

INTRODUCTION TO SALMON WATCH

*When we see land as a community to which we belong,
we may begin to treat it with love and respect. Aldo Leopold*

**Providing experiential education and encounters with Pacific wild salmon
to connect students and adults with nature and empower community engagement.**

Historically, an estimated 16 million wild salmon returned in a given year to their native streams in the Columbia River basin to spawn.

The total return to the Columbia River Basin for 2017 is estimated at about 1.5 million fish. The 2016 return was 1.8 million, and the average over the last 10 years is about 2.2 million. Source: Washington Dept. of Fish & Wildlife

The species-specific predictions for fish arriving at the mouth of the Columbia River include:

- 160,400 upriver spring Chinook (above Bonneville Dam), compared to the actual return of 187,800 in 2016
- 63,100 summer Chinook, compared to 91,000 returning in 2016
- 198,000 sockeye, compared to 295,500 returning in 2016; this forecast includes 1,400 Snake River sockeye, an endangered species, compared to 944 returning in 2016; The Idaho Department of Fish and Game estimates 868 adult Snake River sockeye (hatchery plus wild) will cross Lower Granite Dam, the last dam the fish cross on their journey to spawn
- 130,700 upriver summer steelhead, compared to 182,736 returning in 2016
- 18,000 wild winter steelhead, compared to 22,379 returning in 2016
- 582,800 fall Chinook, compared to 641,900 returning in 2016
- 309,040 coho, compared to 196,342 returning in 2016
- Chum salmon: The managers do not forecast this run, but the 2016 run totaled about 40,000 fish, twice the 2015 return of about 20,000.

The Salmon Watch environmental education program has served tens of thousands of youth in Oregon since 1993, initially established by Oregon Trout and later coordinated by The Freshwater Trust. Affiliate programs were set up during the 1990s. In 2010, Salmon Watch was discontinued in the lower Willamette Valley and Columbia Gorge.

World Salmon Council (WSC) was founded in 2012 to reestablish Salmon Watch in the Portland metro and Columbia Gorge regions, and serve as the overall Salmon Watch program coordinator for all programs throughout the Pacific Northwest. <http://www.salmonwatch.org>

Currently, WSC is focused solely on delivering and expanding Salmon Watch. As the umbrella organization for Salmon Watch, WSC leads on program development, sharing curriculum updates and materials with all partners and schools involved with Salmon Watch, regularly consulting with partner groups and others on program expansion and enhancements, and when appropriate pursuing joint fundraising.

Local affiliate Salmon Watch programs are serving thousands of students in:

Salem (Marion County Soil & Water Conservation District)

https://www.marionswcd.net/?page_id=96

Corvallis-Albany (Calapooia Watershed Council, Benton County Soil & Water Conservation District)

<http://www.lbsw.org/>

Eugene-Springfield (McKenzie River Watershed Council)

<http://www.mckenziawc.org/salmonwatch/>

Grants Pass and Medford (Rogue Valley Council of Govts.)

<http://www.stream-smart.com/about-us/2613-2/2615-2/>

Salmon Watch was created with the goal of instilling in the next generation of decision-makers an ethic of stewardship that incorporates the conservation of our wild fish heritage into their view of watershed management. Coupled with classroom instruction, field study and community service projects, Salmon Watch is designed to enable students to understand and relate to the natural world on a personal level by witnessing spawning salmon, one of nature's great spectacles, and actively assessing the health of local watersheds. The program's objectives are to foster a deeper appreciation and understanding of the value of native salmon to our natural heritage and to indigenous cultures, and to empower students with the capacity for taking responsible action in their communities.

UNIQUE PUBLIC-PRIVATE PARTNERSHIP

Salmon Watch is a collaborative educational effort involving: World Salmon Council, and local nonprofit organizations, federal, state and local government agencies, private foundations, businesses, Native American tribes, educators, teachers, and hundreds of volunteers.

Partners contribute financial support, expertise, resources and their valuable time to help implement Salmon Watch.

Annually, more than 100 schools participate throughout Oregon and Southwest Washington, engaging over 5,000 students in experiential education.

