

**Lower Rogue
Watershed Council,
South Coast Watershed
Council, and the Curry
County Soil and Water
Conservation District**

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Curry Watersheds Partnership Wins an Outstanding Partnership Award!!

During the joint Network of Oregon Watershed Councils/Oregon Association of Conservation Districts conference this past November, Tom Byler, Executive Director for the Oregon Watershed Enhancement Board (OWEB), presented the Curry Watersheds Partnership with OWEB's first ever Outstanding Partnership Award.

Kelly Timchak and Liesl Coleman were present to receive the award, which was a basket of Oregon goodies to share with all the Partnership staff.

Mr. Byler had many wonderful compliments for the Partnership, and you will see his quotes highlighted throughout this issue.

Congratulations, everyone, you all deserve it!!!

"This partnership demonstrates how Watershed Councils and Soil and Water Conservation Districts can work together to provide the resources and support for communities to become engaged in successful monitoring, educational and restoration activities that strengthen local watersheds, and positive economic and social activities." ~Tom Byler

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Take a peek inside to see how the South Coast Watershed Council is helping local growers to bring their crops to **international** markets! (Page 10)

Rogue River Cleanup...another successful year! By Kelly Timchak

"Participating in a river clean-up is one way that the people can do their part for a river we all love"

We had a gorgeous, sunny day at the Port of Gold Beach and up river. There were 45 students and about 75 adults participating in the Cleanup this year! Students and adult chaperones were taken on the river in 12 jet boats piloted by volunteer drivers. The gravel bars along the lower Rogue and Illinois Rivers and beaches near the river mouth now have 20 cubic yards less trash, and an acre less Scotch Broom. The BBQ at Quosatana Campground was followed by a wonderful talk from the Forest Service on stewardship of our natural resources, and a surprise visit from Smokey Bear! This year we were also fortunate to have the Salmon Tent back again; an interactive "tent" shaped like a salmon that kids can climb around and play in. In addition to this delightful return, there were forest animal costumes for the children to dress up in as well. We even had a parade!

The annual Cleanup could not happen without generous financial and personal support from local businesses and amazing volunteers! Thank you to all our wonderful cooperators as you have all helped complete another successful year for the Rogue River Cleanup!

A very special thank you to the boat pilots – those that carried students, and those that provided safety. Thank you to the great folks that helped with the event organization and the BBQ. Thank you to SWCD staff and all the parents and others that helped supervise the students. Lastly, a great big thank you Forest Service employees who were a super addition to the day, and great help on the river and the BBQ. And for anyone we missed, thank you!



Participating students in forest creature costumes!



Above: Smokey the Bear with some volunteers and Linda Mullins (USFS)

Right: The Trash Dogs and their find for the day at the Cleanup!

The annual Rogue River Cleanup shows results by changing the way that our youth and community think about our river, invasive plants, and responsible trash disposal. **We are all making a difference together...see you on the river next year!**



A Community Committed to Environmental Quality By Kelly Timchak

The Lower Rogue Watershed Council received a national grant from the Environmental Protection Agency in the summer of 2012. This grant will occur over a two-year time period, and has four components:

- produce a scientifically-based assessment (OWEB, HGM) of the Rogue estuary that includes historic and current conditions, an analysis of limiting factors, areas for restoration, enhancement, and conservation, and recommendations for projects
- educate and engage the local community in a continuing education class at the local community college, with a sub-set of students trained to collect water quality and hydrogeomorphic data appropriate for volunteer sampling

"The Lower Rogue Watershed Council is dedicated to protecting the Rogue River because a healthy community starts with a healthy river, and our river provides everything from clean drinking water to recreation opportunities to fish and wildlife habitat."

~Kelly Timchak, Coordinator for the LRWC

- monitor water and environmental quality:
 - storm runoff source search (volunteer-based synoptic sampling of turbidity & E.coli sources affecting tidal wetlands, salmonid rearing habitat, recreational contact areas)
 - estuary E.coli concentrations
 - shellfish habitat evaluation to inform appropriate E.coli criteria
 - concentration of indicator metals (Cu, Zn, Pb) in storm run off and substrate

- convene a community/agency Estuary Restoration Team to review the assessments and develop a community-driven restoration plan for the Rogue Estuary

Outcomes include increased community awareness and activism in estuary conservation, credible water quality data to focus attention on pollutant sources and promote TMDL implementation, and a Strategic Action Plan that includes a prioritized list of projects, landowner outreach, funding opportunities, and monitoring objectives.

This grant would not be possible without the help of four state agencies, five city organizations, OSU, SWOCC, and over 10 community groups in Gold Beach. We are a strong community committed to a higher standard of environmental and water quality.

