the advisor for the marine and upland forest exhibits at the Hands On Children Museum. He also shared in the attained dream of the South Sound Estuary Association's (SSEA) mission to have a marine education center in downtown Olympia. David worked on SSEA's behalf to open the first pilot *Estuarium*. Days before his passing, David visited the *Estuarium* at its new location at 309 State Ave NE where he shared his ideas for displays and exhibits.

David also trained Stream Team Sound Stewards and SSEA Beach Naturalists. His web site and interest in near shore habitats was the inspiration for three brochures featuring the common types of marine life seen at Boston Harbor Marina, Burfoot County Park and Tolmie State Park.

Stream Team owes David much. Check out his website at [www.pugetsoundsealife.com](http://www.pugetsoundsealife.com) for more information on the critters that inhabit Puget Sound.

## Hot Tubs & Swimming Pools: TIP for "Best Management Practice"

Did you know discharging chlorinated water from your pool or hot tub into the street, a ditch or a stream is illegal? Even at low levels, the chlorinated water ends up in your watershed where it is harmful to fish and other aquatic life. Comply with the Federal Clean Water Act by following these tips for safe disposal:

- Stop adding chlorine or shut off the chlorination system prior to emptying the water from your pool or hot tub.
- Let the water sit for **at least one to two weeks** to reduce or eliminate the amount of chlorine.
- After one week, it is safe to use the water for irrigating your property as long as it will not reach a storm drain, a ditch or a stream. Never discharge any water or substance to streams.
- After two weeks, use a chlorine test kit to measure the chlorine level in the pool or hot tub. **If there is a detectable level of chlorine a longer holding period is required.** When no detectable levels of chlorine remain then it is safe to slowly discharge, preferably to sanitary sewer or vegetated area.
- In either case, make sure the water will not flow onto an adjacent property. Avoid letting water become stagnant so that nuisance conditions such as bad odors and insect breeding habitats are not created.

**Note:** Back flush from pool filters is allowed to be discharged into the sewer system, an on-site septic tank, a seepage pit or a properly designed drain field.

Questions? Please contact Chris Maun at Thurston County Water Resources: 360-357-3355 ext. 6377.





## Featured Stream

### East Fork McLane Creek



CREDIT: WILD FISH CONSERVANCY NORTHWEST  
TRAVIS HEDRICK, WFC INTERN, THE EVERGREEN STATE COLLEGE

## East Fork McLane Creek

McLane Creek is nestled on the flanks of Thurston County's Black Hills just beyond the creeping margin of West Olympia. A substantial tributary, the East Fork of McLane Creek flows along the east side of Delphi Road to join McLane Creek less than a mile upstream from the Mud Bay estuary and Hwy 101.

While the lower reaches of the East Fork are managed for residential development and agriculture, the tributaries and headwaters of the East Fork are primarily on state or privately-owned forested lands that are forested and managed for timber production. Due to a historic glacial peculiarity, the headwater wetland that feeds the East Fork during the winter and spring also flows into Black Lake, which drains through the Black River to the Chehalis, ultimately entering the Pacific at Grays Harbor. So, it is physically possible—though highly unlikely—for a fish to swim from South Puget Sound, up Mud Bay and the East Fork of McLane Creek, down Black Lake and the Black River to enter the Pacific at Westport.



In 2013, the non-profit organization Wild Fish Conservancy surveyed the East Fork of McLane to map the location of the creek and its tributaries, characterize fish species composition and identify habitat restoration opportunities. This survey found that the low-gradient creek and its associated wetlands provide many spawning and rearing opportunities for a variety of native fish species. In addition to chum and coho salmon, Wild Fish Conservancy found populations of native cutthroat trout, sculpin, and brook lamprey. A first in the McLane watershed, Wild Fish Conservancy documented Olympic mudminnow—a state threatened species—in the East Fork headwaters. These mudminnows

were likely pioneers spilling over into the South Puget Sound watershed from the Chehalis watershed where they are well-established.

To view a fascinating short video of chum salmon spawning in the East Fork of McLane Creek go to <http://tinyurl.com/McLaneCreek>

Soon, Wild Fish Conservancy will post the results of this interesting survey, including field data and photographs, in an interactive web-based map. To view this map and learn more about the stream survey work that Wild Fish Conservancy does, visit [www.wildfishconservancy.org](http://www.wildfishconservancy.org)

*Thanks to guest author, Jamie Glasgow, Wild Fish Conservancy, for this article.*



## WATER-WISE PLANT SALE.....

- Sunday, Sept. 28
- 11 a.m. – 4 p.m.
- WSU Thurston CO  
Extension Office,  
5033 Harrison Ave NW,  
Olympia

Marianne Binetti's tip is to place leaves in a dark plastic trash bag. Add a shovel of soil, tie the bag up, poke a few holes in it and hide it behind a bush until spring. Open in spring for beautiful mulch!



