

# the REEDD



THE NEWSLETTER OF THE SKAGIT FISHERIES ENHANCEMENT GROUP

*Dedicated to Restoring Salmon for Future Generations*

## Saving Salmon to Save Orcas

By ALISON STUDLEY - Executive Director

Like citizens around Washington State, we at the Skagit Fisheries Enhancement Group are deeply concerned about the decline of our iconic Orca whales in our local waters. The Southern Resident Orca whales that inhabit the waters in and around the San Juan Islands during the summer months have reached a dramatically low number with only 74 whales remaining. These whales were listed on the Endangered Species list in 1973, however their plight was emphasized this summer by a mother mourning the death of her calf as she carried it ceremoniously around Puget Sound for 17 days. This display of

affection between a mother and a baby unable to survive has pulled at the heart strings of our community. More recently we tracked the health of a young Orca known as "J50" to scientists or "Scarlet" as we lamented less frequent sightings and ultimately heard of her passing due to malnutrition with great sadness. The losses of these Orcas has many people wondering what can we do to save these magnificent mammals with whom we are so fortunate to share our ecosystem.

Scientists have identified three major factors that must be addressed in order for Orcas to continue to survive. These three threats are food availability, toxic

contaminants, and disturbance from vessel traffic noise. In March 2018, Governor Inslee signed an executive order creating the Southern Resident Orca Task Force. This executive order directs state agencies to implement nine immediate actions to benefit Southern Resident Orcas as well as directs the Task Force to identify, prioritize and support the implementation of a longer-term action plan for the recovery of Southern Resident Orcas so that the Salish Sea has a healthy and sustainable population for the future. A draft report was released in September outlining recommendations for recovering Southern Resident Orcas. A final report of

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# the REDD

**REDD:** A female salmon uses her tail to dig a nest in the gravel. After she deposits her eggs the male fertilizes them. The female then covers the fertilized eggs and the resulting nest is called a redd.

## MISSION

Our mission is to educate and engage the community in habitat restoration and watershed stewardship to enhance wild salmonids.

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# Saving Salmon to Save Orcas

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the Task Force recommendations is due to Governor Inslee on November 16, 2018. We look forward to continuing to track the Task Force's recommendations and implementing actions that can make a difference for our beloved Orca whales.

While there are three key factors that have been identified for the Task Force to address as having major impacts to the health of our Orcas, the one factor that we at the Skagit Fisheries Enhancement Group can help with the most with is increasing food availability for our whales, specifically salmon. Orcas that are malnourished are not able to successfully reproduce which has led to the death of several new calves and an alarming reduction in whale numbers. Southern Resident Orca whales rely on a healthy supply of Chinook salmon which makes up 80% of their diet while they inhabit the waters of the Salish Sea. A recent report from NOAA identifies the importance of local rivers and specifically identifies Chinook from the Skagit River as great importance to our Orcas. The



*J50 (Scarlet) with her mother in 2015.*

Skagit Fisheries Enhancement Group is working diligently with many partners to increase the number of salmon, specifically Chinook, that are available to our Orca whales. The Skagit River is home to over one-half of the remaining wild Chinook in Puget Sound. Therefore ensuring there are healthy populations of Chinook salmon is directly related to ensuring enough food to keep Orca whales healthy. Recently, we were awarded two grants from the National Fish & Wildlife Foundation's Killer Whale Research and Conservation Program. These two grants specifically target the restoration of Chinook salmon habitat at Pressentin Park (Marblemount) and Britt Slough (Conway) in order to increase the number of

Chinook salmon available to Orca whales. These are just two examples of projects dedicated to helping the plight of our Orca whales, however many other projects we do also restore Chinook salmon habitat.

You can help the plight of our Orca whales by volunteering with us to plant trees along salmon streams, by volunteering to help maintain nearshore restoration projects, by attending a training workshop to help count salmon returning this fall, or by simply making a donation to help keep these crucial restoration projects going. By helping to restore salmon populations, you can also help restore our endangered Orca whale populations.