The Salmon Watch curriculum was created in the early 1990s, and updated periodically over the years. This current version includes updates as of 2017. The curriculum was prepared with the aid and advice of Melanie Andrews, Eric Baak, Glen Biehl, Erica Brim, Patty Bowers, Mike Cloughesy, Susan Cross, Rose Marie Davis, Norie Dimeo-Ediger, Roy Iwai, Marlene Orahrd, John Femal, Rand Fisher, Frank Graham, Jay Hopp, Al Hughes, Walt Hollands, Debbie Hollen, Dave Homer, Rebecca Martin, Karen Kelly, Cheire Kimmersley, Judy Li, Jim Martin, Mark McCallister, Paula Minear, Jason Miner, Elizabeth Moore, Suzanne Moore, Marvin Pemberton, Stephen Phillips, Lizanne Saunders, Mary Ann Schmidt, Julie Schreck, Deborah Scrivens, Julie Smith, Bill Smiley, Jim Stark, Dan Shively, Debbie Suing-Cassell, Tom Tattam, Ellen Taussig, Karl Weist, Scott Welch, Lynn Wilson, and Jennie Winston, Matt Burke, Rachel Walsh, Christine Buhl, Leslie Comnes.

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CURRICULUM AND TEACHER'S GUIDE

When students are invited to move their education beyond the walls of the classroom and engage genuine action, they are given the opportunity to synthesize knowledge, skill and character; to test their preconceptions and misconceptions against real experience; and to learn both to follow and to lead as members of a learning organization. Thus, the action components of environmental education have the potential to help schools manage the transition to a postmodern-world.

William F. Hammond, "Educating For Action" November/December 1997, Clearing Magazine

The Salmon Watch curriculum is designed to provide a holistic, multi-disciplinary and watershed-based approach to environmental education, using the salmon as the key indicator species of watershed health and the cultural icon of the Pacific Northwest. The following units contain many different ideas, lessons, and supplementary resources to help in your teaching about nature, salmon, water quality, and human choices.

Central to Native Americans is the belief that all things and all beings are interconnected. The circle or hoop symbolizes this, because anything that affects one part of the circle affects all the others. How humans interact with animals, with nature, with the spirit world, and with each other, therefore, touches everyone's well being. Central to a scientific understanding of watersheds, ecosystems and life of the salmon, one also must understand the cycles, circles and hoops or the interconnectedness of all things. To this end, cycles, circles and hoops will form a theme that weaves itself through this curriculum instilling students with a clear understanding of interconnectedness.

It is understood that because Salmon Watch field trips often occur within the first month of school, teachers are hard-pressed to provide students with background knowledge of this subject matter and the skills to not only appreciate an outdoor experience, but also to conduct a serious assessment of the health of the watershed site that they visit.

To this end, the curriculum has been designed so that Units 1 and 2 contain lessons, activities and information that provide good and balanced preparation for students before they are thrust upon nature and sensitive salmon habitat. Upon completion of the Salmon Watch Field Trip, Units 3-7 will fill in the gaps of knowledge and provide a more comprehensive view the subject matter and the issues surrounding salmon in the Northwest.

The curriculum was designed not only to serve a wide variety of ages, grades and skill levels, but also to accommodate the gamut of learning styles and ethnic backgrounds and to help teachers meet the requirements of the Oregon 21st Century School Act. Particular measures were taken to develop lessons that require active, participatory and experiential learning.

Each unit designates lessons and activities as introductory, advanced, and extension. For example, if you are an instructor teaching a senior advanced biology class, you may want to review some of the ideas and concepts in the introductory lessons, move right into the advanced activities and possibly the extension lessons. If you are a seventh grade earth science teacher, you probably want to engage your students in the introductory activities and skip the advanced lessons. Obviously, only a teacher will know exactly what is appropriate for a class or particular student ;that is why we have tried to make this guide as user-friendly and accessible as possible.

