

# Stream Team

## NEWSLETTER

Olympia • Lacey • Tumwater • Thurston County

**FREE**



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**SPRING EDITION**  
March–April–May 2012

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**ON THE COVER:** Stream Team volunteers, Sophie Rice and Danny Hunt collect stream bugs from Schneider Creek in Olympia. See page 12 to learn more about collecting stream bugs with Stream Team and page 10 to learn more about Schneider Creek.



### Safely dispose of hazardous products at HazoHouse:

2418 Hogum Bay Rd NE, Lacey  
Open: Fri.- Tues., 8 a.m. to 5 p.m.  
FREE for residential customers.

For more information contact  
Thurston County HazoHouse at  
360-867-2912 or go to: [www.co.thurston.wa.us/solidwaste/hazardous/haz-hazohouse.htm](http://www.co.thurston.wa.us/solidwaste/hazardous/haz-hazohouse.htm)

Hazardous products can harm the environment, people and pets if they are not properly stored and disposed of. Follow these simple guidelines to keep your family and pets safe:

- 1 Store in original container and do not remove the label. Never combine products together.
- 2 Store hazardous products in a large plastic tote to contain any spills or leaks.
- 3 Spilled or leaked products need to be handled as hazardous materials. Follow the label instructions for cleaning the spill.
- 4 Take all unused products and any materials used to clean up spills to Thurston County's HazoHouse.

To make your home greener this spring, replace hazardous products with products that are safer for your family and the environment. For a guide to safer household products go to <http://www.co.thurston.wa.us/health/ehhm/saferproducts.html>

## Don't Just Clean Up, Green Up!

Are you planning on cleaning out your house or garage this spring? If so, you will probably find left over or unused hazardous products. Hazardous household products that need to be disposed of include, paints and thinners, solvents, used motor oil, pesticides, car batteries and cleaning supplies. These products should never be put in the garbage.

How do you know if a product is hazardous? Look for the key words, POISON, DANGER, WARNING or CAUTION on the label.

## 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.*

## 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: Erin Keith

Tel: 360-438-2687 TDD: 1-800-833-6388  
[erkeith@ci.lacey.wa.us](mailto:erkeith@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](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

Tel: 360-754-3355 EXT 6377  
TDD: 360-754-2933  
[maunc@co.thurston.wa.us](mailto:maunc@co.thurston.wa.us)

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Thurston County Stream Team

## DESIGN & LAYOUT:

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## 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.





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

**Thurs., March 22 • 6 – 9:15 p.m.**

Lacey Community Center  
6729 Pacific Avenue SE, Lacey



If you live along a stream, lake or Puget Sound, you won't want to miss this workshop! This FREE workshop will help you learn how to invest in the beauty and health of your home and watershed. Learn how landscaping with the right native plants can add beauty to your landscapes while protecting your shoreline property from erosion. Discover how shoreline plantings and other practices can help improve habitat for salmon and other wildlife.

If you live along a stream, lake or Puget Sound, you can register for this workshop by contacting Erica at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166.

## *New Stream Team Opportunity:* **SHOREBIRD FIELD TRIP AND CITIZEN MONITORING**

### KENNEDY CREEK SHOREBIRD FIELD TRIP

**Sat., April 7 • 8 – 10 a.m.**

Kennedy Creek Estuary; Van leaves downtown Olympia 7:30 a.m.



Are you interested in learning about the shorebirds that rely on our local estuaries and mudflats to fuel their long migration flights? Would you like to learn how your observations can contribute to science?

Join us for a field trip to Kennedy Creek estuary with special guest speaker Joe Buchanan to observe the shorebird migration. We hope to see several species of shorebirds including western sandpipers, dunlins and black-bellied plovers.

Field trip speaker, Joe Buchanan is a wildlife biologist with the Washington Department of Fish and Wildlife. His primary responsibilities at WDFW relate to issues involving forest practices rules and wildlife management. Joe studies shorebirds on his own time and has been monitoring shorebird migration at Kennedy Creek estuary for over 30 years.

Volunteers interested in citizen monitoring opportunities will learn how to record birding observations and how volunteer observations can help track bird populations in south Puget Sound.

Space is limited. For more information or to sign up for this free field trip and reserve your space in the van, contact Michelle Stevie at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.



# MARIANNE Binetti

## "THE LAWN RANGER GOES NATURAL!"



April 30, 2012 • 7 – 8:30 p.m.  
The Olympia Center,  
222 Columbia St. NW, Olympia

*You may recognize Marianne Binetti as a columnist for The Olympian and Tacoma News Tribune, from her appearances on HGTV, as a radio host or as the author of more than a dozen gardening titles. She is an expert on lawn and garden care for Western Washington and the Puget Sound region. She holds a horticulture degree from WSU and writes for various magazines and industry blogs. She is known for her light-hearted, energetic and humorous speaking style and encourages more carefree gardening.*

Ride into a lush new lawn this year with four steps to lawn renovation. Discover the natural way to control lawn weeds, "dirt" cheap ways to add more nitrogen to your soil, and how to mow like a pro, plus the secret ingredient every lawn in Western Washington craves. Learn how to have a more carefree lawn that stays green and looks healthy, but demands less water, fertilizer and mowing.

Information tables and giveaways from storm and surface water utilities, water conservation, and groundwater protection. For more information, contact Patricia Pyle at [ppyle@ci.olympia.wa.us](mailto:ppyle@ci.olympia.wa.us) or 360-570-5841.



## Save the Date: "Sea Cinema" Film Festival

June 9, 2012 • 7 – 11 p.m.  
Capitol Theater,  
206 5th Avenue, SE, Olympia

Bring your family and friends and celebrate World Oceans Day. See spectacular scenery, learn about creatures in the undersea world, take a global trip around the world to see other places without leaving Thurston County, and see our amazing Puget Sound up close and personal!

*This free event is co-sponsored by Stream Team, People for Puget Sound, Olympia Film Society, South Sound Estuary Association and Taylor Shellfish. For more information about the film festival visit [www.olympiafilmsociety.org](http://www.olympiafilmsociety.org)*

## Attract Wildlife While Conserving & Protecting Water Resources

### FREE "Naturescaping for Water and Wildlife" Field Class



Sat., May 5 • 10 a.m. - 5 p.m. • Olympia

Learn how to turn your yard into a lovely year-round landscape that attracts birds, butterflies and amphibians with beautiful plants that require less water and protect water quality.


