



APPLEGATE WATERSHED
EDUCATION & OUTREACH COMMITTEE PRESENTS

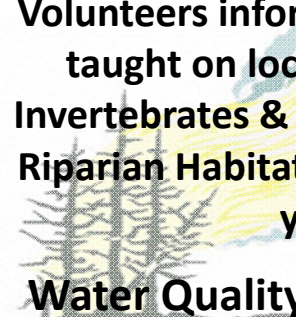

WATERSHED HEALTH TRAINING DAY

Join us
TUESDAY, SEPTEMBER 24TH

4:30pm – 6:30pm

at the

**Humpback Bridge,
Williams Creek Wayside
Hwy 238 near Provolt**



We will be partnering with OSU Extension Services to give Educators and Volunteers information and skills that can be introduced in the classroom and taught on location in the field. We will practice sampling Aquatic Macro Invertebrates & Water Quality, including information and examples of Healthy Riparian Habitats and Erosion Control. Please bring rubber boots or waders if you have them, but we will have some on hand.

Water Quality

Aquatic Macro Invertebrates

Riparian Habitat



For more information or to RSVP

Please Contact:

JANELLE DUNLEVY

APWC Coordinator

coordinator@apwc.info

541-899-9982

**APPLEGATE PARTNERSHIP
& WATERSHED COUNCIL**

WWW.APPLEGATEPARTNERSHIPWC.ORG

A 501 (C)3 NON-PROFIT



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Watershed Health Training Day Resource Packet
Applegate Partnership and Watershed Council
with OSU Jackson County Extension
September 24th 4:30-6:30

Presented by Rachel Werling, instructor OSU Extension. Rachel is and instructor of natural resources and science education at Jackson County Extension. Her programs serve children, youth and adults and are presented for schools, watershed councils and the community. For information or questions contact: rachel.werling@oregonstate.edu, 541-776-7373 ext 216.

Goals:

Participants will:

- Receive online references for teaching materials.
- Receive information about where to borrow equipment for use in such activities.
- Gain or review skills for leading streamside activities for school or community outreach and education. Specifically we will review: Macro Invertebrate Sampling, and Water Quality Testing.

Contents:

Education Resources: Streamwebs, Salmon Watch

- **Streamwebs** online curricula (we will focus on Salmon Watch resources)
- Streamwebs **data sheets** (excellent! Create a “page” on the streamwebs platform and upload, share and compare your data!)

Equipment Resources:

- BCWEP (Bear Creek Watershed Education Partners): Membership is \$15 allows use of equipment. www.bcwep.org/programs/monitoring.html
- OSU Jackson County Extension education kits and resources
- Southern Oregon University SEEC education kits
- Klamath Outdoor Science School education kits

Field Trip Tips (from the Salmon Watch Curriculum)

About StreamWebs






StreamWebs is a dynamic networking platform that links students with locally based hands-on watershed stewardship projects and provides a multimedia showcase for their project and



data reports. **StreamWebs** offers teachers and community partners resources to support setting students on the path to lifelong watershed stewardship. By providing students and teachers open-source, web-based tools for watershed data management, analysis, and networking, **StreamWebs** supports classrooms in their pursuit of STEM (Science, Technology, Engineering, Mathematics) educational opportunities, while helping students and teachers demonstrate their role as vital contributors to watershed sustainability. StreamWebs originated in 2008 as a project of The Freshwater Trust. In 2011, StreamWebs transitioned to Oregon State University Extension Service.

Curricula available on Streamwebs:

<http://streamwebs.org/resources/publications>

-  • [StreamWebs Student Stewardship Project Field Book](#)
-  • [Salmon Watch 10th Edition Curriculum Guide](#)
-  • [Salmon Watch 10th Edition Volunteer Resource Packet](#)
-  • [1000 Drops Curriculum Guide](#)
-  • [Hometown Waters](#)

Data sheets available on Streamwebs:

<http://streamwebs.org/resources/data-sheets>

Sheets

A data sheet form for Water Quality monitoring. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The main body of the form is a table with columns for 'Sample 1', 'Sample 2', 'Sample 3', and 'Sample 4'. The rows are labeled 'Temperature', 'Dissolved Oxygen', 'pH', and 'Conductivity'.

 [Water Quality](#)

A data sheet form for Aquatic Macroinvertebrates. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various macroinvertebrate groups. There are also sections for 'Notes' and 'Collector'.