Frank Burris leads a discussion on estuary function



One of the limited marsh areas in the Rogue Estuary

Bacteria in the Rogue River Estuary by Cindy Myers

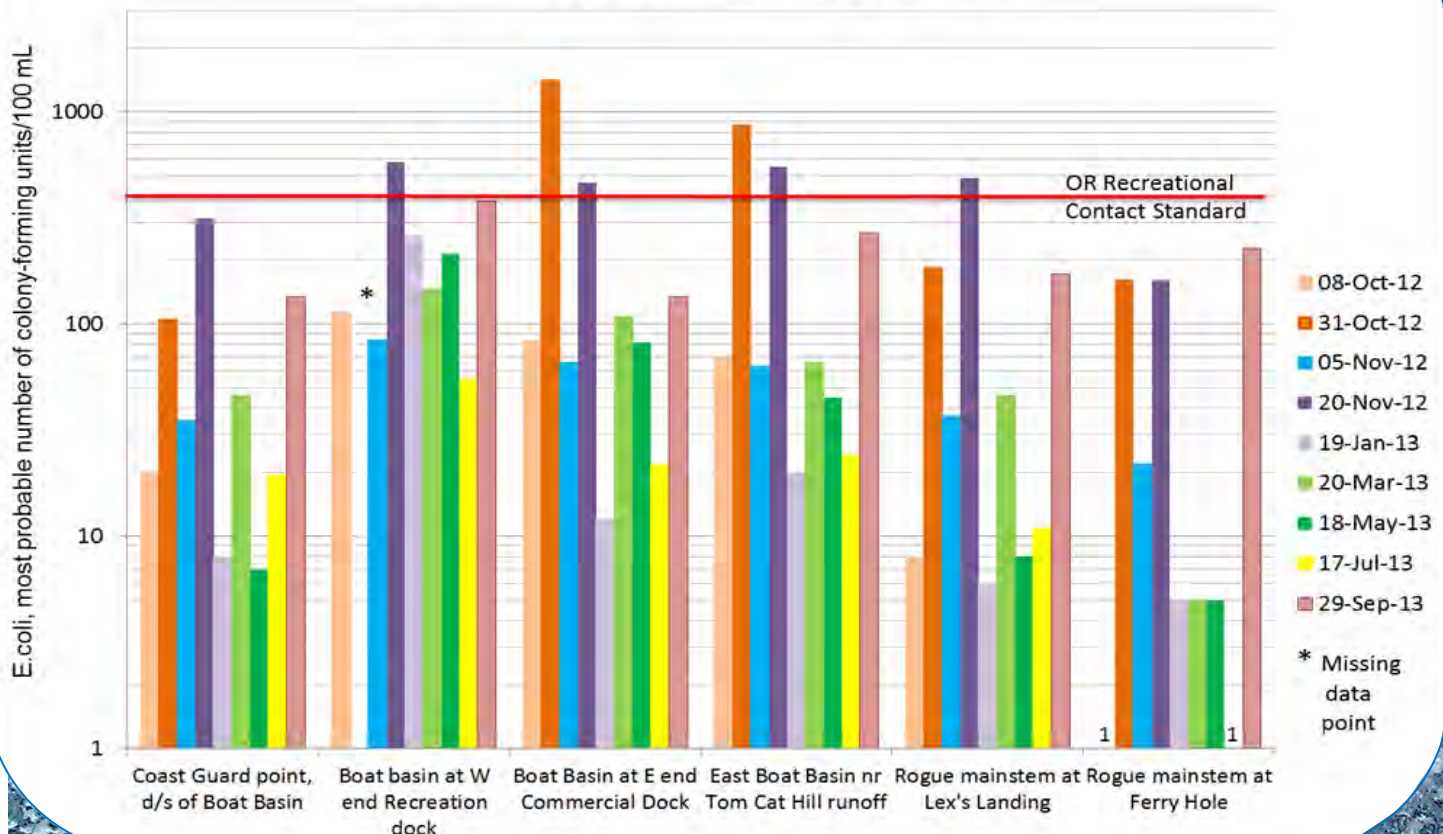
An Urban Waters grant from EPA funded a study of bacteria in the Rogue River Estuary. Samples were collected during the period of least tidal exchange, every two months for a year. Samples were also collected during storms on 10/31/12, 11/20/12, and 9/29/13. Samples are processed by feeding and growing the bacteria colonies at optimum temperature for 24 hours.

Concentrations are estimated from the number of *E. coli* bacteria colonies that fluoresce under UV light, reported as most probable number of colony-forming units per 100 milliliters (MPN CFU/100 mL). Only during storms did *E. coli* bacteria concentrations exceed the Oregon standard for recreational contact (see graph). Additional studies are ongoing to determine whether the more stringent water quality standard for shellfish is appropriate for this estuary. (cont on next page)




Above: Cindy and Kelly collecting water samples in the Rogue Estuary


Rogue River Estuary Bimonthly and Storm *E. coli*, 2012-2013



(continued) **Bacteria in the Rogue River Estuary**



Left: A volunteer reads *E. coli* trays in a black light to look for samples with high counts of the bacteria



For most samples, *E. coli* concentrations increased from upstream of the estuary ("at Ferry Hole") to Lex's Landing (upstream of Highway 101). Stormchaser sampling showed that during the two "first flush" storms, all of the tributaries had more bacteria than the Rogue, including Edson, Saunders, God Wants Ya', Wedderburn Ranch, and Indian Creeks. God Wants Ya' and Indian Creeks had lower concentrations than the Rogue during the largest storm (11/20/12).

E. coli concentrations in the Boat Basin were greater than in the Rogue River mainstem, measured both upstream at Lex's Landing, and downstream at Coast Guard Point. Of the three sample stations within the Boat Basin, the west end of the Recreation dock had the highest *E. coli* values during all nine sampling events. The stream draining into this area, Dean Creek, had concentrations that doubled between the storm sample upstream of Buffington Park, and the outlet to the Boat Basin. This information will be considered during development of a Strategic Action Plan for the Rogue River Estuary.

Making riparian protection a business priority by Barbara Grant

Most of the benefit from the riparian buffers restored and protected on private agricultural land is spread around the region in economic factors, in fish and wildlife habitat, in scenery, and in quality of life. ... The financial burden, however, pretty much falls on the landowner.

Depending on materials and the kind of ground you're working on, fencing out livestock can cost \$4 to \$7 per linear foot. That's **\$21,000 to \$40,000 per mile**. One mile of a 50 foot-wide buffer restricts grazing on just over 6 acres. If that ground is all fairly productive pasture, **replacing the feed from those 6 acres may cost an operator about \$4,000 per year**.

How does riparian restoration rise to the top of a ranch's long list of financial priorities, when ranchers are not just stewards of the land but also of their family's business? The answer has multiple facets. For instance ...

Consider public perception (and regulation)

A riparian buffer with livestock exclusion can be an appealing way to avoid well-intentioned complaints about livestock trampling streambanks. Trees make a nice privacy screen, too!

This fenced corridor divides a large hillside pasture and makes a thoughtfully-planned addition to the ranch's grazing strategy.

As new trees mature, the enhanced forested buffer will provide shade and wildlife habitat as well as protecting surface water quality, providing a wind break, and improving pasture management.

CREP 2012, Floras Creek tributary in Curry County



Buffer the worst

Assess the land bordering your streams. Installing the widest buffers on the least productive grazing land makes sense: marginal pasture produces less feed, often in areas where livestock work harder to forage, and the ground tends to yield less and less under constant use. Ecologically, marginal land is more likely to suffer erosion and wash sediment into streams due to slopes and soil types.

Plan a buffer that earns its keep

A fenced buffer corridor should always be planned to complement ranch operations and to maximize return on investment. A riparian fence is often a great jumping-off point for cross-fencing, or might provide an opportunity to divide a larger ranch into units that reduce round-up labor. Fencing a riparian buffer may allow a land manager to exclude livestock from a muddy area that has mired livestock in the past or a steep slope that complicates moving (or finding) animals. Fencing a stream that parallels a property boundary means that a riparian fence might stand in for a section of perimeter fence. A carefully planned buffer will benefit both sides of the fence.

(continued on next page)

(continued) **Making riparian protection a business priority**

Don't overlook sources of help

Multiple sources are available to help restore fish and wildlife habitat and improve surface water quality on privately-owned ranch lands. Riparian fences are a great fit for these programs.

