

WSU Extension Snohomish County
Natural Resources Educational Resources Guide



The WSU Snohomish County Extension has many natural resource oriented educational tools and teaching expertise available for use by educators and community organizations. The purpose of this guide is to provide an overview of the Natural Resources curriculum, activities as well as outreach and stewardship opportunities available for educators of all kinds in the Snohomish County area. The guide is organized into the following areas of educational interest:

1. Water Habitats: Marine/Estuarine/Aquatic
2. Fish and Wildlife
3. Forest and Native Plants
4. Life Skills and Interdisciplinary Education
5. 4-H Experiential Learning Model
6. Climate
7. Presenters and Speakers

Educational Materials and Manuals:

Under each topic we will list the resources we have available, how they can be utilized in and out of a classroom setting and what type of additional training that might be required. Additional curriculum and lesson resources can be found on our website at: <http://snohomish.wsu.edu/naturalresources/>

WSU Snohomish County/Natural Resources Speakers and Presenters:

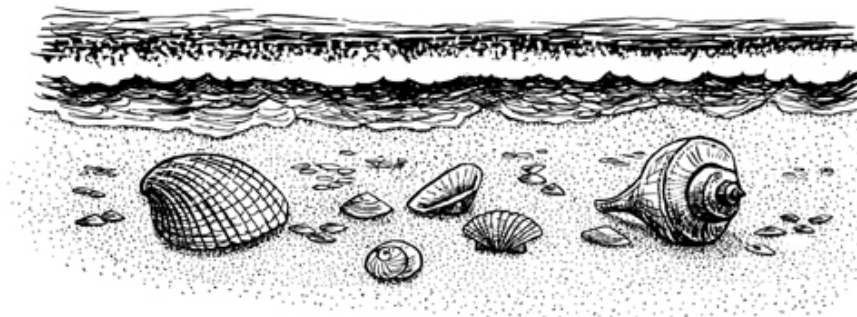
In addition, this guide will provide the contact information and area of expertise for WSU presenters and speakers. They are eager to come into the classroom or into after-school programs and deliver both prepared and customized lesson plans and activities.

Natural Resources Library:

A Natural Resources Loaning Library has been established at the South Everett McCollum Park Extension office. It contains books, CDs / DVDS and videos good for both educators as teaching resources and individuals who want to satisfy their personal curiosity or gather information for their own stewardship efforts. Please contact Karie Christensen (425) 357-5500 or klchristen@cahnrs.wsu.edu for checking out resources including any kits for rental. The full inventory will be available at our website at <http://snohomish.wsu.edu/naturalresources/> by February 15, 2009.

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Water Habitats: Marine/Estuarine/Aquatic Curriculum and Lesson Guides



1. Project WET Curriculum Guide: Curriculum & Activity Guide (2007)
 - The guide is packed with background information, cross-reference material and proven wetland activities. It provides curriculum planning and guidelines for K-12 lessons.
2. Project WILD Aquatic: K-12 Curriculum & Activity Guide (2006, 1995)
 - This interdisciplinary guide focuses on conservation and environmental education with an emphasis on wildlife. The goal is to develop awareness, knowledge and skills concerning wildlife and the environment.
3. Wow! The Wonders of Wetlands-Wetlands Curriculum Guide for K-12 (2003)
 - This guide is great for teachers, refuge managers, nature center interpreters and park service educators. It is filled with background information and accompanying activities. The guide is also useful in planning field trips, making sampling equipment, and getting involved with wetland stewardship.
4. Beach Explorations: A Curriculum for Grades 5-10 by Gloria Snively, (2001)
 - This is a 4-6 week curriculum that has been field tested by teachers and students. The focus is on marine ecology concepts such as organism, life cycle, tidal cycle, habitat, zonation and types of seashore. It also provides lessons on stewardship and pollution.
5. Once Upon a Seashore: A Curriculum for Grades K-6 by Gloria Snively, (2001)
 - The lessons in this curriculum use primary level science inquiry skills such as observing, comparing, questioning and classifying. The focus is on basic seashore relationships such as organism, life cycle, tidal cycle, habitat, zonation and types of seashore. It also provides lessons on stewardship and pollution.