Salmon Watch Alignment with Science Standards

The Salmon Watch program has gone to great lengths to align itself with the ODE Science Standards. In 2016, lesson correlations to Next Generation Science Standards and Core benchmarks were updated. We believe the curriculum is designed in such a way that students can achieve the high standards set forth by the state. This curriculum will raise student achievement by:

- Raising expectations for students.
- Focusing curriculum and instruction on higher standards built on the basics.
- Holding students accountable for achieving the standards through assignments and projects.
- Using the community as a learning resource.
- Forging new working partnerships among schools, parents, employers and communities.

At the beginning of each lesson we have identified 6th grade, 8th grade, and High School Core Science and Next Generation Science Standards: Structure and Function, Interaction and Change, Scientific Inquiry, and Engineering Design.

A complete list of the aligned standards for the Salmon Watch curriculum can be found in the APPENDIX

CURRICULUM OUTLINE

Unit1 Preparing Students for Salmon Watch

Unit2 Field Trip Planning & Implementation

Unit3 Native American Indian Storytelling

Unit4 Salmon

Unit5 Life in a Watershed

Unit6 Humans and their Environment

References & Resources

Internet Resources

Salmon Related Videos

Bibliography

Maps and Atlases Glossary

Teacher Task Checklist

Administrative Tasks:

- _____ Work with program coordinator to select field trip date(s) **(April-June)**
- _____ Reserve a school bus for your field trip (failure to do so will result in cancellation of your trip)
(May-August)
- _____ Arrange for substitute teacher if needed **(May-September)**
- _____ Attend two-hour training session (new teachers mandatory, returning teachers optional) **(August)**
- _____ Complete preliminary visit to field trip site (optional) **(May-November)**
Identify restrooms, safety hazards, field trip station locations, lunch gathering area
- _____ Send in your program fee **(By September 29)**
Turn in Salmon Watch invoice (we will send to you) to appropriate administrator; have them send payment to World Salmon Council (mail to our PO Box address, check payable to World Salmon Council)
- _____ Complete field trip reimbursement request form and submit it to your school administrator
(By November 30)

Curriculum Tasks:

- _____ Incorporate Salmon Watch curriculum into your classroom instruction **(September-May)**
- _____ Create your online StreamWebs account **(September)**
- _____ Enter data collected into StreamWebs database **(September-December)**

Field Trip Tasks:

- _____ Compose your field trip schedule and send to program coordinator
(No later than two weeks before your trip)
- _____ Obtain signed student waiver forms and submit to World Salmon Council **(By date of your trip)**
- _____ Invite parents to serve as chaperones on your field trip **(During the weeks before your trip)**
Send your field trip schedule, clarify directions and rendezvous point, communicate expectations
- _____ Have parent chaperones fill out online adult waiver form **(By date of your trip)**

- _____ Prepare students for the field trip (***During the weeks before of your trip***)
Discuss appropriate clothing, safety precautions, lunch and water needs, behavior expectations
Establish educational objectives, clarify specific learning goals
- _____ Prepare and bring any additional materials/worksheets you want students to bring
(By date of your trip)
- _____ Contact your volunteer educators by phone or email (***No later than one week before your trip***)
Send your field trip schedule, clarify directions and rendezvous point, communicate expectations,
discover and utilize their areas of expertise, go over any extra handouts or materials you will provide
- _____ Pick up your field trip equipment at the designated location/time (***Designated time before trip***)
- _____ Facilitate your field trip
Monitor student safety/behavior, help facilitate students' learning experience, take photos/video and
send to WSC
- _____ Return your field trip equipment at the designated location/time (***Designated time following trip***)

Follow-up Tasks:

- _____ Have students write thank you notes to volunteers and send to WSC
(No later than two weeks following trip)
- _____ Have students complete student evaluation forms and send to WSC
(No later than two weeks following trip)
- _____ Complete the online teacher evaluation form (curriculum and field trips) (***By January 31***)

Salmon Watch Project Tasks:

- _____ Select Salmon Watch Project and develop implementation strategy (***October-December***)
- _____ Complete a Salmon Watch Project with your class (***October-April***)
- _____ Complete the online Salmon Watch Project evaluation form (***By May 31***)