Grants: Your local Watershed Council and Conservation District can provide more information about grant opportunities, which vary with the funding source. Typically, these competitive grants require a landowner contribution of at least 25%, and are monitored for a few years following installation. Technical staff design each project with landowner input to meet the requirements of potential funding sources and the needs of each landowner.



USDA Farm Bill programs: Farm Service Agency's cooperative **Oregon Conservation Reserve Enhancement Program (CREP)** pays Federal and state cost-shares adding up to 75% of planned expenses, PLUS annual rental payments and a combination of incentive payments. Cost-shares from OWEB and FSA and program incentives all add up to slightly more payment to the landowner than the outlay to restore a riparian buffer. In return, the participating landowner installs fencing and trees according to NRCS-approved specifications, and excludes livestock and maintains the buffer for the duration of a 10- to 15-year contract. Control and ownership of the property stay with the landowner, who collects rent on the enrolled acres each year. Technical

support for the Oregon CREP is provided by NRCS, by SWCD CREP technicians, and by Oregon Department of Forestry.

Combinations: A landowner may elect to enroll in CREP or another Farm Bill program, and use a portion of the program payments to cover the required landowner match on a more complex grant-funded restoration project. Responsibility for complying with the CREP contract stays with the landowner, and the maintenance and follow-through required give extra assurance to funding sources that the landowner truly takes ownership of the proposed project.

Curry County: Where to find help for riparian protection

The Curry Watersheds Partnership: 541-247-2755

Riparian Programs Coordinator drew.harper@currywatersheds.org Ext. 1#

Curry Soil & Water Conservation District liesl.coleman@currywatersheds.org Ext. 0#

Lower Rogue Watershed Council kelly.sparks@currywatersheds.org Ext. 4#

South Coast Watershed Council harry@currywatersheds.org Ext. 8#

US Department of Agriculture Service Center: 541-396-2841

CREP Technician, Curry SWCD barbara.grant@or.nacdnet.net ext. 106

Farm Service Agency bret.harris@or.usda.gov ext. 101

Natural Resources Conservation Service amy.wilson@or.usda.gov ext. 105

Curry County Fencing Workshop by Drew Harper



In October, Curry SWCD held a fencing workshop on a ranch near Langlois. Randy Bailey (Gallagher Animal Management Systems) shared his expertise on hi-tensile electric fence technologies and techniques.

The workshop covered everything from the basics of electric fence design to how to power the fence to making a clean and effective splice. The utility of several advances in technology were also well displayed.

In addition to the fencing portion of the workshop, Woody Lane (Lane Livestock Services) gave a presentation on the results of practical trials conducted on local ranches concerning efficient use of nitrogen fertilizer as well as trials with RyzUp Smart Grass®.

Furthermore, a brief discussion of various types of off-stream livestock water systems was offered by Drew Har-

per (Curry SWCD). Well-designed water systems permit livestock growers to manage animals and pastures in an economically effective manner, especially when used in conjunction with well-planned fencing. Curry SWCD has been assisting landowners with the development of off-stream water for several years and has had great success with their designs. It is often the case that financial assistance is available to help landowners develop offstream water systems and install fencing.

For more information on how offstream water development can benefit your operation, please contact

Drew Harper at 541-247-2755 ext. 1# or

drew.harper@currywatersheds.org

Also, be sure to check the Curry Watersheds Partnership website (www.currywatersheds.org) for upcoming workshop announcements.

"This partnership demonstrates how Watershed Councils and Soil and Water Conservation Districts can work together to provide the resources and support for communities to become engaged in successful monitoring, educational and restoration activities that strengthen local watersheds, and positive economic and social activities."

~Tom Byler (OWEB)



War on Weeds! By Dustin Williams

The battles continue down here on the south coast as the Curry SWCD's Vegetation Management Program wraps up another year of noxious weed control. In 2013 our top contenders in the fight include gorse, Japanese knotweed, Himalayan knotweed, Spanish heath, Scotch broom, Jubata grass, European Beach grass and Yellow starthistle.

With gorse and Japanese knotweed at the top of the charts, the Curry SWCD treated and surveyed over 200 noxious weed sites in 2013!

An estimated 25 acres of gorse and 80 river miles of Japanese knotweed was surveyed and treated. Since our efforts began more than 8 years ago, the Japanese knotweed population in Curry County has been reduced by more than 50%. The Curry SWCD has been surveying and treating county roads that lead to national forest lands for 3 years now.



Jubata grass, "The next BIG threat"

A Japanese knotweed youngling faces certain death



In 2013 that included surveying nearly one hundred jubata grass sites (a.k.a. pampas grass), which we hope to move to the top of the list for treatment in 2014. The Vegetation Program also treated sites along the Highway 101 corridor and is working closely with the Oregon Dept. of Transportation to prioritize and treat additional sites in the next year. Curry SWCD continues to work with local land managers with noxious weed control and encourages everyone to join forces and keep fighting the War on Weeds. **ATTACK!**

"These three groups have partnered effectively to assess, develop, and implement watershed restoration projects and related activities that benefit the ecological, economic, and social well-being of Curry County watersheds in southwest Oregon." ~Tom Byler (OWEB)

Marketing South Coast Cranberries *by Harry Hoogestager*

There are about 175 cranberry growers in Coos and Curry Counties, and this industry is an important part of our South Coast agricultural landscape. Oregon cranberries are considered to be sweeter, redder, and juicier than cranberries grown elsewhere in the U.S. Other cranberry-producing states include Massachusetts, Wisconsin, and Washington. There is increasing evidence that cranberries are high in anti-oxidants and phyto-nutrients, and can have major health benefits for humans.

Our watershed restoration work with cranberry growers has now spanned ten years. Some of the projects we have done with willing growers include:

- Irrigation efficiencies (conserving water)
- “Tailwater” recovery ponds (to recycle and re-use water, and prevent run-off)
- Water quality testing.
- Sanding for bog resilience and health
- Encouraging & helping to fund reduced-risk pesticides and herbicides
- Insect traps to reduce pests around bogs
- Planting of bee-friendly shrubs for better pollination

Our latest effort is to investigate whether there is a market for Oregon cranberries in Asia. Target countries include Japan, Korea, China, Hong Kong, Russia, and India. Why, you might ask, should the **Curry Watersheds Partnership** become interested in marketing an agricultural product ?

