

Stream Team News

FREE

OLYMPIA • LACEY • TUMWATER • THURSTON COUNTY

EDUCATE • PROTECT • RESTORE



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SPRING EDITION
March–April–May 2022

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Nature Sleuths Treasure Hunt New Games Added!



streamteam.info/nature-sleuths

In this fun scavenger hunt, choose your mission and explore local parks and trails throughout Thurston County while looking for natural treasures! Play along with the Goose Chase app on your phone or iPad, as you look for clues along the trails. Complete each park's mission and receive a Nature Sleuth park specific sticker and be entered into a drawing for cool prizes! The more missions you complete, the higher your chances are to win! Prize drawings will be held July 1 and December 15, 2022.

For more information, visit streamteam.info/nature-sleuths or contact Michelle at mstevie@ci.olympia.wa.us.



STICKERS SHOWN
NOT ACTUAL SIZE.

Complete each park's mission and receive a Nature Sleuth (park specific) sticker like these!

To keep everyone safe during this time, Stream Team is following jurisdictional guidance and the Governor's most up-to-date COVID-19 guidelines in response to the COVID-19 virus. We are modifying some of our programming to accommodate restrictions while still helping you learn and stay involved with Stream Team. Volunteer events will be held following State & City health guidelines. In the meantime, we will post links to exciting videos and provide additional online educational opportunities. **Until further notice COVID effective masks (not gators or bandanas) are required for all in person events. For the safety of others, if you are sick, or have been around someone who is sick, please stay home and not attend in person events.** Please visit streamteam.info to learn more!

Don't forget to follow us on Facebook and Instagram to learn what you can do while staying home to keep our waters clean and habitat healthy for wildlife.

ON THE COVER: Arbor Day work party. Photo by Michele Burton Photographer.



DID YOU KNOW?

Articles marked with a damselfly icon, like the one on the left, will be posted on our website in the Reference Library.

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.

FOLLOW US:

- Thurston Stream Team
- [thurston_stream_team](https://www.instagram.com/thurston_stream_team)
- Thurston County Stream Team

NEWSLETTER CONTRIBUTORS:

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DESIGN & LAYOUT:

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AzureSGD.com



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: Linsey Fields

Tel: 360-486-8707

TDD: 1-800-833-6388

WaterResources@ci.lacey.wa.us

IN TUMWATER:

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

Attn: Stream Team Coordinator

Tel: 360-754-4140

TDD: 1-800-833-6384

WaterResources@ci.tumwater.wa.us

IN OLYMPIA:

City of Olympia Environmental Services
P.O. Box 1967, Olympia, WA 98507-1967

Attn: Michelle Stevie

mstevie@ci.olympia.wa.us

IN THURSTON COUNTY:

Thurston County Water Planning
2000 Lakeridge Dr. SW, Bldg. 4, Rm 100,
Olympia, WA 98502

Attn: Miriam Villacian

Tel: 360-628-2992

TDD: 360-754-2933

miriam.villacian@co.thurston.wa.us

POLLINATOR PUZZLE EXHIBIT

- April 2022
- Olympia City Hall, 601 E. 4th Ave., Olympia

FINISHED ART DUE:
MARCH 18

Celebrate
Pollinator Week!

JUNE 20 – 26

See back cover for details.



Spring Arts Walk: The Pollinator Puzzle Exhibit

Paint a puzzle piece to express your concern for pollinators!

Pollination plays a very important role in the plant lifecycle. Pollinators such as bees, butterflies, bats and even flies move pollen from one flower to another so that plants can reproduce. Pollinators are an essential part of the planet's ecosystem. Flowering plants, including trees, depend on pollinators to reproduce and grow seeds. These same plants and trees help purify our water, including stormwater. They also help prevent erosion, as their roots hold soil in place. Plants also play an important role in the water cycle. Water moves from the plants roots into the stem and leaves, where it evaporates becoming water vapor that is stored in the air.

Without pollinators we would not have plants, and without plants, the earth's water cycle would be jeopardized and out of balance. Pollinators are also essential to plant life that humans and wildlife worldwide depend on. We need pollinators and they need our help!

Commit to being pollinator or bee friendly with these simple actions:

- Avoid the use of pesticides in your yard.
- Grow or buy organic food.
- Plant bee-friendly (blooming) plants that are native or non-invasive.
- Allow clover and dandelions to grow in your lawn. They are often a first food source for bees in spring.
- Keep a shallow dish of water filled with pebbles in your yard for bees to drink.
- Educate your family and friends about the importance of pollinators!

Interested in creating a puzzle piece for the exhibit?

Join us and guest artist Carrie Ziegler of Earth Art for a thought-provoking display of art reflecting pollinator issues and solutions. Participants will paint a piece of a puzzle expressing how we can all protect pollinators. Puzzle pieces will be combined and installed at Olympia City Hall for a Spring Arts Walk exhibit. Art supplies provided. To reserve your puzzle piece, register at streamteam.info and click on register. **Completed puzzle art piece due by March 18.** For more information, contact Michelle at mstevie@ci.olympia.wa.us.

Pollinator Fun Facts!

