Stream Team News

FREE

OLYMPIA • LACEY • TUMWATER • THURSTON COUNTY

EDUCATE • PROTECT • RESTORE

FALL EDITION
Sept–Oct–Nov 2021

Inside...

To keep everyone safe during this time, Stream Team is following 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.

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.

Indian Creek Watershed Restoration, Olympia

INDIAN CREEK RESTORATION, OLYMPIA

- **Sat., Nov. 6**
- **10 a.m. – 1 p.m.**

Join Stream Team and Olympia Parks, Art and Recreation for a day of restoration on Indian Creek. Indian Creek watershed hosts a natural forest of native trees and is home to numerous wildlife species. Unfortunately, it is also burdened with English ivy and other invasive plants. Bring a friend and join our community restoring parks! Restoration activities will include ivy removal from trees and along the trail to prep the site for future tree planting. All tools will be supplied.

To register for this workshop, visit **streamteam.info** and click on "register". For more information, contact Kym at **kfoley@ci.olympia.wa.us**. Event location and parking will be sent upon registration.

ON THE COVER: Stream Team Salmon Steward Susie Vanderburg. 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
Thurston County Stream Team

NEWSLETTER CONTRIBUTORS:

Meridith Greer, Susan McCleary, Ann Marie Pearce, Michelle Stevie, Sarah Tolle, Emily Watts, Heidi Zarghami, and Michele Burton Photographer.

DESIGN & LAYOUT:

ASGD Brand Strategy + Design
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: Lacey Water Resources
Tel: 360-438-2687
TDD: 1-800-833-6388
WaterResources@ci.lacey.wa.us

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

Attn: Michelle Stevie
mstevie@ci.olympia.wa.us

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

Attn: Meridith Greer
Tel: 360-754-4148
TDD: 1-800-833-6388
mgreer@ci.tumwater.wa.us

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

Attn: Ann Marie Pearce
Tel: 360-754-3355 ext. 6857
TDD: 360-754-2933
ann.marie.pearce@co.thurston.wa.us

See the Salmon like Never Before!

Brewery Park at Tumwater Falls (formerly Tumwater Falls Park) has always been a great place to see the returning salmon, but this year you can see them like never before!

Over the last year, the Department of Fish and Wildlife and the City of Tumwater have made changes at the park. The City of Tumwater officially opened the first leg of the Deschutes Valley Trail earlier this year. This new trail connects Historical Park and Brewery Park at Tumwater Falls, allowing you to walk alongside the salmon as they swim up the river!

The second big change at the park is a new and improved hatchery. The new hatchery features large net pens that can hold more fish, as well as a raised fish ladder. Watch through the new windows as thousands of salmon navigate their way up the fish ladders every year!

Each year hatchery produced Chinook salmon return to the Deschutes River. Chinook salmon are the largest of the Pacific salmon species, weighing between 20–25 pounds. These salmon spend between three to seven years in the ocean before returning to freshwater, mostly eating other smaller fish. The Chinook salmon that return to Brewery Park at Tumwater Falls find their way back to the Deschutes River between mid-September and mid-October. While a few other salmon may make their way up the fish ladders at the park, the majority of salmon returning this fall will be Chinook salmon.

Do you want to help make sure salmon can return to the Deschutes River every year? Your everyday actions can really help! Salmon need cool, clean water to survive and you can help by following these easy steps!

- Pick up after your pet: Every doo, every time
- Take your car to a commercial car wash
- Use natural yard care techniques
- Have vehicle leaks fixed
- Conserve water all year-long

Learn more about how you can protect salmon every day by visiting **streamteam.info**.

Stay tuned for the Return of the Chinook Event!

streamteam.info/newsletter-sign-up

Sign up for our monthly emails and be the first to find out how to celebrate the return of these King salmon.

CREDIT: MICHELE BURTON PHOTOGRAPHER

Chum Salmon & Cider Celebration

When the chum salmon return to McLane Creek to spawn, it's a cause for celebration. Last year, due to state Covid-19 safety guidelines, Stream Team cancelled the annual celebration held at the McLane Creek Nature Trail.

As we get closer to chum spawning season, Stream Team will consider State guidelines to determine if we can safely hold a Chum Salmon & Cider Celebration in November. Please check our website at **streamteam.info/events/** for updates.

See Chum Salmon
at McLane Creek this November!

Every fall, chum salmon return from the ocean to spawn in McLane Creek, which flows through the McLane Creek Nature Trail.

McLane Creek Nature Trail is located off of Delphi Road on the western outskirts of Olympia. The loop trail is a little more than one mile long, and it offers two birds-eye viewing locations to watch this reproductive wonder.

The first viewing location is a large platform built along the edge of the creek. This viewing platform offers plenty of space to spread out and still see the chum spawning.

