

- 2 Bald Eagle Kayak Tour
- 3 Stormwater Runoff: The Home, Lawn & Garden Connection
- 4 Rain Gardens: Mini Stormwater Treatment "Plants"
- 4 Free Consultations with Stormwater Stewards
- Plastics & Water: A Dangerous Mix for Aquatic Life
- **6** Featured Water Body: Pattison Lake
- 7 Lamprey: An Overlooked Fish
- 8 A Look at 2013 with Your Stream Team
- 10 Americorps Staff

- **10** Amphibian Egg Mass Monitoring Results: Species Occupancy
- **11** Stream Team Workshops
- 14 Kids' Corner
- 15 Calendar of Events
- 16 Holiday Trees: Give Back to Streams



## **3rd Annual Bald Eagle Kayak Tour in Mud Bay**

#### Sat., Dec. 7 • 10 a.m. – 1 p.m.

Bundle up and join Stream Team and City of Olympia's Parks, Arts, and Recreation for a unique opportunity to explore Eld Inlet's Mud Bay at Allison Springs. See the restored pocket estuary at Allison Springs, and experience chum spawning and bald eagles in their winter habitat. We will leisurely paddle Mud Bay into the mouth of McLane Creek to see eagles on their feeding grounds. Special guest biologist, Lindsy Wright, US Fish and Wildlife Service will discuss eagle behaviors, habitat and new trends.

To register, call City of Olympia Parks, Arts, and Recreation at 360-753-8380 or visit olympiawa.gov/experienceit online: Program # 17467 (Special Stream Team cost \$25).

Space is limited to 15 participants. Children ages 12–16 may attend with an adult. Ages 17–18 may attend with signed permission. Moderate walking on uneven ground will be required. Kayaks and safety equipment provided.

Staff contact: Michelle Stevie at mstevie@ci.olympia.wa.us

**ON THE COVER:** Western toad egg mass. Photo taken by Jessica Moore, Northwest Trek.

#### **STREAM TEAM MISSION**

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

Steam 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:

ThurstonStreamTean

#### **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: Cynthia Taylor Tel: 360-491-5600 EXT 5734 TDD: 1-800-833-6388 CTaylor@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 TDD: 360-753-8270 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

#### **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

# The Home, Lawn & Garden Connection

We've all seen it: sheets of water running off driveways, patios, sidewalks and roads. What we often do not see is the pollution that the stormwater carries with it into the nearest stream, lake or Puget Sound.

Before there were rooftops, driveways, roads and parking lots, most of Thurston County was covered with multi-layered forests. When it rained, much of the rainwater never reached the ground because it was intercepted by leaves and branches in the forest canopy and evaporated. The rainwater that did reach the ground did so by slowly dripping through layers of branches and leaves and then onto the forest floor and infiltrating into the soil to become groundwater. The forest floor acted like a sponge because

the decaying matter and the plant root network soaked up much of the rainwater. In this way, the rainwater was "managed" where it fell and rarely resulted in stormwater flooding or pollution.

Today, there are a wide variety of "green" stormwater solutions that homeowners can use to help manage stormwater runoff on-site, encouraging their landscape to function more naturally like a forest. Some practices may be easier to install and use than others, but what they all have in common is that they encourage rainwater to soak into the ground rather than running off into the stormwater system. Some easier green stormwater solutions include planting trees, adding compost to soils in your lawns or gardens and collecting rain water from roofs. Other practices may take more effort, planning and/or engineering, such as installing a rain garden, permeable pavers or a green roof.

If you would like to find out about "green" stormwater solutions that you could use at your home, you can request a free consultation from a highly trained Stormwater Stewards volunteer. Read the Stormwater Stewards article on page 4 for more information.





#### **Benefits of Rainwater Soaking in On-site:**

- Reduce flooding
- Remove pollutants
- Replenish groundwater

#### You Can Make a Difference at Your Home:

- Plant native trees or shrubs in your yard
- Improve soil health and water retention by adding compost
- Aerate your lawn to reduce soil compaction and improve the health of grass roots
- Direct downspouts into a rain garden, rain barrel, rock-filled trench or grassy area
- Install permeable pavers in walkways and/or driveways

# Mini Stormwater Treatment "Plants"



Rain gardens are pretty, but do they work? U.S. EPA conducted a study to find out how effective they are at removing certain types of stormwater pollution from runoff. The table below shows their findings.