We think the answer is pretty straightforward. These ranchers and agricultural producers are often 4th and 5th generation “Curryites” who have a long and proud history in our county. If they stay in business, and can make a profit, we retain working landscapes for the future. And those working landscapes include 1,000-acre farms and ranches with valuable open space; operations that have salmon swimming next to cranberry bogs. Our work also brings economic aid to our rural corner of the state -- and improved water quality (and quantity) for our salmon and our steelhead populations.

Another component of our effort includes introducing school children to working farms. Students can tour a farm, talk to a grower about the challenges of growing food, and in the fall, even help with the harvest.

Our Cranberry Initiative is one of several projects the SWCD and the South Coast Watershed Council are working on. Other projects include tree planting, adding large instream wood

Support Local Agriculture & Education by purchasing a

Local Foods Calendar creatively crafted by Pacific High School Students

Contact

Leila Cassel for more information:

lcassel@2cj.com

in selected locations, improving upland forests, and working with the county’s emerging Forestry Collaborative.

Scott McKenzie explaining cranberry harvest practices to elementary students



Closing off a section of the flooded cranberry bog to harvest cranberries

Curry County Community Food Assessment: Analyzing the Current State of Our Food System and Offering Recommendations for the Future *by Carrie Courtney*

From September 2013 to July 2014, a comprehensive **Community Food Assessment** is being conducted throughout Curry County. A Community Food Assessment examines the current state of our Curry County food system, including the opportunities and challenges we are facing. The report will cover agriculture, commercial fishing, food distribution, the emergency food system, community food efforts and much more. Additionally, the report will contain a list of recommendations, which are drawn from residents of Curry County, organizations and the author of the report. The overall goal of the report is to create a stronger, more resilient food system.

Carrie Courtney is conducting the Community Food Assessment through Curry Watersheds Partnership, Resource Assistance for Rural Environments AmeriCorps Program and the Oregon Food Bank.

Methods currently being used to gather the appropriate information needed to conduct the assessment are listed below:



Producers from Curry County enjoying a meal and discussion at the Community Food Conversation hosted in October.

Formal Interviews: Formal interviews are being conducted with farmers, ranchers, food banks and pantries, grocery store owners and managers, concerned citizens and more. *(story continued on next page)*



***(continued)* Curry County Community Food Assessment:
Analyzing the Current State of Our Food System and
Offering Recommendations for the Future**

Community Food Conversations: Community Food Conversations are informal gatherings where the community discusses their food resources and the opportunities they see to strengthen their community's food system. There will be two or more Community Food Conversations held in Curry County.

Local Action Groups: There is a Port Orford Local Foods Action Group, Gold Beach Local Foods Action Group, and a Wild Rivers Local Food Cooperative out of Brookings/Harbor. The groups are helping acquire information for the assessment.

Surveys: Consumer Surveys, Food Pantry Surveys, Rural Grocery Store Owner Surveys and more have been created and are currently being distributed throughout Curry County.

Curry County Food Guide: We are creating a Curry County Food Guide. This project stemmed from interested community members who requested a food guide

be created to assist community members in accessing locally grown, produced and harvested food here in Curry County. The information gathered will be used toward a printed and online Curry County Food Guide. In the process of creating this guide, a great amount of helpful information has been collected from producers, ranchers, farmers markets, restaurants, café, and catering businesses and more.

"South Coast Watershed's Foodshed Classes now reach 175 students countywide per school year. Students received over 10 classroom hours of education about their local Foodshed, where and how their local food is grown and transported, and how this all affects our watersheds." ~Tom Byler (OWEB)



As mentioned previously, we are conducting the Community Food Assessment until the end of July. We are very excited about this project, and we welcome any input, energy and support from community members. If you are interested in sharing your knowledge, please contact Carrie Courtney at 541-332-5039 or email carrie.courtney@currywatersheds.org

Chef Scott from Tu'Tu'Tun Lodge working hard in the kitchen.



EDUCATION SECTION

Watershed and Foodshed

Jack Creek Adopt-a-Stream Project by Statia Ryder

If you are spending a day golfing the greens at Salmon Run Golf Course in Brookings, Oregon, don't be surprised if you see a team of students wearing bright orange hard hats and carrying water quality testing equipment! They are participating in an on-going 'Adopt-a-Stream' project that is testing the water flowing through Jack Creek watershed for salmon stream health metrics. Jack Creek flows into the Chetco River; a world-renowned salmon and steelhead river. Since 2005, students have been testing the water in Jack Creek, often down-stream of the golf course, for water quality parameters such as dissolved oxygen, temperature, nitrates, phosphates, pH and perhaps the most fascinating: Macro-Invertebrates!



Above: students pass around macro-invertebrate samples collected at the golf course pond

Macro-Invertebrates are small, spineless creatures which tell scientists a lot about the overall health of an aquatic and riparian ecosystem. Not only are they important in processing much of the vegetative debris in a stream, their populations are also indicators of how a stream changes over time. Certain macro-invertebrates (Class 1 organisms) will only survive in clean, cold water with lots of dissolved oxygen; basically requiring the same water quality needs as salmon and trout, making them an indicator species. Other aquatic macro-invertebrates (Class 2 and 3 organisms) can also live the same water as Class 1 macro-invertebrates, but they can also survive in warmer water, with less dissolved oxygen and more pollution. It is important to have a diversity of all 3 classes in the eco-system since each aquatic insect, snail, crayfish, worm, etc. has its own special ecological function. Some creatures eat leaves, others scrape algae off of rocks, some eat decaying matter and some even eat... poo! They are also important because they provide salmonid fry with food!

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After an afternoon of planting on the greens, it's time to pack up and head back to school.





Watershed Education

Under the leadership of Statia Ryder, Curry Watersheds Education Coordinator, and volunteers from the Oregon South Coast Fishermen, students have been monitoring the presence/absence of macro-invertebrates and also work to remove invasive weed species around the stream. The project began just down-stream of the Salmon

Below: 4th grade students collecting macro-invertebrates at Hole 9 at Salmon Run Golf



on Run Golf Course; the same site where Oregon Department of Fish and Wildlife biologists and volunteers were also monitoring juvenile salmon with a smolt trap as they migrate downstream.

While we have consistently collected Class 1, 2 and 3 macro-invertebrates at this site, data suggests that the stream ecosystem is *actually improving* due to the increase of diversity of organisms and consistency of Class 1 macro-invertebrates students find each year! This is encouraging, especially to address a local citizen concern that the golf course may be degrading the water quality of Jack Creek.