The second location is a walking bridge over the creek with views upstream and downstream.

To learn about the chum salmon and the spawning process:

- Look for the signs posted at the viewing location.
- Watch our salmon videos at **streamteam.info/salmon-viewing-videos/**.
- Play along with our Nature Sleuth scavenger hunt game at **streamteam.info/nature-sleuths/**.

Parking is limited at the nature trail*. We recommend carpooling if possible.

For more information about McLane Creek Nature Trail, including directions, go to WA State Department of Natural Resources website at **dnr.wa.gov/Capitol#mclane**.

CREDIT: MICHELE BURTON PHOTOGRAPHER

Go to **dnr.wa.gov/publications/eng_rms_mclane_nature_trail_2.pdf** to download a map of the loop trail at McLane Creek Nature Trail.

Note: The McLane Creek Nature Trail is part of the Capitol State Forest and is a WA State DNR Recreation Site. A Discover Pass is required when visiting state recreation lands managed by the WA State DNR and WA Department of Fish & Wildlife. For information about how to purchase a $10/day pass or $30 annual pass, visit **discoverpass.wa.gov (Salmon Stewards are granted temporary parking passes.)*

CREDIT: MICHELE BURTON PHOTOGRAPHER

BEWARE:

Dogs can get sick and even die from eating raw salmon in or near a stream!

If a dog eats raw salmon it could get Salmon Poisoning Disease (SPD). SPD is often fatal to dogs if not treated in time. To learn more about SPD, visit **bit.ly/3Ajr7we**.

Salmon Viewing: Keep Your Dog & Salmon Safe!

We are very lucky to have places nearby where we can watch salmon as they swim upstream and spawn. For Chinook and chum salmon they only have one chance to spawn (mate and lay eggs).

It's important to watch quietly and not scare salmon while they are spawning.

Salmon stop eating as they enter streams. Thus, they have a limited amount of reserved energy to help them survive long enough to swim upstream and spawn.

Help make sure the salmon you watch can spawn:

1. **Keep dogs on leash**—dogs can scare the salmon.
2. **Stay quiet and move slowly**—a shadow or movement over the water or even a slight noise can scare the salmon.
3. **Stay out of the stream & keep your dogs out of the stream**—salmon bury their eggs under the gravel to keep them safe. Walking in the stream can kill the salmon eggs.

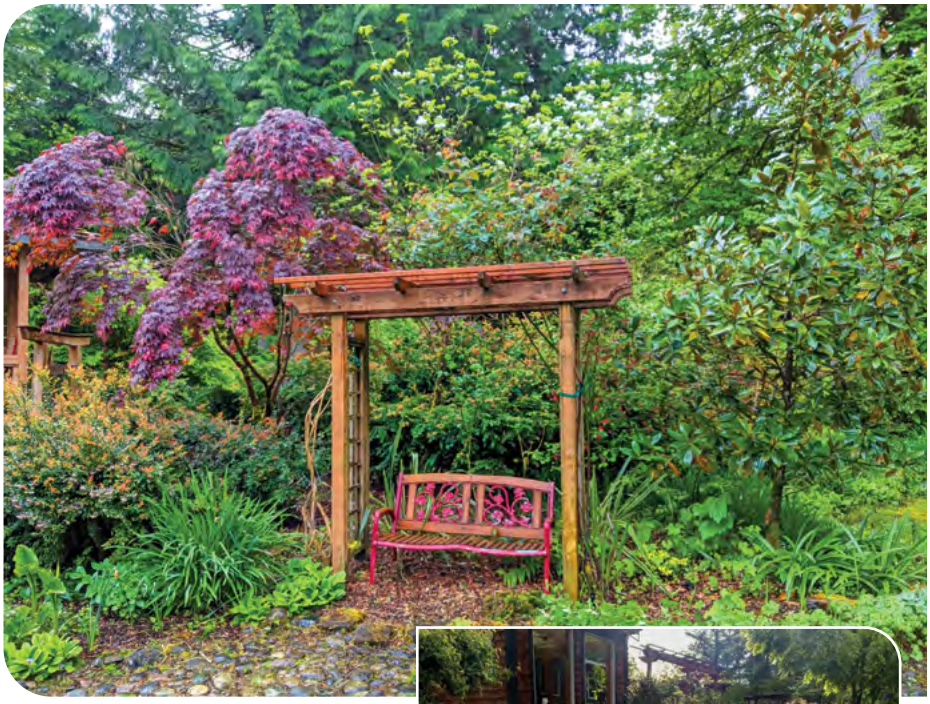
When walking near streams when salmon are spawning:

