

Stream Team News

FREE

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EDUCATE • PROTECT • RESTORE



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NATIONAL PUBLIC LANDS DAY

- Saturday, September 26
- 10 a.m. – 1 p.m.
- Priest Point Park,
2600 East Bay Drive,
Olympia, Shelter #4



Celebrate National Public Lands Day!

Stream Team joins with Olympia Parks, Arts and Recreation for a fun stewardship work party to continue restoration along the mouth of Mission Creek. Tools, gloves and light refreshments will be provided.

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



Salmon Viewing Etiquette for People & Dogs

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

1. Keep dogs on leash

Dogs can scare the salmon. **Beware:** dogs should not eat raw salmon as they can get Salmon Poisoning Disease (SPD)*.

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.

*** SPD is often fatal to dogs and occurs when a dog eats raw salmon that is infected with the *Neorickettsia helminthoeca* parasite.**



ON THE COVER: Salmon Steward teaching about Deschutes River Chinook at 5th Ave bridge, Olympia.

STREAM TEAM MISSION

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

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

SPECIAL NEEDS?

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

FIND US ON FACEBOOK:



ThurstonStreamTeam

STREAM TEAM INQUIRIES

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

IN LACEY:

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

Attn: Kim Benedict

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

IN OLYMPIA:

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

Attn: Michelle Stevie

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

IN TUMWATER:

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

Attn: Debbie Smith

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

IN THURSTON COUNTY:

Thurston County Water Resources Program
929 Lakeridge Dr. SW, Olympia, WA 98502

Attn: Chris Maun or Ann Marie Pearce

Tel: 360-754-3355 EXT 6377
TDD: 360-754-2933
maunc@co.thurston.wa.us
pearcea@co.thurston.wa.us

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DESIGN & LAYOUT: Azure Summers Graphic Design, design@azuresgd.com

See the “King” of Salmon this Fall

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 Bay and migrate back up into the Deschutes River are the offspring of adult Chinook salmon that made the journey from the Deschutes River 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 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 and all day on weekends to answer questions about the salmon. Salmon Stewards will also be present at Tumwater Falls on Monday, Wednesday and Friday mornings from late September to mid-October. Visit Tumwater Falls during these times to see the “egg-taking” operation where eggs and milt are removed from the salmon and then transferred to a hatchery.

For more information, contact:

- ▶ Michelle Stevie (5th Avenue Dam) at mstevie@ci.olympia.wa.us or 360-753-8336
- ▶ Debbie Smith (Tumwater Falls) at dmsmith@ci.tumwater.wa.us or 360-754-4148



CIDER SUNDAY •••••

- Sunday, October 4
- 10 a.m. – 4 p.m.
- Tumwater Falls Park



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.

These events are always held on the first Sunday of every October. Bring the family down for some fun FREE salmon and pioneer-related activities!

For more information, contact Debbie Smith at dmsmith@ci.tumwater.wa.us or 360-754-4148.

Cider Sunday & 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

These events are always held on the first Sunday of every October. Bring the family down for some fun FREE salmon and pioneer-related activities!

For more information, contact Debbie Smith at dmsmith@ci.tumwater.wa.us or 360-754-4148.

The Return of the *Magnificent Chum!*

You won't want to miss this natural wonder, whether it's your first time viewing chum spawning in McLane Creek or you've been multiple times! The magnificent and colorful chum return to spawn every fall in McLane Creek (and its tributaries). The McLane Creek Nature Trail offers excellent viewing of this natural wonder. Just 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 you can view the wild chum in all their spawning splendor. With their dark purplish-stripped coloring, they are truly a sight 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 answer questions people 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.



CITIZEN PLANKTON MONITORING



ONLY 4 DATES REMAINING!

■ Thursdays,
September 3, 10, 17, 24

SAMPLING

■ 2 – 2:45 p.m.
■ Port Plaza dock

ANALYSIS

■ 3 – 4 p.m.
■ LOTT Wet Science Center
500 Adams St. NE, Olympia

What's Blooming in Budd?

This summer marked the fourth year of citizen plankton monitoring in Budd Inlet near downtown Olympia. Don't miss out on this fun and educational activity! Join Stream Team and Pacific Shellfish Institute biologists at the Port Plaza dock to learn about some of the smallest organisms in the sea – phytoplankton. Join us for the last remaining sampling dates of 2015 as we drop a net into the rich waters of Puget Sound to collect a jar of nutritious plankton soup. Prepare to be amazed as a drop of water comes to life under the microscope. Grab a clipboard and record weather, tides, water temperature, salinity and water clarity conditions.