## Fall Planting & Preparing *Your Garden for Winter*

Fall is a great time to add new plants to your garden. When transplanted in the fall, plants have ample time to adjust to their new environment before the hot summer months arrive and stress them with heat and drought. New fall plantings receive plenty of water throughout the rainy season and will require fewer supplemental watering sessions than plants transplanted during the spring or summer. This is good for the plant and a great way to practice outdoor water conservation. Furthermore, during cooler months there are fewer pest and disease problems for plants to combat as well as less competition from weeds.

Need a source for your fall plantings? Check out the “Water-Wise” Plant Sale held by the Native Plant Salvage Foundation on September 28 from 11:00 a.m. to 4:00 p.m. at WSU Thurston County Extension Office, 5033 Harrison Ave NW. Arrive early for the best selection of plants. Experts will be on hand to help you select the best plant for your site conditions. Find more information about this event at [www.nativeplantsalvage.org](http://www.nativeplantsalvage.org).

The upcoming cold and wet months of winter may seem like a time in which your garden is “sleeping” but it is actually a very important time for root growth and an important time to maintain and even improve soil health. Many plants will continue to grow their roots until the first freeze of the winter. In order to protect your plants from the cold and prevent erosion of important top soil, cover your garden beds with a thick layer of organic mulch before the heavy rains begin in the fall. Eroded top soil can flow into nearby storm drains and pollute our local surface water. Additionally, loss of top soil is bad for gardens. Organic mulch is made of biodegradable material that covers soil and adds nutrients to the soil as it decomposes, it can be applied up to four inches thick. Fallen leaves from nearby trees are a great source of free organic mulch. Collected leaves can be distributed on garden beds as organic mulch. Throughout the fall and winter, the insects in your soil will break the leaves down and add nutrients to your soil. If you don't have leaves on your lawn to be used as organic mulch, most lawn and garden stores have organic mulch available for purchase.

## Adopt A Storm Drain!

Help prevent localized flooding this fall! Team up with neighbors, home owner associations, and/or family members and “adopt” storm drains in your neighborhood. The simple action of raking and clearing debris off of drain grates in the streets can help protect your property, stormwater retention ponds, and roadways.

Storm drains, also known as catch basins, are an integral part Thurston County's stormwater infrastructure. While appearing to be a simple grate where rainwater drains, beneath the grate there is generally a sump, designed to capture sediment, debris, and other pollutants before the stormwater is piped to your local stormwater pond or a nearby creek, lake, or Puget Sound.

Before it rains in the fall, inspect storm drains and clear off the grate of accumulated dirt, leaves, needles, sticks, and trash. Discard the organic matter in the yard waste bin or compost, and put the remainder in the trash. Continue this practice throughout the year as needed.

If flooding does occur during heavy rain events, you can often locate submerged and clogged grates by finding storm drain markers on the curb. These markers have been placed by stormwater utilities to remind people that “only rain should go down the drain”!

Be safe! When raking drains stay out of busy streets and be careful of oncoming traffic in neighborhood streets. For more information about storm drain care and other storm water system components, please visit: <http://tinyurl.com/StormDrainCare>





## Salmon Etiquette

For salmon, spawning is a once in a lifetime opportunity to produce offspring. We are very lucky to be able to watch this important and amazing part of their life cycle. Take care to watch quietly and not disturb them while they are spawning.

1. Keep dogs on leash—dogs can scare the salmon. Beware: Eating raw salmon can make dogs very ill.
2. Keep a respectable distance away from the salmon—a shadow movement over the water or a slight noise can scare the salmon off and disrupt their spawning ritual.

## See Salmon in Your Own Backyard

As summer ends, one sure sign of fall approaching in South Sound is the return of Chinook salmon to lower Puget Sound. The salmon that return to Budd Bay and migrate back up into the Deschutes River are the offspring of adult Chinook salmon that made the journey from the Deschutes out to the Pacific Ocean three to five years ago.

As they acclimate back to fresh water from salt water, the salmon 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 the “King” of fish. Come see these magnificent creatures before they’re gone for another year!