The field class will cover:

- Water-wise ideas for your landscape
- Keys to attracting birds, butterflies, beneficial insects and amphibians
- Easy ways to minimize lawn space
- Creating new hardscaping, with a focus on free-draining surfaces
- How to solve drainage issues with on-site stormwater management
- Planting for four-season interest
- Landscaping for tricky areas like slopes
- How simple landscape changes can save you time and money



The morning classroom session will be followed by site visits to local gardens. Free bus transportation is provided. Registration is required, as space is limited. For more information, or to register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166.





## Saturdays March & April 10 a.m. – Noon

- ▶ March 10  
*Circle Hawk Farm  
on Spurgeon Creek,  
Thurston County*
- ▶ March 17  
*Percival Creek, Tumwater*
- ▶ March 24  
*Black Lake Ditch, Olympia*
- ▶ March 31  
*Woodland Creek  
Community Park, Lacey*
- ▶ April 14  
*McLane Creek Nature Trail,  
Thurston County*
- ▶ April 21  
*Black Lake Ditch, Olympia*
- ▶ April 28  
*Woodland Creek  
Community Park, Lacey*

Contact [streamteam@ci.lacey.wa.us](mailto:streamteam@ci.lacey.wa.us)  
for more information



## Putting Nature Back: Plant Trees for the Future

Stream Team volunteers have planted thousands of trees along Thurston County creeks over the past 20 years. Many of these places now look and act like a “natural” forested riparian buffer, but they could have remained covered in blackberries or scotch broom without the labor provided by willing and caring volunteers. Even a few years of tree and shrub growth can make a significant difference on the smaller-sized streams in the uplands of Thurston County. In the smaller headwater creeks, a narrow buffer of trees creates an

environment that is cool and moist. This microclimate extends laterally from the stream and provides a welcoming habitat for amphibians and other terrestrial and aquatic creatures in the heat of the summer.

***Be part of the future! Grab your boots, and come plant trees in March and April with Stream Team!*** All plantings are from 10 a.m. to noon, and directions to each of the planting sites can be found at [www.streamteam.info](http://www.streamteam.info) or you can request additional information by sending an email to [Streamteam@ci.lacey.wa.us](mailto:Streamteam@ci.lacey.wa.us). Most plantings are suitable for children, but check with the coordinator to verify the site conditions. If you require special accommodations, please call at least one week before the event.







**Thurston County Fairgrounds Rain Garden**  
installed by the 2011 Stormwater Stewards.

## Let It Soak In: FREE Rain Garden Design Workshops

- ▶ **Thurs., March 8 • 6:30–8 p.m. • Tumwater Fire Station**  
*optional hands-on workshop 8:15 – 9 p.m.*
- ▶ **Thurs., April 19 • 6:30–8 p.m. • LOTT WET Science Center Board Room, Olympia**  
*optional hands-on workshop 8:15 – 9 p.m.*



Adding a rain garden to your property is a great way to make a difference in protecting your local waterways and Puget Sound, while also beautifying your yard. Rain gardens are shaped and sized to fit your yard and planted with a variety of flowers, shrubs and ornamental grasses. A properly functioning rain garden acts similar to a natural forest by collecting, absorbing and filtering stormwater runoff from rooftops, driveways, patios and other areas around our homes.

Join us for a free, hands-on workshop to see firsthand how to add one of these lovely stormwater features to your yard. Participants will receive a free full-color rain garden poster and a free copy of WSU's "Rain Garden Handbook for Western Washington Homeowners."

Advanced registration is required, as space is limited. For more information, or to register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166. Visit [www.nativeplantsalvage.org](http://www.nativeplantsalvage.org) to see a video on building a rain garden.

## Stormwater Stewards: Class of 2011 Ready to Take Action

In 2011, fifteen local citizens made a commitment to take action to protect their local watersheds and Puget Sound. They came from varied backgrounds, but they all shared one thing: a concern about polluted stormwater runoff and a desire to make a difference. They became the inaugural class of a new Thurston County Water Resources/WSU Extension program called Stormwater Stewards.

The Stormwater Stewards program is modeled on the successful Master Gardener program and other Stream Team programs, such as Salmon Stewards. Highly capable volunteers pursue classroom and field training in order to go out in their community to educate and assist others. Stormwater Stewards' focus is residential-scale low impact development (LID) techniques that manage stormwater runoff close to where it originates on our home sites, thereby preventing the problems of flooding, erosion and pollution from entering our local waterways and Puget Sound. Once trained and certified, the Stormwater Stewards will conduct home-site assessments for interested residents

and provide recommendations for ways to effectively manage stormwater on-site using LID strategies.

Stormwater Stewards receive training in topics as diverse as:

- Sustainable landscaping techniques
- Ways to avoid the use of products that harm groundwater
- Designing and constructing rain gardens
- Several permeable paving strategies
- Vegetated roofs and other rooftop management systems

As part of their training, the 2011 class built a new rain garden at the Thurston County Fairgrounds and visited many sites where LID practices are in use. Participant Wendy Jonas-Ryea shared her views on the training experience: "I feel confident that I am going to be able to return the knowledge

that I have gained from this program back to the community."

While the 2011 Stormwater Stewards continue with their practicum activities to become certified, a new training is set for 2012. If you are interested in learning about new techniques to infiltrate stormwater, and want to share this information with other people, then sign up to be a Stormwater Steward!

### Are there better solutions for dealing with stormwater runoff on YOUR property?

Get a free site assessment from the Stormwater Stewards! Find out the options for your site, get recommendations, and possibly technical assistance from Sound Stewards and WSU staff. Limited time offer. **Contact Erica Guttman at [erica@nativeplantsalvage.org](mailto:erica@nativeplantsalvage.org) or 360-867-2164.**



## 2012 Stormwater Stewards Training Dates

**Classroom sessions:** May 3, 10, 17, 31 and June 7 • 6:15 – 9 p.m.

**Field dates:** June 10 (afternoon only), June 23 and June 30 • All Day

## Andy & Aidan Hopwood

Andy Hopwood was named Stream Team volunteer of the year back in 1996. At that time, Andy was working at Fort Lewis and spent much of his time on the weekends helping Stream Team with stream clean-ups, tree plantings, Scotch broom removal, and even with some stream engineering projects aimed at controlling erosion and trapping sediment.