RESPONSIBILITIES OF SALMON WATCH PARTICIPANTS

Salmon Watch Program Staff

- Provide teachers with curriculum, instruction on how to best use lessons, materials, and select educational resources.
- Recruit and coordinate field trip volunteers.
- Provide the communication link between teachers, agencies and volunteers.
- Work with agency officials to determine appropriate field sites and optimal salmon viewing dates and times.
- Provide all field trip equipment and resource materials; first aid kit in each equipment bin.
- Provide map and/or driving directions to site.
- Provide school/district reimbursement funds for field trip bus transportation and substitute teachers, if needed.
- Assist teachers and students with their community service projects when requested.
- Secure program funding and partner support.
- Facilitate on-going program expansion, revision and planning.

Teachers

- Attend training session. (Required for all new teachers).
- Review curriculum and integrate into lesson plans as appropriate for grade/class
- Prepare students for Salmon Watch field experience:
 - Clarify program goals.
 - Discuss safety guidelines.
 - Communicate appropriate outdoor clothing.
 - Communicate lunch, drink and snack needs.
 - Discuss field trip behavior with students.

- Complete preliminary visit to trip site:
 - Identify safety hazards.
 - Identify nearby toilet and emergency medical facilities.
- Complete school administrative requirements: Obtain permission from school officials.
- Order bus.
- Arrange for substitute teacher if needed.
- Recruit chaperones and provide pertinent information:
 - Purpose and nature of trip.
 - Site of trip.
 - Times of departure and return.
- Obtain student waiver/photo release signed by parent/guardian and return to Salmon Watch staff before/during trip or at equipment exchange.
- Complete field trip agenda
- Confirmation of trip information with Salmon Watch staff:
 - Send copy of agenda to Salmon Watch staff in advance.
 - Number of students expected.
 - Times of arrival and departure.
- Contact volunteers and other adult participants (at least two weeks before trip):
 - Discover and utilize their areas of expertise.
 - Share field trip agenda.
 - Clarify what you expect of them.
 - Explain student expectations.
 - Determine time and place of rendezvous.
- Confirm equipment needs, equipment available for checkout from Salmon Watch staff or other designated pick-up location.

- Safety precautions:

- Identify in advance any field trip participants with medical or safety training.
- Bring cell phone (if available).
- Bring list of participants with special medical needs.

- Complete other necessary arrangements:

- Student handouts prepared.
- Special equipment acquired.

- Lunch provisions.

- Ensure students report data collected during Water Quality and Macroinvertebrate stations to StreamWebs
- Ensure students complete attitude surveys and knowledge assessments.
- Facilitate post-trip classroom learning using Salmon Watch experience.
- Work with Salmon Watch staff to development and complete a Salmon Watch project.
- Complete Salmon Watch program teacher evaluation.

Students

BEFORE THE TRIP

- Complete attitude survey and knowledge assessment.
- Have all permission slips/waivers signed and turned in.
- Know objectives and basic concepts of watersheds and salmon.
- Have snacks, a lunch and something to drink.
- Have layered clothing and rain gear (see list in Unit2).
- Bring other equipment that will improve your trip experience (see list in Unit 2).

DURING THE TRIP

- Use techniques and skills for experiencing nature (see Unit 1).
- Practice low impact walking and follow field site and safety protocols.
- Leave no trace of your visit.

- Bring sense of adventure and curiosity.
- Practice good data collection and field notes.

AFTER THE TRIP

- Complete Student Evaluation.
- Use your data to analyze the health of the watershed you visited.
- Develop and execute an action plan for your community service learning project.
- Write thank you letters to volunteers.
- Report data to StreamWebs.

Volunteers

- Attend half-day training session. (Required for all new volunteers).
- Assist, support and facilitate the students' field trip learning experience. (The key is to find the balance between helpful and overbearing).
- Communicate with teachers about trip agenda, equipment needs and teacher expectations.
- Ensure safety! Bring appropriate clothing, cellphone, know the hazards of the site, etc.
- Assist teachers and Salmon Watch staff with on-going site selection and review.
- Follow through and attend field trip date(s) agreed to (or arrange for a replacement).
- Assist with community service learning projects where appropriate.
- Complete and submit a volunteer evaluation.