Want a closer look? Follow us to the LOTT Wet Science Center classroom to observe live zooplankton and phytoplankton on the big screen. Learn how to identify these microscopic organisms as we generate a species list and count harmful algal bloom (HAB) species for NOAA's Sound Toxins volunteer monitoring program. Keep weekly tabs on *What's*

Blooming in Budd and view past data by logging onto www.pacshell.org/whats-blooming-in-budd.asp.

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





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:

Chum Salmon Steward Training:

- ▶ Wednesday, Oct. 28, 6 p.m. – 8 p.m. . . Part 1 (Basic Classroom Session*)
- ▶ Wednesday, Nov. 4, 6 p.m. – 8 p.m. . . . Part 2 (Chum Specific Classroom Session)
- ▶ Saturday, Nov. 7, 10 a.m. – Noon Part 3 (Chum Field Session)

For more information, or to register for the training, contact Ann Marie at pearcea@co.thurston.wa.us or 360-754-3355 ext. 6857.

** The Basic Classroom Session is for all Salmon Stewards who did not complete the basic trainings typically held in early to mid-August, or for anyone who would like a refresher on the salmon life cycle, the 4 H's and Salmon Docent skills.*

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 (Salmon Stewards are granted temporary parking passes.)

CIDER SUNDAY •••••

- Sunday, November 15
- 11 a.m. – 1 p.m.
- McLane Creek Nature Trail

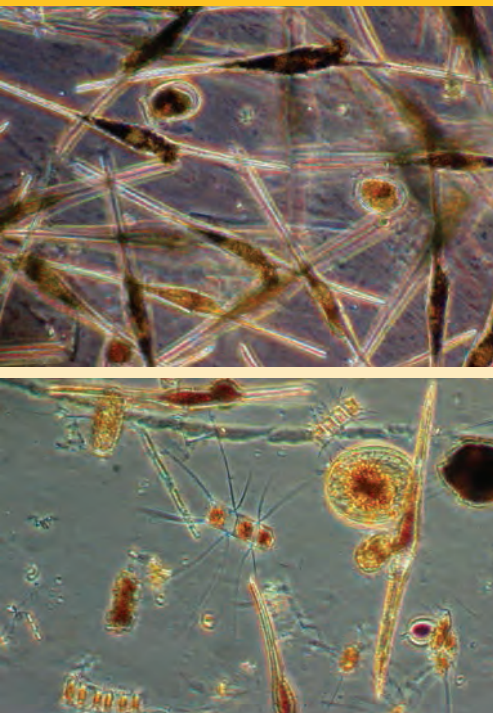


Salmon & Cider

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.

What's Blooming in Budd: Dockside plankton viewing



The "Blob":

Anomaly or Harbinger of the Future?

What is the blob and why is it called the blob?

The surface waters of the Northeast Pacific started warming in 2013, and in early 2015 remain significantly warmer than at any other time over the last few decades. Scientists nicknamed this unusually warm water "the blob" as it appeared as a blob on satellite images differentiating it from average water temperatures because of how it appeared on the color-coded water temperature map. Since January 2014, the mass of water penetrating the North Pacific has become persistent in waters from Alaska to Baja, showing up as red and orange when scientists mapped it on the color-coded water temperature map. Cooler temperatures appear as blue on the map.

How did the blob develop?

Although the extent and nature of the mechanisms and dynamics responsible are still being assessed, there is a growing consensus about some of the contributing factors that may have led to the development of these warm Northeast Pacific conditions. The Pacific Northwest experienced a period of seasonally quiet and dry weather from October 2013 into February 2014. This period also featured anomalously weak cooling of the upper ocean off our coast for the time of year. The result was the "blob", a large mass of water that was ~3°C warmer than normal in February 2014 and is still prominent.

The present warm ocean conditions, starting in 2013 and continuing into 2015, may represent a new regime and pattern never seen in modern records. It is also quite safe to state that the Northeast Pacific warming that peaked in early 2014 is NOT associated with the equatorial El Niño/La Niña phenomena. Warm waters have been occurring with more frequency in the North Pacific, but what makes the current warming atypical is that it's coming ahead of the appearance of any El Niño, the name given to the phenomenon of regular and sometimes large annual variations in sea surface temperatures, air pressure and rainfall. An El Niño usually develops around the equatorial region and tropics and migrates northward. This time the warming is emerging from three North Pacific hot spots: the Bering Sea, the Gulf of Alaska and Southern California/Baja.