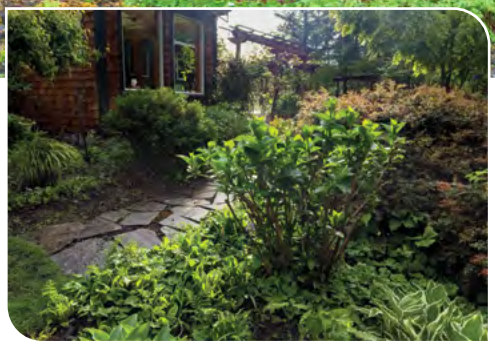
- **Keep your dog on a leash**—even when you are not near the stream. Animals can carry salmon carcasses away from a stream. Dogs have great sniffers and they can find these carcasses, which may be infected.
- **Or, leave your dog at home.** Your dog will be safe from Salmon Poisoning Disease and the salmon won't get spooked by the quick movements of a dog.

Less Grass, Less Stress
for You & the Planet

Fall is here and it is time to tuck-in your yard for a winter nap! Before you get started, take a minute to think about all the time and money you spent mowing, watering and maintaining your lawn during spring and summer. You might get the notion to downsize or lose the lawn entirely. Imagine a yard with big planting beds bursting with beautiful native plants for pollinators, or a large garden filled with delicious veggies!

If you are concerned about climate change, clean water and water conservation, eliminating or reducing your lawn is the right choice. Here's why:





- When it rains, chemicals, pesticides and nutrients from lawn fertilizers are carried to our waterways, exposing children, pets and wildlife to harmful chemicals.
- The EPA estimates 40 to 60 percent of nitrogen from fertilizers ends up in surface and groundwater.
- Grass is thirsty. Americans use about 7 billion gallons of water a day, a third of all residential water consumption is for lawns.
- Despite the time and resources needed to maintain lawns, they provide no habitat for bees, butterflies, birds or other native wildlife.
- Exhaust emissions and fine particulates from gasoline-powered lawn and garden equipment can cause adverse health effects. These include cardiovascular disease, stroke, respiratory disease, cancer, neurological conditions, premature death, and effects on prenatal development.
- For each ton of nitrogen created to make lawn fertilizer, four to six tons of carbon are added to the atmosphere.
- EPA data shows that by mowing our lawns, Americans use 800 million gallons of gasoline and spill an additional 17 million gallons. Burning all this gas releases 16 billion tons of CO_2 into the atmosphere, contributing to climate change.

Keeping some of your lawn? You can lower your lawn's environmental footprint by following these recommended actions:

- Use a push or electric powered lawn mower.
- Mulch mow and leave clippings on your lawn. Lawn clippings add nutrients to your soil rather than using fertilizers made from fossil fuels.
- When needed, use organic slow-release fertilizer. This will help build soil health and keep nutrients from running off into waterways.
- Let your lawn go golden in summer or water only 1" per week slowly, when it's cool outside.
- Mow high. Long grass blades help soil hold onto more moisture.
- Compost yard trimmings to create a natural source of nutrients for flower and vegetable gardens.

Not sure how to get rid of your lawn? You can do it all at once or chip away at it gradually, increasing the size of your garden and planting beds each year. Dedicate a few of the hours you might normally spend caring for your lawn to planting native grasses, shrubs, trees, flowers and food. Stream Team has some great instructions on how to downsize your lawn and what replacement plants to choose.

To learn more about natural yard care, visit **streamteam.info/yard-care-reference-library**.

Help Prevent *Flooding* in Your Neighborhood

A single storm can dump millions of gallons of water in our cities and county.

Rain cannot soak into the soil through hard surfaces like rooftops, roads, and parking lots. Instead, it flows over these hard surfaces or pools up if it has no place to flow. As stormwater runs over these surfaces, it picks up pollutants like oil leaked from cars, tire bits, lawn chemicals, dog poop and more.

To help prevent flooding in roads and in our neighborhoods, the cities and the county built a system of storm drains, pipes, ditches and ponds to carry the water off our roads.

What is a stormwater system?

A stormwater system is a network of engineered structures designed to prevent flooding by moving stormwater away from homes and off our streets. Stormwater systems include:

- Storm drains,
- Underground pipes,
- Drainage ditches,
- Stormwater ponds, and
- Much more.

Newer stormwater facilities also include features to help remove pollutants from the water before it flows on into inlets, lakes, streams, or down into our groundwater supplies.

Your neighborhood's stormwater system needs to be checked and maintained regularly—just like your car—or they won't work right and may break down.

Storm drains, stormwater ponds and other parts of your neighborhood's stormwater system need to be regularly checked and cleaned out. Otherwise, they can become clogged and lead to flooding. In many neighborhoods, it's the neighborhood's responsibility to inspect and maintain all or part of the stormwater system.

