



Coming Full Circle:
From Native Plants to Local Food



2010 Summer Teacher Institute
Nisqually National Wildlife Refuge
June 23, 24 & 25

Teacher participants will:

- Understand local, global, and historical food resources and issues and how they relate to our local environmental issues, particularly water quality
- Gain skills and experience to implement Native plant identification
- Explore how visual art can enhance nature studies
- Learn water quality testing skills and knowledge *or*
- Learn to utilize *Shadow of the Salmon* curriculum and film which conveys traditional tribal knowledge through storytelling, and shows how the environmental work being done by tribes today is reflective of that knowledge *and...*
- Receive orientation to and programmatic materials for Washington Green Schools, a web-based program to help your school reduce its environmental and carbon footprint.
- Contribute to watershed education program development and enhancement
- Network with local resource professionals who can assist you with your school garden projects.

-Wednesday Day 1- NNWR Education Center

8:30 Registration, Check-In, Refreshments

9:00 Welcome, Introductions and Goals of Institute/Overview

Shadow of the Salmon and Washington Green Schools – Transition to the NNWR Visitor Center Auditorium

New Teachers: Water Quality Monitoring Training

9:15 Introduction to Optimal Water Quality Standards
Maggie Bell-McKinnon, Department of Ecology

9:45 Break & drive to site

10:00 Stream Survey Activities and Stream-side Etiquette/minimizing impacts

10:30 Getting a good grab sample

- Temp/Thermometer – air temp first; 3 minutes for water temp

10:45 Monitoring training -1st Rotation

- Dissolved Oxygen, Biochemical Oxygen Demand
- Nitrates
- pH and Turbidity

11:15 2nd Rotation

11:45 3rd Rotation

12:15 Lunch and return to Nisqually Nat'l Wildlife Refuge

1:00 Fecal Coliform training (demo with volunteers)

1:30 Water Quality Monitoring Day: Logistics discussion

- Using the Master Data recording form
- Procedures for buses and subs
- Fecal Coliform and Total Solids samples

2:30 **Tying It Together-** Weaving New Experiences into Your Watershed Year

- Reflect and review water quality monitoring training
- Pick 5-10 questions you have from the day's training
- Make a plan of action to implement WQ monitoring with your class(es).

-Wednesday Day 1- Returning Teachers – in the NNWR Auditorium

9:15 **Shadow of the Salmon**, *Lisa Eschenbach and Pat Otto, Pacific Education Institute*

“Shadow of the Salmon” is a timely film, dramatizing a young boy’s first experiences of the Coast Salish culture, as he opens his eyes to the importance of salmon as a keystone species in the Northwest. The film was televised nationally, nominated for three Emmy Awards, and featured in the Smithsonian’s National Museum of the American Indian, the State History Museum, and shown to the Washington State Legislature, and to numerous state agencies, and organizations. The film and accompanying teacher’s guide was developed by local tribes with the support of many tribal, public, private and nonprofit partners.

11:30 Lunch (brown bag)

12:00 Washington Green Schools *Colleen Uureb, Thurston County Solid Waste Education and Outreach Specialist and Washington Green Schools Board Member*

This voluntary, web-based program can help your school reduce its environmental and carbon footprint. Specifically, we will tailor this presentation to fit our institute themes of school gardens and watershed studies. Washington Green Schools provides resources and tools to involve your school community in assessing the current status of your campus and taking action in the following categories: Energy Efficiency, Recycling & Waste Reduction, Toxics Reduction & Indoor Air Quality, Transportation & Outdoor Air Quality, Water Quality & Conservation. Learn how to bring this program to your school.

2:30 Tying It Together- Weaving New Experiences into Your Watershed Year

Returning Teachers

- Reflect and review the Shadow of the Salmon and Washington Green Schools presentations
- Choose 3-5 questions you have after viewing the days presentations
- Make a plan of action to implement Shadow of the Salmon &/or Washington Green Schools with your class(es).

