



“Silver Salmon in Snow Creek”  
photo by Zack & Mike Hovis (see page 3)

# In the Flow

February 2016

Produced with Volunteer Help

Issue 68

[www.clallam.net/streamkeepers](http://www.clallam.net/streamkeepers)

[streamkeepers@co.clallam.wa.us](mailto:streamkeepers@co.clallam.wa.us)

360-417-2281

-  SK Special Event
-  Annual Review & Planning
-  Proposed Priorities for 2016
-  Thank you, Andy Perham
-  Remembering Streamkeepers
-  Portion of Salt Creek Preserved
-  Culvert Inventory
-  Orchard Mason Bee Boxes
-  Grant Projects Help Stormwater
-  New Meter Makes SK Easier
-  PIC Plan and Team
-  Water Quality Index
-  SK Helps Road Department
-  Thank You, Dan Lieberman
-  Volunteers Needed
-  Streamkeepers at Work
-  Congrats, Coleman Byrnes

## Join us for Information & Celebration

12:00 at 4 Seasons Ranch Clubhouse on  
Morse Creek, 673 Strait View Drive

- Potluck/schmooze
- Introductions/go-round: What’s everybody been up to in the world of water?
- Ed Chadd: Streamkeepers 2015 review & 2016 work plan
- Ian Miller on Climate Adaptation report, focusing on impacts to/from streams & coastlines
- Mike Haggerty on projected climate impacts on salmonids, focusing on steelhead
- Q&A for Ian Miller and Mike Haggerty
- Walk to the new erosional areas near the 4 Seasons Ranch Clubhouse
- Carpool to NOSC restoration area on Morse Creek upstream of Hwy 101 for a tour led by Kim Clark & Mike Haggerty

\*\*\*\*\* RSVP \*\*\*\*\*

Dear awe-inspiring SK volunteers: You’ve done it again! In 2015, you logged in a total of just under 4100 hours. This matches our 2014 & 2013 totals of almost 4300 and 4200 hours, and is the equivalent of two full-time, highly-technical employees, for the County’s investment of one half-time staff person—not a bad return for the taxpayers! Kudos! The County, streams, and fish are lucky to have you on their side!

*(Material on this page was developed at Streamkeepers' annual advisory meeting on 11/17/15)*

## **ANNUAL REVIEW & PLANNING PROCESS—REVIEW OF PRIORITIES FROM 2015**

### **Revise SK sampling plan per recommendations of advisors and volunteers**

*Revision focused on switching to newer YSI ProDSS Water Quality instrumentation; the switchover is in process, with new protocols written, training done, and database and Quality Assurance Plan revised. The plan is to spend a year collecting side-by-side data with the ProDSS and our old equipment to validate the new meter, enable data walk-across, and learn how to best deploy it.*

The SK **Quality Assurance Plan** has been thoroughly revised per current Ecology standards.

**Flow modeling project:** *when the new instrumentation becomes standard equipment, the time required to perform water quality monitoring will be cut into a fraction, but wade-across flows will still take the same amount of time. We're looking for ways to forego measuring flow at each site by devising a modeling system, based on correlations between flows at gaged and ungaged sites. A good deal of work was done toward creating this modeling system, but a good deal more remains to be done. A volunteer group has agreed to take on this project, hopefully to completion.*

### **Seek funding for equipment and ongoing expenses needed for revised sampling plan**

*The Road Dept. purchased one YSI ProDSS in 2015; side-by-side testing with old equipment will hopefully justify purchase of a second ProDSS meter and a switch of standard field equipment to this meter in summer 2016. Uncertain at this point whether ProDSS testing results will justify using this meter for turbidity; if not, we will have to either continue deploying our HF DRT 15-CE meters in the field or collect samples to test at home/office.*

### **Enter and check all backlogged data in time for Ecology's next call for freshwater data (expected in summer 2015)**

*Most backlogged data has been entered and checked; data-sheet QC has been sped up through volunteer effort, and the data-sheet QC extensively elaborated; Ecology called for data in Feb. 2016, with no deadline set yet.*

### **Continue to develop customized data-entry forms and reports for active monitoring projects**

*Customized entry form is working well for SK Quarterly data; all-purpose form is working adequately for other projects.*

### **Begin migrating pre-summer-2010 data into new database structure, and seek funding to complete the migration**

*Part of that work has been completed thanks to Mountaineers grant funding and volunteers; still need \$3000-5000 to complete the effort.*