Pollutant	Source of pollutant	% Removed by rain garden	
Copper	Roof shingles, oil, grease, soil	43-97%	
Lead	Roof shingles, oil, grease, soil	70-95%	
Zinc	Roof shingles, oil, grease, soil	64-95%	
Phosphorus	Detergents, fertilizers, pet waste	65-87%	
Total nitrogen	Fertilizer, pet waste, organic matter	49-67%	
Calcium	Fertilizer, pet waste, organic matter	27%	

Source: U.S. EPA on National Pollutant Discharge Elimination System stormwater program

Jennifer McIntyre, a researcher with Washington State University, and her research team recently conducted a study in which juvenile coho fry were exposed to stormwater runoff directly, and some were exposed to the runoff that had been filtered through rain garden soils. Within twelve hours, the coho exposed to the unfiltered runoff all died, while all the coho exposed to the rain garden filtered runoff survived. You can read more about this study at http://www.pbs.org/newshour/bb/ environment/jan-june13/pledge\_03-14.html

Rain gardens are much more than beautiful features in your landscape. They provide food and habitat for wildlife and help remove harmful pollutants from stormwater runoff, while adding an attractive landscape feature to your yard.

You can learn more about rain gardens, including how to design and install them, at one of Stream Team's Rain Garden workshops.

## Free Consultations with *Stormwater Stewards* Now Available

Looking for ideas for dealing with stormwater runoff on your property? Stormwater Stewards is a free program offered by Thurston County Water Resources, the Cities of Lacey, Olympia and Tumwater and WSU Extension, which is modeled after the highly successful Master Gardener program. Stormwater Stewards are highly trained volunteers who can help residents learn about green stormwater solutions that protect water resources while improving their home and landscapes. Stormwater Stewards can make recommendations on:

- Drainage improvements
- Techniques to infiltrate stormwater on-site
- Sustainable landscape techniques
- Wildlife habitat
- Healthier plants and lawns
- Designing and constructing rain gardens
- Permeable pavers and more

For more information or to request a Stormwater Stewards consultation, contact Krista at Krista@nativeplantsalvage.org or 360-867-2166.



## ···· *Plastics \$ Water :* ···· A Dangerous Mix for Aquatic Life

Humans use plastics in our daily lives in a myriad of products, and, through littering, ship spills and other actions, some of these plastics end up in our waterways. Plastics will break down into smaller and smaller particles, but they never "go away". Even plastics labeled as biodegradable need exposure to air to biodegrade, so they will never totally break down in water.

Plastics that get into our waterways can harm fish and other wildlife. Photos of aquatic wildlife tangled in plastic bags, fishing line and other plastic debris show up regularly on our media. A gray whale found dead in West Seattle in April 2010 had 20 plastic bags in its stomach, along with other human garbage.

Studies have shown that aquatic animals will eat plastic particles. Plastic does not get digested and has the effect of causing the animal to feel full even though it has not taken in enough nutrients. This can lead to malnutrition or starvation of the animal. Further, plastics can contain harmful substances, such as BPA (bisphenol A), polystyrene and PCBs (polychlorinated biphenyls), which accumulate in animal tissues and cause biologic harm.

Ocean currents cause plastic debris to collect together into large, moving masses. Ocean currents that spiral around a central point in a large scale circular feature, clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere, are called gyres. Gyres which contain large amounts of plastics and other marine debris have been dubbed "garbage patches". While this term conjures up an image of a mass of garbage floating on the surface of the ocean, in reality, it mostly consists of a mass of



subsurface plastic, mainly micro-plastics (less than 5 mm), swirling around with the ocean currents. The largest, and most famous, "garbage patch" occurs in the North Pacific Ocean.

Accidents involving ships are one cause of plastics being spilled into our waterways. Everything from industrial plastics to loads of rubber duckies has made its way into the ocean via ship spills. The most insidious spills are of shiploads of microplastic pellets used in the manufacture of plastic products. These particles, called nurdles, are particularly harmful to wildlife. These spills are hard to clean up. Their small size is comparable to plankton, so scooping them up would also remove plankton, which is vital for the food web in our oceans.

A surprising source of plastics in our waterways comes from household products used and flushed down the drain. From microbeads in body care products washed down the shower drain to tiny bits of synthetic fabric, such as fleece, discharged with washing machine water. All these household products contribute to the problem. Sewage treatment plants screen out larger plastic items that get into the sewage waste stream, but microplastics pass right through. You can help eliminate this source by checking the products you buy. Avoid anything with microbeads and choose products with a minimal use of plastic packaging. And, of course, bring your own reusable bag to the store!



For several years now, Pattison Lake, like several other Thurston County lakes including Lawrence and Black Lake, have been subject to toxic blue-green algae blooms. Blue-green algae blooms, a cyanobacteria organism, typically occur in local lakes in late August, as lakes increase in temperature after prolonged summer sunlight.