To diversify educational opportunities and community collaboration, Curry Watersheds' Adopt-a-Stream program partnered with the golf course in spring 2010 to assist with riparian planting along Jack Creek. The following year, learners from a "Riverside Adventure Camp" collected the first set of water quality data upstream of the golf course to begin comparing with downstream data. Now in the 4th year of working with Salmon Run Golf Course, students have since planted over 400 native trees and shrubs, cleared invasive species along riparian zones and wetlands, collected more water quality data, and collected many samples of macro-invertebrates.

The difference now is that we are collecting water quality samples in two different ponds on the golf course to try and determine if there is suitable habitat quality for salmonids.

Let me explain! During the years of student projects, the Oregon South Coast Fishermen have been there helping out and also talking amongst themselves... and then amongst the General Manager at Salmon Run... and then to ODFW about the feasibility of stocking a pond with trout for a youth fishing weekend. The GM said sure! ODFW suggested that they consider the initiative if there was data to support there was suitable habitat for the trout. This brings us to the current inquiry that students are testing at the golf course: "Are Salmon Run Golf Course's ponds eco-systems and water quality healthy enough to support salmonids?" (cont on next page)



Right: Ray, from Oregon South Coast Fishermen, keeps a small tree safe while 2 6th grade girls dig a hole along Jack Creek to plant it.



Watershed Education

Below: A future scientist and her water sample.



versity of these spineless creatures indicate that salmonids would thrive there? What is the depth of the ponds and the how safe is the habitat area? How many fish could they stock? Would the ponds benefit from an aerator fountain? Would adult fish be stocked or would juveniles be reared?

Azalea Middle School 6th grade students and Kalmiopsis School's 4th grade students began collecting macro-invertebrates and water quality samples from the ponds in the spring of 2013 and continued through fall and winter, with plans to continue through 2014 or longer as needed. Thus far we have had encouraging results indicating a healthy ecosystem. But are the results conclusive enough to show that salmon and/or trout could survive there? The diversity of macro-invertebrates discovered continue to dazzle us all; especially since they are so different from those typically found in streams and rivers. But does biodi-



Right: Statia Ryder, Curry Watersheds Education Coordinator peeks in as a group of 6th graders are sorting and identifying their collected specimens down-stream of the golf course at the old dam site.



Above: Rich Heap, from Oregon South Coast Fishermen, helps a student collect a water quality sample from Salmon Run's irrigation pond using an extended arm pole sampler.

Many thanks to the OSCF volunteers, teachers, ODFW, Salmon Run, and Swanson Ecological Services for your project support. Funding for this project has come from Oregon Watershed Enhancement Board, NOAA BWET grant program, The Gray Family Foundation, Dorothy and Elredge Combs Memorial Fund and the U.S. Forest Service.

Thank you all!!!



Watershed Education

A Journey from Land-to-Sea on our Wild Rivers Coast! By Statia Ryder

Below: Students get to pet pelts and skulls before their hike to the stream where they were surprised by stuffed cougars and bobcats! Smooth move ODFW!



Thanks to receiving a grant from NOAA's Bay Water Education & Training (BWET) national environmental education grant program, Curry Watersheds Education Program was able to partner with the Port Orford Ocean Resource Team (POORT) to include an Ocean Literacy unit in combination with their Salmon Ecology classes to all of Curry County's 4th grade students in 2013. The students began their journey from Land to Sea starting early in the school year with a "Watershed Field Day." They rotated through a variety of partner-led hands-on stations including: the Stream Trailer, Riparian Zones for fish and wildlife, Macroinvertebrates, Marine Reserves and Invasive Species. Curry Watersheds' partners included: POORT, Oregon Department of Fish and Wildlife, U.S. Forest Service and Oregon State Parks along with central and north Curry schools. *(cont on next page)*

Below: Tyson Rasor, POORT, introducing the different ocean habitats found in Redfish Rocks Marine Reserves. Look closely... ooo



Above: Statia and the Stream Trailer in action! Watersheds 101-Go!



Watershed Education

Right: Stream science; all geared up and ready to rock.

Soon after, Statia Ryder led the classes in a Salmon Ecology unit where they studied the inter-relationships of healthy riparian zones for wildlife, water quality and fish in their classroom, and then on to more field trips! They trekked through riparian forests wearing polarized sunglasses viewing streams' riffles and pools where they got to see wild salmon spawning in full color and splendor in their native habitat. They monitored water quality at **Adopt-a-Stream** project sites by collecting and analyzing macro-invertebrates all over the county where they also visited more streams, ponds and riparian forests,

all the while looking for a biodiversity of species. This watershed unit has been connecting Curry's 4th and/or 5th grade students to their local watersheds since 2004 delivering a foundation of knowledge and environmental awareness to build upon in future years. But in 2013, their watershed-based unit meandered over into the Ocean Literacy unit, led by Tyson Rasor from POORT!

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Above: Students watching a pair of coho build a nest on a salmon watching field trip

Left: Outdoor classroom on a gravel bar! Students sort through their buckets after collecting macro-invertebrates out of Riley Creek, their schools adopted stream. Cathy Boden, Watershed Education Specialist monitors their progress.



Watershed Education

What is Ocean Literacy?

In a “clam-shell” it is described as this: **“Ocean literacy is an understanding of the ocean’s influence on you, and your influence on the ocean.”** To view the complete Ocean Literacy framework and principles, visit http://oceanservice.noaa.gov/education/literacy/ocean_literacy.pdf



Above: Ocean creatures and tidepooling

For a complete listing of all the individuals who have contributed to the development of the Ocean Literacy Framework, please visit

www.oceanliteracy.net

Thanks to support from the NOAA’s BWET grant and the many others who have done an amazing job defining the importance of citizens understanding Ocean Literacy Principles, Curry county 4th graders’ journey continued from freshwater into the depth of the sea. This has helped them to understand that it is very much dependent on us, just as we are on it. With Tyson, they learned that the Earth has one big ocean with many features, that the ocean supports a great diversity of life and ecosystems, and that humans are inextricably interconnected to the ocean. They were visited by live ocean creatures in the classroom and also by OSU Researcher, Tom Calvanese, who is conducting research and running a FishTracker program to monitor fish movement patterns in, out and around Curry County’s new Redfish Rocks Marine Reserve.

For more information about Fishtracker: <http://fishtracker.org/fishtracker/Welcome.html>

The Ocean Literacy unit was completed with field trips to local beaches to go tide-pooling and conduct ocean debris surveys. Overall, students discovered:

Number of species identified: 38

Pieces of marine debris collected: 445

The most common type of marine debris: Foam Plastic (140 pieces), Hard Plastic (106 pieces), bottle caps (27 pieces).