 [Aquatic Macroinvertebrates](#)

A data sheet form for Riparian & Aquatic Survey. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various aquatic organisms. There are also sections for 'Notes' and 'Collector'.

 [Riparian & Aquatic Survey](#)

A data sheet form for Riparian Transect. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various riparian organisms. There are also sections for 'Notes' and 'Collector'.

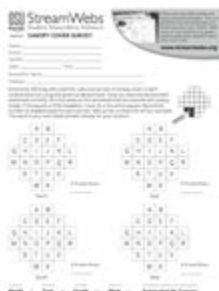
 [Riparian Transect](#)

A data sheet form for Photopoint Monitoring. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various photopoint organisms. There are also sections for 'Notes' and 'Collector'.

 [Photopoint Monitoring](#)

A data sheet form for Streamflow. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various streamflow organisms. There are also sections for 'Notes' and 'Collector'.

 [Streamflow](#)

A data sheet form for Canopy Cover Survey. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various canopy cover organisms. There are also sections for 'Notes' and 'Collector'.

 [Canopy Cover Survey](#)

A data sheet form for Invasive Species Mapping. It includes a header with the StreamWebs logo and title. Below the header are fields for 'Date' and 'Location'. The form contains a table for recording 'Number of Individuals' for various invasive species. There are also sections for 'Notes' and 'Collector'.

 [Invasive Species Mapping](#)

Equipment and Educational Resources available for checkout through Jackson County OSU Extension Services

Most equipment is free and available for up to 2 week check out. Contact OSU Extension at 541-776-7371 ext. 216. Kits can be delivered to public schools through the SOESD courier.

Aquatic Macro-Invertebrate Sampling Kits

Includes: rubber boots, D-frame kick nets, small nets, scrub brushes, turkey basters and smaller droppers, insect viewing equipment, ice cube trays and wash tubs, identification guides and data collection sheets.

Water Quality Testing Kits

Includes: Rubber boots, Hach or LaMott kits with equipment and chemicals for sampling dissolved Oxygen, pH, turbidity, temperature, safety glasses, rubber gloves.

Digital Cameras

Forestry Field Equipment

Includes: Field vests, *Trees to Know in Oregon* book, Mac's Field Guide Tree ID, Clinometer, Spherical Forest Densimeter, DBH tape (to measure tree diameter), 75-100 ft transect tape measure, Increment borer, compasses, Basal Area Gauge.

GPS units and compasses

Garmin etrex VentureHC:10 units available. **Sliding scale maintenance fee: \$2 per unit or \$0- \$15 for the whole kit.**

Astronomy Kit with Telescope

Earth Science Kit and Curriculum

Wildlife Scat and Tracks Kit

Forest Ecology Games and Resources

Binoculars and Birding Field Guides

BCWEP equipment available for loan to members

KITS – for classroom or field use:

Amphibian kits (2) – includes hand lens, aquarium nets, dip nets, thermometers, compass, stop watch, Field Guide to Amphibians, (book) and first aid kit.

Water Quality Test Kits (9) – includes Ph, dissolved oxygen, nitrate, phosphate, turbidity and alkalinity test sampling and testing equipment with instructions. Some kits also includes thermometers and Field Guides to Water Quality Monitoring (book).

Macroinvertebrate Kits (4) – includes dip nets, brushes, sampling trays, magnifiers, hand lens, photo identification cards, and Guide to Pacific Northwest Invertebrates (book).

MAPS

Bear Creek Watershed Maps (laminated) – shaded relief map showing topography, waterways, major towns and roads in the Bear Creek Watershed. Also available for purchase.

EQUIPMENT/TOOLS

Dissecting microscopes (8) – Shinco Field Microscopes

Rubber boots (all sizes) – for field trips and outdoor education.

Binoculars (22) – great for birding or outdoor observation.

Stopwatches (15) – for measuring streamflow or monitoring wildlife behavior.

100 foot measuring tapes (5) – for establishing test plots or determining flood stages.

Loppers (25) – for maintaining riparian vegetation or removing invasive plants.

BCWEP also has shovels, trowels, gloves safety vests, goggles, wire brushes, trash bags and other miscellaneous tools available to members *free of charge*.

Please let us know other equipment needs you have.