Does the blob affect Puget Sound?

Yes. Starting in September 2014, water temperature throughout Puget Sound rapidly increased 1.5–2 °C above seasonal expected values and oxygen saturation declined by 5% below expected value. With summer drought conditions, estuarine circulation and renewal of water from the ocean is expected to be much lower. Because of warmer temperatures and already lower-than-typical oxygen levels early in the year, water quality conditions in the summer of 2015 could be very different. Since algal growth and productivity is expected to be much lower this year along the entire west coast, it is not clear if conditions will worsen inside Puget Sound.

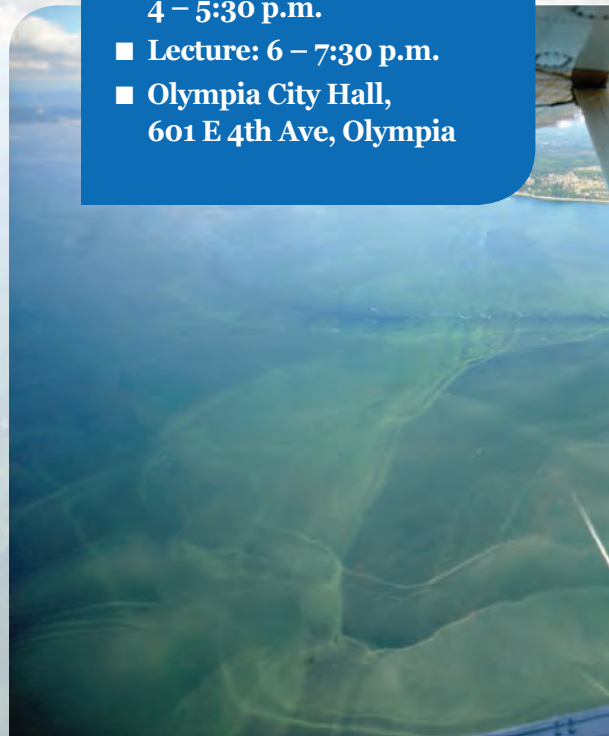
Are warm temperatures of the blob bad for Puget Sound?

Warm water temperatures mean potential changes for the marine food web and water quality. Diseases and pathogens thrive and persist in the water under warmer water conditions. Cooler water holds more oxygen than warm water. Warmer water temperatures mean that organisms consume oxygen faster, and the warmer water will hold less dissolved oxygen. The effect could be lower overall oxygen availability. Salmonids and other cold-loving species resident to Puget Sound require colder water and may be negatively affected.

EYES OVER PUGET SOUND: POSTER & LECTURE SESSION



- Thursday, September 17
- Poster Session:
4 – 5:30 p.m.
- Lecture: 6 – 7:30 p.m.
- Olympia City Hall,
601 E 4th Ave, Olympia



Does the drought affect Puget Sound?

The drought will affect the input of freshwater during the summer. Because of the warmer than normal air temperatures, snowpack melted earlier and snow-fed rivers ran higher than normal. As a consequence, salinities in Puget Sound are below normal, and the estuarine circulation exchanging water with the ocean is strong. As the summer flows will be drastically below expected values, estuarine circulation will weaken and salinities will increase above typical conditions, changing the physical structure of the water column and leading to less water exchange. At the same time, the lack of glacial silt in the water will increase water visibility and affect visual fish predation and the survival of juvenile fish.



How long will we see the effect of the blob?

The blob is expected to hang around and may be reinforced by the El Niño. The effects of the blob on Puget Sound are also expected to last throughout 2015. Because of weak water circulation promoted by the drought, water will stay warm and has the potential to warm even more in the shallow southern regions of Puget Sound throughout summer.

Is this an evidence of climate change?

The blob that originated in the North Pacific and the Bering Sea has not been seen before and it may combine with a developing El Niño event. It is premature to speculate if the blob is a result of climate change or just an unusual occurrence that was previously unknown. As oceanographers and climate experts look deeper into the causes, processes and larger scale context of this phenomenon, we will answer this question with greater certainty in the future.

How much warmer is the water inside Puget Sound?

Most offshore data collection buoys on the Washington Shelf (Northwest Integrated Ocean Observing System-NANOOS) show that the current water temperatures along the Pacific Northwest coast are in excess of 2 standard deviations above normal. Inside Puget Sound, water temperatures are now 1.5–2 degrees Celsius warmer over the entire depth of the water column.