About 1 out of every 3 bites of food exists because of our precious pollinators.

Pollinators support a **variety of life** in the world. There is a connection between plant diversity and pollinator diversity.

In the U.S., pollination produces nearly **\$20 billion** worth of products annually.

Insects, such as bees, wasps, moths, butterflies, flies and beetles are the most common pollinators, however, as many as **1,500 species of vertebrates such as birds and mammals serve as pollinators too.**

These include hummingbirds, perching birds, fruit bats, opossums, lemurs and even the gecko.

The **honey opossum** is an important pollinator in Australia for the flowers of the eucalyptus tree.

The white ruffed lemur is the **world's largest pollinator.**

One native leaf cutter bee can do the pollination job of 20 non-native bees.

The **tiny chocolate midge** is the **ONLY** pollinator who serves the cacao plant.



PHOTO CREDIT: MICHELE BURTON PHOTOGRAPHER

Purple Martin Monitoring Training

Purple martin populations are on the rise all over the United States due to conservation and monitoring efforts. These graceful birds once nested in the cavities of large dead trees (snags) in the forest. Due to land development, the purple martin's natural nesting habitat no longer exists in urbanized areas. Loss of habitat and the use of pesticides are two contributing factors causing a great decline in purple martin survival. To restore failing populations, nest box programs were developed throughout the US. These programs, including the nest boxes located on East Bay Drive, have contributed to the recovery of purple martin populations.

PURPLE MARTIN MONITORING TRAINING

- Tues., Mar. 29
- 5 – 6 p.m.
- East Bay: Marine Dr. & Olympia Ave., Olympia

NO EXPERIENCE NECESSARY!

Are you interested in monitoring to track purple martin populations?

Stream Team is looking for volunteers to monitor the nest boxes at East Bay in downtown Olympia from April to September. New volunteers are required to attend a short training on monitoring basics and bird identification and then can sign-up to monitor throughout the season.

Our actions at home have a direct effect on migrating bird populations.

Migrating birds that depend upon insects for food, such as purple martins, are affected by land use changes and other human actions. All over the world, birds are at risk from human impacts. Actions such as deforestation, intense agriculture, pesticide use, predation by domestic cats, collisions from man-made structures, light pollution and climate change put our feathered friends in jeopardy of extinction. In 2018, USA Today reported that birds eat up to 550 million tons of insects each year. Without insects, both migrating birds and the balance of our entire ecosystem would be lost.

By avoiding the use of pesticides and not purchasing plants where neonicotinoids (a type of pesticide) are used, you can help protect water quality from harmful runoff and help native insects and migrating birds! Insecticides such as neonicotinoids or neonics are now the most widely used pesticide worldwide. This group of pesticides is persistent in the entire plant including the produced seeds. The use of neonics is contributing to honeybee die-off and colony collapse. These pesticides are also deadly to birds. One small neonic coated seed can kill a songbird. Other pesticides, such as rodenticides, can kill large hawks that have eaten rodents that have ingested the poison.

What can you do to help purple martins and other birds?

- Practice natural lawn care and avoid pesticides.
- Retain dead and dying trees (snags) in your landscape especially near saltwater, forests, streams and wetland sites.
- Create snags in forest openings and along forest, stream and wetland edges if snags are lacking or limited.

To register to help monitor purple martins, visit streamteam.info and click on register. For more information, contact Michelle at mstevie@ci.olympia.wa.us or visit streamteam.info/hands-on-science/#purple-martin.

Stinging or Common Nettle (*Urtica dioica*)

Stinging nettle is a common perennial plant growing worldwide and known for its stinging leaves. Reaching up to six feet tall, stinging nettles can grow in both sun or shade but prefer damp soils along streams, forests and meadows. The stinging nettle spreads rapidly through rhizomes, a creeping root system that grows horizontally underground producing new plants. Rhizomal spread, coupled with disturbance, enables stinging nettle to be aggressive and take over, similar to a non-native noxious weed.



The Urticaceae family, the family that stinging nettles belong to, is diverse and vast. Within this family, the plants more closely related to stinging nettle commonly have stems with a square form and jagged or toothed leaves. Both the stems and the leaves are covered with tiny stinging plant hairs. The stinging hairs, or trichomes, have round tips and when brushed against will break off, revealing needle-like tubes that can pierce the skin. These tubes contain a mix of chemicals including acetylcholine, formic acid, histamine and serotonin. When in contact with skin they cause a burning, itchy and sometimes blistering rash on people and animals.

Why Stinging Nettle Stings

The stinging mechanism of this plant allows for its survival and spread. It is used to defend itself from large plant eating animals (herbivores) so it is not eaten. Likewise, other plants use these same defenses for propagation and survival. Similar types of plants growing in soils with high concentrations of salt produce salt secreting trichomes while others such as insectivorous plants have trichomes that trap and digest insects. Similarly, thorns found on roses are an outgrowth of such a mechanism also used to deter herbivores from eating them.