With the support of grantors, teachers, and many other partners and volunteers, programs like these have the opportunity to excel and to be extremely valuable to our students. While we do our best to measure quantitative and qualitative effectiveness, the true worth of all the effort of field trip coordination, classroom planning, grant writing (and so much more), is written on the faces of the students. They begin making their own discoveries, witnessing the magic of nature’s processes, wearing the pride of stewardship, and then make a caring difference in their home watersheds by recycling, cleaning up trash, conserving water/electricity, and sharing those values with their friends and family. Inspire yourself and a child, and make a difference together today! You’ll see what I mean.

And don’t forget the Land to Sea connection...

Our water is a reflection of us.



Right: A sandy, salty field trip full of life.



Watershed Education

How Clean is Clean? By Statia Ryder

Usually when the Curry Watersheds Education Programs teaches about water quality, it is taught from a salmon or trout's perspective... as in, if we want to keep the Pacific Northwest's salmon streams, to stay "Salmon Streams" we need to monitor the water to make sure the chemistry in the water stays within a certain range; a range which supports a diversity of life and habitats healthy and functioning. Hence, we learn fun sayings like when monitoring temperature, "40-66° F fish get their kicks" or when measuring dissolved oxygen we learn a range between "8-14, is very keen." The Stream Trailer, a miniature watershed model, demonstrates the many ways different ways of how pollution might enter a stream as run-off from the land, which nearly every child in Curry County gets to experience multiple times throughout their educational experience here. We all know that clean water is better for the majority of living things, and that most of us would agree that, 'pollution is bad,' but how clean is clean and how much pollution is bad? Well, it depends on who you ask and for what purpose it is serving, naturally!

Students from Driftwood School in Port Orford and **Azalea Middle School** in Brookings studied water quality from a different perspective in 2013... from the human perspective! Students went on a journey from their town's drinking water source, followed it to the treatment facility, and then finally to the tap. Students learned their water is collected out of local watersheds in several ways. One way that water is delivered to the tap is through a human designed reservoir, like the one in Hubbard's Creek in Port Orford. Alternatively, the City of Brookings gets their water directly from the Chetco River and the town of Langlois from Floras Creek. This water is then collected after it naturally filters through layers of sediment under the river bottom in a Ranney Collector Well.



Above: Dave Terrusa explaining the Ranney Collector at the intake at Floras Creek

Lessons were taken from each field trip, each collection location, and treatment facility. Dave Terrusa, from the Langlois Water District, shared that the biggest challenge for Floras Creek is controlling the amount of fine sediment, which needs to be filtered out. Students quickly became experts on measuring the amount of particles in the water. *Turbidity* is another word for the clarity of the water; like when it rains and the rivers turn a delicious chocolate mocha color! The untreated water goes into a settling tank and then through filtration and flocculation techniques until it leaves his facility crystal clear, with a balanced pH and treated for bacteria. The water entering the facility the day of our tour was 8.04 NTU, and after treatment, it left a clear .013 NTU, well below the Drinking Water Standard of .30 NTU. On the surface Dave is a jovial, easy going guy who loves to laugh and share, but when it comes to his dedication and commitment to the people of Langlois, he is surprisingly serious. Dave has been known to work all hours of the night to deliver clean, clear water. **Thanks, Dave!**

(cont on next page)



Watershed Education



A student collects a sparkling water sample from the Chetco River during their drinking water tour.

On the opposite spectrum of turbid water is the Chetco River, flowing sparkly and clear. The City Water Manager, Raymond Page, shared with Azalea Middle School students that the water getting filtered and collected from below the river's rocky bottom flows into its holding well is safely below drinking water turbidity standards... all year long. The days we had field trips, the reading was .01 NTU which is the absolute lowest reading the machine can read! (Drinking water standard for turbidity is .30 NTU.) I should also insert here that the surface river water tested out at .13 NTU, still within NTU Standards! The only thing Ray's team has to do to the drinking water is add a pH balancer and bacteria inhibitor for potential micro-organisms. Ray presented the challenge to the students

that the bottled water they buy in the store probably doesn't have as low of a turbidity reading as that from the Chetco River's in-take source. Students took him up on that challenge and we used a turbidimeter in class to measure bottled water's particles. We found them to still be under the Standard .30 NTU in the range of .24-.27 NTU, which was nowhere near Chetco's raw .01 NTU!

While we were busy testing water in class, students had the idea to test Azalea Middle School's tap water too- the same water which left Ray's treatment facility. The cold water was found to be quite a bit higher than what is was when it leaves the treatment facility, but within Standards. Ray mentioned that it's common for older pipes to contribute a particulate content to water. The hot water results, however, surprised everyone when it did NOT meet Standards. We tested again and again until finally we were challenged to learn from the teachable moment relating to our hot water heaters...

Have you cleaned your hot water heater lately?? Is your hot water heater polluting your homes drinking water?? *Take home message: most hot water heater recommendations are to clean it at least once a year!*

The biggest challenge for Brookings is keeping pipes operational. These pipes go under city roads, which have a tendency to shift with the moving earth, leading to breakages and leaks. Water quantity, or the amount of water flowing through the Chetco River, and the amount Brookings can store at one time also presents challenges, usually in the summer months. Yet another reason to actively choose to conserve water; the less water we use, the more we leave in the rivers!

Speaking of conservation and leaky pipes... welcome to Port Orford, where rumor has it, over half of the town's treated water disappears during the distribution system to residents. They have an entire page on their website encouraging home-owners to check their own home for water leaks. The system is old and in order to fix the problem over 90% of pipes and existing infrastructure will need to be replaced. The good news is they have a small reservoir to hold their town's precious drinking water and a back-up system for water emergencies using water from Garrison Lake. Allen Wagner led the student tours around the Hubbard's reservoir, then to the treatment facility where they got to see a much larger system than the one they witnessed in Langlois. Filtering out sediment remains a challenge for Port Orford, especially during the rainy months. On our visit, water coming into the facility was reading 1.1 NTU. After it was treated, it left a very safe .05 NTU. *(cont on next page)*



Watershed Education

After visiting both facilities, students from Driftwood School were then poised to educate others about the importance of maintaining and improving healthy watersheds; especially when they are delivering water to our homes. At the Water Festival in Port Orford, students led demonstrations with the Stream Trailer on how pollution might enter a river, and the many ways we can work towards decreasing pollutants from entering our waterways. Since the Stream Trailer easily demonstrates the different land uses and the run-off most associated with them, audiences watch with wide eyes as pollutants (Kool-Aid or soil) runs into the river and then into the ocean.