When	Where	Salmon Stewards Present	Contact
<b>Late Aug. to mid-Sept.</b>	5th Avenue Dam	Weekday evenings; All day weekends	Patricia Pyle (5th Avenue Dam), ppyle@ci.olympia.wa.us or 360-570-5841
<b>Early Sept. to mid-Oct.</b>	Tumwater Falls Park	Weekday evenings; All day weekends; Mon-Wed-Fri mornings late Sept. to mid Oct.	Debbie Smith (Tumwater Falls Park), dmsmith@ci.tumwater.wa.us or 360-754-4148

**Stream Team Salmon Stewards will be at these locations** on week day evenings and all day on weekends to answer questions about the 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 for hatchery incubation of juvenile salmon.**

## SALMON & CIDER AT MCLANE CREEK....

- Sunday, Nov. 16
- 11 a.m. – 1 p.m.
- McLane Creek Nature Trail

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



## Welcome the Chum Salmon to McLane Creek

It is always a sight worth seeing to view the chum salmon spawning naturally in McLane Creek at the McLane Creek Nature Trail. The nature trail is located off of Delphi Road in west Olympia. A short walk along the trail, past the beaver pond and through an array of native trees and shrubs, will take you to the creek where the magnificent and colorful chum return to spawn every fall. With their dark purplish-black coloring, they are truly amazing to see as they dig their nests and vie for optimal spawning positions.

Every year, Stream Team trains Salmon Steward volunteers to greet people walking along the nature trail and to answer the questions people may have about this wild, native 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.

**If you are interested in being a Salmon Steward at the McLane Creek Nature Trail, Stream Team will be hosting a two-part training in November.**

### Salmon Steward Training Opportunity

<b>Part 1: Classroom Session</b>	<b>Wednesday, Nov. 5</b>	<b>6 p.m. – 8 p.m.</b>
<b>Part 2: Field Session</b>	<b>Saturday, Nov. 8</b>	<b>10 a.m. – Noon</b>

For more information, or to register for the training, contact Chris Maun at [cmaun@co.thurston.wa.us](mailto:cmaun@co.thurston.wa.us) or 360-754-3355 ext. 6377.

*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 parking 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](http://www.discoverpass.wa.gov) (Salmon Stewards are granted temporary parking passes.)*



WHEN	WHERE	WHAT KIND OF SALMON	WHAT CAN I SEE THERE	WHAT ELSE	SALMON STEWARDS ON-SITE
<b>September</b>	5th Avenue Bridge/Dam, Downtown Olympia	Chinook	Chinook milling around below the dam, seals chasing the salmon, salmon entering the fish ladder.	Stop by anytime. City-owned parking lots and metered street parking is free on weekends and after 5 p.m. weeknights.	Weekday evenings; All day weekends; Late Aug.- mid Sept.
<b>September &amp; October</b>	Tumwater Falls Park, 110 Deschutes Way SW	Chinook	Take a walk on the lovely loop trail and see salmon milling and spawning below the lower falls, salmon in the river, salmon trying to jump the large or small falls, and salmon in the fish ladder and holding pens.	Open 8 a.m. to dusk daily. Free parking. Playground and picnic tables. Spawning operation typically begins third week of Sept. Monday, Wednesday and Friday mornings through mid-Oct.	Weekday evenings; All day weekends; Mondays, Wednesday and Friday mornings late Sept. to mid Oct.
<b>November</b>	McLane Creek Nature Trail, Capitol State Forest	Chum	See wildlife in and around the beaver pond, forest and stream on this mile long loop trail. Watch the salmon during their spawning courtship.	10 a.m. – 2 p.m. Weekends, dawn to dusk through mid-Dec.	10 a.m. – 2 p.m. Thursday, Nov. 27 (Thanksgiving) & Friday, Nov. 28. <i>Vehicles required to display Discover Pass.</i>

### Please Remember: Respect the Salmon!

- Stay a respectable distance away from the salmon
- Keep dogs on leash

### RETURN OF THE CHINOOK TUMWATER FALLS PARK.....

- **SUNDAY, OCT. 5**
- **10 a.m. – 4 p.m.**
- **Tumwater Falls Park**

Family-friendly, salmon-themed arts and crafts activities. Salmon Stewards on hand. In conjunction with the Tumwater Homesteaders' Cider Sunday event.

### SALMON & CIDER AT MCLANE CREEK.....

- **SUNDAY, NOV. 16**
- **11 a.m. – 1 p.m.**
- **McLane Creek Nature Trail**

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

PLEASE REMOVE THIS HANDY SALMON VIEWING GUIDE AND HANG IT UP OR TAKE IT WITH YOU!