While not all blue-green algae is toxic and is merely an unpleasant nuisance, it can, in some cases, create conditions hazardous to people and pets. Thurston County Environmental Health monitors some lakes. When laboratory analysis reveals the presence of biotoxins, the county issues an advisory. When an advisory is in place, people are warned to avoid ingestion of water, through swimming or boating activities, and to keep pets out of the water.

To learn more about toxic bluegreen algae blooms go to: www.doh. wa.gov/CommunityandEnvironment/ Contaminants/BlueGreenAlgae





CREDIT: DAVE SUTHERLAND

## **Pattison Lake**

Pattison Lake is the middle lake of the interconnected horseshoe shaped tri-lakes system that also includes Hicks Lake and Long Lake. Located in the Lacey urban growth area, Pattison Lake is south of Mullen Road and north of the Yelm Highway. Just to the north, Hicks Lake provides inflow to Pattison Lake through a culvert that passes under Mullen Road. Thus, Pattison Lake is part of the headwaters of the Woodland Creek system.

Sometimes erroneously called Patterson Lake, this lake is actually named after early Thurston County settler, James Pattison who, along with his wife, Jane Willey Pattison, crossed the Oregon Trail in 1849 and staked their donation land claim on the southwestern side of the lake.

With a surface area of 265 acres, Pattison Lake also receives inflow through a groundwater connection in addition to the Hicks Lake connection. The lake is shallow with an average depth of only 14 feet and a maximum depth of 22 feet. With an elevation of 154 feet above sea level, Pattison Lake is eight feet lower than Hicks Lake. The lake consists of two basins, a smaller north basin that is 75 acres and the south basin of 190 acres. This is the result of the presence of a railroad trestle the splits the lake, creating a narrow waist. Extensive fill was used when the trestle was constructed, reducing the length of the structure and its cost. Every day, dozens of trains, both freight and Amtrak passenger trains, cross Pattison Lake on this main Burlington Northern trunk line which carries traffic up and down the west coast. A small, extremely shallow channel allows passage of small boats and water to flow between the two basins.

Pattison Lake is a very popular fishing lake and is stocked regularly with rainbow trout. It also has resident largemouth bass, yellow perch, black crappie and rock bass. Washington Department of Fish and Wildlife provides public access on the northeast side of the lake at a boat launch located off Kagy Street. Unlike both Hicks and Long Lakes, Pattison Lake has a speed limit of 5 miles per hour. Thus, no jet skis or water skiers are present, making Pattison Lake a popular canoeing and kayaking lake as well as a favorite for fishing. A Discover Pass is required, and WDFW fishing regulations apply.

Like other lakes in the Thurston County, Pattison Lake once featured popular resorts, which were destinations for tourists from the 1910s through the 1930s as people from more urbanized locations such as Tacoma and Seattle sought recreational opportunities. Five such resorts existed on Pattison at one time, including Mullen's Resort, LaVista Pavilion, Cedar Beach, Kelly's Beach and Forest Beach.

Most prominent of these was Mullen's Resort, located on the north end of the lake, just off today's Mullen Road. Owned and operated by Frank and Ruby Mullen. Mullen's resort featured 15 rental cabins for fisherman and others seeking rest and relaxation, 115 rental

boats, 17 canoes, a wooden water slide attraction, and, most impressively, a high dive platform and board which required scaling some 88 steps to its top. The Northwest Amateur Athletic Union competitive dive team practiced on this colossal tower.

The LaVista Pavilion, with its glistening maple floors could seat 268 diners. Later in the evening the dance floor became popular as area orchestras attracted scores of dancers. In 1938, the pavilion was converted into a roller rink where kids both young and old could show their skating skills. Like the other area resorts, the gas rationing brought on by World War II signaled the beginning of the end for these destination beach resorts. Today, small cabins, now rental units, still remain on the shores of Pattison Lake, a reminder of earlier times.

## Lamprey, an overlooked fish ... 🕯

As an important part of our coastal river ecosystems, lamprey has played a significant role in the evolution of our streams. Like Pacific salmon, they are a valuable part of the food web, providing essential nutrients and food to both the fresh water and marine ecosystems. They are also a valuable part of the diets and culture of many Pacific NW tribes. In recent times, these ancient fish have been overlooked and are now in decline throughout their range. To address this decline, restoration plans have been created to restore their populations and their habitat.

Restoration plans seek to improve migration passage, restore stream habitat and improve water quality by reducing toxic contamination. Population monitoring and research is also an integral part of these conservations plans, as little is actually known of their precise habits and needs.

There are three species of lamprey that occur in the State of Washington: Pacific lamprey (Entosphenus tridentatus formerly known as Lampetra tridentate), Western brook lamprey (Lampetra richardsoni) and river lamprey (Lampetra ayresi). All three lamprey populations are considered to be depressed and at risk of extinction due to habitat loss, pollution and migration passage constraints. Habitat losses include reduced stream flows, water diversions, dredging, stream bed scour, pollution and degradation of riparian vegetation.