Being in the military, Andy and his family (wife, Rosey and children, Aidan and Avery) moved to Tennessee and Florida. After retiring from the military in 2010, the Hopwoods decided to move back to the Pacific Northwest. Once again, Andy got involved with Stream Team, this time bringing his son Aidan along. Andy and Aidan have volunteered with multiple stream restoration projects



Aidan (left) and Andy (center) Hopwood along with friend, and fellow Stream Team volunteer, Andrew Dellsite (right).

since they moved back. Andy says Aidan helps motivate him to go out on the cold and rainy days, which are pretty common during Stream Team's planting season from fall through early spring!

Aidan, like his father, especially likes to pull out Himalayan blackberry and English ivy. They have become experts at rolling out and installing weed control matting, and they always stick around to help load up tools and supplies at the end of the day.

This past year, Andy participated in Thurston County's first class of the new Stormwater Stewards program (see page 6). When asked what drew him to the program, Andy explained that, "it is a natural extension" from working on restoring the streams. The Stormwater Stewards receive extensive training to help residents learn about stormwater management techniques they can do at home. In this way, Andy sees that the Stormwater Stewards can help people learn how to protect streams by preventing stormwater pollution and flooding from reaching the streams.

Andy has plans to replant areas of his own lawn with native and drought-tolerant plants. He's hoping to reduce the amount of stormwater that runs off of his property, while also creating a beautiful landscape and habitat for wildlife.

When Andy was growing up, he lived near a trout stream, spending summer days fishing. Andy saw how industrialization and chemicals affected the stream. As a boy, his father taught him to not take clean water for granted when he turned on the faucet. Andy knows that we are dependent on clean water and wants to make sure that this important resource is still here when Aidan and Avery grow up. Aidan and Andy are eagerly awaiting Stream Team's next tree planting project and hoping that Aidan will get a chance to learn how to pull Scotch broom!



## The Purple Martins Are Back!

Interested in monitoring these amazing aerial acrobats?  
Join the East Bay Purple Martin monitoring team!

Stream Team is looking for volunteers interested in monitoring the nest boxes at East Bay in downtown Olympia from April to September and inspecting and cleaning the houses after the birds leave in September. For more information, or to sign up, contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.



Michelle Stevie and a fellow Purple Martin Monitor, Zexia Wei, cleaning the nest boxes.



# The Wild Side of Wildflower Mixes

Over the years, agencies have routinely used wildflower seed mixes to beautify roads and highways. These seed packets also became popular with gardeners wanting to add low maintenance, water-wise color and “butterfly habitat” to their gardens. Over time, however, more and more plants such as orange hawkweed, bachelor button and butterfly bush started springing up in places that were not seeded. This attracted the attention of scientists and ecologists, who became concerned with the impacts these plants may be having to local streams and ecosystems.

Scientists found that these plants, once considered harmless, were spreading like wildfire and “naturalizing” woodlands, prairies, streamsides and wetlands. Naturalizing is when a plant (or animal) comes from another region and becomes<sup>1</sup> successfully established in its new environment. Many of these plants fit the definition of a noxious weed or invasive species.

## Why the concern?

Nonnative species (both plants and animals) can have a devastating impact to the lands and water that native plant and animals depend on for survival. The end result is the destruction of wildlife habitat and forage that impacts native species. Two-thirds of listed endangered species are threatened by non-native plants. Non-native species also have an economic impact; in the US, \$185 billion per year is spent combating invasive species. In Oregon, Scotch broom alone has a \$46 million dollar per year impact. As non-native wildflowers and other plant species spread, the loss of habitat and costs to control these species continue to escalate.

## Wildflower seed<sup>1</sup> mixes.

University of Washington studies showed that many commercial wildflower seed mixes have noxious weeds and/or invasive species included in the mix. How do they get into the seed mix? Many of the seeds are intentionally put into the mix as they are easy to grow and reproduce abundantly and quickly. Others plants get included into the seed mix though contamination, as they are harvested.

Unfortunately, the labels on many wildflower packets do not include a seed mix list or have a list that is inaccurate, making it nearly impossible for conscientious gardeners to avoid invasive plants. For this reason, researchers at the UW stated that they could not recommend using any wildflower seed mixes.

## What you can do:

- Do not plant commercially-packaged wildflower mixes.
- Plant native species.
- Consult with your local Noxious Weed Control Agency for alternative options ([co.thurston.wa.us](http://co.thurston.wa.us))
- Utilize local plant guides such as Common Sense Gardening Guides: [www.co.thurston.wa.us/health/ehcsg/guides.html](http://www.co.thurston.wa.us/health/ehcsg/guides.html)
- Never place invasive plants/noxious weeds in the compost! Consult your local Noxious Weed Control Agency at the address above to learn the best way to remove and dispose of invasive plants.

In Washington State, **noxious weeds** are defined as “a plant that, when established, is harmful or destructive or difficult to control using cultural or chemical practices.”

**Invasive species** are non-native (or alien) plants, animals or pathogens whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. These invaders are successful because they can spread unchecked due to the lack of natural competitors or predators. Without these natural checks and balances, they are able to reproduce rapidly and out-compete native species.

1. Thurston County Noxious Weed Control Agency



## Butterfly Bush: A Beautiful Nuisance

Butterfly bush (*Buddleia*) may look innocent, but it has become an invasive plant and is posing a very real threat to fish and wildlife habitat. Butterfly bush grows quickly and can produce as many as 40,000 tiny seeds per single flower head, which spread by wind and water. With a 30-year lifespan and rapid reproduction cycle, this non-native plant out-competes native plants and trees.

While some butterflies may get nectar from the plant, the Washington State Noxious Weed Control Board found that it is rarely used by butterflies as a host plant for laying eggs. Recently, it was found that butterfly bush in the Nisqually watershed displaces native willow, a species which is crucial for native butterfly reproduction and larval survival.

## What can you do if you have butterfly bush?

Remove the butterfly bush and replant the area with a non-invasive native plant. Make sure to bag butterfly bush in a black plastic bag and place in the landfill to prevent seed dispersion. Do NOT place in your compost or yard waste bin.