Uses for Stinging Nettle

Stinging nettle is an amazingly versatile plant and has long been used as a food source and medicinal herb. The stem of the plant is very fibrous and can also be used for making rope and textiles. As a food source, once the plant is dried or cooked the stinging hairs are no longer effective and can be eaten. In the spring, the new green sprouts and the older leaves are a source of nutrients including calcium, magnesium and vitamins A, K and C. Dried stinging nettle has been used to treat urinary disorders, allergies and hay fever, diabetes, gout, eczema, dandruff and arthritis.

Climate Conversations: Forest Carbon Sequestration Webinar

CLIMATE WEBINAR

- Tues., May 17 • 6 – 8 p.m.
- Webinar



Photosynthesis:

The process by which green plants and other organisms use sunlight to create food from carbon dioxide and water.

What is forest carbon sequestration?

Carbon sequestration is the uptake and storage of atmospheric carbon in forests and wood products. It is one of the most important roles played by forests, grasslands and other plants. Through photosynthesis, growing trees and plants remove carbon dioxide from the atmosphere and store it in their leaves, stems, branches and roots. Much of this material is eventually stored in the forest soils. This uptake and storage of carbon from the atmosphere helps to offset greenhouse gas concentrations in the atmosphere and ease climate change. The amount of carbon stored is influenced by many factors such as forest age, management and level of disturbance.

At this climate conversation, guest speaker, Dylan Fischer, scientist and faculty member at The Evergreen State College, will talk about the role of northwest forests in a changing climate and research that has been conducted demonstrating the capacity of our forests to help mitigate carbon emissions.

Dr. Fischer teaches and conducts research on plant ecosystem ecology, carbon dynamics, nutrient cycling and disturbance ecology in forests. His work includes work with tree roots, molecular genetics, plant physiology, carbon balance, nitrogen cycling, species interactions, community analysis and restoration ecology.

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

Wildflower Seed Packets: *Friend or Foe?*



Wildflowers have the reputation for being low maintenance, water wise, colorful and providing habitat for bees and butterflies. Over the years, wildflower seed mixes have been used to beautify roads, highways and yards. They're cheap and you can buy them on the shelves of local nurseries and hardware stores, but are they beneficial or do they cause other concerns?

A University of Washington study determined that wildflower seed packets mostly contained fast growing nonnative invasive plants or non-friendly plants. You can find the study by visiting [washington.edu/news/2002/04/18/wildflower-seed-mixes-full-of-weed](https://www.washington.edu/news/2002/04/18/wildflower-seed-mixes-full-of-weed).

Common fast-growing species in wildflower packets include these naturalizing, non-native plants:



Orange Hawkweed



Bachelor Button



Butterfly Bush

“Naturalizing” means they spread like wildfire and take over woodlands, prairies, stream sides and wetlands. Some of these packeted plant seeds may be considered as invasive or noxious weeds. Many noxious weeds threaten public health, the environment, wildlife habitat, forests, agricultural areas and recreational areas.

Why does it matter if I plant non-native or naturalizing plants?

Nonnative/invasive plants are fast growing and can take over an entire ecosystem. As they spread, they outcompete, or crowd out native plants leaving no room for them to grow. Invasive plants, like English ivy, can harm and kill large trees. Our native plants play a critical role in our ecosystem as important food sources for birds and other wildlife, as well as treating polluted stormwater runoff helping to keep our local waterways clean.

The True Cost of Wildflower Mixes

It is estimated that the United States spends \$185 billion per year trying to remove invasive species. The State of Oregon spends \$46 million a year fighting one plant species: Scotch Broom. The more non-native species that are introduced and spread, the more money is spent trying to control and remove them, while native plants and wildlife decline due to loss of habitat and food sources.

What can you do?

If you want to add some colorful flowers and pollinator friendly plants to your yard, don't reach for the wildflower seed packets. Instead, plant native species or ornamentals known to not naturalize.

To learn more about natural gardening and lawn practices visit streamteam.info/native-plants or streamteam.info/native-plants-reference-library.

Naturalizing:

When a plant or animal from another region successfully establishes itself in a new environment.

Noxious weed:

Invasive, non-native plant that threatens agricultural crops, local ecosystems or fish and wildlife habitat. Noxious weeds include non-native grasses, flowering plants, shrubs and trees, and aquatic plants that invade forests, wetlands, rivers, lakes and shorelines.

Additional resources:

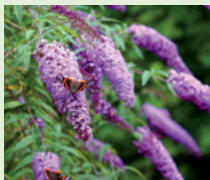
growsmartgrowsafe.org

thurstoncountywa.gov/phss/phssdocuments/weeds-June%202021-web.pdf

invasivespecies.wa.gov

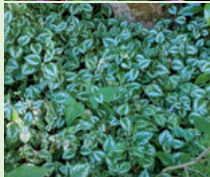
Weed Detectives, We Need Your Help!

In Washington State, noxious weeds are defined as “a plant that, when established, is harmful, destructive or difficult to control using cultural or chemical practices.” Noxious weeds and invasive plant species have been found in our area! Check your yard and landscape for invasive species such as these:



Butterfly Bush (*Buddleia*)

Butterfly bush grows quickly and has 40,000 tiny seeds per flower head. With a 30-year lifespan and rapid reproduction, this plant crowds out native plants and trees. They are rarely used as habitat for our native butterflies.