Want to find out if your neighborhood is responsible to maintain its stormwater system?

Contact your local stormwater inspector:

- **Lacey:** Gagan Brar (360) 451-2868
- **Olympia:** Kane Osstifin (360) 753-8579
- **Thurston County:** Skyler Specht (360) 867-2079
- **Tumwater:** Matthew Joseph (360) 754-4140

Prevent flooding in your neighborhood:

1. **Rake leaves and debris off of storm drains to prevent clogging.**
   - Stay safe, wear a high visibility vest and have someone look out for cars for you.
2. **Inspect your neighborhood storm drains and have them cleaned out when necessary.**
   - Visit your jurisdiction's website to learn how to inspect and maintain storm drains.
3. **Keep grass, leaves, dirt or debris from getting into roadways and drainage ditches.**
   - Do not sweep, blow or pressure wash debris into the street where it can clog storm drains or enter into drainage ditches.

What to do if the road is flooded.

1. **Contact your local jurisdiction if you think storm drains are clogged and you cannot safely unclog them.**
   - **Lacey:** (360) 491-5644
   - **Olympia:** (360) 753-8333
   - **Thurston County:** (360) 867-2300
   - **Tumwater:** (360) 754-4150
2. **Turn around, don't drown.**

- If the road is flooded, do not attempt to drive through it.
- According to the National Weather Service, six inches of water in the road can cause most passenger cars to stall or lose control.

DID YOU KNOW?

The Cities and County check and inspect more than 15,000 storm drains each year! That's a lot of storm drains!

Stay informed.

Check rainfall, stream and groundwater levels at monitoring.thurstonwater.org/

Find current and historic levels for rainfall, the status of local streams and groundwater levels by visiting Thurston County's monitoring website.

Stay Safe: Sign up for severe weather alerts.

The National Weather Service sends warnings for tsunamis, tornadoes, flash floods, extreme winds, blizzards, ice storms and more. You can receive Wireless Emergency Alerts (WEA) on your mobile device. The service is free and automatic, if your cell phone is WEA-capable. For more information on Wireless Emergency Alerts on your cell phone visit **thurstoncountywa.gov/em/Pages/ei-alert.aspx**.

Pacific Salmon

Salmon continue to provide countless contributions to the ecosystems, economies, and cultures of the Pacific Northwest. They have an anadromous lifecycle, which means they spend the beginning of their lives in freshwater, grow from juveniles to adults in the ocean, and then return to their birth streams to spawn.

Throughout their journey, salmon are essential food sources for numerous organisms in addition to humans, including plants! After they spawn (reproduce) and die, salmon carcasses provide nutrients for streamside and aquatic vegetation as well as aquatic insects, which in turn are the primary food source for young salmon continuing the cycle of life!

Chinook & Coho Salmon Lifecycle Stages

1. **Eyed Egg** — 30 – 35 DAYS AFTER FERTILIZATION — *Eye is visible from the outside of the egg*
2. **Alevin (sac fry)** — 40 – 45 DAYS AFTER FERTILIZATION — *Larvel stage with the yolk sac providing nutrition*
3. **Fry** — 95 – 115 DAYS AFTER FERTILIZATION — *Yolk sac absorbed and activley feeding*
4. **Smolt** — 9 – 18 MONTHS AFTER FERTILIZATION — *Juvenile migrations and adaptation to salt water*
5. **Ocean** — 1 – 5 YEARS IN THE OCEAN — *Feeding migrations and rapid growth*
6. **Adult** — *Mature salmon return to their freshwater stream of origin to spawn and die*