### CIDER SUNDAY AT TUMWATER FALLS PARK.....

- **Sunday, Oct. 5**
- **10 a.m. – 4 p.m.**
- **Tumwater Falls Park**

Family-friendly, salmon-themed arts and crafts activities. Salmon Stewards on hand. In conjunction with the Tumwater Homesteaders' Cider Sunday event.

### Return of the Chinook Event

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 also be on hand to answer questions about the Deschutes Chinook salmon run. To volunteer 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 your apples into cider.

This event is always held on the first Sunday of October. Bring the family down for some fun free salmon and pioneer-related activities!

For more information, contact Debbie Smith, [dmsmith@ci.tumwater.wa.us](mailto:dmsmith@ci.tumwater.wa.us) or 360-754-4148.

# Elwha River Salmon Restoration

This fall marks a milestone in the restoration of salmon in the Elwha River Watershed: the historic removal of two dams, The Elwha Dam and Glines Caynon Dam, is expected to be complete. Dam removal has been a four-year deconstruction and ecological rehabilitation process that began in September 2011. In March 2012 the last of the Elwha dam was removed. By the end of the year, the same is expected to be true of the Glines Caynon Dam.

Before these two dams were built on the Elwha Watershed, the river was legendary for its diverse production of anadromous fish, including winter and summer steelhead, coho, summer, fall and spring Chinook, pink, chum, and sockeye salmon, cutthroat and bull trout, lamprey and forage fish. Now that the Elwha is once again flowing free, careful monitoring of salmon and steelhead populations on the Elwha and its tributaries is underway. Federal, state and tribal agencies are working together to study the effects of this unprecedented undertaking, the largest dam removal project in the history of the United States.

Doug Morel, Fisheries Manager with the Elwha tribe is “cautiously optimistic” about what will happen with salmon restoration on the river. Since pre-season planning relies on averages from previous years, scientists have no way to accurately predict the numbers of fish that will return to the Elwha in the coming years. Morel explained that it will “in large part be determined by ocean conditions and river flows”. If the predicted El Niño takes place in late summer and early fall, the drier conditions could affect the amount of salmon survival and spawning that occurs.



ELWHA RIVER - HUMES RANCH AREA2 BY JEFFTAYLOR@XWB.COM (TALK). ORIGINAL UPLOADER WAS ELWHAJEFF AT EN.WIKIPEDIA.

According to Morel, ocean conditions were favorable the past two years and biologists saw an “uptick” in salmon returns and forage fish populations. For example, prior to 2012, Chinook returns averaged 1,500 a year, but in the fall of 2013, more than 4,000 Chinook salmon returned making the run the strongest it has been since 1992.

Other preliminary data is promising. In September 2013, biologists conducted a one day survey to map the living and dead Chinook salmon as well as spawning redds (spawning nests). They snorkeled and hiked along 13 miles of the Elwha River and the river’s lower tributaries from Glines Caynon Dam to the Strait of Juan de Fuca. A total of 3,528 adult Chinook and 763 redds were counted, 75% of which were observed upstream from where the Elwha Dam had once stood. In spring 2014, steelhead populations were studied in

the first major effort to track fish since the removal of the dams. Steelhead were captured and radio tagged with transmitters for further data collection as they moved upriver. Barb Maynes, spokesperson for the Olympic National Park said, “It is continued good news that fish are returning and returning to new areas and reaching areas on their own that have been closed off for decades.” Pat Crain, National Park Service biologist, reported steelhead redds were found in Elwha tributaries that previously had none in recent decades. (Peninsula Daily News).

Overall, scientists are hoping salmon populations will grow to 400,000. Will we once again see Chinook weighing over 100 pounds like were previously recorded prior to 1930? Time will tell. Stay tuned in the upcoming months for more information and current updates at the following websites and blogs:

<https://www.facebook.com/elwhariverrestoration>

<http://tinyurl.com/DamRemovalBlog>

<http://peninsuladailynews.com>

<http://tinyurl.com/ElwhaRiverWebcam>



## MUSHROOM WALK.....

- Saturday, Oct. 4
- 9:30 a.m. – Noon  
OR 1 – 3:30 p.m.
- Location: local park TBA



## Fungus Among Us!

October is the perfect time for walking in the woods and for hunting those elusive mushrooms! So get your boots and rain coat on and join us with mycologist (mushroom expert) Richard Gaines for a walk in the park!