#### Distribution

Lamprey range from Alaska to Baja California and are also found in Japan. Historically, Pacific lamprey have been the most widely distributed lamprey species along the west coast of the US. This is the only species where individuals have been known to spawn more than once. Pacific lamprey is an important food fish, especially along the Columbia River and its tributaries, where it was once prolific. Today, lamprey returns are critically low.

In general, Pacific and river lamprey are anadromous, and each returns to coastal streams and rivers after 1–3 years of feeding in the ocean to spawn. Anadromous lamprey adults have a jawless sucker-like mouth that enables them to be parasitic and feed on a variety of fish including Pacific salmon. Adults stop feeding when they return to spawn.

Of the three species, only the Western brook lamprey spend their entire life cycle in fresh water. It is believed that brook lamprey movement is minimal, and most individuals remain in their streams of origin. Western brook lamprey are nonparasitic and do not feed as adults. The only function of adults is to spawn.

#### Spawning

Both adults construct the redd (spawning nest) by moving the gravel substrate with their sucker mouths. Redds are round depressions in gravel or cobble substrates with piles of gravel along the

## Featured Creature

## Lamprey

- Pacific lamprey up to 30 inches, weight 1 pound
- **River lamprey,** 7-12 inches
- Western brook lamprey less than 7 inches

side of the depression rim. Lamprey spawn in gravel located in pool tail-outs and low gradient riffles just like salmon.

Typically, adult lamprey die shortly after eggs are deposited and fertilized. Eggs hatch in 2 or 3 weeks, when newlyhatched ammocoetes emerge and drift downstream into low flow velocity habitats. Ammocoetes of each of the three species may remain burrowed in the stream bottom, living as filter feeders on algae and detritus for 2–7 years.

Management activities to preserve lamprey populations include migration modifications to fish ladders at major hydroelectric dams and stream culverts. Habitat restoration includes the protection of mainstem and tributary habitats, restoration of flood plains and side channel habitats, as well as reducing toxic contaminates, thereby restoring water quality parameters. Lamprey supplemental programs are also being considered to recolonize stream basins.

	Lamprey	Eels		
Range	Baja California to Alaska, Japan	Atlantic Coast, to the Gulf of Mexico, Caribbean		
Age of family	450 million years	5–7 million years, same as salmon		
Physical description	<ul> <li>Jawless fish with snake-like body and cartilage skeleton. Breathing holes, jawless sucking disc mouth and no fin rays</li> <li>Dark blue grey / brown</li> <li>7-30 inches and weigh up to 1 pound</li> </ul>	<ul> <li>Snake-like body, weak jaw, many small teeth and fin rays</li> <li>Brown on the top, yellow on the bottom</li> <li>Up to 5 feet long</li> </ul>		
Reproduction	<ul> <li>Pacific and river lamprey are anadromous; adults build redds in stream gravel, lay up to 100,000</li> <li>Adults die after spawning</li> <li>100,000 eggs to match</li> </ul>	<ul> <li>Catadromous (live in fresh water, but migrate to marine waters to breed)</li> <li>Lay 4 million eggs that float on water surface</li> <li>Adults die after spawning</li> </ul>		
Life history	<ul> <li>Larvae (ammocoetes) burrow into the muddy stream bottom to feed for 4–7 years; during metamorphosis, the juveniles develop eyes and sucking disc prior to migrating to the ocean. Mature 2–3 years before returning to fresh water to spawn.</li> <li>Western brook live entire life in fresh water</li> </ul>	Larvae live 1 year before migrating to fresh water streams; mature in fresh water 10-14 years before returning to the ocean to spawn		
Feeding	Larvae feed on algae, detritus and tiny invertebrates; adults are parasitic on larger fish and marine mammals	Invertebrates, detritus, frogs, fish		

References: Columbia River Inter-Tribal Fish Commission, United States Fish and Wildlife Service and Inland Fishes of Washington







Missy Ayres & April Roe, Americorps Volunteers

## **Americorps Staff**

City of Lacey and Thurston County have been granted Americorps volunteers through the Washington Service Corps to complete environmental education activities within their jurisdictions, including Stream Team activities. The Americorps members start in October and will be serving as full-time volunteers

through August 15, 2014. AmeriCorps is a federal program designed to provide meaningful service to young adults, ages 18-25 years old, which prepare them for work in their fields of interest. The program also provides the members with an education award at the end of their service which they can apply to continued education or student loans. City of Lacey welcomes Missy Ayres and Thurston County welcomes April Roe to their organizations and Stream Team!