### **Explore ways to improve sharing of data findings with a variety of audiences**

*No progress—volunteer initiative has failed to materialize.*

## **PROPOSED PRIORITIES FOR 2016:**

- ***Enter and check all backlogged data and submit during Ecology's call for data (spring 2016).***
- ***Complete switch to new water-quality instrumentation, including purchase of additional equipment.***
- ***Complete research toward a flow modeling system; if workable, write a Quality Assurance Project Plan and implement.***
- ***Seek funding (\$3000-5000) to complete migration of pre-summer-2010 data into new database structure.***
- ***Seek funding to resume bug sampling (WDFW funding, our traditional source, was denied in 2015).***
- ***Explore ways to improve sharing of data findings with a variety of audiences.***

**SK QUARTERLY MONITORING PLAN AND SPECIAL PROJECTS FOR 2016:** see pages 6 & 7

## Thank you, Andy Perham! Streamkeepers' project assistant in 2015

Andy arrived in Port Angeles fresh out of college and eager to get his hands wet and learn. He volunteered with Streamkeepers as soon as he arrived, at the same time he was looking for work. When Streamkeepers advertised for a temporary employee to help with our Ecology-funded program-revision project, Andy jumped at the chance. He approached his work with enthusiasm, curiosity, and determination, and he really helped us move the ball forward on several fronts, including researching improved water-quality instrumentation (see separate article later in this issue), crunching numbers, writing memos, doing research, working with volunteers, and mucking around in streams.

At the end of our grant project, Andy found a "real job" with the Clallam County Environmental Health section, focusing on septs and water quality, in various projects that still bring him into collaboration with Streamkeepers, so our paths fortunately cross often, most importantly on the Pollution Identification and Correction (PIC) project in the eastern part of the county. He has by no means forgotten us, serving once again as a Streamkeepers volunteer in his spare time.

Andy joins a procession of folks whom Streamkeepers have helped move along in their careers, including Jim Podlesny, Hannah Merrill, Adar Feller, and Robert Knapp. If you can deal with what comes across our transom, you're ready for anything! And Andy certainly is ready for whatever comes his way, including a new baby girl he and his wife Ally are expecting this summer! Thanks, and congratulations, Andy!

Dear Streamkeepers volunteers and advisors,

Thank you for everything you have provided me during my stint at Streamkeepers; whether it was advice, wisdom, gardening tips (Ron), or simply overall direction and guidance, I will carry all of it with me into the future. Getting to know all of you has been a real treat, and a perfect introduction to beautiful Clallam County and all it has to offer. The overwhelming passion for this area that is beaming from all of you, and the Streamkeepers program, has been instilled in me and it will be my foundation as I move forward in my new and exciting career as an Environmental Health Specialist.

Thank you, Andy Perham



Andy beaming over our new toy, the YSI ProDSS purchased as part of our Ecology-funded program revision project, with funding provided by the County Road Dept.

## Remembering Streamkeepers

Joe Michalczyk was one of several Rotarians who helped form Streamkeepers' predecessor, the 8 Streams Project, in 1997. An engineer who once ran the hydroelectric dams on the Elwha River, Joe lent his trained eye to stream monitoring and helped improve the rigor of our protocols. He also worked with students and helped start the restoration of Valley Creek, which continues to this day.

*Pat Hovis showed up at Streamkeepers training in 2007 with 12-year-old Zack in tow. Zack ate up all the candy and everything else Streamkeepers had to offer, with Pat and husband Mike cheering him on with some amusement—could he really be that into bugs? Now Zack's applying for grad school in stream ecology. Pat dealt with a crippling lung disease, and everything else, with courage, grace, and humor, and all who knew her basked in her warmth and passion for life.*



### Half mile of Salt Creek Conserved

Congratulations to the North Olympic Land Trust and to Jane and Peter Vanderhoof, owners of West Wind Farm, host to Streamkeepers' annual field training for many years. Wonderful to know that the forest, water, farmland, and fish will be protected in perpetuity.