Participants will learn about NW mushroom species including the common edibles, identification basics and collecting methods. He will talk about poisonous fungus and how to forage for edibles safely. Instructor, Richard Gaines has a BS in Natural Science and over forty years of experience identifying and foraging for mushrooms. He has taught mushroom identification and medicinal mushroom workshops for The Evergreen State College. Richard is an active member of the South Sound Mushroom

Club (SSMC), North American Truffling Society (NATS), and North American Mycological Association (NAMA).

**Attention! The date may change depending on fall rains and mushroom growth.** To register online, visit [www.streamteam.info](http://www.streamteam.info) and click on "register." **Please register for only one session.**

Come prepared for weather. For more information contact Michelle Stevie at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us)



### You May Need a Permit for Mushroom Hunting

(Puget Sound Mycological Society, [www.psms.org](http://www.psms.org))

You may be required to obtain a "personal use permit" when going mushroom hunting in many areas of Washington State, but not all. Washington State is divided into numerous federal, state, local and Native American jurisdictions. Learn the proper rules for each jurisdiction before you harvest.

#### Also there may be species restrictions:

The Forest Service now has a Special Status Species List, which may prohibit the collection of certain species of plants and mushrooms in certain districts. <http://www.fs.fed.us>. For a description of our State's Conservation policies and the program concerning lands regulated by the Bureau of Land Management go to: <http://tinyurl.com/ISSSSP>

State parks permit collecting only edible mushrooms. Some districts have special rules or limits for specific species such as cutting matsutake in half vertically (to prove they are not intended for sale). See the Species column on the rules sheet for details at: Washington State Personal Use Mushroom Harvesting Rules, [www.psms.org/WAMushroomRulesNov2012.pdf](http://www.psms.org/WAMushroomRulesNov2012.pdf)



## Featured Creature

### Beaver (*Castor canadensis*)

**Beavers** are North America's largest rodent and can weigh up to 60 pounds and measure up to three feet from head to tail. Beavers are semi-aquatic and have a characteristically large, flat, paddle-shaped tail and webbed hind feet. The front paws are smaller and unwebbed with claws. The tail can be as long as 15 inches long and 6 inches wide. The tail is not furred but has leathery scales and sparse course hairs, and it serves the beaver as a counterbalance while on land and as a steering rudder in water. Beavers also use their tails to sound an alarm to warn of danger and to frighten away predators. A beaver's tail stores fat and helps to regulate body temperature by releasing body heat.

Beavers have a thick layer of subdermal fat that helps to insulate them in cold water. Their nostrils and ears seal when they submerge in water, and their eyes have a transparent third eyelid or "nictitating membrane" which they can close, allowing them to see underwater. The beaver's incisors (front teeth) are harder on the front surface than on the back, which causes the back to wear faster. This creates a sharp edge that enables them to easily cut through wood. Beavers are herbivores and prefer to eat leaves, bark, twigs, roots and aquatic plants. They can live up to 24 years in the wild.

Beavers, like many rodents, construct nesting dens for protection against predators and for shelter.

## The Beaver: Nature's Greatest Engineer

In the past, beavers were abundant and ranged over the entire North American continent, creating ponds and wetland habitats used by many species. It is estimated that before the fur trade, beaver populations were from 100 to as high as 200 million individuals. In the 1800s, trapping was so profitable that beavers were nearly extirpated from much of their range. It was not until the 1930s that regulations governing trapping came into effect and limited beaver eradication.

Historically, the importance of beavers was not understood. As a result of this lack of understanding, society relegated the beaver to the category of a "nuisance species," an animal to be eradicated if conflicting with human land use interests. This conflict has greatly affected our landscape, altering natural wetland areas. Beavers are considered to be a key species that serve a vital role in maintaining the health of our watersheds. Throughout North America, beavers are associated with wetlands, helping to create areas that are nature's water reserves. Wetlands are one of the most important ecosystems on the earth. They increase natural water storage capabilities, stabilizing water supplies both in times of flooding and extreme drought. Wetlands also provide flood attenuation and provide valuable habitat

to fish and wildlife. It is estimated that 50% of the threatened or endangered species in North America rely upon wetlands.

In the northwest, Pacific salmon have closely evolved with beavers and wetland ponds. With the control of beaver slow water features and ponds have significantly decreased. Recent studies have documented that the extensive loss of beaver ponds has greatly reduced coho smolt production. Restoration efforts related to watersheds and salmon populations are now utilizing beavers as a restoration tool for recreating slow water refuge habitats, providing rearing habitat for young salmon.