Yellow archangel (*Lamium galeobdolon*)

Yellow archangel is a fast-growing ground cover that easily out competes our native plants spreading quickly into forested and natural areas when dumped as yard waste.



Scotch Broom (*Cytisus Scoparius*)

Scotch broom establishes itself quickly after land clearing activities and spreads throughout treeless areas. A single plant can produce 300-500 seeds annually which can sprout after being dormant in soil for 50 years.



English Ivy (*Hedera Hibernica*)

A member of the ginseng family, this weed grows as a vine for up to 10 years before fruiting. Seeds get widely dispersed by birds and the plant can regrow from leaf or stem fragments left on the ground.

To remove invasive weeds from your yard, follow these steps:

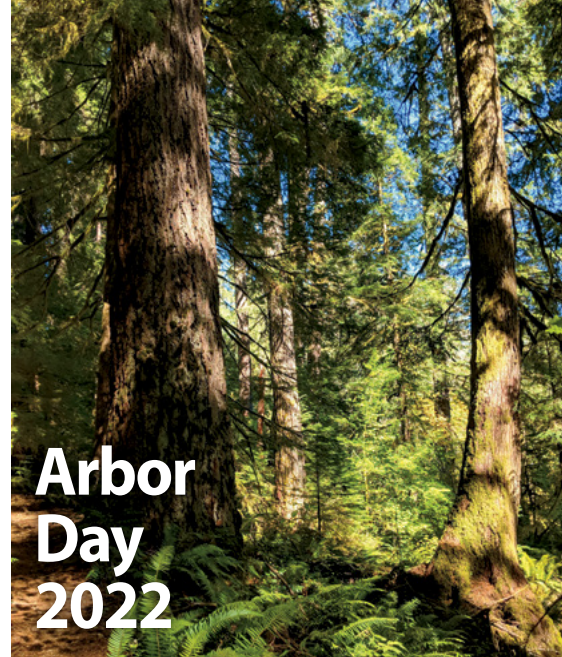
- Hand-pull the plant as much as possible including the roots.
- Bag the plants.
- Dispose in your garbage or take bagged plants to the Thurston County Waste and Recovery Center where it will be processed as garbage for a fee.

Removing English Ivy on trees:

- Remove all vines from the lower trunk of the tree (only as high as you can comfortably reach).
- Pry stems off with a large screwdriver or forked garden tool.
- Make sure to remove the stems from all around the trunk.
- Cut large vines using an axe or a pruning saw.
- The upper vines will die if they are not rooted in the ground, although this can take several months.
- Clear ivy from around the base of the tree as well or it will quickly re-grow up the trunk.

For more information on how to identify, remove and dispose of invasive weeds, visit co.thurston.wa.us/tcweeds, email tcweeds@co.thurston.wa.us or call 360-486-5576.

DID YOU KNOW? Weed wrenches are a manually operated tool that give you leverage to pull a plant out of the ground by its roots. It is especially helpful for plants like Scotch Broom that have very strong roots. **To borrow a weed wrench for FREE, contact your local Stream Team representative listed on page 2 of this newsletter.**



Arbor Day 2022

Celebrate the 150th anniversary of Arbor Day!

Started 150 years ago in Nebraska, Arbor Day brings together communities from over 44 countries to help plant trees around the world! These trees play very important roles in sometimes unexpected ways!

Join Stream Team and your local jurisdictions this spring to help plant trees around the community!

Keep an eye on our monthly emails for the latest information on events happening near you.

DID YOU KNOW?

- Trees help remove pollution from the atmosphere, improving air quality and human health.
- One large tree can provide a full day's supply of oxygen for up to four people.
- Trees help improve water quality by acting as a buffer between rivers and local stormwater runoff, soaking up and treating water before it reaches the river.
- Trees help cool ground and air temperatures by providing shade.
- Trees help save energy by keeping buildings nearby shady and cool in the summer and warmer in the winter.
- For every dollar spent planting trees, communities receive two to five times that investment in benefits.

Puget Sound's Underwater Forests



Under the surface of the Salish Sea, you'll find one of the most ecologically productive habitats on Earth—kelp forests. Kelp forests play a vital role in deep water and nearshore marine environments. Like tropical reefs and rainforests, kelp forests create and sustain life.

Over 20 kelp species can be found in the nearshore intertidal and subtidal zones of Puget Sound. Nearshore habitats are an important part of the marine ecosystem. Kelp are part of the rich marine biodiversity of Puget Sound and a huge part of our Northwest culture, contributing to our quality of life. Nearshore kelp forests provide critical refuge, food and nursery grounds for species like salmon, forage fish and rockfish. They also support local and distant food webs that sustain birds like cormorants and herons and marine mammals like Southern Resident orcas, seals and gray whales that live in or near Puget Sound.



ILLUSTRATION CREDIT: TheMarineDetective.com

Vanishing Bull Kelp

Bull kelp, an iconic annual seaweed, is one of the main species that help form underwater kelp forests. Each spring bull kelp emerges with their root-like structures, or holdfasts anchored to the rocky sea floor. Their long stems or stipes, buoyant bulbs and wavy leaf-like blades can grow up to 90 feet, absorbing nutrients and sunshine at the water's surface, where they create a floating surface canopy.