Please note:

- Curriculum guides 1-3 are available for reference but they are the kind of reference that is best when taken with additional training. To find out more about trainings you can use following link:
http://www1.co.snohomish.wa.us/Departments/Public_Works/Divisions/WSM/Work_Areas/Outreach/Education/

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Fish and Wildlife

Fish

1. Annual Wallace River Hatchery Tours, First week of November, watch the Coho run! Program offered by 4-H Natural Resources and Forestry.
2. Washington Department of Fish and Wildlife, Fish Hatchery Next Door (Washington Department of Fish and Wildlife)
 - A curriculum designed to help learners with fish hatchery education.
3. Trees to Seas: Journey of the Wild Salmon (A Game for grades 4-8 from the Washington Department of Fish and Wildlife)
 - This game will help learners make the connection between trees and salmon; It will help illustrate the importance of salmon to riparian ecology, the salmon life cycle and the importance that trees play in their habitat.
4. Department of Fish and Wildlife Educational Salmon Trunks for rental
Trunk Contents: More detailed information can be found on our website at <http://snohomish.wsu.edu/naturalresources/>
 - Display packet: Laminated posters necessary to create educational displays
 - Theme Kits: Information, activities, handouts, WDFW Fact Sheets and other materials that will assist you in creating educational experiences around each theme.
 - Activity packets: Each Packet contains a teaching aid and information about how to use it in a presentation.
 - Aquatic WILD Salmon Activities and Resources: This includes the curriculum, activity guides, slide shows, videos, quiz cards, presentation outlines and many of the Educational tools associated with Aquatic WILD. Please contact Karie Christensen (425) 357-5500 or klchristen@cahnrs.wsu.edu to check on trunk availability.
5. Streets to Streams: Youth Investigations Into Water Quality, (EPA Curriculum for grades 5-9)
 - This curriculum will help educate students about the role of surface water in the environment. There are fun hands-on activities for both urban and rural areas that cover everything from water basics to community involvement.
6. Fish in the Floodlights: Curriculum for Middle Schools
 - Through participation in 9 Short Plays about Salmon, the learner will have opportunities to develop creative and critical thinking skills. They are also given opportunities to explore Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, color, gender, national origin, religion, age disability, and sexual orientation. Evidence of non-compliance may be reported through your local Extension office.

thoughts, feelings and actions of self and others through dramatic interaction and reflection.

7. EZ ID Guides: Online resource
 - o This online resource is used for identification of and natural history information on Puget Sound invertebrates, seaweeds, sea grasses, and shore plants. Learning can be reinforced with an online game. Field identification cards are also for sale. Visit: <http://beachwatchers.wsu.edu/ezidweb/>

Wildlife

1. Birds Fact or Opinion-Handout
2. 4-H Natural Resources: Wildlife Discovery – Cornell Cooperative Extension, (1989)
 - o This series is designed to introduce youth to a variety of natural resources subjects through activities that heighten their awareness of the natural world.
3. 4-H National Council: Wildlife Habitat Evaluation Handbook (1983 and 1985 editions)
 - o Curriculum for habitat wildlife evaluation and native plant studies.
4. The Beach Combers Guide to Life in the Pacific Northwest by J. Sept (1999)
 - o This guide provides illustrations and information to aid in the identification of plant and animal species in the Intertidal sites of the Pacific Northwest.
5. Windows on the Wild / Oceans of Life: An educator's guide to exploring Marine Diversity for 6th to 9th graders WWF, (2003)
 - o "Oceans of Life" is part of World Wildlife Fund's environmental education program WOW. It focuses on marine diversity, threats from invasive species and coral reefs. The module covers ecosystems from the mountains to the seashore through case studies and engaging activities that help students consider the complexities of conserving marine biodiversity.

Bugs

1. 4-H Entomology Work Book - WSU Extension & U.S. Department of Agriculture (2001)
 - o This curriculum provides background information and activities to help learners understand all about beneficial and harmful bugs.

Life Skills and Interdisciplinary Education

1. Teaching Kids to Change the World : Curriculum Guide grades 6-12 by Griffin-Wiesner & Maser (2008)
 - o This guide centers on eight principles of change that feature easy and adaptable lessons. The lessons focus on engaging young people to learn about their influence on the people, creatures, and environments that surround them.
2. U.S. Forest Service "Investigating Your Environment: Teaching Materials for Environmental Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, color, gender, national origin, religion, age disability, and sexual orientation. Evidence of non-compliance may be reported through your local Extension office.

Education” Grades 7-12 (1993)

3. Nature’s Art Box Curriculum: Laura C. Martin (2003)
4. As if the Earth Matters: Re-Discovery Lessons and Curriculum by Tom Henley and Kenny Peavy (2006)
 - This book is filled with stories, activities and ideas that will inspire students, teachers and people of all walks of life to rediscover a deep connection to Nature. The activities cover awareness, belonging and stewardship along with a teacher tool kit that provides additional resources for educators.
5. Making a World of Difference: A Book of Environmental Games for 9-12 year olds by Neil Andre and The Dolphin Defenders, St. Louis, Missouri (1993)
 - Simple and fun games that are kid tested to help students learn more about the environment. The guide includes discussion questions about why good stewardship is important and how to take care of our fish, forest and wildlife resources.
6. The Complete Guide to Service Learning by C. Berger Kaye, M.A. (2004)
 - This book is designed to help sow the seeds for a culture of service learning in your school or community. It can be useful for teachers, youth workers, group leaders, counselors, principals or administrators.
7. A Head Start on Science: Encouraging a Sense of Wonder by the NSTA (National Science Teachers Association) (2007)
 - This theme of this guide reflects the book by Rachel Carson “The sense of Wonder”. Rather than trying to “teach” it is based on having fun and marveling at the wonders of nature. It has been used by hundreds of teachers across the country and has been written to help educators teach students to explore their world in many different ways.
8. On Sandy Shores: Marine Science Activities for Grades 2-4 by UCB, (2008)
 - An interdisciplinary curriculum that focuses on the sand shore that inspires natural curiosity for the students. The many aspects explored include characteristic plants, animals and complex biological and ecological interactions on the sand shore. The lessons provide opportunities in math, social studies, science inquiry, language and creative arts.