You can learn more about the Southern Resident Orca Task Force on Governor Inslee's webpage: [www.governor.wa.gov/issues/issues/energy-environment/southern-resident-killer-whale-recovery-and-task-force](http://www.governor.wa.gov/issues/issues/energy-environment/southern-resident-killer-whale-recovery-and-task-force)



*J16/Slick (J50's mother) breaches while J26/Mike (J50's brother) swims nearby on Aug. 18, 2018. J50/Scarlet is not pictured.*

**BELOW: J50 off the west side of San Juan Island near Lime Kiln Lighthouse on Aug. 11, 2018.**







# Stormwater

## A Major Piece in the Puzzle

By **KEELIN MAURMANN**, Former WSC Member

I love curling up with a comfy blanket, a steaming cup of earl gray warming my hands, fluffy cat purring on the pillow next to me and just listening to the large plops of a good rain. Maybe the wind is whirling around the trees outside and there could be thunder a ways off in the distance.

Rain, or any precipitation, is one part of the huge cycle of water that allows us in Western Washington to live the way we want. Who doesn't like squishy moss under an old patriarch, soaking up every drip that escapes through the branches? Rain fills our streams, rivers, and lakes. Snow piles up in the mountains and slowly gives us water throughout our drought summers. Slowly all the water makes it back our beautiful Salish Sea, or is taken back up to our gray skies.

We've altered this wonderful cycle and I don't say that because I am angry or that I hate everything manmade. I say it because it's the truth and this story is at the point where we've actually been making big steps to altering our life to make a difference.

How can we combat one of the biggest sources of pollution to our waterways?

"Stormwater runoff from streets, parking lots, construction, industrial properties, and residential areas is now recognized as one of the leading sources of pollution to our streams, lakes, wetlands, and Puget Sound." – Skagit County Public Works.

When storms bring a huge influx of water coming through the city, storm drains provide a quick and easy way to get water off the road, keeping people safe. Unfortunately these drains usually go straight to our waterbodies. Herein the problem lies, most storm water can't be treated by the water treatment plants because of the sheer volume of water that would go through it.

Precipitation running through our cities picks up sediment, excess nutrients from fertilizers, bacteria, debris and garbage, and household hazardous wastes such as cleaners and all these run in to the nearest waterbody. Each one has its own impact on aquatic life. Sediment increase turbidity and can clog the gills of fish, suffocating them. Excess nutrients cause excess algal growth that take up oxygen, suffocating aquatic life. Any pesticides and chemicals have their own array of problems they can cause.

Some cities have the infrastructure to treat storm water at their wastewater treatment plant, but most cannot. Wastewater treatment plants usually have a steady inflow of waste water, but storms come in all at once and it can often overwhelm the systems. Most storm drains in Skagit County run straight to the nearest waterbody, whether that be a pond, ditch, or stream.

A study done in 2015 found that when healthy coho salmon were exposed to runoff samples taken from down spouts of an elevated urban principal arterial road in Seattle, 100% of the salmon exhibited characteristics of the spawner mortality syndrome. These characteristics include lethargy, a loss of orientation, a loss of equilibrium, and death. The researchers analyzed the runoff and found that it contained high levels of dissolved metals (zinc, nickel, iron, copper, and cadmium) and PAHs (polycyclic aromatic hydrocarbons\*). Interestingly, when they tried to replicate the runoff with similar (and higher concentrations) of dissolved metals and PAHs there was little to no effect on the adult coho.

With this study also came a very exciting finding. With a simple constructed bioretention column, the runoff was effectively treated to the point that when exposed to the filtered runoff, adult coho salmon showed no characteristics of the spawner mortality syndrome. These columns were composed of a drainage layer of gravel aggregate overlain with a soil medium of sand and compost, all topped with a small amount of mulched bark. The entire column stood 96.5 cm tall, but this was sufficient to filter the runoff to a healthy point.