### NOPLE's Clallam County Culvert Inventory

Clallam County is covered with streams, and many have failing culverts that provide serious barriers to fish passage. Many are partial barrier culverts. Checking all the culverts in the county is an important and ambitious job the County Road Department has initiated, with funding and leading from NOPLE (North Olympic Peninsula Lead Entity for Salmon) and help from Streamkeepers. Eric Carlsen, Lead Entity Staff Restoration Planner, directs the project with help from volunteers: Jim McCullough, Coleman Byrnes, Jinx Bryant, and Sue Nattinger. Much excellent fish habitat is blocked by these culverts, and removing/replacing them will allow salmon access to additional upstream spawning and rearing habitat. Some of the streams identified for culvert replacement are: Johnson Creek which runs into the Hoko; Lower Ennis Creek; Chicken Coop Creek; Kreamen Creek which is a tributary to Salt Creek; Valley Creek; Bell Creek which could better connect salmon passage to Washington Harbor; Nelson Creek, tributary to the Lyre River which connects to Lake Crescent; Chicken Coop Creek on E. Sequim Bay Rd.; and Bell Creek under E. Washington St.



### Orchard Mason Bee Boxes

Sixty-one free Mason Bee nest boxes, made by Dan Duncan of Joyce, have been distributed to Streamkeepers volunteers and friends for their gardens. These solitary bees emerge from their nests in early Spring and pollinate Cherry, Apples, Peach and other early flowering trees and fruits. After the bees have done their job in the early Spring, they lay eggs in the nest box tubes, cementing them in with mud. For more information on Orchard Mason Bees:

[https://en.wikipedia.org/wiki/Mason\\_bee](https://en.wikipedia.org/wiki/Mason_bee)

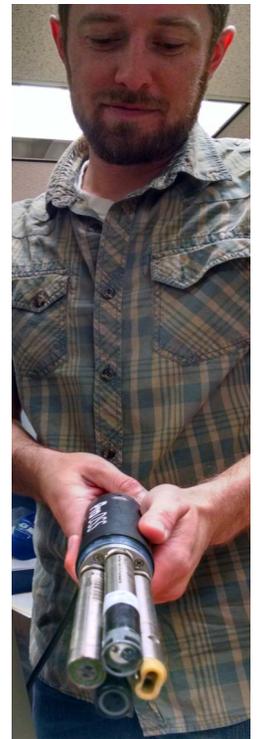
## Grant Projects Are Good News for Stormwater

The 2015 Ecology Water Quality Grant Program included funding for approximately 110 projects to reduce stormwater pollution coming from existing development across Washington. One project is \$461,250 for the City of Port Angeles to install pervious paving that allows water to soak into the ground in two downtown alleys to reduce pressure on the existing stormwater system, help reduce polluted stormwater runoff that gets into Port Angeles Harbor, and reduce stormwater flow into the sewer system. The same type of pervious paving has now been installed as part of the Clallam County Courthouse parking lot retrofit, also funded by an Ecology grant. This project, now complete, prominently involves the installation of rain gardens, highly-engineered landscapes that incorporate special soils, plants, and terrain to catch stormwater and infiltrate it into the ground rather than sending it downhill into poor old Peabody Creek! The fish should be very thankful, and our data should start looking better too!

### New Meter Will Hopefully Make Streamkeeping Easier Soon!

When we sat down with the volunteer corps to discuss program revision as part of our watershed-planning grant from the Dept. of Ecology, **Jim McCullough** said it plain: Our 15-year-old equipment was past its service life, ridiculously complex, and outmoded by new technology. All agreed! So the Clallam Road Dept. funded the purchase of a fancy new YSI ProDSS, which in five minutes can measure everything that the 3 meters we currently have take an hour to do.

This new instrument is optional to use this year, but we're encouraging volunteers to learn to use it and then deploy it alongside the regular SK meters, to get familiarized with the instrument and gather a body of side-by-side data with our current equipment. If it passes our tests, we hope to buy another one so we'll have two new field kits and kiss the old stuff goodbye. In addition to better, more efficient data, we hope the new meters will make it easier to train and retain volunteers—and where would we be without volunteers? We hope to make this the SK standard WQ equipment in Summer 2016.



**PIC of the Pack:** Our Clean Water District Pollution Identification and Correction (PIC) Plan trends monitoring core team: leader **Sarah Miller**, **Linda White**, **Bob Phreaner**, **Janet Bruening**, and **Debi Maloney**, at the Jimmycomelately Creek restoration site.

### Viewing the Data with a Common Lens: the WQI

As federal, state, tribal, and local agencies collaborate more closely in the effort to protect and restore Puget Sound, we're seeing an increasing need for data sets and analyses that we can all interpret in a common way. To that end, the Dept. of Ecology would like to see external data-generators interpreting their data using Ecology's Water Quality Index (WQI), which was developed to summarize Ecology's own monitoring data but can be applied to virtually any set of standard WQ data, including Streamkeepers'. It takes data results, compares them to regional norms, and calculates scores ranging from 1 to 100.