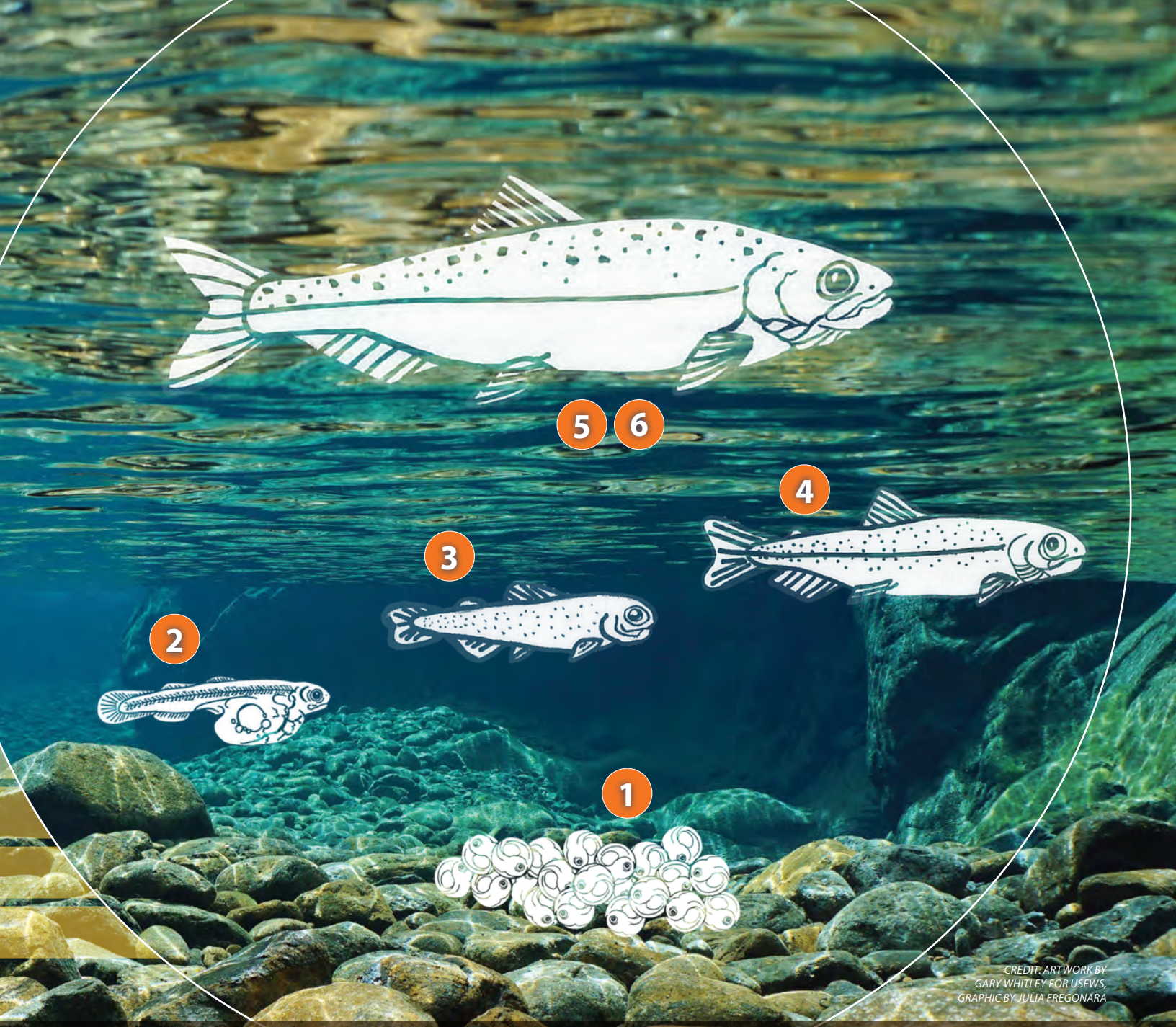
Get to Know Our Pacific Salmon

Chinook/King

Size: Typically 20–25 lbs
Life Cycle: 3–7 years
Spawns: August – November
Diet: Small fish

Chum

Size: Typically 9–11 lbs
Life Cycle: 3–5 years
Spawns: September – December
Diet: Soft-bodied organisms like jellies and zooplankton



CREDIT: ARTWORK BY GARY WHITLEY FOR USFWS, GRAPHIC BY JULIA FREGONARA

Coho/Silver

Size: Typically 5–12 lbs
Life Cycle: 2–3 years
Spawns: September – March
Diet: Insects, invertebrates, crustaceans, fish, and squid

Pink

Size: 3–5 lbs
Life Cycle: 2 years
Spawns: June – September
Diet: Zooplankton, amphipods, fish

Sockeye

Size: 4–11 lbs
Life Cycle: 3–5 years
Spawns: September – December
Diet: Crustaceans, squid, fish, and plankton

Featured Creature

Freshwater Mussels

Freshwater Mussels: A Species in Danger

A Type of Mollusk

Freshwater mussels are mollusks that live in our lakes, ponds and streams. They have two mirror image shells. The inside of the shell is lined with a smooth mother-of-pearl material called nacre. Nacre is the inner shimmery layer found in mollusks shells, like in abalone, and is prized for its decorative uses. Freshwater mussels have a "foot" used for feeding and for moving, although they do not travel far on their own. Like other bivalves, freshwater mussels are filter feeders. They draw water in and filter food from the water, then push out the cleaned water.

The Many Uses of Mussels

Mollusks are the second most diverse group of animals in the world, which includes approximately 100,000 freshwater, marine and terrestrial species. Freshwater mussels are found worldwide, but are most diverse in North America—making up approximately one third of the world's population. Native Americans and early pioneers used them for food, as tools and as jewelry, for both adornment and trade. Prior to the invention of plastic, mussel shells were used for buttons and continue to be used today. Mussel shells are also used to form freshwater pearls by inserting small pieces of mussel shell into the shell of live oysters.