We may be able to help you find what you need!

SOU Siskiyou Environmental Education Center

Resources for Educators <http://www.sou.edu/biology/enved/seec/resources-teachers.html>

Natural Science Study Kits

Over the past decade, MSEE students have created curricula and assembled resources for the development of hands-on Natural Science Study Kits. The kits are designed to teach broad concepts in the study of the natural world and simultaneously provide local specifics that help students to develop their relationship with our region. In recent years, demand for the kits by area teachers has steadily increased. Currently over 1500 students benefit from these activities yearly.

SEEC Kits Available for Check-out

- [Bird Kit](#)
- [Conservation Biology Kit](#)
- [Denman Kit](#)
- [Fire Ecology Kit](#)
- [Forest Ecology Kit](#)
- [Geology Kit](#)
- [Insect Kit](#)
- [Mammal Kit](#)
- [Plant Kit](#)
- [Streams & Rivers Kit*](#)
- Water Conservation Kit*
- [Water Quality Kit*](#)
- [Wetland Kit*](#)

Other Resources for Check-out

Amphibian Toolbox* - This is a box of tools for collecting and identifying amphibians.

Binoculars - We have ten pairs of binoculars available for class field trips.

SEEC Library - SEEC houses a diverse library of natural science and environmental education resources. Our library contains science texts, nature-inspired novels and essays, education journals, Master's theses, educational videos, field guides, and a wide variety of curricula. The SEEC Library offers a variety of resources for any educator. If you would like to browse through our library or just come and say "hello," please give us a call so we can make sure someone is here.

Klamath Outdoor Science School hosts education kits assembled by a variety of partners including OSU Klamath Basin Research and Extension

<http://www.klamathoutdoorschool.org/Kits.html>

List of Available Kits

Birds

[Beginning Birds](#)

Binoculars

Bird Egg Hatching

[Klamath Basin Birding Trail \(4\)](#)

[Owl Pellet Dissection](#)

Bugs

[Entomology](#)

[Macroinvertebrate Sampling](#)

Fish

Angling Clinic

Bass Last Game

Fish Dissection

[Fish Ecology](#)

Fish Printing

Hooks & Ladders Game (Salmon

Migration)

Wildlife

[Wildlife Kit](#)

Forest

Every Tree for Itself

Forest Cocktail Party

[Forest Ecology](#)

[Forest Monitoring](#)

[Forest Products](#)

The Working Forest

[Tree Cookies](#)

Earth & Environment

[Enviroscape](#)

Geology

[Orienteering](#)

[Soils](#)

[Weather](#)

Incredible Journey (water cycle)

Equipment

Work Gloves

[Dissection Kits](#)

Insect Nets (11)

Microscopes (4)

Rubber Boots & Waders

Triple Beam Balance

[Water Quality Testing](#)

TIPS FOR FIELD TRIPS

BEFORE THE TRIP

- Know your objectives and communicate them to the volunteers and students.
- Make it exciting.
- Know the subject and assist your volunteers as needed.
- Prepare your group in advance.
- Know your site thoroughly.
- Be prepared for a change in your schedule or a missing volunteer.

DURING THE TRIP

- Provide the appropriate equipment.
- Give the volunteers an orientation to the site and the agenda for the day.
- Explain the expectations to all participants.
- Serve as the disciplinary figure when needed.
- Prepare students for appropriate site behavior i.e. stay on the trail, leave no trace of your visit, and practice good conservation stewardship.
- Prepare for emergencies i.e. cell phone, phone numbers, Equipment for allergic emergencies, etc.
- Keep the group on time.
- Provide an opportunity to debrief the day with the volunteers before leaving.

AFTER THE TRIP

- Share your data with others through StreamWebs at www.streamwebs.org
- Relate data collected on the field trip to the science inquiry question.
- Explore the community service learning opportunity.
- Evaluate the experience (includes completing the teacher and student evaluation forms and sending them to The Freshwater Trust office by Dec. 31).
- Continue with more related curriculum to synthesize the information.
- Send thank you notes to volunteers and appropriate sponsors.
- Design and implement community service learning projects with students.
- Encourage field trip volunteers to be involved in community service learning projects.
- Complete necessary paperwork to process reimbursement requests for bus and substitute.
- Required documentation includes an invoice for field trip expenses from the school district or a statement on school letterhead.