Over the past 40 years, large bull kelp losses have been observed throughout our region. Entire kelp beds have vanished between Tacoma and Olympia. Ecologists with the Washington State Department of Natural Resources (DNR) have been studying four locations of kelp south of Tacoma since 2013, two of the four sites are now gone.

New Research May Help

A recent study led by Helen Berry, and a team of DNR researchers, used historical documents to identify long term trends in South Puget Sound kelp beds by reconstructing kelp distribution patterns over the past 145 years. The team used historical records such as historic maps, navigational charts and documents, combined with modern data sources, to piece together an assessment of changes over time. They found a staggering 80% loss of bull kelp in South Puget Sound since the 1870s, when European colonizers began arriving. The remaining bull kelp is mostly contained in two areas, the Tacoma Narrows, and a second site near Squaxin Island, located in Mason County. Ecologists have compared populations of bull kelp near Salmon Beach in the Tacoma Narrows to kelp near Squaxin Island, finding that the Tacoma Narrows area has better habitat conditions which may be attributed to stronger currents and more intense tidal mixing than the Squaxin Island site.

The study examines many factors of widespread kelp loss versus pockets of remaining kelp which provides clues about what is impacting kelp beds. Two key factors contributing to the loss of kelp are warming waters and negative human impacts on water quality. Human impacts include stormwater pollution, nutrient loading, increased turbidity, high sediment loading and the introduction of invasive species. Additionally, kelp forests grow best in cold water. Warming marine waters and other impacts resulting from climate change pose new and growing threats to kelp resilience. Since 2013, elevated water temperatures caused by warmer waters from the "Blob" and El Nino have accelerated kelp loss in South Puget Sound. This research has been documented in an interactive story map titled *Patterns of Loss and Persistence in Kelp Forests South Puget Sound (1873-2018)* created in March of 2021.

Kelp Recovery Plan

Groups, including the Northwest Straits Commission, NOAA's National Marine Fisheries Service, Puget Sound Restoration Fund, DNR and Marine Agronomics, are pursuing ways to reduce environmental impacts on kelp. In May of 2020, the Puget Sound Kelp Conservation and Recovery Plan was released which lays out a vision for coordinated research and management actions to protect kelp in Puget Sound.

Within the plan are six strategic goals:

1. Understand and reduce kelp stressors;
2. Deepen understanding of the value of kelp to Puget Sound ecosystems and integrate into management;
3. Describe kelp distribution and trends;
4. Designate kelp protected areas;
5. Restore kelp forests;
6. Promote awareness, engagement, and action from user groups, Tribes, the public and decision-makers.

To see the entire plan visit: nwstraits.org/media/3020/pugetsoundkelpconservationandrecoveryplan.pdf

A Recent Kelp Expedition

In July 2021, an expedition set off to explore kelp forests in Puget Sound. It was a chance to see kelp forests up close, and ignite a broader effort to protect and restore our local kelp forests. During the expedition, partners and work groups visited key kelp forests and other significant kelp locations throughout Puget Sound to conduct research, map kelp beds and participate in two gatherings to build community awareness and support for kelp forests. The goals of the expedition were:

- Spotlight the importance of kelp forests.
- Showcase coordinated actions across tribes, agencies, NGOs and researchers.
- Facilitate collaborative science and research to fill information gaps.
- Share knowledge about kelp forests.
- Celebrate the role of kelp forests with communities throughout Puget Sound.

A beautiful interactive story map was created to share knowledge about the cultural and environmental importance of our region's kelp forests and to highlight the kelp expedition. You can take a look by visiting storymaps.arcgis.com/stories/124e9d24ec1d4e419ea4e32a5ccb42fa.

...continued on page 10

Puget Sound's Underwater Forests ...continued from page 9

Actions We Can Take

It's hard to imagine our region without kelp forests. Here are some actions each of us can take to help protect marine habitats:

- Prevent stormwater pollution with small actions like picking up pet waste, avoiding yard chemicals, using commercial car washes, checking for and fixing auto leaks and installing rain gardens.
- Keep fishing boats to the edge of kelp beds, if passing through kelp cut your boat's engine.
- If harvesting kelp, do so sustainably so it can regrow.
- Talk about the value of kelp to Puget Sound ecosystems with friends, family and community leaders.



Seafood Eaters



Let people know that we are all connected to kelp through our seafood and the health of the marine systems around us.

Shoreline Property Owners



Manage runoff and sediment, and re-establish natural shorelines where possible.

Car Owners



Wash your car at a car wash, as the wastewater is collected for treatment (unlike most street drains). Bonus: many car washes re-use water.

Parents



Take your kids to a beach near a bull kelp forest in fall and winter. Kelp that washes ashore will occupy your kids for hours, fueling their imagination—leaving you time to enjoy the beach yourself.

Divers



Participate in kelp index site monitoring.

Voters and Constituents



Reach out to your local representatives/decision makers to ask what they're doing to support critical nearshore kelp habitat.

Boaters



Learn where your local kelp beds are and avoid driving through them or anchoring in the bed.