How much lower is the oxygen?

Oxygen saturations at the end of March were already 5% below the typical ranges in Puget Sound. The reduced oxygen condition extended to the full depth of the water column and across Puget Sound. In some places regional Dissolved Oxygen impaired water stands criteria were triggered.

How will the blob affect the marine food web?

According to a report by NOAA Fisheries' Northwest Fisheries Science Center, salmon are one of the species most threatened by rises in water temperature, both at sea and in their spawning streams. Southwest Fisheries Science Center notes record-high sea surface climate, and ecological indicators point to changes throughout the marine food web.

According to the 2015 State of the California Current Report delivered to the Pacific Fishery Management Council, large-scale climate patterns that affect the west coast of the Pacific Ocean shifted toward warmer, less productive conditions. This shift may affect marine species from seabirds to salmon. Salmon face the potential "double jeopardy" of low snowpack in the Northwest, and rivers and streams shrunk by drought in California and Washington, plus reduced ocean productivity when juvenile salmon enter the ocean looking for food. However, the impacts on salmon may not become apparent for a few years when the fish that enter the ocean this year would be expected to be caught in fisheries or return to their natal streams.

What does this all mean to Puget Sound? Come find out!

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

Information provided by Christopher Krembs, Eyes Over Puget Sound

NATURESCAPING FOR WATER & WILDLIFE WORKSHOP.....



- Thursday, November 12
- 6 – 9 p.m.
- Lacey Community Center,
6729 Pacific Ave SE,
Lacey

Beautify Your Landscape While Protecting Water Resources

Late fall through early winter is a good time to make a landscaping plan. Learn how to turn your yard into a lovely year-round landscape that attracts birds, butterflies and amphibians, while protecting water resources. Join Stream Team and WSU Water Resources/Native Plant Salvage Project and learn about sustainable landscaping techniques including:

- How to attract more beautiful wildlife to your yard
- Finding the right landscape for your lifestyle
- Easy ways to reduce the size of your lawn
- Planting for four-season interest
- Landscaping for tricky areas with drainage problems and on slopes
- Water-wise plants and ideas for your landscape
- How simple landscape changes can save you time and money

To register for this workshop, visit www.streamteam.info and click on “register”. For more information, contact WSU Water Resources at 360-867-2167 or nativeplantsalvage@gmail.com.

Conserve Water by Installing *New Plants in the Fall!*

Fall is the best time of year to add new plants to your garden! In the fall, soil is still warm from the summer sun, and natural irrigation for your new plants, in the form of rain, is plentiful. Plants installed in the fall typically have significant root growth before the ground freezes in the winter, and they have plenty of time to adjust to their new environment before the hot summer months arrive and stress the plant. Additionally, cooler weather in the fall and winter leads to fewer pest and disease problems. Plants installed in the fall require fewer supplemental watering sessions during the following spring and summer months, enhancing your outdoor water conservation efforts.

When selecting your new plants, consider selecting native, drought tolerant plants. In addition to helping you conserve water in your yard and garden, native plants provide great habitat for wildlife passing through your yard and garden. Native plants have adapted to our climate and environment over many thousands of years, so they are able to survive our hot and dry summers.

After installing your new plants, consider adding a layer of organic mulch, up to four inches thick, to your garden beds. Organic mulch will prevent erosion of top soil when the fall rains begin. Eroded top soil can flow into nearby storm drains and pollute local surface waters. Additionally, loss of top soil is bad for the health of gardens. Organic mulch is made of biodegradable material that covers soil and adds nutrients to the soil as it decomposes. Organic mulch can be purchased at most garden stores.



Natural Lawn Care Tips for Fall

Fall is a fantastic time to improve the health and beauty of your lawn. Use these tips to boost your lawn and soil health, cut costs and protect our waterways from pesticide and fertilizer runoff. When spring arrives, your grass will look greener and thicker than ever!

► Get Your Soil Tested

Test your soil about once every three years for nutrient levels, and to make sure your pH is within the proper range for a healthy lawn. Soil acidity is one of the most important factors affecting nutrient availability, root growth and microbial activity. For help on how to get a comprehensive soil analysis, contact Thurston Conservation District at 360-754-3588.

► Aerate

When cooler weather and moisture return, it's the ideal time to aerate. Annual core aeration can greatly improve the health and appearance of your lawn by increasing water infiltration rates and air circulation in compacted and poor draining soils. Aeration also improves fertilizer uptake, strengthens root development and improves heat and drought tolerance, while reducing stormwater runoff and nutrient and pesticide leaching.