For a list of plants that attract butterflies in various life stages, go to: [www.wdfw.wa.gov/living/butterflies](http://www.wdfw.wa.gov/living/butterflies) or attend the Naturescaping for Water and Wildlife field class on May 5<sup>th</sup> (see page 4 for details)

### REFERENCES:

- ▶ *Thurston County's Guide to Noxious Weeds:* [www.co.thurston.wa.us/tcweeds](http://www.co.thurston.wa.us/tcweeds)
- ▶ *Garden Wise- Non-invasive Plants for Your Garden:* [www.nwcb.wa.gov](http://www.nwcb.wa.gov)



## Changes Coming to Stormwater Permits

Every five years, the Department of Ecology is required by the U.S. EPA to update municipal stormwater permits. These permits, often referred to as NPDES permits (National Pollutant Discharge Elimination System), address non-point source pollution coming from stormwater runoff and authorize discharge of stormwater to surface water under the Federal Clean Water Act. Local jurisdictions, such as Lacey, Olympia, Tumwater and Thurston County, must comply with the 2013-18 permit, expected to be released in June 2012.

NPDES permits deal with myriad, complex aspects of stormwater management from new construction practices to roads and transportation infrastructure, all with the ultimate goal of reducing polluted runoff, reducing peak stormwater flows and protecting waterways.

How does this relate to Stream Team? The Stream Team program is jointly funded by the stormwater utilities of Lacey, Olympia, Tumwater and Thurston County. As permittees, each utility must conduct a public education and outreach program. Stream Team, with over 20 years of education and action with so many fabulous volunteers, predates NPDES permit requirements by many years.

One new proposed change states "...each permittee shall create stewardship opportunities... to encourage residents to participate in activities such as stream teams". Clearly, this proposed language to the new permit confirms what we have known for many years – that Stream Team was, and is, ahead of its time!

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To learn more about proposed changes to Municipal Stormwater Permits visit: [www.ecy.wa.gov/programs/wq/stormwater/municipal/2012draftMUNIcom.html](http://www.ecy.wa.gov/programs/wq/stormwater/municipal/2012draftMUNIcom.html)

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## Design, Wax, Paint: Create Batik Art with Stream Team!

### SATURDAY WORKSHOP    SPRING BREAK WORKSHOPS

**Sat., April 14**  
**10 a.m. – 2 p.m.**

**Thurs., April 5**  
**9 a.m. – Noon AND 1 p.m. – 4 p.m.**

Learn the ancient technique of batik, wax painting on cloth, and capture your favorite Stream Team memory or place in nature in art. Draw a simple design, wax and paint. It's that simple and fun! All supplies and instruction provided.

This is a family friendly event, and all ages are invited to participate. Those 18 and under will have the opportunity to display their batik designs at Arts Walk, April 27-28.

- ▶ **Workshop location:** Procession of the Species Art Studio, 311 Capitol Way (entrance in alley)
- ▶ **To register:** contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.



## Lacey Family Fish-In

**Saturday, April 21 8 a.m. – 2 p.m.**

**Woodland Creek Community Park, 6729 Pacific Ave SE**

Come fish with the family and enjoy free family activities at the Lacey Family Fish-In at Long's Pond at Woodland Creek Community Park. Kids ages 5-14 are eligible to come learn how to fish from the pros and will also receive a rod and reel to keep!

While waiting for your pre-reserved fishing spot, or if you aren't into fishing but love free activities, come and explore fun free activities with Stream Team, South Sound GREEN and other local groups. Paint a salmon, sign the pet poop promise and get a free bag holder, make your own fish-friendly cleaning solution, and so much more!

If you plan to fish, pre-registration is required. Visit Lacey Parks at [www.ci.lacey.wa.us/lacey-fish-in](http://www.ci.lacey.wa.us/lacey-fish-in)



# Featured Stream: Schneider Creek

Nestled within Olympia's west side, Schneider Creek is not a well-known creek, in part because public access and ownership of the creek are limited, except for a few unused rights-of-way and a stormwater facility. It is also the most impaired creek in Olympia, due to stormwater runoff from land that was developed prior to stormwater detention and treatment regulations. Over the years, the City has spent more time in the Schneider Creek watershed basin than in any other Olympia creek basin trying to reduce the impacts of polluted stormwater, according to the City of Olympia's Stormwater manager, Andy Haub.

The drainage basin of over 650 acres starts at 9th Avenue near Decatur Street SW and includes the commercial intersection of Harrison Avenue and Division Street. The creek is piped underground from 9th Avenue SW northward all the way to Giles Avenue, where the creek daylights at a small stormwater facility operated by the City of Olympia. Between Bowman Ave. and West Bay Drive, there are no road crossings over the main stem of the creek. It flows through a wooded canyon that is privately owned and is the backyard of many residences.

The creek, named after German pioneer Konrad Schneider, has changed dramatically from the 1853 Government Land Office survey showing an upland forest of fir, cedar and hemlock (labeled as "timber") and a large wetland at the headwaters. Konrad Schneider purchased the west Olympia property on the shores of Budd Inlet in the mid 1850's, after living on a donation land claim homestead south of the present day Olympia Airport. The family continued to acquire land around South Sound, eventually amassing a contiguous land parcel that connected Budd Inlet to Eld and Totten Inlets and Summit Lake (from *Konrad and Albertina*, Ross 2009). Three Thurston County creeks share his surname.

Springs, located on the northern end of the watershed, served as private drinking water for homes in the Crestline and Raft Avenue neighborhood from the late 1930s until the 1960s. In the 1950s, as more land in the Schneider Creek basin was developed, new homes, businesses and roads were constructed without stormwater treatment; sending the stormwater runoff directly into the creek without slowing it down or filtering pollutants. A 1995 plan for the Schneider