Puget Sound Resident



Make sure you're reducing the nutrient pollution so that kelps have the clear water they need to grow.

Kelp Ambassadors



Pay attention to local kelp forests over time (log personal observations and take pictures of a kelp bed annually to track presence). Notify local/state resource agencies if you notice a dramatic decline or disappearance.

Consumers



Purchase sustainable seafood products. Support kelp farming by using toiletries, food, and other household products containing sustainable kelp ingredients.

Donors, Experts and Volunteers



Support organizations working to conserve and restore kelp forests.

Educators



Add kelp stories to your curriculum.



For more ways you can help, visit <https://storymaps.arcgis.com/stories/124e9d24ec1d4e419ea4e32a5ccb42fa> and click on **Collective Action**.

Welcome & Farewell



This winter Stream Team is saying farewell to 3 remarkable coordinators and welcoming 3 new staff to our Stream Team program. Please join us in wishing Ann Marie Pearce, Emily Watts and Meridith Greer well on their new adventures and welcoming Linsey Fields, Miriam Villacian and Sophie Love to Stream Team.

Welcome Aboard!

Linsey Fields is joining us as the new City of Lacey coordinator. After serving Lacey residents as the waste and drinking water outreach coordinator Linsey is expanding into stormwater and stream restoration. She is excited to be a part of Stream Team and to work with all our great volunteers! Linsey is an alum of The Evergreen State College with a background in fisheries and has recently graduated with her Master's in public administration.



Sophie Love is the Water Resources Assistant for City of Lacey. She looks forward to serving the public through outreach and education. She will coordinate and lead events and lessons, assist with Stream Team Newsletters, and support the City of Lacey Water Resources Specialist. Sophie has her Bachelor's in Biology – Environmental Studies and a background in fisheries and invasive species management.



Miriam Villacian is an Education and Outreach Specialist with Thurston County. She'll oversee the Thurston County Pet Waste Program, assist with the Stream Team Newsletter and social media and help with various administrative tasks. Miriam has her Masters in Sustainable Systems from Presidio Graduate School and has worked for 13 years in urban sustainability and environmental outreach with various audiences.



Farewell!

Emily Watts joined Stream Team in 2018 as the Lacey Coordinator. She has accepted an exciting position with Washington State Department of Transportation as the Community and Organizational Engagement Planner. Emily was pivotal in developing and designing our monthly emails, implementing Puget Sound Starts Here campaigns and Lacey riparian restoration events. We will miss Emily's upbeat personality, collaboration and hard work with Stream Team, but are excited for her new career move. Congratulations, Emily!



Meridith Greer will be moving in a new direction in the spring of 2022 as she pursues more project management focused work. Meridith has been an integral part of Stream Team since 2018, providing support for all Stream Team programs, contributing to the newsletter and hosting Worlds Ocean's Day, the first plankton-monitoring event in Tumwater! We wish her well on this new adventure.

After working full time for 14 years and parttime for several more before, **Ann Marie Pearce** is moving on from her position at Thurston County. During her time with Stream Team Ann Marie worked on numerous programs including taking the lead for the McLane Creek Salmon Stewards, planning and leading stream riparian restoration projects benefiting salmon recovery and creative projects such as Sea Cinema and Haunted Hikes and Go Green Natural Lawn Care Program.

Ann Marie was always cheerful no matter how cold and rainy the weather may have been, she always had a warm smile at the ready. She is beloved by many Stream Team volunteers and will be greatly missed. We wish her the best in all her future endeavors.



Goodbye

Living in the Land of Moss -

Mosses of the Pacific Northwest

Moss is found everywhere, especially in the Pacific Northwest. It lives on our trees, roofs, driveways, lawns and all throughout the forest. Mosses are non-vascular plants in the plant division Bryophyta. They have no true roots, flowers or fruit and instead of seeds they have spores. Their leaves are only one cell thick. Many of the plants we think of as moss look like large green carpets and are technically bryophytes. The group of non-vascular plants that make up bryophytes include mosses, liverworts and hornworts.

Spores vs. Seeds

Mosses spread primarily by windblown spores instead of seeds like many flowering plants. As the spores mature, they form a loose, powdery mass that disperses by the wind or water. When they receive sufficient moisture at their landing site, they germinate and grow. Mosses can also reproduce by fragments of the shoots or leaves breaking off then moving to start a new plant if the moisture and site condition permits.

Acquiring Nutrients & Water

Mosses acquire nutrients and water differently than most plants as they take up a major portion of their nutrients and water from the atmosphere, through dust and rainwater, instead of soil. They have low nutritional needs, which allows them to grow on almost anything if there is sufficient water, including on sand and manmade metal objects, like our cars and houses.

Anything Can Be a Home

Mosses are opportunist in our urban areas growing on trees, sidewalks, gardens, rooftops and everywhere in between. The main requirement for moss is sufficient moisture for at least part of the year. Shaded rooftops are ideal for mosses, even if it they are dry for part of the year. Roof tops and sidewalks can be rid of unwanted moss by increasing the sunlight and sweeping it with a stiff broom.