Make sure to remove a 2" to 3" aeration plug, overlapping your pattern by 25 to 50%. Leave the plugs on the lawn; they will break down and add organic matter to your soil.

► Apply Lime and Fertilizer

After you aerate, apply lime to adjust soil pH. The application rate will depend on the results of your soil analysis. The standard application rate is 35 to 50 lbs. per 1,000 square feet following aeration. Allow two weeks for the lime to work into the soil before applying organic or slow release fertilizer.

Use a 50% or greater slow release or natural organic fertilizer to promote robust root and stem development. Lower nitrogen and higher potassium rates are helpful. Follow the instructions on the label carefully; never apply more than 1 lb. of nitrogen per 1,000 square feet per application. Protect your health and the health of our surface waters by not using fertilizers combined with pesticides (weed and feed products).

► Top Dress with Compost and Overseed

Fall is a great time of year to overseed your lawn. Soil temperatures are still warm, and our rainy Pacific Northwest fall season provides the water needed to help the new grass plants get established.

Before seeding, apply 1/4" of compost with top dresser equipment or rake evenly throughout the lawn. Top dressing with compost is great for your lawn. It helps break down thatch, germinate seeds, improves water holding capacity and adds nutrients into poor soils.

Use a high quality Pacific Northwest seed mix suited for your shade/sunlight conditions, applying 6–8 lbs. per 1,000 square feet. Then apply peat moss with a peat moss roller to cover seed. Make sure grass seeds stay moist for about two weeks or until germination.

► Mulch Mow Leaves

When your shade trees start dropping leaves and they begin to pile up, they block sunlight from reaching your grass, causing harm to your lawn. Here's the good news! You can cut back on raking, blowing and bagging leaves by mulch mowing light layers of leaves into the lawn. To mulch mow, just select the mulching option on your mower and mow over fallen leaves.

Mulching your leaves (leaf-cycling) is faster and far easier on your back than raking; it's also easier on our landfills. Leaf-cycling adds nutrients and organic matter to your soil, giving you richer, healthier soil for free. Also, shredded leaf bits cover the bare soil between individual grass plants, helping to suppress weed seed germination!

For more information on natural lawn care, visit Thurston County's Common Sense Guide to Natural Lawn Care at <http://tinyurl.com/CSGGtoLawnCare>



Featured Creature

Migrating Dragonflies



Worldly Wonders: The Flight of Migrating Dragonflies

Along with billions of butterflies, moths and other insects, dragonflies migrate across every continent except Antarctica. Researchers actually radio tag dragonflies and track them from planes! Using transmitters, they have found that dragonfly migration is similar to that of songbirds. How so? Prior to migration dragonflies build up their fat reserves for the long flight, wait for favorable winds, fly during the day, take rest breaks and can reorient themselves if they lose their way.

What isn't known is where they end up, but some species, such as the green darner dragonfly, migrate as far south as Mexico. Among 5,200 dragonfly species worldwide, green darner dragonflies number among the 25–50 species of dragonflies thought to be migratory. Each summer, the green darner migrates north to the northern U.S. and Canada and returns in the fall to southern climates with their offspring.

In the Pacific Northwest, dragonflies are seen moving southward during the months of August and September. Dragonflies have been correlated with the migration of hawks. Many scientists and citizens track and record their observations during hawk migrations. Not only do the citizens note the number of hawks seen, they also keep track of the numbers of dragonflies observed. A 1995 study done by Frank Nicoletti showed that kestrels (our smallest falcon) migrated most when dragonflies were in migration. He noted that when the kestrels were flying at midday, they were not eating dragonflies. Later in the afternoon, when the kestrels flew lower, a majority of the birds were observed eating dragonflies.

To better understand dragonfly migration, the Migratory Dragonfly Partnership (MDP) was launched by US Forest Service International Programs. MDP was developed so participants would have a centralized process for reporting monitoring results. MDP uses research, citizen science, education and outreach to understand North American dragonfly migrations and promote conservation of dragonflies and their wetland habitats. MDP has partnered with the Hawk Migration Association of North America.

Participants with MDF track five main migratory dragonfly species in North America during their fall and spring flights, as well as monitoring at local ponds throughout the year. Data gathered in 2013 spanned from Saskatchewan and British Columbia in

Canada to as far south as Mexico. Information gathered by volunteers is providing an understanding of the relationships between migrant and resident populations of different species and their relationship with migrating hawks.