4-H Experiential Learning Model (Challenge Resources)

1. Portable Challenge Kit for rental. For more information go to: <http://snohomish.wsu.edu/4h/NR/>
 2. Journey Towards the Caring Classroom by Laurie Frank, (2004)
 3. A Teachable Moment by Cain, Cummings and Stanchfield, (2005) This is a great resource for debriefing activities for experiential activities in and outside of the classroom.
 4. Cowstails and Cobras: A Guide to Games, Initiatives, Ropes Courses, and Adventure Curriculum
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by Thonke (1989)

5. Islands of Healing: Adventure Based Counseling, Schoel, Prouty and Radcliffe, (1988)

Forest and Native Plants

1. Project Learning Tree Curriculum Guide (2006) (It is suggested that if you use this curriculum, please consider taking part in a training offered in conjunction with Washington Forest Protection Association and Environmental Education Program)
2. Follow the Path: Forestry Youth Activity Guide (Level 1) (National 4-H Curriculum)
3. "Reach for the Canopy: Forestry Youth Activity Guide" (Level 2) (National 4-H Curriculum)
4. "Explore the Deep Woods: Forestry Youth Activity Guide"(Level 3) (National 4-H Curriculum)
5. "Forestry Helper's Guide: Forestry Group Activities" (National 4-H Curriculum)
6. Into the Forest: Nature's Food Chain Game (Card Game available for rental)
7. Science Discovery Series: National 4-H Curriculum Guide includes some great forestry resources.
8. 4-H National Curriculum: Eco-Actions(Exploring Your Environment Level 1-3 , and the Helpers Guide)
9. 4-H National Curriculum: Outdoor Adventures Level 1-3 and the Helpers Guide.
10. Eelgrass Educational Kit: WSU Beach Watchers
 - o The Eelgrass Education Kit has been created by WSU Beach Watchers for use in 4th and 5th grade science classrooms. This science activity kit focuses on marine ecology and specifically the exploration of eelgrass meadows. The Kit is a great supplement to the FOSS "Environments" curriculum and is designed to address Washington State's Science Essential Academic Learning Requirements 1.2.1, 1.3.8, and 1.3.10 for Grades 3-5.

Climate

1. Cool Schools Curriculum, <http://www.coolschoolchallenge.org/curriculum.aspx> (trainings are available from the 4-H Natural Resources Program).
2. Union of Concerned Scientists Curriculum for High School (Copies at our office but also online at: http://www.ucsusa.org/global_warming/)
3. Facing the Future Climate Change Connections and Solutions 6-12 Teacher Trainings: Curriculum downloaded at <http://www.facingthefuture.org/> and trainings are available from the 4-H Natural Resources Program.

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WSU Snohomish County Extension Natural Resources Presenters and Speakers

4-H Fish and Forest Stewards Program:

Staff and volunteers are here to implement in-school and after-school enrichment opportunities within the framework of the 4-H philosophy of experiential education and life skills development through natural resources education. Our program covers Pacific Northwest Ecosystem studies. This program is in alignment with Washington State EALR's and offers cost free experiences for participants.

Contact: Gabrielle Roesch, gabrielle90@wsu.edu, 425-357-6011 or check out our website at <http://snohomish.wsu.edu/4h/NR/>.

Forest Stewardship Education

Kevin Zobrist, WSU Extension Forester, coordinates forestry education programs, including the forest stewardship "Coached Planning" short courses, workshops on a variety of forestry topics, interpretive programs, one-on-one technical assistance for landowners, and school programs. Contact: Kevin Zobrist, 425-357-6017, kzobrist@wsu.edu, and online at <http://snohomish.wsu.edu/forestry/>.

WSU Beach Watchers and Shore Stewards:

Volunteers and staff are available to come into classrooms and share information and age appropriate activities on marine ecology and organisms, coastal processes and contemporary Puget Sound issues. In addition, WSU Beach Watchers can provide naturalist support during classroom field trips to Snohomish County Puget Sound parks during low-tides.

Contact Chrys Bertolotto, (425) 357-6020 or chrys@wsu.edu for more information.