Thankfully, this study shows that while storm water can be very deadly to aquatic life it also shows that it can be easily mitigated. Anyone can replicate the bioretention columns, because the columns are simply a replica of the forest. In nature, rain permeates into the soil and can be taken up by plants or can flow into a wetland area. Wetlands are similar to nature's rain garden, they slow the water and allow particulates in the water column to sink to the ground, and their plants help to filter chemicals out before the water heads further downstream. Wetlands also help mitigate flooding by stopping the fast flowing water from continuing through the watershed and releasing it more slowly.

Other ways to help in storm water management is taking some of the toxicants out of the equation all together. This can be done by picking up pet waste, washing your car on a grass or gravel surface, brushing grass clipping from the sidewalk to the lawn, limiting fertilizer use, watering plants deeply and less frequently, thinking twice before using pesticides, and looking into natural lawn care. More involved techniques could be building rain gardens, installing pervious surfaces around your home, or building your own bioretention columns!

Storm water runoff is a massive problem in the PNW; it's something that we all contribute to, so we all need to be involved in the solution. It's a big problem, but thankfully we CAN make a difference.

There are many resources that you can learn more about storm water runoff and its effects on the environment.

For info on building your own rain garden check out <http://extension.wsu.edu/raingarden/>

#### SOURCES:

\*PAHs are a class of chemicals that occur naturally in coal, crude oil, and gasoline. They are aromatic in that they are produced when coal, crude oil, and gasoline are burned. Health effects of exposure to PAHs are widely unknown, but some are considered to be cancer-causing.



## Volunteer Spotlight

### Kirsten Boesen

I began my volunteering with SFEG at a vegetation monitoring training in early June. Then, throughout the summer I did monitoring at Bowman Bay as well as a day with the summer interns on a piece of PSE land off of Skagit River. It was very interesting to go to this second site, as the first plantings of trees are several years old. Finally, I was able to get out to the SFEG nursery once. I hope to continue volunteering with SFEG through more vegetation monitoring and tree nursery visits.

Besides working with SFEG this summer I have done clam digging at Kiket Island with the Swinomish Indian Tribal

Community, oyster sampling with the Northwest Straits Commission, and herb-hand volunteering with Botanical Roots Herb Farm. This fall I am going to begin the Stream Team program with the Skagit Conservation District. Also, I am a long-term volunteer at the Bellingham Food Bank (since 2015).

I am seeking these volunteer opportunities because I believe practicing local conservation is a way to help orient our unsustainable societal dynamics to a more balanced, whole-cycled flow. In the long-term I hope to bring some of my conservation skills I collect here back to the midwest, my home region.

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# New Faces at SF

...and our three new AmeriCorps members!



## Please help us welcome Jason Lewis, new Habitat Restoration Coordinator:

I grew up in Enumclaw, Washington, surrounded by mountains and lush forests. I found my passion for the natural world and knew I wanted to pursue a career in the environmental field at a young age. My passion for nature led to a Bachelor's degree in Environmental Science at The Evergreen State College. While in college I worked as a Backcountry Restoration Technician for the U. S. Forest Service and as a Restoration Forestry Technician for Washington State Department of Natural Resources. I continued pursuing a career in environmental restoration after college and worked for the Skokomish Tribe working on various restoration projects, the largest of which being the Skokomish Estuary Restoration. I landed at the Skagit Fisheries Enhancement Group in September and am excited to work in the Skagit. Outside of work I love backpacking and fly fishing and can be found hitting the ski slopes in the winter.



Hello! My name is **MADDIE HICKS** and I'm so excited to embark on this journey as the new Riparian Restoration Associate for SFEG. I grew up just north of San Francisco and traded in the golden rolling hills of northern California for the lush evergreen forests of western Washington to attend the University of Washington in 2012. I received my BS in Environmental Science and Resource Management and moved back down south shortly thereafter to work for the California Department of Fish and Wildlife in Humboldt County monitoring salmon habitat restoration projects. It was here that I truly fell in love with salmon and realized the potential of restoration efforts to make substantial impacts on their populations. I'm thrilled to have the opportunity to learn more about salmon ecology and restoration in Washington State as well as explore the natural beauty that this region has to offer!