Avoid the use of toxic chemicals such as moss remover with zinc products which are highly toxic to aquatic life, plants, humans and pets! Remember when it rains these toxic products will run off your roof and driveway into lawns and gardens and into storm drains, which lead to our streams and Puget Sound. Find out how to treat moss while protecting our streams by visiting our Reference Library resource on moss control at https://streamteam.info/wp-content/uploads/2020/04/Moss_STFall2013_YC-MG.pdf

Mosses & Their Many Ecologic Benefits

Moss is very susceptible to air pollution and are used as indicators of pollution. Moss can reduce soil erosion on disturbed areas such as land clearing from development and logging. Moss soak up a lot of water, reducing peak stream flows after winter storms. In the moist Pacific Northwest, many mosses contain cyanobacteria that convert the nitrogen in the air into a form that can be taken up by other plants. This nitrogen fixation provides important nitrogen nutrient input into our ecosystem. To learn more about moss check out Bruce McCune's book titled *Common Mosses of Western Oregon and Washington*. Bruce is a professor of Botany and Plant Pathology with Oregon State University in Corvallis, Oregon.

Want to learn more?

Join us for a field trip workshop with wetland scientist and bryophyte enthusiast, Greg Eide. Greg has a degree from The Evergreen State College where he studied botany, with a focus on rare plants, including lichens and bryophytes of southwest Washington. Greg conducts wetland delineations and botanical surveys and is co-author of lichen and bryophyte inventory studies on South Puget Sound prairies. Greg will give a short presentation before we seek out the many mosses on our walk.

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

Non-Vascular Plants are plants without a vascular system consisting of xylem and phloem. Instead, they may possess simpler tissues that have specialized functions for the internal transport of water.



LIVING IN THE LAND OF MOSS FIELD TRIP

- Sat., May 21
- 10 a.m. – Noon.
- Location TBD
- Masks Required

Add Some *Green* to Your Spring Clean

Are you doing some spring cleaning? If so, you may have “hazardous” household products that should NEVER be put in the garbage. The average American household has dozens of hazardous products, including oil paints and thinners, solvents, used motor oil and some cleaning supplies.



How do you know if a product is hazardous?

Look for key words like POISON, DANGER, WARNING or CAUTION on the label. In addition to being harmful to pets and family members, hazardous products can harm the environment if they are not properly stored or disposed of.

Follow these steps to keep your family, pets and local waterways safe:

- Store products in original containers and do not remove the label.
- Store hazardous products in a large plastic tote to prevent/contain spills and leaks both at home and in the car.
- Follow the label instructions carefully when cleaning up spills.
- Never combine different products together. A combination of products could create hazardous fumes, ignite or explode.
- Take all unused hazardous products and any materials used to clean up spills to the Thurston County HazoHouse for proper disposal.

To make your home greener this spring, consider replacing hazardous products with products that are safer for your family and the environment. For a guide to safer household products, visit [epa.gov/saferchoice](https://www.epa.gov/saferchoice).

Pressure Washing and Carpet Cleaning

If you plan to clean your carpets or do pressure washing (or plan to hire a contractor to do so), ensure these guidelines are followed to prevent polluted water from flowing down storm drains.

Pressure Washing

- Use the lowest setting and direct all wash water to a vegetated area where water can infiltrate.
- Do not use soaps or chemicals.
- Cover the ground with tarps, and sweep, vacuum or rake up paint chips to keep them from entering catch basins. If you have an older home, have chips tested to find out if they contain heavy metals that require them to be disposed of as hazardous waste.

Carpet Cleaning

- If you are connected to sewer, filter out debris and flush dirty wash water down the toilet.
- If you are on a septic, filter and spread dirty wash water over a landscaped area. The cleaning agents can harm your septic system.
- Throw filtered debris into the trash.
- If contracting a service, ask the company about their wash water disposal policy.

REPORT SPILLS

To report a small-scale spill or discharge into a storm drain or local water body, call your jurisdiction's 24-hour hotline. You can do so anonymously.

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

Kids' CORNER

WHAT'S THAT WORD?

Here are 10 statements that can be found in this issue of Stream Team News. Each sentence has a missing word or phrase. Complete the sentence and then find the word or phrase in the word search below. If you get stumped, the answers are at the bottom!

1. **STINGING** _____ is an amazingly versatile plant and has long been used as a food source and medicinal herb.
2. **PURPLE MARTIN** _____ are on the rise all over the United States due to conservation and monitoring efforts.
3. Through _____, growing trees and plants **REMOVE CARBON DIOXIDE FROM THE ATMOSPHERE** and store it in their leaves, stems, branches and roots.
4. _____ are an essential part of the planet's **ECOSYSTEM**.
5. Play along with the **GOOSE CHASE APP** on your phone or iPad, as you look for _____ along the trails.
6. Over 20 _____ species can be found in the **NEARSHORE INTERTIDAL AND SUBTIDAL ZONES** of Puget Sound.
7. **BULL KELP**, an iconic annual _____, is one of the main species that help form underwater kelp forests.
8. Wildflowers have the reputation for being low maintenance, water wise, colorful and providing _____ for **BEEES & BUTTERFLIES**.
9. **NOXIOUS WEEDS AND** _____ plant species have been found in our area!
10. Started 150 years ago in Nebraska, **ARBOR DAY** brings together communities from over 44 countries to help plant _____ around the world!