The students measured the level of turbidity throughout the Water Festival day as polluted water continued to flow into the ocean, until the final reading was barely measureable. Polluting the Stream Trailer is admittedly, fun. Bright reds, greens, and purple colors wash off roads, farms, from neighborhoods as pesticides, herbicides, fertilizers, oil. However, soil washes off of eroded, disturbed soils, cows stomp around in the river all washing downstream to our Salmon Streams, and this is not a pretty sight. Sights we witness and the choices we make each day are reflected back to us in our water, flowing past us, and through us.

Students demonstrating at the Water Festival how turbidity and other pollutants enters a river.



Which brings us back to our original question.. How clean is clean? How does the ocean get cleansed from all of the run-off which gets delivered off of the land? And what happens to the water and all the other stuff after it goes down our drains or is flushed down toilets? How clean does that water have to be before it gets flushed back into a stream or ocean... and why should we care? We should care because we are all connected by water- the entire world. If we don't care and we don't teach our children to care, then who cares how clean is clean??

Please consider adopting good water conservation habits, which support a greater purpose of keeping our water clean and plentiful. Here is a link to 50 Ways to Love your River: <http://www.oeonline.org/resources/publications/kitsandtipsarchive/50ways.pdf>

Allen Wagner and students at Hubbard's Reservoir



Thank you to the Gray Family foundation and the Department of Environmental Quality for your support in providing Drinking Water Education to Curry county schools.

The last system to be explored will be Gold Beach's water supply which comes from the Rogue River, a mighty watershed. **Stay tuned!**



Foodshed Education

Look What's Growing in the Central Curry School Gardens by Cathy Boden

Central Curry School District ramped up School Gardening this year bringing the High School Greenhouse back into operation. Master Gardener's Terry Olin and Diana St. Marie spearheaded the project with help from Carol Hobbs working hard to clean out the space getting it ready to propagate plants. Starting with succulents and ornamentals they are now moving on to vegetable starts for this years growing season. These plants will be available to purchase at this years plant sale on May 10th at the Curry County Fairgrounds.

The Riley Creek School Garden led by Master Gardener Mary Jacobs, supported by Carol Hobbs and many other volunteers transformed the garden this year. Volunteers Tim O'Dwyer and Joe Martin rebuilt our garden shed that blew away in last years big storms. Glen Kral has diligently worked to repair our fence and water system, among many other fix it issues around the garden. Mary and Carol have organized certain grades growing specific veggies to enhance garden & classroom education for K-5th graders.

Thanks to students and volunteers, hundreds of pounds of fresh produce have been brought into the school cafeteria and local food bank.

A special THANKS goes out the superintendent Dennis Johnson, and Riley Creek principal Tom Denning for supporting this meaningful growing experience. Thanks also to Scott Thiemann Master Gardener Program Assistance and all of the community volunteers that make it happen.

Don't forget that Riley Creek Garden will have a summer program where ANYONE can come and learn more about growing food. You will even get to take fresh veggies home! Stay turned for days and hours.



Curry County Master Gardener Plant Sale
Support School Garden efforts by supporting
Master Gardeners!

Saturday May 10th

10am-7pm

Showcase Building at the Curry County Fair-
grounds

For more info contact:

Terry Olin terryyantist@gmail.com

Diana St. Marie dstmarie@gmail.com



Foodshed Education

Riley Creek Foodshed Education by Cathy Boden

Two Riley Creek 5th grade classes have completed their Foodshed Classes; learning the impacts Agriculture can have in a watershed. Over 50 students now know why and how Oregon farmers produce 220 different commodities. Investigating soil and water conservation techniques students began to understand the hard work that brings food to our tables. Why is all this information important to Riley Creek Students? **We look into the many ways Agriculture affects our local communities.** Both classes walked to Rays to learn how food labels can help us make wise choices for our health and the health of our watersheds.

Lani Martin's class is currently diving deeper into the history of our food system by researching past Ag events to present in a Timeline Class Project. Both 5th grade classes will be working on a Class Project this spring exploring Oregon's growing regions and tracking weather for one month in all 7 growing regions of Oregon. A class presentation featuring each regions Ag highlights along with cli-

mographs charting rainfall and tem-

perature will help students practice public speaking skills. **The Foodshed Classes and follow up Class Projects all help teachers reach State Core Standards for their students.**

Riley School Garden Needs

- Vounteers
- Rebuild raised beds
- Windproof covers for somebeds
- Grow shelves for classroom
- More summer garden participation

Contact **Mary Jacobs** for more infor-

Riley School Garden Statistics

- More than 50 adult volunteers have logged in an average of 6 hours each
- Most of the 315 students K-5 have participated in garden activities for an average of 6 hours
- Master Gardener Program has spent about \$1,000 annually supporting Riley Creek School Gardens





Foodshed Education

Curry County Farm Field Trips by Cathy Boden

Every 5th grade class in Curry County is offered a handful of Farm Field Trips during the school year through their Foodshed Education.

Starting in November, 5 classes totaling nearly 100 students from North & Central Curry visited Scott McKenzie's SeaView Cranberry Bogs. Scott explains how cranberries are grown, what he does to conserve soil and water, and why his berries can be certified Salmon Safe and endorsed by Oregon Food Alliance. Students also learn where his cranberries go when they leave the farm and what products are made from his berries.

Below: Students watch as they corral the berries toward the truck



Students watch the beater machine work the bog, watch workers corral the berries that get sucked up into the totes on a truck. We even get to eat cranberries and walk out onto a bog for a closer look!

Pacific High School students took advantage of cranberry field trips to learn more about the product and to take pictures of the harvest to showcase cranberries in their Local Food Calendar. See sideline to learn how you can own a Local Food Calendar crafted by our local High School students!

This year a Cranberry Gleaning opportunity was offered to the members of the Port Orford Community Coop. Several locals gleaned the edges of the bog (where the harvesting process misses) for a couple of hours. Pickers took home half of what they picked leaving the rest to be sold at our local community coop.

The next field trip leads us out to the Wahl Lambing barn in March where 7,000 lambs are born each year. We always need volunteers! Come on out to watch lambs being born and **many** young lambs running around!