New and Returning Teachers: Convene at the Education Center

3:00 Planning Your Watershed Year

- **Tips for monitoring day and organization** – *Lindalee Tatro, veteran NREP teacher, 5th grade, Southworth Elementary, Yelm Community Schools*
- **Examples of curriculum integration-** *Kathy Jacobson, Chehalis Basin Education Consortium*
- Q & A

4:15 Dismissed

-Thursday Day 2- Activities, Demonstrations and Curriculum

8:30 Refreshments and Sign-in

8:45 Welcome and Introductions

9:00 Keynote Presentation: Coming Full Circle: From Native Plants to Local Food

- *Jesse Barham, Restoration Biologist, Nisqually National Wildlife Refuge*
- *Amee Bahr, Nursery Manager, Sound Native Plants*

Teachers will understand the timeline of food history, from native hunting and gathering, to industrial farm models and the renaissance and importance of local food production. Speakers will also emphasize the importance of native plants in restoration, the timeline and lifecycle of their ecological functions.

9:45 Break

10:00 Everything Circles Back- Connecting to Community Resources

Teachers choose 2 – 50 minute sessions.

- **10 Minute Field Trips** (in the NNWR Education Center amphitheater) *Anne Mills, South Sound GREEN*, For all school environments - urban, suburban, or rural – this book describes more than 200 short, close-to-home field trips that explore new dimensions of familiar spaces and objects. Brick walls, rock outcrops, lawns, broken pavement, weeds, and trees are all targets of exploration. The book is divided into topic sections (plants, animals, Earth science, etc.); each includes pre-field trip classroom activities, teacher preparation, and a list of trip possibilities.
- **Ethnobotany and Sustainable Living** (in NNWR Education Center) *Alfredo Gomez-Beloz, PhD, All Together Farming*, Ethnobotany is the study of the interrelationship between people and plants. Two activities, Bioburgers and Seed Association, will be presented to demonstrate this mutual relationship as a framework for children to better understand why they should want to live in a sustainable manner.
- **School Gardens with Native Plant Salvage Project** (in NNWR Education Visitor Center Auditorium) *Erica Gutteman, Native Plant Salvage Project*, After years of experience planning and installing “Waterwise Gardens” in Olympia area schools, Erica and NPSP staff have developed a series of EALR aligned lessons to bring the garden to life in the classroom.

12:00 Lunch

12:30 Mycoremediation- *Pat Rasmussen, Amandine Murphy Terra Commons and Fungi Perfecti*
Mushrooms are an integral part of the forest ecosystem. They help to connect all plants and organisms so they work together to survive. They also help unlock nutrients from leaf litter, woody debris, and animals by breaking them down into rich soil matter. Mycoremediation is a new concept that not many people are aware of. It is the process of using fungi to help clean up toxins that are in the environment. Humans can help the mushrooms break down the toxins by setting certain species up in the environment that is contaminated. Terra Commons has been involved in projects and will show you how mycoremediation can work at your school.

1:00 To Plant a Tree....Aligning with the EALRs

Many of you involve your classes in tree planting, or habitat restoration activities. We will use this time to review which EALR's are met by your students when they participate in the service learning project of tree planting or habitat restoration with NREP, CBEC or SSG.

1:15 Curriculum Focus

In groups of 10-12, teachers will **choose two** curriculums to review, participate in activities and prepare a brief presentation to summarize their curriculum choice to the larger group.