Population Decline

Some species of freshwater mussels can live longer than 150 years, making them one of the longest-lived animals on Earth. Since the late 1800's, freshwater mussels have been in decline. Thirty-five species are believed to be extinct, and 70% of mussels worldwide are facing extinction. Urban development threatens freshwater mussel populations due to polluted stormwater run-off, poor water quality, and loss of habitat. In some areas, their loss is also due to overfishing for the production of freshwater pearls.

Natural Filters & Indicators of Water Quality

Freshwater mussels help improve water quality in our freshwater lakes and streams by filtering the water as they eat and breathe. Freshwater mussels filter out suspended particles, algae, bacteria and other pollutants. Some of these pollutants can accumulate in their bodies. Scientists use mussels as indicators of water quality. A sudden increase in mortality of freshwater mussels can indicate toxic contamination. Scientists can also measure the amount of pollution found in their shells and tissue. Mussels are very important to aquatic (water) food webs, nutrient cycling and habitat quality in freshwater ecosystems.

Life Cycle

Freshwater mussels depend on fish such as Pacific salmon for part of their life cycle to help spread their larvae throughout watersheds. For most of their lives, mussels live partially buried in the sediment filtering the water. During reproduction, the male releases sperm into the water and the females take in the sperm through their filtration system, like with food. The embryos develop into larvae called glochidia, which the female releases like its waste products. The released larvae must then find a host fish to further

Climate Conversations: Thurston Climate Mitigation Plan Webinar & Panel Q&A

There is a lot each of us can do to combat climate change and there is no time to waste...

In September, 2020, Thurston County and the Cities of Lacey, Olympia, and Tumwater presented the science-based Thurston Climate Mitigation Plan. The plan identifies strategies and actions that the Thurston region must act on to avoid severe impacts of climate change and to meet emissions-reduction targets. At this informative webinar, you will learn how you and local governments can work together on this region-wide effort.

The Mitigation Plan proposes to:

- Achieve a 45% reduction of 2015 greenhouse gas levels by 2030.
- Achieve an 85% reduction of 2015 greenhouse gas levels by 2050.

Join us for a multijurisdictional presentation and panel for follow-up questions and answers. To register, visit **streamteam.info/events**. For more information, contact Michelle at **mstevie@ci.olympia.wa.us**.

CLIMATE MITIGATION PLAN WEBINAR & PANEL Q&A

- **Thurs., Oct. 21**
- **6:30 – 8 p.m.**
- **Webinar link: us02web.zoom.us/webinar/register/WN_hsF6yTsbQvqvGoQmA6NXyg**

its development. The larvae of native freshwater mussels are external parasites of fish, attaching themselves to their gills or fins. Some mussels are specific to a fish species that they parasitize. The length of time it takes for the larvae or glochidia to develop may take days or months for maturity depending on the mussel species.

During this development phase, the mussels are dispersed as the host fish migrate throughout the watershed to spawn. Once ready, the juvenile mussels will drop off from their host, falling to the bottom of the stream, burrowing into the sediment and beginning their lifecycle again.

Where to Find Mussels

Freshwater mussels are confined to permanent water bodies, including lower gradient creeks, rivers, ponds, and lakes. They are not usually found in the steeper, swifter headwater streams, as the water velocity is likely to be too strong for the juvenile mussels to stay attached and become established. Mussels that live in ponds and lakes are more tolerant of muddy substrates, low dissolved oxygen, and warmer water temperatures. Mussels can also be found in freshwater tidal habitats, such as the lower Columbia and Kalama Rivers. Stream species are more diverse and prefer the gravely substrates and sediment found in streams with stable stream flows and year-round water. Like many species, the effects of climate change, such as lower stream flows, loss of habitat and host fish, will have a dramatic effect upon their survival.

Population Surveys

Population surveys to determine freshwater mussels' abundance and loss are being conducted throughout the United States. Specifically, this is required by the U.S. Fish and Wildlife Service to preserve populations concerning federal, state and local transportation and dredging projects. In some local areas, such as Portland, Oregon, volunteers assist in collecting valuable population information in specific watersheds. For further information on the importance and life cycle of freshwater mussels and population surveys, visit **bit.ly/3Akgc5x**.

Orcas: A New Hope!

Our Southern Resident Orcas have welcomed three new babies to their family. Mother orca Tahlequah, J35, gave birth to Phoenix, J57, a male born in September 2020— who is alive and well. Two more calves also have been born, Crescent, J58, a female born in 2020, and Tofino, J56, a female born in 2019.