## The Schneider Family: How Two Generations Helped to Transform the Natural Resources of Thurston County.

April 17 • 7 – 8 p.m.  
Traditions Cafe,  
300 5th Ave., SW, Olympia

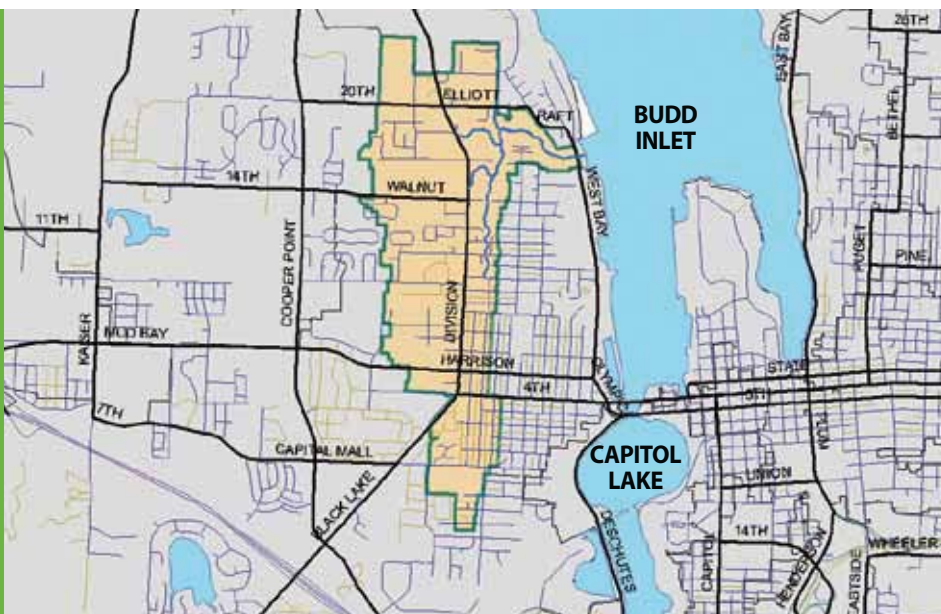
Deb Ross will use the Schneider family as a model for how pioneer families found and used natural resources in Olympia, and the surrounding area; focusing on farming, lumbering, shellfish harvest, quarrying, land development, and the critical need for access to waterfront and water for all of these activities.

Deborah is the author of *Konrad and Albertina*, an novel based on the true story of the Schneider Family.

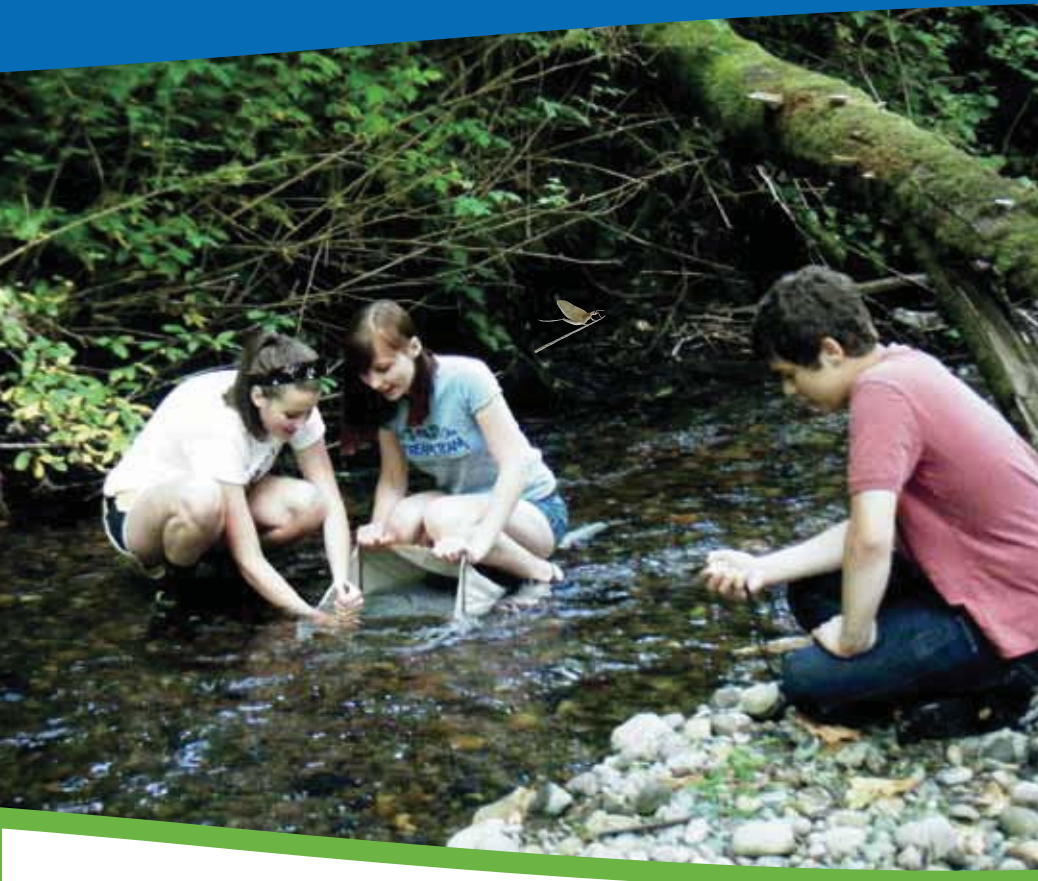
Creek Channel Stabilization Project states, "The primary problem in the creek is extensive channel downgrading and mass wasting in the upper mainstem and tributaries resulting in excessive sediment deposition in the biologically important downstream portions of the creek." In 2003, a concerned resident wrote the city stating, "The creek bottom was more than 10 feet lower than it was when I was in high school (in late 1930s)."

In addition to the main stem, there are three tributaries, referenced in relation to nearby roads: Elliot, Peach and Muirhead. Much of the drainage from these sub-basins is also piped underground. When the west side of Olympia was developed, all the pipes and culverts carrying Schneider Creek and its tributaries were 36 inches or smaller, including the culvert at the mouth of the creek under West Bay Drive. The West Bay Drive culvert has been partially replaced with a 72 inch culvert, and a fish ladder will be constructed in the final phase to complete the project.

This watershed has approximately 35% impervious cover. Over 1/3 of the







Stream Team volunteers collect stream bug samples from Schneider Creek, 2011

developed land area receives no stormwater treatment before the water discharges into Schneider Creek. Putting in stormwater treatment after development is expensive; yet, the City was committed to improving the Schneider Creek basin, as outlined in the 1995 report, to benefit the creek and water quality. In 1998, the City built an “experimental” stormwater treatment facility at Giles Avenue. The site was too small for a traditional stormwater pond, so a cartridge filter system was installed to clean the water. With stormwater research and technology improving, the treatment facility has been upgraded three times since the initial design to provide the best treatment available. In addition, a number of other capital projects were completed in the 1990s to improve the creek and to prevent flooding and landslides.

Despite the existing condition of the watershed, Schneider Creek meets the water quality standards with the exception of part 2 of the fecal coliform standard which states that: no more than 10% of the samples shall exceed 200 colonies per 100 ml (100 colonies/100 ml is the permitted standard). Part 2 has been violated every sample year since 1993, with the

exceptions of 1997 and 2007. Nitrate concentration in the creek is high year-round, reflecting contamination in the shallow ground water and surface runoff (Thurston County 2007-2009 Annual Water Quality Report).