If you are interested in contributing to migration monitoring or collecting information on local ponds, visit <http://www.migratorydragonflypartnership.org>.

NISQUALLY WATERSHED FESTIVAL

- Saturday, September 26
- 10 a.m. – 4 p.m.
- Nisqually National Wildlife Refuge



Join Stream Team at the 26th Annual Nisqually Watershed Festival

This year's festival includes numerous fun and educational activities, including main stage presentations featuring music, dance and live wildlife shows with fascinating reptiles and birds. The Red Salmon story tent will be back along with salmon fish printing (bring a clean light color T-shirt), a marine creature tank and more! So come out and celebrate the beauty and cultural history of this amazing 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 at www.streamteam.info for a two hour shift.

FUNGAL FORAGING FORAY •••••



- Saturday, November 7
9 a.m. – 3 p.m.
(Stay as long as you like)
- Capitol Forest
(Specific location TBD)
- Van Pool available leaving
Olympia City Hall 8:30 a.m.



Fungal Foraging Foray

Few things are pursued with such a broad spectrum of enthusiasm as gaining an understanding of the kingdom fungi. Loathed by as many as are enthralled by them, fungi in their fruiting form have an effect on some which can border on the maniacal. Some are intrigued by kingdom fungi's complexities which have enabled similar morphological traits to converge as well as separate across phyla. Others are more entranced by the mystical, spiritual and medical benefits alleged by some of the kingdom fungi. Some just love the pretty colors while others have more gastronomical hopes in mind. If you are looking to gain a better understanding of local, delicious, edible fungi in our area, join up for a day of foraging with Stream Team.

Our guide Marcus Goodman has a B.S. in Plant Ecology/ Mycology from The Evergreen State College, and he manages the City of Olympia's wastewater and stormwater systems.

WHAT TO BRING:

- Weather-appropriate clothing, footwear, etc.
- Small backpack with water, lunch and personal items needed for a day in the woods.
- Small knife and 1 inch paint brush (for cleaning).
- Basket or other device to carry foraged mushrooms (no plastic bags!)
- Discover Pass for parking. Vanpool available.

RECOMMENDED:

Field guides such as: Mushrooms of the Pacific Northwest (Trudell & Ammirati, 2009); Mushrooms Demystified (Arora, 1986); All the Rain Promises and More (Arora, 1991).

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



Featured Waterbody

Swift Creek



Swift Creek

Swift Creek, a small but very productive tributary stream of McLane Creek, is nestled on the flanks of Thurston County's Black Hills just beyond the advancing influence of West Olympia. Swift Creek begins in Capitol Forest west of Delphi Road, passes under Cedar Flats Road and joins McLane Creek less than a half mile upstream from the Mud Bay estuary and HWY 101. While the lower reaches of Swift Creek consist of low density residential development and some agriculture, the many small tributaries and headwaters of Swift Creek are located in state-owned forest lands that are managed for timber production by the Washington Department of Natural Resources.

McLane Creek is the more well-known creek, thanks in large part to the popular nature trail off Delphi Road (which is also one of the best locations to view spawning chum salmon!). Each fall, the smaller Swift Creek consistently supports a larger run of returning adult chum salmon. Year after year, the Washington Department of Fish and Wildlife and the Squaxin Island Tribe conduct salmon spawning surveys to estimate the salmon population return size. Despite its relatively small size, Swift Creek has between three to five times as many returning adult chum as McLane Creek, providing high biological value to South Puget Sound with its quality salmonid habitat.

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. Several large active beaver ponds provide essential off-channel habitat for coho salmon fry during dry summer months and during the winter flood season. In addition to chum and coho salmon, Wild Fish Conservancy found populations of native coastal cutthroat trout, sculpin and brook lamprey.

Fish passage barriers were noted at several sites. Fish passage barriers included undersized and failing, crushed culverts with associated plunge pools that block fish from migrating upstream. Identified fish passage barriers are reported to Washington Department of Fish and Wildlife and submitted for restoration projects. A natural barrier waterfall also exists on the mainstem of Swift Creek. The Wild Fish Conservancy has posted the survey results, 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.

Information provided by Jamie Glasgow, Wild Fish Conservancy

In 2013, the nonprofit organization, Wild Fish Conservancy surveyed Swift Creek to map the location of the creek and its tributaries, characterize fish species composition, identify migration barriers and identify habitat restoration opportunities.