Missy was born and raised in the Olympia/Lacey area. She is a graduate of the University of Washington with a bachelor's degree in Environmental Science. She enjoys spending time walking in the woods, kayaking on Puget Sound and spending time at the local Farmer's Markets in Thurston County. She has an interest in learning more about Environmental Education and improving her knowledge of invasive plant species. She is excited for the opportunity to get involved with Stream Team, to meet all the great volunteers and help recruit many new ones, too.

April moved from Pennsylvania to take the AmeriCorps position with Thurston County. She went to the Pennsylvania State University and graduated with a bachelor's degree in Environmental Resource Management. Her hobbies include swimming, fishing, and exploring state parks. Although a Pennsylvania native, she is excited to reside in and explore beautiful Thurston County!

## Winter Twig Identification Workshops

Add a new dimension to your winter outings when you join local plant experts to learn the secrets to identifying local shrubs and trees without their leaves. The Native Plant Salvage Foundation is offering "Winter Twig Identification," a 2.5-hour field class held at a West Olympia-area nature trail on Sunday, January 26. Choose either a morning class from 10 a.m. to 12:30 p.m. or an afternoon session from 1 to 3:30 p.m.

Advanced registration is required, so that participants can receive full details and directions. Contact the WSU Extension Native Plant Salvage Project at nativeplantsalvage@gmail.com or 360-867-2166. You can also register online and see more information at www.nativeplantsalvage.org

## **Amphibian Egg Mass Monitoring Results: Species Occupancy**

Pond	Long toed salamander	Northwestern salamander	Red legged frog	Chorus (tree) frog	Oregon spotted frog
Hansen					
Woodard Wetland					
Indian Summers					
66th Ave Pond A					
66th Ave Pond B					•
Mud Bay / 200 Delphi Road					
The Farm at South Bay Road					
Trillium Park					
11th Ave					
Tumwater Golf Pond A					
Tumwater Golf Pond B					
Tumwater Golf Pond C					
Frederick St					

To prevent extinction of the Oregon spotted frog, the U.S. Fish and Wildlife Service, is proposing to designate critical habitat for the Oregon spotted frog under the Endangered Species Act. This species is the most aquatic native frog in the Pacific Northwest. Factors for decline include: loss of habitat, non-native plant invasions, and the introduction of exotic predators such as bullfrogs. Surveying for critical habitat is essential for conserving this species. Citizen monitoring programs provide valuable data for resource managers.

## BACK YARD HABITAT & BIRD BOX BUILDING WORKSHOP ••••

- Sat., Jan. 11
- 10 a.m. Noon
- LOTT WET Science Center, 500 Adams St NE, Olympia



## AMPHIBIANS OF THE PACIFIC Northwest Workshop•••

- Sat., Jan. 25
- 10 a.m. 1 p.m.
- LOTT WET Science Center, 500 Adams St NE, Olympia



## **Invite Birds to your Yard!**

A few small additions can liven up your yard with the sights and sounds of birds all year long!

Guest speaker local bird expert, Burt Guttman, will discuss how to create habitat in your back yard. Burt is a member of the Faculty Emeritus in biology at The Evergreen State College. He has been a lifetime birder and is the author of several books on biological topics, including Finding Your Wings: A Workbook for Beginning Bird Watchers in the Peterson Field Guide Series.

Mr. Guttman will talk about the common local species of birds, their habitat needs, and how to enhance them to our backyards. Learn about the different adaptations that birds utilize for survival as they select specific nesting sites and choose certain foods.

Eco Woodworks local custom woodworker, Dave King, will instruct us on building a bird house for your back yard. Bird house kits will be available at no cost, and participants will get hands-on instruction for constructing a bird house kit.

Families welcome! Space is limited. One bird house per family/group. All registrants must commit to hanging the bird house in their yard.

To register for this workshop, or for additional information, visit www.streamteam.info and click on "Register".

Staff contact: Michelle Stevie at mstevie@ci.olympia.wa.us

## Are frogs singing in your neighborhood?

Have you ever wondered what types of frogs are singing? Why are they singing? And why do they only sing at certain times of the year?

If you are curious about frogs, toads, salamanders and newts, then join Stream Team with guest speaker Dr. Marc Hayes for a fun, informative workshop on Pacific Northwest amphibians.

Dr. Hayes is a herpetological ecologist and senior research scientist with the Washington Department of Fish and Wildlife. He has 40 years of experience working with amphibians and reptiles in Arizona, California, Costa Rica, Florida, Mexico, Oregon and Washington.