F	T	E	Y	P	J	K	U	H	G	B	H	A	B	I	T	A	T	C	D	H	J
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W	D	C	V	F	G	T	Y	H	N	U	J	M	K	I	O	W	C	V	Y	H	N

FIND THESE BONUS WORDS: **OXYGEN** **WEEDS** **WILDFLOWERS** **RESTORATION** **BUTTERFLIES**

ANSWERS: 1. nettle, 2. populations, 3. photosynthesis, 4. Pollinators, 5. clues, 6. kelp, 7. seaweed, 8. habitat, 9. invasive, 10. trees



To keep Stream Team participants safe, we are limiting the number of participants and requiring safety measures such as physical distancing and wearing masks. We will provide safety guidelines in advance to anyone who registers or contacts us for more information.

For additional events, event details or to register, please visit our website at **streamteam.info** and click on the calendar icon.

MARCH • APRIL • MAY • JUNE



Nature Sleuths Treasure Hunt

Explore parks and trails in Thurston County while looking for natural treasures! Join us on the Goose Chase app to play along.

For more information, visit streamteam.info/nature-sleuths or contact Michelle at mstevie@ci.olympia.wa.us. See pg. 2 for details.



Amphibian Egg Mass Survey

Sat., Mar. 5, 12, 26 • 9:30 a.m. – Noon
Thurs., Mar. 10 • 3 – 5 p.m.

Join other adventurous volunteers this spring and survey wetlands for amphibian egg masses. On-site field training will be provided.

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



Purple Martin Monitoring Training

Mar. 29 • 5 – 6 p.m.

**East Bay: Marine Dr. & Olympia Ave.,
Olympia**

Stream Team is seeking volunteers to monitor the nest boxes at East Bay in downtown Olympia from April to September.

To register, visit **streamteam.info** and click on register. For more information, contact Michelle at **mstevie@ci.olympia.wa.us**. See pg. 4 for details.

Spring Arts Walk: The Pollinator Puzzle Exhibit

April 2022

**Olympia City Hall, 601 E. 4th Ave.,
Olympia**

Join us for a thought-provoking display of art reflecting pollinator issues and solutions. Participants will paint a piece of the puzzle, expressing how we can all protect pollinators. Finished pieces will be combined and installed at Olympia City Hall for a Spring Arts Walk exhibit. Completed art due March 19th. Art supplies provided.

To reserve your puzzle piece, register at **streamteam.info** and click on register. For more information, contact Michelle at **mstevie@ci.olympia.wa.us**. See pg. 3 for details.

Climate Conversations: Forest Carbon Sequestration Webinar

Tues., May 17 • 6 – 8 p.m.

Join us with guest speaker, Dr. Dylan Fischer as we discuss the role of northwest forests in a changing climate

To register, visit **streamteam.info** and click on register. For more information, contact Michelle at **mstevie@ci.olympia.wa.us**. See pg. 5 for details.

Living in the Land of Moss— Mosses of the Pacific Northwest

Sat., May 21 • 10 a.m. – Noon

Location TBD

Masks Required

Join us for a field trip workshop with wetland scientist and bryophyte i.e., moss enthusiast, Greg Eide.

To register, visit **streamteam.info** and click on register. For more information, contact Michelle at **mstevie@ci.olympia.wa.us**. See pg. 12 for details.

Celebrate Pollinator Week!

June 20 – 26

Olympia, TBD

Mark your calendar for Pollinator Week events! Stay tuned for more details in our Summer Newsletter. See pg. 16 for details.



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

Celebrate
Pollinator Week!
JUNE 20 – 26
OLYMPIA



Celebrate Pollinator Week!

Mark your calendar for Pollinator Week events!

Stream Team is partnering with the City of Olympia's Park Stewardship Program for a special pollinator-themed restoration work party and other educational opportunities, including building pollinator gardens! Stay tuned for more details in our Summer Newsletter.

If you have noxious weeds that you must get rid of, try using bee-friendly methods. Visit co.thurston.wa.us/tcweeds/Beepage.htm for more information.

When buying ornamental plants to attract bees, avoid buying plants treated with neonicotinoids containing: Clothianidin, Dinotefuran, Imidacloprid or Thiamethoxam.

Avoid purchasing prepackaged wildflower seed mixes as they contain many invasive weed-type flowering plants. Request pollinator friendly seed packets from Thurston County Noxious Weeds at co.thurston.wa.us/tcweeds/Beepage_garden.htm.

If you must use pesticides, follow all specific requirements to protect bees on the label and spray after the flower petals have fallen (when it's less attractive to bees).

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Ways to Reduce Weeds While Protecting Bees

- Avoid using pesticides, insecticides and fungicides.
- Cover bare ground with coarse mulch to prevent weeds from growing.
- Pull weeds in late winter or early spring before they go to seed.
- If you can't pull all the weeds, then cut the flowers before they go to seed.
- Replace weeds with native or noninvasive pollinator-friendly plants that bloom from spring to fall.