Since 2003, trained Stream Team volunteers have monitored Schneider Creek for biological health using the Benthic Invertebrate Index of Biological Integrity protocol by gathering macroinvertebrate samples collected from the creek bed. The scores have improved over the past 8 years, suggesting that the health of the creek is stabilizing or improving.

During the summer of 2009, Harry Williams and his mom, Susan marked 30 storm drains in the Elliot Drive area of the watershed. By marking storm drains, people are reminded that storm drains lead to creeks and Puget Sound, and that seemingly innocent actions and products can have detrimental effects on the water quality and aquatic life in the stream. The year-round elevated nitrate levels in the watershed are likely related to failing septic systems, fertilizer use and pet waste left on the ground.

*If you are also concerned about the health of Schneider Creek and other local creeks, take action!*

- 1 Maintain your yard using natural yard care methods and products. Learn how from the expert: attend Marianne Bientti's talk on lawn care. (See page 4 for more details)
- 2 Take advantage of the City of Olympia's and Thurston County's rain garden incentive and capture and infiltrate the rain runoff from your roof and yard into a specially-designed rain garden. For more information, go to [www.olympiawa.gov/raingardens](http://www.olympiawa.gov/raingardens)
- 3 Have your septic system inspected every three to five years and pumped as needed by a reputable company. For more information, visit Thurston County Environmental Health at [www.co.thurston.wa.us/health/ehoss](http://www.co.thurston.wa.us/health/ehoss).
- 4 If you live in Olympia, take advantage of the City's financial incentives to convert your septic system to municipal sewer service. Contact Diane Utter at [dutter@ci.olympia.wa.us](mailto:dutter@ci.olympia.wa.us) or 360-753-8562.
- 5 Carry a Pick Up for Puget Sound pet waste bag holder when walking your dog. These are provided free by Stream Team. Also, bag dispensers and signs are provided for neighborhoods and multi-family housing complexes. Contact Stream Team at [Streamteam@ci.lacey.wa.us](mailto:Streamteam@ci.lacey.wa.us) or 360-438-2672 for more information.
- 6 Participate in Thurston County's Clear Choices for Clean Water incentive program to find out what more you can do to keep stormwater runoff clean and clear. Contact Jennifer Johnson at [johnsoj@co.thurston.wa.us](mailto:johnsoj@co.thurston.wa.us) or 360-867-2577.



# Stream Bugs: Up Close and Personal

We all know that fish live in streams, but have you ever wondered what else lives beneath the water? Here in the Pacific Northwest, we have many different types of “stream bugs” that live on or below the gravel in the streams. These critters, known as benthic macroinvertebrates, include many different types of insect larvae and nymphs such as stoneflies, true flies and mosquitoes. Crayfish, freshwater mussels, aquatic worms and spiders, and snails are also benthic macroinvertebrates.

When studying these critters, scientists found that some are highly sensitive to pollution in streams while others are more tolerant to pollution and habitat disturbance. For this reason, “stream bugs” are monitored, collected and used as indicators of stream health.

Are you curious about benthic macroinvertebrates and how they survive in an underwater world? You can get a chance to see these macroinvertebrates up close by volunteering to collect “stream bug” samples with Stream Team this summer. If you can’t wait until summer, here is a sneak preview of what you might see when you go out to a stream to monitor.

## Mayfly nymph

This is a mayfly nymph, which is an immature or larval form of a mayfly. Most mayflies are highly sensitive to water quality.

They breathe through tiny gills located on the sides of their abdomen. Thus, they need cool, clean water with plenty of dissolved oxygen.

Their gills can get clogged by sediment (dirt), so they are usually not found in streams that experience high rates of flooding or erosion. This is why trees growing alongside a stream are so important. Their roots help bind the soil, thereby slowing erosion, while their branches and leaves help shade the stream. Cool water holds more dissolved oxygen, which mayflies, salmon and many other stream critters need to survive. Once the mayfly matures, it will swim to the top of the water and shed its outer layer so that it can spread its wings.



## Mayfly adult

The scientific name for a mayfly is Ephemeroptera, the root of which is “ephemeral” meaning “short-lived.” This is a fitting name as

mature mayflies only live for approximately 24 hours. In this short amount of time, they manage to find a mate, lay eggs and ensure the mayfly lifecycle continues. The female lays the eggs in or near the water. Once they hatch, the larvae spend several months to a year in the stream before they mature. Mayflies are a favored food for salmon, so fishermen pay close attention to mayfly hatches as salmon seem to “fly” at the chance to dine on them.

You can see mayflies and other stream bugs up close this summer by volunteering to help gather samples from one of 20 streams that Stream Team monitors throughout Thurston County.



## Learn More - Monitor Streams

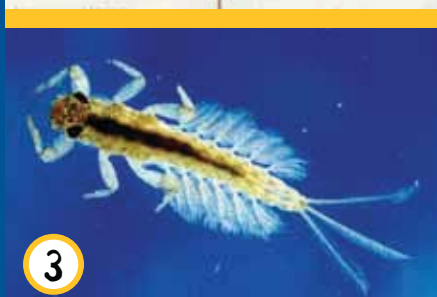
**20 creeks are monitored during the summer by Stream Team volunteers. The training will be held twice in June. Sign up for our weekly emails at [streamteam@ci.lacey.wa.us](mailto:streamteam@ci.lacey.wa.us) to receive updates.**

No experience is necessary to join the Stream Team monitoring group. Simply attend one evening training to learn how and why Stream Team monitors benthic macroinvertebrates. Then, sign up to monitor one or more streams later in the summer. Monitoring usually takes three to five hours, depending on the stream. Monitoring takes place on weekdays, evenings and weekends to help accommodate busy schedules.

To find out more about benthic macroinvertebrate monitoring with Stream Team, or to register for a training, contact Ann Marie at [finanam@co.thurston.wa.us](mailto:finanam@co.thurston.wa.us) or 360-754-3355 ext. 6857.

# Match the Stream Bugs

# Kids' CORNER



These stream bugs, or macroinvertebrates, are all very sensitive to pollution and require cool, clean water to survive. Match the descriptions of each stream bug to its photo. Write the correct number in the circle.

*Note: to learn more about how Stream Team uses stream bugs, and how you can help, see page 12.*

☐ **Stonefly Nymph:**  
1/2" - 1 1/2", 6 legs with hooked tips, antennae, and 2 hair-like tails. No gills on lower half of body.