As our population grows, land becomes more developed, habitat loss increases, predators that control beavers decrease and beaver conflicts increase. Since beavers are essential in maintaining and restoring our watersheds, it is likely that our best option is to find ways to coexist.

**Solutions:** Some of the ways that we can coexist with beavers are by engineering our own structures to dissuade them. Such measures may include installing barriers, such as wrapping trees in wire mesh so that beavers cannot cut them down. Another solution is to build flow control devices to maintain water levels to keep





beavers from blocking stream crossing structures. For the past 50 years, live trapping and relocating of beavers has successfully restored and maintained stream ecosystems. Today beavers are being reintroduced into watersheds as a “restoration tool.”

### Beavers and Climate Change:

Climate change will have an effect on our natural systems. Rising stream temperatures, declining summer flows, decreased ground water storage and availability and changes in flood timing are predicted. Reestablishing beavers can play a critical role in climate change adaptation strategies. There would be ecological benefits to beaver dam building by slowing snowmelt and extending summertime stream flows. The creation of beaver ponds would maintain and create wetlands that provide water storage, recharge ground water, expand riparian vegetation and maintain or increase essential habitat for fish and wildlife.

PHOTO COURTESY OF ROD GILBERT



When available, they burrow into the sides of stream banks and lakes. In less suitable habitat, they will transform the area by cutting down trees with their strong teeth. Using wood and mud, they will build a dam that blocks the pond or stream and creates large ponding pools. Beavers also construct large, domed lodges from branches and mud. They are usually constructed towards the middle of the pond, where they can only be reached by an underwater entrance, deterring predators. For more information about beavers, visit: <http://tinyurl.com/WDFWBeavers>



## Stormwater Pollutants Cause of Fish Mortality in Pilot Study

Successful salmon reproduction is one of the most highly valued measurements of stream health in the Pacific Northwest. Since many of our streams and rivers flow through heavy industrial and urbanized areas it is essential that these waters are healthy to support salmon production and survival. Protecting the early life stages of salmon and the food on which they depend is the key to maintaining productive streams, especially in urban environments where urban stormwater can have toxic effects on fish populations.

It has been found that performing chemical analysis of stormwater or collecting water samples is inadequate by itself for evaluating environmental impacts. Many toxic pollutants cannot be detected through commonly available chemical analyses, and many of the chemicals that can be detected have little toxicity information available. Also, the toxic effect for combined chemicals is unknown. A more reliable method for evaluating instream chemical testing is using fish. Fish and other aquatic organisms can be used to analyze chemicals as these organisms have the ability to accumulate and concentrate chemicals found in streams in their tissues. Testing of tissue samples can then give an indication of pollutant type and exposure.

With the goal of better understanding water quality issues in our streams, researchers at the Washington State Department of Ecology conducted a pilot study on Indian Creek in Olympia during the spring of 2010. Rainbow trout eggs were used to assess stream health. Indian Creek was chosen for this study as it has been shown to be moderately impacted by stormwater runoff.

When placed in a stream test organisms, such as trout eggs, experience a realistic environmental exposure and respond to a broad spectrum of toxic chemicals and mixtures. The Indian Creek study included exposure of rainbow trout embryos in a hatchbox that simulated a natural redd or egg nest made from river gravel. The test lasted for thirty four days beginning with eyed eggs and ending with swim-up fry. Each life stage can be sensitive to different pollutants and was assessed for mortality, failure to hatch, abnormal development and reduced growth.

Of the two site exposures trout at the lower Indian Creek site showed toxicity through significant mortalities and several candidate chemicals were identified as the possible toxicants. Metals were the only pollutants that were clearly in higher concentrations at the lower monitoring station. The link for the final report of the 2010 study can be found at <http://tinyurl.com/StormwaterStudy>

In spring of 2013 Ecology conducted a study to follow-up on the findings of the previous 2010 study. The 2013 study will soon be published. Stay tuned for a follow-up report in our next quarterly newsletter.

# Kids' CORNER

## The salmon are returning!

Below are three types of salmon commonly found in Thurston County creeks and rivers. Color the blank salmon to match the spawning colors shown in the drawings.