CREDIT: MICHELE BURTON

Dr. Hayes will discuss the most common amphibian species found in Thurston County. We will learn about each species' unique identifying characteristics, their life history stages and habitat requirements. The workshop will also focus on still water breeding species, their habitat needs and egg mass identification characteristics.

#### **Amphibian Egg Mass Surveys**

Amphibians lay their eggs in wetlands, stormwater ponds, and ponds in late winter through spring. If you have a yearning to get outdoors and like to play "I Spy", then join us in February thru March to survey local wetlands to identify and count amphibian egg masses. Attendance at the Amphibians of the Pacific Northwest Workshop is preferred, but not required, to participate.

#### **Field Class Date Will Be Announced**

Watch the Stream Team website calendar or bi-monthly Stream Team email for the egg mass survey field training date. The training will be scheduled on a Saturday in early February, depending on local amphibian breeding activity.

To register for this workshop, or for additional information, visit www.streamteam.info and click on "Register".

Staff contact: Michelle Stevie at mstevie@ci.olympia.wa.us

Stream Team Winter 2013 Newsletter • www.streamteam.info • 🖪 Thurston Stream Team

## NATURESCAPING WORKSHOP ••••

#### ■ Wed., Feb. 5

- 6 9 p.m.
- LOTT WET Science Center, 500 Adams St NE, Olympia



## BEYOND Landscaping Workshop •••

- Thurs., Feb. 27
- 6 9:15 p.m.
- City of Lacey Jacob Smith House, 4500 Intelco Loop SE, Lacey



12

## Naturescaping for Water & Wildlife

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 using less water.

#### Attend this workshop and learn:

- Planting for four-season interest
- Landscaping for tricky areas like slopes
- Easy ways to minimize lawns
- Water-wise ideas for your landscape
- · How simple landscape changes can save you time and money

#### Part 2: Landscape Plans

#### ■ Thurs., Mar. 6 • 6 – 9 p.m.

This optional class will enable participants to receive a free planting plan consultation! Bring your draft landscape plan and have it reviewed by local experts who can answer specific questions about your landscape and plant choices, and give their expert advice! Work on and/ or revise your plan during this workshop. Prior participation in the Naturescaping workshop is required.

Erica Guttman, WSU Native Plant Salvage Project, will teach the class.

To register for this workshop, or for additional information, visit www.streamteam.info and click on "Register".

Beautify Your Landscape While Protecting Water Resources

## Beyond Landscaping: Planting to Protect and Restore Shoreline Property

If you live along a stream, lake or Puget Sound, this workshop is for you! Living next to water is a special place and requires unique landscaping methods and approaches. Attend this workshop to learn how to improve the habitat, stability and beauty of your shoreline. This workshop is especially tailored for shoreline property owners. Topics include managing invasive species, choosing the right plants for revegetation, erosion and geese control, tree care and view maintenance, and how to make an affordable action and planting plan. Learn from each other: with other shoreline property owners in attendance, the conversation and question and answer may give you landscaping tips and strategies for your property!

#### Part 2: Beyond Landscaping—Landscape Plans

#### ■ Sat., Mar. 15 • 10 a.m. – 2:30 p.m.

This optional class will be offered for a limited number of participants. After the Beyond Landscaping workshop, participants will develop their own landscape plan for their shoreline property. During Part 2 of the class, participants will meet with experts to review and discuss their landscape plan. Following the plan review, the class will travel to a field site for a hands-on session on slope planting techniques, including how to plant fascines and live stakes on a steep slope-site, as well as other practices to minimize impact and maximize stability! Please register separately for this class.

To register for this workshop and field class, or for additional information, visit www.streamteam.info and click on "Register".

## LICHEN WORKSHOP ••••

- Sat., Feb. 22
- Lecture: 10 a.m. – Noon LOTT WET Science Center, 500 Adams St NE, Olympia
- Field Trip: 1 p.m. – 2 p.m. Priest Point Park Rose Garden, 2600 East Bay Drive NE, Olympia



## RAIN GARDEN WORKSHOP••••

- Thurs., Jan. 16
- 6:30 8:30 p.m. with optional assistance to create a rain garden planting plan from 8:15 – 9 p.m.
- Tumwater Fire Station, 311 Israel Rd SW, Tumwater

- OR

- Thurs., Apr. 24
- 6:30 8:30 p.m. with optional assistance to create a rain garden planting plan from 8:15 – 9 p.m.
- LOTT WET Center Board Room, 500 Adams St NE, Olympia

## The World of Lichens!

With common names like Fairy Puke and Golden Moon Glow, who wouldn't be interested in these fascinating organisms? Join Stream Team for our second annual field class with arborist and lichen enthusiast, Micki McNaughton.