In 2005, the Southern Resident Orcas were designated as endangered under the federal Endangered Species Act. Unfortunately, only about 25 percent of orca newborns have survived since their listing in 2005. The plight of Tahlequah, J35, with the loss of her newborn calf in 2018, was the most compelling example of the hardship orcas face. Nevertheless, with new life comes new hope. Tahlequah's story and the loss of a 4-year old orca, led to the creation of Governor Jay Inslee's Orca Recovery Task Force.

Healthy Salmon Equals Healthy Orca Families

Pollution in the food chain has detrimental effects to those who consume it directly or indirectly. For example, salmon take in pollutants from their environment in a variety of ways. Then, when orcas eat salmon, these pollutants build-up in orca bodies in a process called bioaccumulation. These pollutants are also passed along in the mother's milk to their calves. On average, an adult orca eats between 18-25 salmon a day depending on their activity. Nursing orca mothers need even more salmon to meet their energy needs, which is why healthy salmon are critical for orca survival. A healthy mom is a healthy calf!

Nature Sleuth's Scavenger Hunts!

September – November

Have you participated in any of our Nature Sleuth scavenger hunts? Whether you are an avid sleuther or playing for the first time, be sure to check out the salmon spawning this fall. This September help us celebrate the 32nd annual Nisqually Watershed Festival by playing the Billy Frank Jr. Nisqually National Wildlife Refuge scavenger hunt game! For more festival info, visit **nisquallyriver.org/festival**.

To participate as a solo explorer or as a family adventurer, download the GooseChase app on your mobile device and let the games begin! Complete the missions and receive a park specific sticker, plus be entered into a drawing to win a pair of Bushnell binoculars! Final drawing will be held December 1, 2021. Remember, you must participate in the first game and submit your address in order to receive your stickers!

Don't have a device for apps? No problem, contact us!

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

GooseChase Directions

Participants can join the Nature Sleuths Scavenger Hunt by following these simple steps:

1. **Download** the **GooseChase** iOS or Android app.

For Apple **For Android**

2. **Choose to play** as a guest or register for a personal account with a username & password of your choice.
3. Search for and **select the Nature Sleuths 2021 game**, or search by game code **DDK6PJ**.

Bioaccumulation is the gradual build up of substances, such as pesticides or other chemicals, in an organism.

5 Ways to Reduce the Bioaccumulation of Harmful Pollutants in Orca Mothers

1. **Bag and trash dog poop.** Bacteria and viruses in dog poop can pollute our waterways.
2. **Fix vehicle leaks.** Oil, gas and other fluids leaking from cars can flow into streams, and the Puget Sound.
3. **Practice natural lawn care.** Water can carry pesticides and fertilizers into streams and lakes which can make salmon sick.
4. **Use a commercial car wash.** Commercial car washes treat car wash water containing copper dust and other harmful pollutants before sending it down the drain, keeping water clean for salmon and orca.
5. **Plant a tree.** Trees soak up rainwater, shade streams, and keep dirt from washing into waterways which improve salmon habitat and help to increase the orca's main food source.

To learn more about what you can do to help, visit our Actions for Clean Water drop-down at **streamteam.info** or visit **whaleresearch.com/action**.

Moss Balls: Cute, Fluffy, & Hiding a Dark Secret

What is a moss ball?

Native to Japan, Iceland and Estonia, moss balls are made up of algae that grows in shallow bodies of lake water. The circular shape is caused by water currents that roll, mold, and form the ball.

Marimo moss balls are a type of algae that grows in partial light. If you've ever cruised your neighborhood pet store, you may have seen Marimo moss balls on the shelf. They've become quite popular in the United States. These cute, squishy little green balls of moss are kept in different habitats. They can act as decoration in a fish tank or act as the main attraction in their own bowl.

Secret Stowaway

In February 2021, a Seattle pet store employee reported seeing a mussel in one of their Marimo moss balls. Soon, several states reported the presence of zebra mussels in Marimo moss balls being sold. Stores acted quickly to pull the moss balls from shelves and place them in quarantine. Zebra mussels are a prohibited aquatic invasive species, which means they pose a risk to our native Washington aquatic species. Zebra mussels can also clog pipes and mechanical infrastructure of industrial plants, utilities, locks, dams and more.

Before you buy a moss ball for your fish tank, make sure you ask store staff if they check for zebra mussels and other invasive species!

If invasive mussels take hold in Washington, officials estimate it would cost more than $100 million each year to keep Washington's power and water infrastructure running, in addition to causing catastrophic ecological damage.

Learn how to report and safely dispose of invasive species at **wdfw.wa.gov/species-habitats/invasive/dreissena-polymorpha/moss#report** or get the app!

Kids' CORNER

Did you know?

The adult males have **sharp, dog-like teeth.**

Male & female adult chum have **purplish/ black tiger stripes.**

The adult females have a **dark horizontal line** along their sides.