Chinook



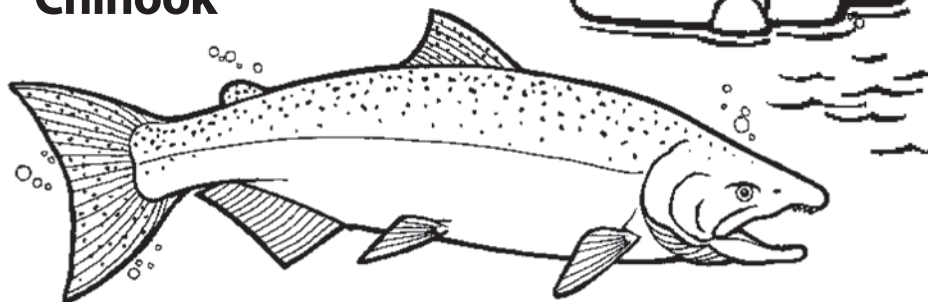
Chum



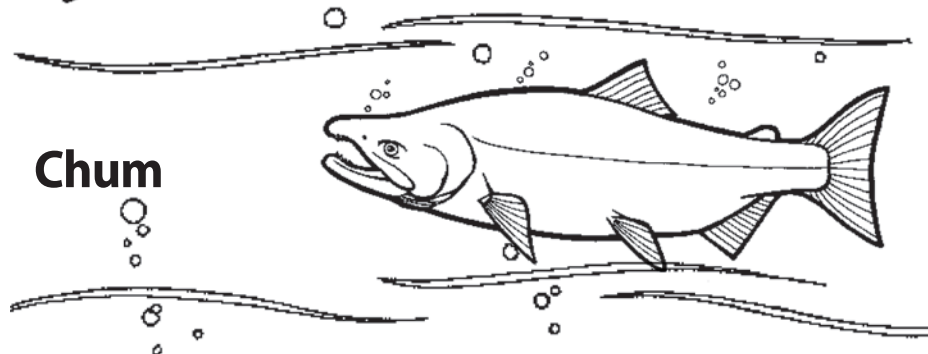
Coho



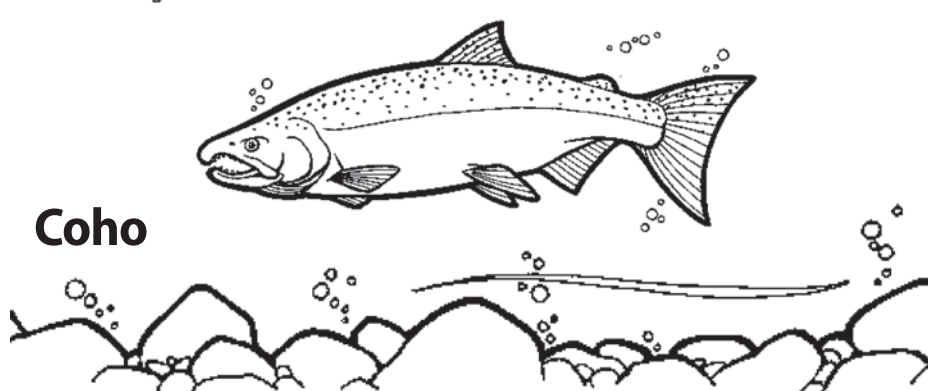
Chinook



Chum



Coho



Photos Courtesy Fisheries and Oceans Canada / Illustrations Courtesy US Fish and Wildlife Pacific Division

## HOW TO REGISTER FOR EVENTS



Visit: [www.streamteam.info](http://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 or Amphibian 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](http://www.streamteam.info)  
To talk with Stream Team staff about any of the events listed on this page, please call **360-438-2672**

## SEPTEMBER

### Forage Fish of South Sound Beaches Workshop

**Sat., Sept. 13 • 9 a.m. – 3 p.m.**

**Talk: 9 – 10 a.m.**

Olympia City Hall, Council Chambers,  
601 E 4th Ave, Olympia

**\*Lab Training: 10:30 a.m. – 1 p.m.**

South Sound Estuarium, 309 State Ave. NE  
*\* You must register separately for the lab training as space is limited.*

**Field Training: 1:30 p.m. – 3 p.m.**

Priest Point Park

See pg. 3 for details. Register online.

### Nisqually Watershed Festival

**Sat., Sept. 27 • 10 a.m. – 4 p.m.**

Nisqually Wildlife Refuge,  
100 Brown Farm Rd. NE, Lacey

Volunteers are needed to help staff the Stream Team booth.

See pg. 4 for details. Register online.

## OCTOBER

### Work Party at Woodland Creek Community Park

**Sat., Oct. 4 • 9 a.m. – Noon**

Woodland Creek Community Park,  
6729 Pacific Ave SE, Lacey, WA 98503

Come out and help Lacey Stream Team as we remove invasive species and plant native trees. We will provide light refreshments, tools, and gloves. Volunteers should wear sturdy shoes and protective clothing. This event will continue, rain or shine!