Lichens are unusual organisms; they are not true plants but a combination of two organisms living symbiotically together, algae and fungus! In this workshop we will learn how these two organisms support each other in a symbiotic relationship to provide for each other's survival needs.

Discover why lichens are ecologically important to the health of our environment, their many uses, and how they are an indicator of air quality.

Micki McNaughton is a Certified Arborist and has a degree in Ecology and Horticulture. She is currently working on an advance degree in Restoration of Natural Systems, as well as working as the Urban Forestry Special Project Coordinator for the Washington State Department of Natural Resources.

To register for this workshop, or for additional information, visit www.streamteam.info and click on "Register".

Staff contact: Michelle Stevie at mstevie@ci.olympia.wa.us

pioneer on newly exposed rock surfaces

Pilophorus acicularis: Commonly known as Devil's Matchstick; a true



## Let It Soak In: Two FREE Rain Garden Workshops in 2014



Thinking about adding a rain garden to your landscape? Or wondering what a rain garden is? A rain garden is a great way for you to make a big difference in protecting our local waterways and Puget Sound, while beautifying your yard. Rain gardens are shaped and sized to fit your yard and planted with a variety of flowers, shrubs and ornamental grasses. Rain gardens act like a forest by collecting, absorbing and filtering stormwater runoff from rooftops, driveways, patios and other areas around our homes that do not allow rainwater to soak back into the ground.

Attend this hands-on workshop to learn how to add one of these lovely "stormwater" features to your yard. The workshop will give you all the details you need to design and install a beautiful rain garden that will manage your home's stormwater drainage while protecting our local water resources. The basic instructional workshop will be followed by optional hands-on activities for those interested in more in-depth learning. Participants will receive a full-color rain garden poster and copy of WSU's "Rain Garden Handbook for Western Washington."

The class will be taught by Erica Guttman. Erica Guttman has been a hands-on environmental educator for over 25 years and has been designing, installing, researching, and teaching about rain gardens for over seven years. She has contributed to several rain garden publications and created a 30-minute video, "Building a Rain Garden: Keeping our Pacific Northwest Waters Clean." She holds an MA in ecological restoration with a focus on the Puget Sound nearshore.

If you live in Olympia, Lacey, Tumwater or Thurston County, a rain garden installation on your property could be eligible for a rebate! Go to www.streamteam.info/actions/ raingardens for more information the guidelines and applications.

To register for this workshop, or for additional information, visit www.streamteam.info and click on "Register".





5. pollutants 6. water 8. soil 10. air 12. health 13. cool

Jokes — Q: How do trees get on the internet? A: They log in Q. Why are trees such bad knitters? A. They are always dropping their needles. Crossword — Across 2. food 7. greenhouse 8. shade 9. plant 11. habitat 14. seasons Down 1. connection 3. oxygen 4. save

## HERE ARE THE REASONS WHY: ACROSS

- 2 Nuts, seeds, and berries! Trees provide \_\_\_\_\_ for wildlife.
- 7 By absorbing carbon dioxide, trees help offset the \_\_\_\_\_ effect.
- 8 Hot? Want to be protected from UV rays? Look for a tree and sit in its
- **9** \_\_\_\_\_ trees with Stream Team and have fun, while improving habitat.
- 11 Trees provide \_\_\_\_\_\_ for birds, squirrels, bats, bees, owls, and other wildlife.
- 14 Observe a tree all year long: you will see it changes with the \_\_\_\_\_

## DOWN

- 1 Can you think of a tree that helps you feel a \_\_\_\_\_\_ to a special place?
- **3** Living things need this to survive. Luckily, trees produce it!
- 4 To \_\_\_\_\_\_ energy, plant trees around your home and cut your summer air conditioning need by 50%.
- 5 Trees prevent stormwater from carrying \_\_\_\_\_\_ to Puget Sound by minimizing the amount of runoff that goes into a storm drain.
  - Shade from trees slows evaporation from thirsty lawns. This means you need to \_\_\_\_\_ less!
    - On hillsides or steep slopes, trees slow runoff and hold \_\_\_\_\_\_ in place.
- Take a deep breath! Trees improve our
   \_\_\_\_\_ quality!
- 12 Trees promote human \_\_\_\_\_\_ by reducing stress and aiding in relaxation.
- **13** By releasing water vapor into the air through their leaves, trees \_\_\_\_\_\_ a city by up to 10°F.

Reasons to plant tree facts provided by TreePeople: http://www.treepeople.org/top-22-benefits-trees

14

# Stream Team Events

For additional events, event details, or to register, please visit our website and click on "Calendar" or "Register" To talk with Stream Team staff about any of the events listed on this page, please call 360-438-2672

## DECEMBER

## **JANUARY**

#### **3rd Annual Bald Eagle Kayak** Tour 😂

Sat., Dec. 7 • 10 a.m. - 1 p.m.