Protecting Our Water

When Removing Moss

Living in the beautiful green Pacific Northwest means living with moss. Preventing moss buildup from damaging structures such as homes, sheds, driveways, sidewalks and patios can be tricky business. Going to the store and picking up whatever moss killer catches your eye can lead to problems, including possible toxin exposure to pets and children and contamination of our water resources.

Moss requires three things to flourish: moisture, shade and acidic conditions. Reducing these conditions is the first recommended step in reducing problems from moss. Hand removing moss is the second step. Using chemical controls is recommended as a last resort.

It is illegal to discharge any substance other than rain water or snow melt into a water body. This means that allowing moss killers to directly enter any water body is illegal and could lead to a fine. **If your roof drainage system is tied directly to any water body, including a stormwater pond, you must disconnect the drainage system before using any chemical moss control.**

Tips to Reduce and Remove Moss from Structures:

- Selectively prune vegetation to minimize shade in mossy areas.
- Ensure structures are sloped properly to drain away excess water.
- Scrape moss by hand. For roofs, remove moss carefully with a putty knife. A flat-bladed shovel or scraper can work on hardscapes.
- Driveways, sidewalks and most patios may be pressure washed. Never pressure wash roofs, as this can damage them.
- Use a sprinkle of baking soda on mossy structures to increase the pH to a more alkaline condition. Alternatively, spraying with vinegar, a weak acid, can also kill moss.
- Install zinc strips to the peak of roofs. In large amounts, zinc can be toxic to pets, wildlife and aquatic life, but zinc strips release minimal amounts of zinc during each rainfall.
- If a chemical moss killer is used, the least toxic products are ones which contain ammonium or potassium salts of fatty acids. These are low risk to pets and wildlife but still toxic to aquatic life. They must not be allowed to drain directly to any water body.
- Moss killers containing zinc sulfate are highly toxic to aquatic life. Use only if treated areas do not drain directly to a water body.
- More moss prevention tips and tables listing specific brands of moss killers and their toxicity ratings can be found at www.growsafegrowsmart.org.

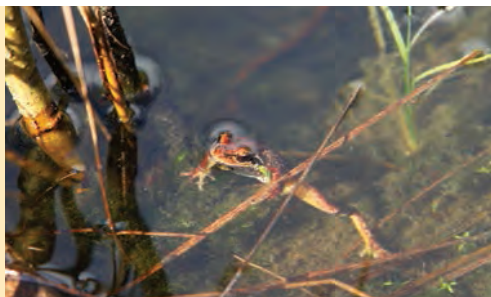


Amphibian Road Survey Training

Interested in mapping frog and salamander migrations? Seasonally, frogs and salamanders migrate from aquatic breeding habitat to upland terrestrial habitat. Usually, they migrate on dark and rainy nights, and often, this means crossing busy roads. Unfortunately, many do not make it across these roads, causing populations to be decimated.

Join us for a presentation featuring special guest, Michelle Tirhi of Washington Department of Fish and Wildlife to better understand the perils migrating amphibians face, and to learn how you can help document their migrations. The training will instruct volunteers on data collection for migrating amphibians as well as recording traffic mortalities. The training will include an actual night survey at nearby Kaiser Road.

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



■ Wednesday, October 14

CLASSROOM PRESENTATION •••••

■ 6 – 8 p.m.

■ Black Lake Fire Dept.,
125 Delphi Rd NW, Olympia

FIELD TRAINING •••••

■ 8 – 9 p.m.

■ Kaiser Rd



Kids' CORNER

Salmon Dot-to-Dot & Fun Facts



Salmon follow their senses to get back home!

Young salmon learn the smell of their native stream before migrating to the ocean. Then, when they are ready to return home, they follow the scent back to the stream where they were born!

the
LARGEST SALMON
caught on record
weighed

A FEMALE CHINOOK
can produce
more than
4,000 eggs

126 POUNDS

HOW TO REGISTER FOR EVENTS



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



Select the event for which you plan to register



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



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



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

by participating in four types of Stream Team events:

- Macro, Amphibian or Forage Fish Monitoring
- Salmon or Sound Stewarding
- Tree Planting or Maintenance
- Educational Workshop

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

Stream Team *Events*

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

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

SEPTEMBER

What's Blooming in Budd?

Citizen Plankton Monitoring

PORT PLAZA DOCK:

Thurs., Sept. 3, 10, 17 & 24 • 2 – 2:45 p.m.

LOTT WET SCIENCE CENTER:

Thurs., Sept. 3, 10, 17 & 24 • 3 – 4 p.m.