For more info., contact Kim at 360-438-2687 or [kbenedic@ci.lacey.wa.us](mailto:kbenedic@ci.lacey.wa.us)

Register online.

### Return of the Chinook

**Sun., Oct. 5 • 10 a.m. – 4 p.m.**

Tumwater Falls Park

Volunteer for a shift at the Stream Team booth and receive a FREE Stream Team T-shirt.

See pg. 9 for details. Register online.

## OCTOBER

### History of the Boldt Decision & Salmon Management Today

**Wed., Oct. 15 • 7 – 9 p.m.** 

Olympia City Hall, 601 E 4th Ave, Olympia  
Register online.

### Salmon Steward

### Chinook Field Training

**Sat., Sept. 13 • 10 a.m. – 1 p.m.**

Tumwater Falls Park

### Percival Creek

### Revegetation Project

**Sat., Oct. 25 • 10 a.m. – Noon**

Percival Creek at Sapp Rd.

For more info., contact Debbie at  
360-754-4148 or  
[dmsmith@ci.tumwater.wa.us](mailto:dmsmith@ci.tumwater.wa.us)

Register online.

### Mushroom Walk

**Sat., Oct. 4 • 9:30 a.m. – Noon**

**OR 1 – 3:30 p.m.**

Thurston County local park TBA

For more info., contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us)

See pg. 11. Register online. Please register for only one session.

## COMMUNITY EVENT

### Native Plant Salvage Foundation's Annual Water Wise Plant Sale

**Sun., Sept. 28 • 11 a.m. – 4 p.m.**

WSU Thurston Co. Extension office, 5033  
Harrison Ave NW, Olympia

Hard-to-find native and water-wise plants, including a special rain garden section. Personal Plant Shoppers will help you select the perfect plants for your garden.

For more info., visit  
[www.nativeplantsalvage.org](http://www.nativeplantsalvage.org)

## NOVEMBER

### Salmon Stewards

### Chum Salmon Training: Part I

**Wed., Nov. 5 • 6 – 8 p.m.**

Thurston County Building 4

Part I of two-part training for Salmon Stewards who are interested in stewarding at McLane Creek Nature Trail. No prior experience necessary.

For more info., contact Ann Marie at  
360-754-3355 ext. 6857 or  
[pearcea@co.thurston.wa.us](mailto:pearcea@co.thurston.wa.us)

Register online.

### Salmon Stewards

### Chum Salmon Training: Part II

**Sat., Nov. 8 • 10 a.m. – Noon**

McLane Creek Nature Trail

Part II of two-part training.

For more info., contact Ann Marie at  
360-754-3355 ext. 6857 or  
[pearcea@co.thurston.wa.us](mailto:pearcea@co.thurston.wa.us)

Register online.

### Chum Salmon & Cider Celebration

**Sun., Nov. 16 • 11 a.m. – 1 p.m.**

McLane Creek Nature Trail

Enjoy hot cider and snacks while learning from trained Salmon Stewards about the wild spawning chum salmon.

For more info., contact Ann Marie at  
360-754-3355 ext. 6857 or  
[pearcea@co.thurston.wa.us](mailto:pearcea@co.thurston.wa.us)

See pg. 8.

### Naturescaping for Water & Wildlife Workshop

**Thurs., Nov. 20 • 6 – 9 p.m.**

Tumwater Fire Hall

See pg. 16 for details. Register online.





# Stream Team

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

929 Lakeridge Dr SW  
Olympia, WA 98502  
[www.streamteam.info](http://www.streamteam.info)

## FREE SUSTAINABLE LANDSCAPING CLASS...

### Naturescaping for Water & Wildlife

- Thursday, Nov. 20
- 6 – 9 p.m.
- Tumwater Fire Hall



Are you interested in learning about landscaping practices that will save you money on your water bill and save you time spent on yard maintenance chores? Or, perhaps, you want to learn about creating a beautiful landscape that will attract birds, butterflies or other wildlife. You can learn about all this and much more at Stream Team & Native Plant Salvage Project's free *Naturescaping for Water and Wildlife* workshop.

The featured speaker will be WSU staff, Erica Guttman, who has over twenty years of experience planning and implementing local landscape projects. Participants will receive free handouts and helpful tips to create more attractive and sustainable landscapes around their homes.

To register, or for more information, please email [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or call 360-867-2166.