☐ **Caddisfly Nymph:**  
Up to 1", 6 hooked legs on upper third of body, 2 hooks at back end. Usually found inside a stick, rock or leaf case with its head sticking out.

☐ **Water Penny:**  
1/4", flat saucer-shaped body with a raised bump on one side and 6 tiny legs on the other side.

☐ **Mayfly Nymph:**  
1/4 - 1", brown, plate-like or feathery gills on sides of lower body, 6 large hooked legs, antennae, 2 or 3 long, hair-like tails.

☐ **Riffle Beetle:**  
1/4", oval body covered with tiny hairs, 6 legs and 2 antennae. Walks slowly underwater.

☐ **Dobsonfly Nymph:**  
3/4" - 4", dark-colored, 6 legs, large pinching jaws, eight pairs of feelers on lower half of body with paired cotton-like gill tufts along underside, short antennae, 2 tails and 2 pairs of hooks at back end.

## Letter

## Tiles

Arrange the tiles to read a message from Stream Team!

W I T H	E C T	E A M
U G S	A M B	S T R E
T E A M	C O L L	S T R




**Find Mary the Mayfly**  
hiding 5 times in this newsletter.

Enter into a drawing for a free Stream Team stainless steel water bottle! To be entered into the drawing for kids ages 12 and under, send an email with your contact information to [streamteam@ci.lacey.wa.us](mailto:streamteam@ci.lacey.wa.us) with the page numbers that you found Mary on.

**Prize drawing will be held Friday May 11, 2012.**

BUG ANSWERS: 5-1-6-3-4-2  
TILES: COLLECT STREAM BUGS WITH STREAM TEAM





# ▽ Stream Team Events

For directions to tree planting and mulching projects, go to [www.streamteam.info](http://www.streamteam.info)

## MARCH

### Let it Soak In: Rain Gardens Workshop

**Thurs., Mar. 8 • 6:30 – 8 p.m.**  
Tumwater Fire Station

**Optional hands-on workshop**  
**8:15 p.m. – 9 p.m.**

Registration required. To register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166. See page 5 for more info.

### Spurgeon Creek Tree Planting at Circle Hawk Farm

**Sat., Mar. 10 • 10 a.m. – Noon**  
Olympia

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

### Percival Creek Tree Planting

**Sat., Mar. 17 • 10 a.m. – Noon**  
Tumwater

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

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

**Thurs., Mar. 22 • 6 – 9:15 p.m.**  
Lacey Community Center

To register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166. See page 3 for more info.

### Black Lake Ditch Tree Planting

**Sat., Mar. 24 • 10 a.m. – Noon**  
Olympia

For information, contact Patricia Pyle at [pply@ci.olympia.wa.us](mailto:pply@ci.olympia.wa.us) or 360-570-5841.

### Woodland Creek Community Park Mulching Party

**Sat., Mar. 31 • 10 a.m. – Noon**  
Lacey

For more information, contact Katie at [Streamteam@ci.lacey.wa.us](mailto:Streamteam@ci.lacey.wa.us) or 360-438-2672.

## APRIL

### Stream Team: ArtsWalk Batik Workshop

**Thurs., Apr. 5**  
**9 a.m. – Noon AND 1 p.m. – 4 p.m.**

Procession of the Species Art Studio  
311 Capitol Way, Olympia  
(entrance in the alley)

To register, contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.

### Kennedy Creek Shorebird Field Trip

**Sat., Apr. 7 • 8:00 a.m. – 10:00 a.m.**

Space is limited. To register, contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336. See page 3 for more info.

### Stream Team: ArtsWalk Batik Workshop

**Sat., April 14 • 10 a.m. – 2 p.m.**

Procession of the Species Art Studio  
311 Capitol Way, Olympia  
(entrance in the alley)

To register, contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.

### Earth Day Event: McLane Creek Nature Trail Work Party

**Sat., Apr. 14 • 10 a.m. – Noon**

Gloves, tools and refreshments provided.  
To register, contact Ann Marie @ 360-754-3355 ext. 6857 or [finanam@co.thurston.wa.us](mailto:finanam@co.thurston.wa.us)

### Schneider Creek Presentation

**Tues., Apr. 17 • 7 – 8 p.m.**

Traditions Café, 300 5th Ave., SW, Olympia  
Presenter: Deborah Ross, local historian and author of the Schneider family novel called, *Konrad and Albertina*. See page 10 for more info.

### Let it Soak In: Rain Gardens Workshop

**Thurs., Apr. 19 • 6:30 p.m. – 8 p.m.**  
Olympia, LOTT WET Center Board Room

**Optional hands-on workshop**  
**8:15 p.m. – 9 p.m.**

Registration required. To register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166. See page 5 for more info.

### Black Lake Ditch Tree Planting

**Sat., Apr. 21 • 10 a.m. – Noon**  
Olympia

For information, contact Patricia Pyle at [ppyle@ci.olympia.wa.us](mailto:ppyle@ci.olympia.wa.us) or 360-570-5841.

### Lawn Care Workshop with Marianne Binetti

**Mon., Apr. 30 • 7 – 8:30 p.m.**  
The Olympia Center

To register, contact Patricia Pyle at [ppyle@ci.olympia.wa.us](mailto:ppyle@ci.olympia.wa.us) or 360-570-584. See page 4 for more info.



# More Events ▽

## COMMUNITY EVENTS

### Woodland Creek Community Park Mulching Party

Sat., Apr. 28 • 10 a.m. – Noon

Lacey

For more information, contact Katie at [Streamteam@ci.lacey.wa.us](mailto:Streamteam@ci.lacey.wa.us) or 360-438-2672.

### Monitor Purple Martins at East Bay

April through September

Olympia

For more information or to register, contact Michelle at [mstevie@ci.olympia.wa.us](mailto:mstevie@ci.olympia.wa.us) or 360-753-8336.

## MAY

### Naturescaping for Water & Wildlife Field Class

Sat., May 5 • 10 a.m. – 5 p.m.

Olympia

Space is limited. Bus transportation provided.

To register, contact WSU Native Plant Salvage Project at [nativeplantsalvage@gmail.com](mailto:nativeplantsalvage@gmail.com) or 360-867-2166. See page 4 for more info.



**EARN YOUR FREE "P.S. I LOVE YOU" BAG**  
by participating in four types  
of Stream Team events:

**Wildlife or Habitat Monitoring  
Salmon or Sound Stewarding  
Tree Planting • 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.