Streamkeepers developed our own [Clallam County WQI](#) back in 2004 while composing the [State of the Waters Report](#), and we believe our CCWQI still has value, but we also understand the importance of regionally-recognized modes of data presentation. Ecology would like to be able to crank out WQIs based on data submitted to them by groups like Streamkeepers, but they haven't been able to obtain funding. So, as so often happens, if we want to generate WQI scores, we're going to have to do it ourselves.

**Are there some volunteers out there willing to work on this project?** This would be a multi-pronged research and programming project, involving: Reading Ecology's methodology paper; Examining the programming built into their WQI Excel workbook; Populating some data fields describing our sites in terms of state water-quality regulations; and Devising a method to either recreate the programming in our own database or to automate the creation of WQI worksheets within Ecology's Excel workbook. If you're interested in taking on any part of this project, let us know.

### What Role does SK Play in the Mission and Responsibilities of Clallam Co. & the Road Dept.?

In late 2015, the Clallam County Commissioners asked the Road Dept. to remind them why they fund Streamkeepers. It is a reasonable question! Roads Engineer Ross Tyler and Public Works director Bob Martin pointed out that Streamkeepers provides an important risk-management service for Clallam County, helping it to avoid potentially-burdensome regulatory requirements of the federal Clean Water Act. Currently, the County has not been required to take special measures to clean up and protect our waters that many other jurisdictions must undertake, in part because: 1) Streamkeepers' continued monitoring shows the State that the County is making a good-faith effort to keep tabs on water quality, working alongside numerous partners, and 2) Streamkeepers' data has demonstrated that the County's water quality is in pretty good shape. Nevertheless, there are several water bodies that are considered Impaired under the Clean Water Act, and eventually the County will be involved in their cleanup. However, with Streamkeepers working alongside State agencies and other actors, we hope to be able to perform the necessary investigations at a much lower cost than a contractor and have a chance of steering the cleanup in a direction most appropriate for our local situation (and therefore less costly). It's estimated that Streamkeepers has saved the County \$1 million or more in yearly compliance costs over the past 10 years!

### Thank you, Dan Lieberman and your Natural Resources classes at the Skills Center!

We are sad to report that this outstanding and unique program has been canceled for the current school year. Over the years, we have shared much interesting news from this class, which has been involved in just about every effort to study and protect our natural resources here on the north Olympic Peninsula. Our database is filled with their data, and our volunteers have worked alongside these students on a variety of projects. One of their research posters adorns the lobby of the County Courthouse. In working on real-world problems, these students have honed their writing and math skills and performed real science. Their own impressive newsletter, *Terra Cognita*, is posted at <http://nopsc.org/natural-resources/projects/newsletters/viewcategory/19-newsletter.html>. SK volunteers have seen the enthusiasm and learning that these students have experienced and are saddened that this wonderful program is in abeyance, but hope that it can be revived on a stronger basis next year.

## Volunteers Needed

We have many projects that need your help. All necessary training will be provided.

- \*1 Monitor flows in storm or non-storm conditions anytime over the next few months at our Quarterly sites. This has to do with an exciting flow-modeling project that would greatly improve both Streamkeepers' efficiency and the ease of work in the field.
- \*2 Help in the Streamkeepers office with data entry and checking.
- \*3 Help with Port Angeles grab sampling, 1-2 weekday half days per month.
- \*4 Turbidity testing of samples coming in from the field, at SK office or home.
- \*5 Equipment calibration, every month or two at SK office.
- \*6 Stream teams: Monitor basic water quality parameters quarterly at streams from Sequim to Joyce.



Steve Belcher fixing the weather station donated to SK by the City of Port Angeles. Not much wind in our little kitchen!



Bob Sextro running turbidity samples with the HF DRT-15CE in the infamous "Wet Lab at Data Collector's Site" - note his little chemist friend in the foreground.



### Yoga Decontamination?

Sarah Miller And Ed Chadd decontaminating boots after their work in the stream. It helps to have a tree nearby!



### Coleman Byrnes Receives Annual Conservation Award

The Olympic Peninsula Audubon Society awarded Coleman Byrnes with their annual Conservation Award for meritorious service on behalf of so many good efforts to protect and restore the natural world. **Congratulations, Coleman!**