The females carefully **cover their eggs with gravel** to keep them safe while they develop in the gravel nests.

The **fertilized eggs & the hatched young salmon grow in the gravel nests** in McLane Creek from October – May.

Thanks for helping to keep the young salmon safe!

Make sure you and your dogs stay out of the creek from October through May!

Visit **streamteam.info** to download this page as a coloring sheet!



Stream Team *Events*

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.

SEPTEMBER – OCTOBER – NOVEMBER

Chum Salmon & Cider Celebration

Stay Tuned!

As we get closer to chum spawning season, Stream Team will monitor the safety situation to determine if we can safely hold a Chum Salmon & Cider Celebration in November. See page 3 for more details.

For more information, visit **streamteam.info/events** for updates.

Nature Sleuth's Scavenger Hunts!

September – November check out salmon spawning and other great adventures!

In September, check out the Billy Frank Jr. Nisqually National Wildlife Refuge scavenger hunt game and help us celebrate the 32nd annual Nisqually Watershed Festival! For more festival info, visit **nisquallyriver.org/festival**. See page 12 for more details.

For more information, visit **streamteam.info/nature-sleuths**.

Arbor Day Celebration

Sat., Oct. 2

Harbor House, 217 Thurston Ave NW, Olympia

Join us for a celebration of Olympia's urban forests, including workshops, "Ask an Arborist" with City tree care professionals, and a native plant giveaway.

For more information, visit **olympiawa.gov\arborday**.

Thurston Climate Mitigation Plan Webinar & Panel Q&A

Thurs., Oct. 21 • 6:30 – 8 p.m.

Webinar Address: us02web.zoom.us/webinar/register/WN_hsF6yTsbQvqvGoQmA6NXyg

There is a lot we can do to combat climate change. See what strategies and plans for actions we can all take. Join us for a multijurisdictional presentation and panel for follow up questions and answers. See page 11 for more details.

To register, visit **streamteam.info/events** or for more information, contact Michelle at **mstevie@ci.olympia.wa.us**.

See Chum Salmon at McLane Creek

November

Every fall, chum salmon return from the ocean to spawn in McLane Creek, which flows through the McLane Creek Nature Trail.

McLane Creek Nature Trail is located off of Delphi Road on the western outskirts of Olympia. The loop trail is a little more than one mile long, and it offers two birds-eye viewing locations to watch this reproductive wonder. See page 4 for more details.

Go to **dnr.wa.gov/publications/eng_rms_mclane_nature_trail_2.pdf** to download a map of the loop trail at McLane Creek Nature Trail.

Indian Creek Watershed Restoration, Olympia

Sat., Nov. 6 • 10 a.m. – 1 p.m.

Event location and parking to be sent upon registration

Bring a friend and join our community restoring parks! Restoration activities will include ivy removal from trees and along the trail to prepare the site for future tree plantings. See page 2 for more details.

To register, visit **streamteam.info/events** or for more information, contact Kym at **kfoley@ci.olympia.wa.us**.

Stream Team

EDUCATE • PROTECT • RESTORE

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

ARBOR DAY CELEBRATION

- **Sat., Oct. 2**
- **10 a.m. – 2 p.m.**
- **Harbor House, 217 Thurston Ave NW, Olympia**

Arbor Day Celebration

Come celebrate the beauty and benefits of trees!

Arbor Day is an opportunity to celebrate our urban forest and explore the many ways trees make our communities safer, healthier and beautiful!

Join us for a celebration of Olympia's urban forests, including workshops, "Ask an Arborist" with City tree care professionals, and a native plant giveaway. Visit **olympiawa.gov/events-and-activities/arbor-day** for details.

Local forests are an iconic symbol of the Pacific Northwest.

Our forests are made up of many native trees such as the majestic Western red cedar and cascara. Shrubs like vine maple and salmonberry make up the understory of our forests, as well as a vast array of herbaceous plants.

Native trees and vegetation provide many ecological and societal benefits.

Trees filter the air, provide oxygen, and sequester carbon on a planetary scale. Trees stabilize steep slopes, reduce erosion, and shade creeks, shorelines, and wetlands for fish and other aquatic wildlife. Native fruits, seeds, and flowers feed many species of birds and insects, providing a key link in local food chains. Many species of mushrooms form underground relationships with trees, further increasing the diversity of local forests and providing tasty meals for local wildlife and humans alike.

In urban areas, trees help:

- Moderate city microclimates,
- Slow and filter stormwater runoff,
- Add beauty and texture to our urban landscapes,
- Provide wildlife habitat, and
- Sequester carbon from the atmosphere.

City trees also contribute to our community by providing many psychological, social, and health benefits.

As you can tell, when it comes to trees there is a lot to celebrate, so join us on October 2!