Mud Bay at Allison Springs

See page 3 for details.

To register, call City of Olympia Parks, Arts, and Recreation 360-753-8380 or visit olympiawa.gov/experienceit online: Program # 17467





### 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 gualifying events.

#### **Back Yard Habitat and Bird Box** Building Workshop (💗)

Sat., Jan. 11 • 10 a.m. - Noon LOTT WET Science Center See page 11 for details.

#### "Holiday" Tree Planting (💗)

Sat., Jan. 11 • Noon – 2 p.m.

Woodland Creek Community Park

See page 16 for details.

Contact Cynthia Taylor at CTaylor@ci.lacey.wa.us or 360-491-5600 ext. 5734 for more info.

#### Let It Soak In: Rain Garden Workshops 🦃

Thurs., Jan. 16 OR Thurs., Apr. 24 6:30 – 8 p.m.

Tumwater Fire Station OR LOTT WET Center Board Room

See page 13 for details.

#### **Amphibians of the Pacific** Northwest Workshop (😁)

Sat., Jan. 25 • 10 a.m. – 1 p.m. LOTT WET Science Center See page 11 for details.

## **COMMUNITY EVENT**

#### Winter Twig Identification **Workshops**

Sun., Jan. 26 10 a.m. – 12:30 p.m. OR 1 – 3:30 p.m. See page 10 for location and other details.

Register online at www.nativeplantsalvage.org

## **FEBRUARY**

#### **Naturescaping for Water** & Wildlife Workshop 🦃

Wed., Feb. 5 • 6 – 9 p.m. LOTT Wet Science Center

See page 12 for details.

#### **Fascinating World** of Lichens (😁)

Sat., Feb. 22 • 10 a.m. – 2 p.m. See page 13 for details.

#### **Beyond Landscaping:** Part 1 (😁)

Thurs., Feb. 27 • 6 – 9:15 p.m. City of Lacey Jacob Smith House See page 12 for details.

## **HOW TO** REGISTER **FOR EVENTS**



Visit: www.streamteam.info and click on "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



929 Lakeridge Dr SW Olympia, WA 98502 www.streamteam.info

## Holiday Trees Give Back to Streams!

This holiday season, you can enjoy the beauty and fragrance of a live potted tree in your home. After the holiday, return the tree to Stream Team to be planted at a stream restoration project! What a great way to kick off the New Year!

How does it work? Purchase a live potted tree from Puget Sound Plants for the holiday season (at a discounted price). Trees must be ordered ahead and picked up by December 20th. After the holidays, drop the tree off at a designated location by January 6, 2014. Trees will be kept in a nursery and cared for until they are planted by Stream Team volunteers later this winter or in the spring.

Replanting trees next to streams provides shade that keeps streams cool for salmon and other species of fish and wildlife. You can also help plant the trees. Check our website for planting dates at www. streamteam.info/getinvolved/calendar

#### Want to participate?

Call Puget Sound Plants at 866-816-5080, Monday–Friday, 8 a.m. – 4:30 p.m., to place your tree order. Mention that your tree purchase is with the Stream Team Holiday Tree Program. Arrange the pickup day and time when placing your order. Puget Sound Plants is not open on weekends.

#### Pick Up

Puget Sound Plants is located at 3147 46th Ave NE, near South Bay and Shincke Roads. Please pick up the tree at the prearranged time and day.

This limited offer ends soon. Please place orders starting December 9 and pick up your rental tree by December 20.

#### **Returning Your Tree**

After the holidays, you can plant your tree (instructions included) or you can choose between three locations to drop off your tree:

Lacey City Hall, 420 College St SE

*Staff assisted:* Saturday, January 4, 11 a.m. – 1 p.m.

City of Olympia Nursery, 830 Union Ave SE, alley access behind Chevron

*Unassisted drop off:* December 30, 31 & January 2, 3, & 6, 7 a.m. – 5:30 p.m. *Staff assisted:* 

Saturday, January 4, 9 – 11 a.m.

Drop off and Planting: Woodland Community Park, 6729 Pacific Av SE on Saturd

January 11, 11:30 a.m. – 2 p.m. Tree planting open to everyone!

Drop off your tree, or stay and help plant it! Staff and volunteers will be available to help unload your tree. To register for the tree planting, or for additional information, visit www.streamteam.info and click on "Register".

#### ✓ ORDER AHEAD, pick up by DEC. 20

#### 

#### NOTE:

Trees weigh between 60-115 pounds. Care instructions will be included.

 MOVE YOUR TREE OUTSIDE BY JAN.6.
 Plant at home or drop off at designated locations.