### World Water Day Celebration

Sat., March 17 • 1 – 4 p.m.

WET Science Center  
500 Adams St. NE, Olympia

Listen to speakers, visit information  
booths and make a World Water Day  
wind sock!

### Lacey Family Fish-In

Sat., April 21 • 8 a.m. – 2 p.m.

Woodland Creek Community Park, Lacey  
See page 9 for more details

### ArtsWalk & Procession of the Species Parade

Fri., Apr. 27 AND Sat., Apr. 28

Downtown Olympia

Stop by Wind Up Here to see Stream  
Team batiks! For more information,  
go to [artswalkolympia.com](http://artswalkolympia.com)

### Lacey Spring Fun Fair

Sat., May 19 AND Sun., May 20

St. Martins University, Lacey

Kidsworld is FREE for all ages! For hours and  
activities, visit [www.laceyspringfunfair.com](http://www.laceyspringfunfair.com)

## 2012 Stormwater Stewards *See page 6 for more info.*

**Classroom sessions:** May 3, 10, 17, 31 and June 7 • 6:15 – 9 p.m. 

**Field dates:** June 10 (afternoon only), June 23 and June 30 • All Day

## Planning a Car Wash Fundraiser?

The best way to raise money through charity car washing, while also protecting water quality, is through the sale of car wash tickets. Selling tickets for local car washes is the best way to ensure that water is conserved and that dirty car wash water is sent to the local water treatment facility instead of to local waterways. Charity car wash ticket fundraisers can be held anytime, rain or shine!

Car wash tickets may be ordered with your organization's name imprinted on the tickets (imprinting is free). Your organization buys the tickets for a minimal price and determines what the resell price will be. For more information, or to order tickets, go to [www.CharityCarWash.org](http://www.CharityCarWash.org)

Order tickets today at  
**[www.CharityCarWash.org](http://www.CharityCarWash.org)**

While not quite as water-friendly as commercial car washes, Stream Team can help if you choose to "do-it-yourself".

Contact your local Stream Team Coordinator (listed on page 2) to sign up to receive a free *Clean Cars Clean Streams* car wash kit. The kit consists of buckets, sponges, hose nozzles, eco-friendly car wash soap and signs. Your Stream Team Coordinator will advise you on local water-safe sites to hold your car wash fundraiser. The recommended sites will ensure that dirty car wash water is receiving some treatment before it enters our waterways.



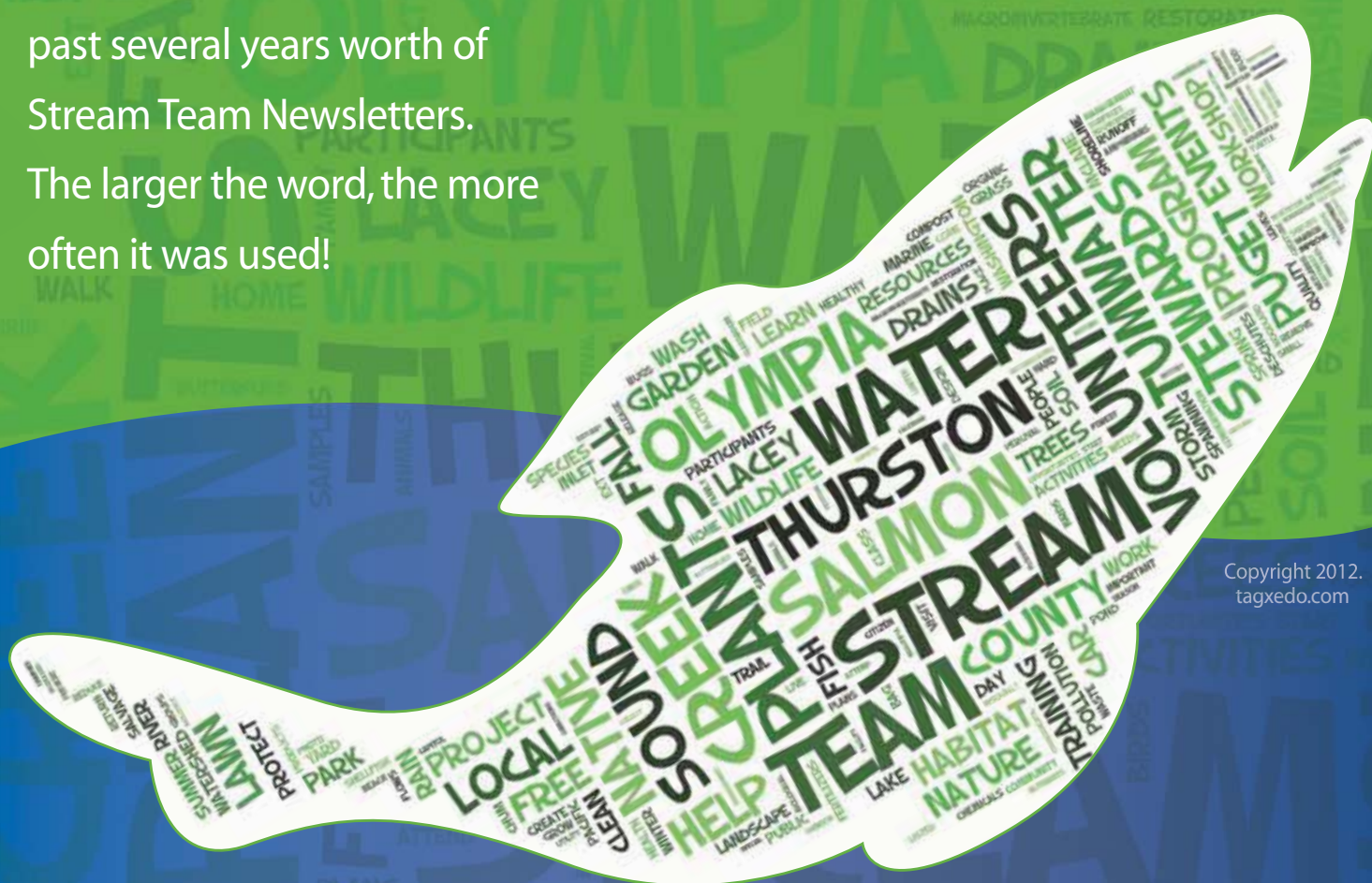


# Stream Team

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

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

This word cloud includes  
the most used words from the  
past several years worth of  
Stream Team Newsletters.  
The larger the word, the more  
often it was used!



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