Hello everyone! My name is **VILINA SANBURN-BILL** and I'll be the new Education Associate this year. I grew up in the San Juan Islands and was introduced to the beautiful outdoors of the Pacific Northwest (and the wonder of salmon) at an early age. Both my parents spent time salmon fishing in southeast Alaska and I followed in their footsteps by spending a summer on a tender in Lynn Canal. My love for science and learning led me to start an Environmental Science degree that I've pursued for over 5 years, in 2 countries, and at 5 learning institutions ultimately ending up in Bellingham at WWU. When it became clear I needed a break from academia, I began volunteering at another of the Regional Fishery Enhancement Groups. Volunteering rekindled my passion for environmental education and that passion turned into an AmeriCorps position last year as the Education Coordinator with the Nooksack Salmon Enhancement Association. A year later, I was still not ready to go back to school and sought a new, more challenging position and found myself here at SFEG. As an outdoor enthusiast, an aspiring educator, and a lover of getting my hands dirty, this position is a dream come true and I can't wait to get started!

# EG!

Hey hey, I'm **KALENA WALKER** and I'm this year's Community Engagement Associate. My whole life has been lived by water, coasts, or oceans and I have no intention of breaking that streak. I first moved to the Pacific Northwest some thirteen years ago and fell in love. So much did I grow to appreciate this area that I chose to return after high school to earn my degree in Environmental Science with a Marine Ecology emphasis from Western Washington University. After school, I flitted around working as a fisheries biologist on the Bering Sea, volunteering with whale sharks in the Philippines, and even spent some time living in Germany and exploring Europe before finally landing back here in the upper left corner of the US to apply my new skills and experiences. I'm excited to be back home and working with this great community to help others see the magic and importance of our beautiful region's ecology!



## MEMBERSHIP INFORMATION

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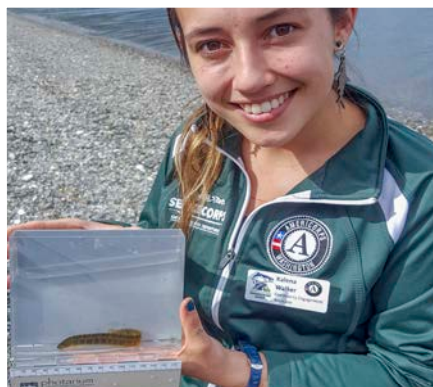
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## Events and Opportunities Calendar

### Salmon Sightings

**October 20 (Saturday)** at Clark Creek at the Marblemount Hatchery, and **November 10 (Saturday)** at Oyster Creek in partnership with NSEA and Taylor Shellfish. Both events noon-3pm. Join us to view and learn about spawning salmon. Experts will be on hand to talk about salmon habitat and local restoration efforts. More info at [www.skagitfisheries.org](http://www.skagitfisheries.org). Limited parking will be available at both sites, so please carpool!

### Skagit Wild & Scenic Film Festival

**October 26 (Friday) 6:30pm;** The Wild and Scenic Film Festival will show at the Lincoln Theatre for one night only on Friday October 26. This unique Film Festival event will begin with a 6:30 pm reception, with films beginning at 7:30 pm. This event uses film to inspire conservation within our community. The Festival will feature two hours of environmentally themed short films that together represent the work of over 100 film artists and directors. More info at [www.skagitfisheries.org](http://www.skagitfisheries.org)

### Fall Planting Parties

**October 27 (Make a Difference Day), November 3, and 17, (Saturdays) 10am-1pm;** Help restore native riparian plants in the Skagit Watershed! These plants will help restore salmon homes by providing shade and cover for salmon and leaf litter for aquatic insects, which in turn provide food for salmon. These riparian zones also improve water quality by controlling erosion and filtering pollutants. More info at [www.skagitfisheries.org](http://www.skagitfisheries.org). Limited parking will be available, so please carpool!