Help gather phytoplankton samples from Port Plaza Dock and/or observe live samples on the big screen at the LOTT WET Science Center. See pg. 4 for more details. Register online.

Forage Fish Surveys

BURFOOT PARK: Thurs., Sept. 10 • 9 a.m.

WEST BAY PARK: Sat., Oct. 10 • 9 a.m.

TESC: Tues., Nov. 10 • 9 a.m.

Survey various beaches for sand lance and surf smelt eggs. Surveys are tide dependent so survey times will be variable.

Trained and untrained volunteers welcome!

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

Eyes Over Puget Sound: Poster & Lecture Session

Thurs., Sept. 17

POSTER SESSION: 4 – 5:30 p.m.

LECTURE: 6 – 7:30 p.m.

Olympia City Hall
601 E 4th Ave, Olympia

See page 6 for details. Register online. For more info., contact Michelle at mstevie@ci.olympia.wa.us

Salmon Stewards Chinook Field Training

Sat., Sept. 19 • 10 a.m. – 1 p.m.

Tumwater Falls Park

Open to general public. Staff from WDFW will be discussing the Chinook hatchery run followed by a history talk and walk along the Deschutes River at Tumwater Falls Park. For more info., contact Debbie at dmsmith@ci.tumwater.wa.us. Register online.

Celebrate National Public Lands Day!

Sat., Sept. 26 • 10 a.m. – 1 p.m.

Priest Point Park

2600 East Bay Drive Olympia, Shelter #4

See pg. 2 for details. Register online.

26th Annual Nisqually Watershed Festival

Sat., Sept. 26 • 10 a.m. – 4 p.m.

Nisqually National Wildlife Refuge

Volunteer for a two-hour shift at the Stream Team booth and receive a free Stream Team T-shirt. See page 10 for details. Register online.

OCTOBER

Cider Sunday & Return of the Chinook Event

Sun., Oct. 4 • 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. 3 for details. Register online.

Amphibian Road Survey Training

Wed., Oct. 14 • 6 – 8 p.m.

McLane Black Lake Fire Department
125 Delphi Rd NW, Olympia

See page 13 for details. Register online.

Chum Salmon Stewards Training: Basic Salmon

CLASSROOM SESSION: PART 1

Wed., Oct. 28 • 6 – 8 p.m.

Location: TBD

See page 5 for details. Register online.

Percival Creek Revegetation Project

Sat., Oct. 31 • 10 a.m. – Noon

Percival Creek at Sapp Rd, 2352 Sapp Rd SW, Tumwater

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

NOVEMBER

Chum Salmon Stewards Training: Chum Run

CLASSROOM SESSION: PART 2

Wed., Nov. 4 • 6 – 8 p.m.

Location: TBD

See page 5 for details. Register online.

Fungal Foraging

Sat., Nov. 7 • 9 a.m. – 3 p.m.

Capital Forest (Specific location TBD)

Vanpool leaving Olympia City Hall @ 8:30 a.m.

See page 11 for details. Register online.

Chum Salmon Stewards Field Training

Sat., Nov. 7 • 10 a.m. – Noon

Location: TBD

See page 5 for details. Register online.

Naturescaping for Water & Wildlife Workshop

Thurs., Nov. 12 • 6 – 9 p.m.

Lacey Community Center, 6729 Pacific Ave SE, Olympia

See page 8 for details. Register online.

Work Party at Woodland Creek Community Park

Sat., Nov. 14 • 10 a.m. – Noon

Woodland Creek Community Park

Register online. For more info., contact Kim at kbenedic@ci.lacey.wa.us

Chum Salmon & Cider Event

Sun., Nov. 15 • 11 a.m. – 1 p.m. 

McLane Creek Nature Trail*

Enjoy free hot spiced cider and donuts while learning from trained Salmon Stewards about the wild chum salmon spawning in McLane Creek. No registration required.

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

To Register a Group

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



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



Stream Team

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

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

Help Keep Storm Drains Clear!

Storm drains, also known as catch basins, are an integral part of pollution and flood prevention in Thurston County. 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 stream, lake or Puget Sound. City and County crews routinely use a Vactor (vacuum) truck to clean public storm drains, but crews can always use an extra helping hand. Neighbors working together to ensure their local storm drains remain clear will go a long way in preventing localized flooding. Storm drains on private property are not serviced by government crews, and are required to be maintained by property owners.

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 or compost bin, 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. If your local storm drains are on private property, you will need to hire a Vactor truck service on a regular basis to keep your storm drains functioning properly.

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 should go 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. 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