Picture: Students picking cranberries that were left after the commercial harvest



Foodshed Education

North Curry Local Food Education by Cathy Boden

Driftwood School
Worm Composting Bins
\$45

Comes with everything you
need to start composting with worms!
Contact Cathy Boden 541-332-5039
cathy@currywatersheds.org

Foodshed Classes will be the focus for Driftwood Ag Science 5th graders this winter. In addition Port Orford Ocean Resource Team member Diane Schofield wrote an ODA Farm to School Grant to source local food for the North Curry school cafeteria. The grant adds 15 cents to each students school lunch cost to offset the higher price for higher quality local food products from Valley Flora Farm, Jensen's Blueberries, SeaView Cranberries, and Port Orford Sustainable Seafood to name just a few participating local producers. If you want to help secure local food for our schools contact Cathy Boden Foodshed Coordinator.

The challenge to get our regionally produced food in the school cafeteria food system will be taken on by Curry Watershed Partnership and Port Orford Community Coop along with other organizations & volunteers. A Local Food Calendar designed to raise money for the schools local food projects are also part of the grant. Driftwood school students have a dream of building a greenhouse to extend the growing season into the winter months while school is in session.

Regional Tourism by Cathy Boden

Travel Oregon has been working with our Region from Bandon to Crescent City, through a series of workshops, to develop a tourism plan for the Wild Rivers Coast. Michelle Carrillo and Cathy Boden were selected to lead the Agri-tourism focus group.



Supporting the efforts of Carrie Courtney, Local Food Coordinator with Curry Watershed Partnership to complete a Local Food Guide, we will start our campaign to promote local food to tourists and locals. After identifying who grows/raises our food and which businesses feature that local food, we will create a seasonal availability calendar to identify what food is available when. Other organizations planning regional events can use this calendar to offer local food.

From here we will build travel itineraries that highlight businesses that offer food by our regions producers.

Want to be a part of the Agri-tourism focus group?

Contact:

Michelle Carrillo at OSU Extension
541-247-6672

michelle.carrillo@oregonstate.edu OR

Cathy Boden at Curry Watershed Partnership
541-332-5039

cathy@currywatersheds.org

A special **THANKS** goes out to the
funders of the Curry Watershed Partnership's
Foodshed Education, School Garden Program, and
the
Local Foods Assessment

Gray Family Fund
Gordon Elwood Foundation
Wild Rivers Coast Alliance
Curry County Master Gardeners



Thank YOU!!



Ways to get involved in Watershed Education in Curry County

Many ways to Volunteer!

- Watershed Field Trips & Adopt A Stream Projects
 - Foodshed Field Trips
 - School Gardens
 - Local Foods Assessment
- Wild Rivers Coast Agri-tourism

Many ways to Donate!

- School Districts for School Gardens
- Master Gardeners Plant Sale May 10
- North Curry Local Foods Calendar
- South Coast Watersheds 501c3 for any specific or general Watershed/Foodshed project

Contact Cathy Boden 541-332-5039 or
cathy@currywatersheds.org

"The partnership's shared staff – providing project management, technical support, restoration implementation, monitoring coordination, education Coordinator and fiscal services – allow for a comprehensive approach to restoration and community involvement. The organizations do not have to worry about watershed boundaries and can focus on a holistic approach to restoration and engaging a broad diverse community."

~Tom Byler (OWEB)



AgriMet Success Continues into 2014

Curry SWCD would like to thank our generous donors for making another year of AgriMet weather station maintenance possible.

The AgriMet program helps regional farmers and ranchers plan efficient irrigation and pest control, and provides essential data for agricultural research and planning.

AgriMet is the satellite-based network of automated agricultural weather stations operated and maintained by the Bureau of Reclamation throughout the Northwest. For Internet access to local AgriMet information see

<http://www.usbr.gov/pn/agrimet/agrimetmap/banoda.html>

More than a weather station

The Bandon AgriMet station (BANO) provides area-specific and crop-specific data that helps our local cranberry farmers, blueberry producers, and pasture irrigators use water and energy efficiently.

Data is collected at the station every 15 minutes, and uploaded to the network every 4 hours for nearly real-time access. The information is translated into crop-specific water use (ET) on the website.

BANO AgriMet station provides data on specific crop water usage, solar radiation, relative humidity, wind speed and direction, precipitation, air temperature, soil temperature, and dew point.



Pacific Ag Systems, Inc.

Junction City, Oregon

(888)998-1983

www.PacAg.com



Curry Currents brings news to our community from a group of organizations working together to protect and enhance the natural resources of Curry County and its major watersheds.

We work with agencies and nonprofits as well as agricultural operations and other private landowners to put conservation practices on the ground and to provide information and education about natural resource conservation and protection.

The Curry Watersheds partnership shares a central office, located in the north end of the Gold Rush Building at 29692 Ellensburg Ave in Gold Beach.

The **Curry Watersheds Partnership** includes:

- Curry County Soil and Water Conservation District
- Lower Rogue Watershed Council
- South Coast Watershed Councils

For more information about our projects and programs call 541-247-2755.

Check out our ever-evolving website at www.currywatersheds.org for more information.



Thanks for another great Year!

Curry Currents 2013



Watershed Councils

South Coast Coordinating Watershed Council	George Fleming, Chair
Lower Rogue Watershed Council	John Wilson, Chair
Port Orford Watershed Council	Steve Taylor, Chair
Elk/Sixes Watershed Council	Joe Marsh, Chair
Floras Creek Watershed Council	Steve Kalina, Chair
Hunter Creek/Pistol River Watershed Council	Dave Lacey, Chair
Winchuck Watershed Council	Ed Gross, Chair
Euchre Creek Watershed Council	John Wilson, Chair

Program Managers and Staff

Kelly Timchak	Coordinator, Lower Rogue Watershed Council
Harry Hoogesteger	Coordinator, South Coast Watershed Council
Cindy Myers	Water Quality Monitoring Coordinator
Matt Swanson	Project Effectiveness Monitoring, Sediment Abatement, Watershed Restoration Technical Assistance
Statia Ryder	Watershed Education Program Manager
Cathy Boden,	Foodshed Education Coordinator
Drew Harper	Riparian Management Coordinator
Dustin Williams	Project Implementation Manager
Liesl Coleman	District Manager
Barbara Grant	CREP Riparian Specialist
Erin Minster	GIS/Technical Specialist

Curry Soil & Water Conservation District Board

Chair	Steve Kalina
Vice Chair	Neil Walker
Treasurer	Scott McKenzie
Secretary	Jeremy Knapp
Director	Keith Smith

To receive our newsletter please contact us and provide your name and email address.

Curry SWCD

PO Box 666

Gold Beach, OR 97444

Email and phone contact:

info@currywatersheds.org

541-247-2755 ext. 0#