- Starflower Habitat Education Activities - (depart from the NNWR Education Center- trail walk) *Kate O'Brien, Nisqually Nat'l Wildlife Refuge Education Coordinator*
- Facing the Future- (in NNWR Visitor Center Auditorium) *Dave Wilton, Facing the Future Staff*
- Project Learning Tree –(in NNWR Education Center) *Lisa Eschenbach and Pat Otto, Pacific Education Institute*

- Food Miles of Your Lunch and Keepers of Life: Native American Stories, Projects, Recipes Gardening and Earth Activities (in the NNWR Education Center amphitheater) *Kathy Jacobson, Chehalis Basin Education Consortium*

3:15 Presentation of Curriculum and Activity Highlights

Teachers may use the following outline for their group presentations:

- 1- Is the curriculum aligned to the updated Washington State EALRs?
- 2- How would you rate the curriculum on ease of use, or approachability? Do the lessons require a lot of outside prep or extensive/specialized materials?
- 3- Are the activities mostly classroom based or field based?
- 4- Choose 3-4 lessons or activities that you would be most likely to use. Explain why these are your top choices.
- 5- Choose one lesson to explain to the larger group in more detail.

3:45 Book and Media Review, Additional Resources

Movies:

- **Food, Inc.-** Academy Award nominee for Best Documentary Feature, In *Food, Inc.*, filmmaker Robert Kenner lifts the veil on our nation's food industry, exposing the highly mechanized underbelly that has been hidden from the American consumer with the consent of our government's regulatory agencies, USDA and FDA. Our nation's food supply is now controlled by a handful of corporations that often put profit ahead of consumer health, the livelihood of the American farmer, the safety of workers and our own environment. See their website www.foodincmovie.com for information on how to have a screening at your school.
- **Food Revolution-** This food revolution is about saving America's health by changing the way you eat. It's not just a TV show, it's a movement for you, your family and your community. If you care about your kids and their future take this revolution and make it your own. Educate yourself about food and cooking. Find out what your child is eating at school. Make only a few small changes and magical things will happen. Switching from processed to fresh food will not only make you feel better but it will add years to your life.

Growing Awareness by Jade Ajani- With issues of sustainability and food security coming to the fore throughout North America and beyond, Growing Awareness illustrates the importance of local small farms to a community and critiques the emergence of an organic-industrial complex as well as the modern corporate-controlled and government-subsidized global food system. This feature-length documentary from the Pacific Northwest examines Community-Supported Agriculture (CSA), through which consumers buy shares of a local farm's harvest, receiving a weekly supply of fresh food throughout the growing season.

- Stepping Up To the Plate: For Healthy Kids and Local Farmers

Books

- Food Rules, Omnivore's Dilemma, Second Nature, the Botany of Desire, by Michael Pollan
- The Education of Little Tree, by Asa Earl Carter
- Food Not Lawns: How to Turn Your Yard Into a Garden and Your Neighborhood Into a Community by Heather C. Flores
- the Edible Schoolyard by Alice Waters

- Animal, Vegetable, Miracle by Barbara Kingsolver
- Slow Food by Carlo Petrini Slow Food is a non-profit, eco-gastronomic member-supported organization that was founded in 1989 to counteract fast food and fast life, the disappearance of local food traditions and people's dwindling interest in the food they eat, where it comes from, how it tastes and how our food choices affect the rest of the world. To do that, Slow Food brings together pleasure and responsibility, and makes them inseparable.

Curriculum

- Cornell's Garden Based Learning
- The Climate Friendly Gardener

4:15 Dismissed

-Friday Day 3- Field Trips and Program Development

(meet in the NNWR Education Center)

8:15 Welcome and refreshments

8:30 Community Resources for New and Existing School Gardens *Karen Raye, Thurston County Food Bank School Gardens Coordinator.* Karen began her involvement with school gardens as a parent volunteer and currently works to connect school gardens with the food bank in Thurston county. She will explain TCFB's school garden initiative, and the support they offer school gardens in Thurston County's urban core, share research on the benefits of school gardens, explain the importance of school garden program community development, introduce best practices for using produce from school gardens and discuss how to start a school garden and create a school garden strategic plan.

9:30 Incorporating Drawing into Watershed Studies, *Lucia Harrison, Member of the Faculty in Visual Arts at The Evergreen State College, local artist, and salmon watcher for the Nisqually Tribe.* Lucia will introduce some ready to use ideas for bringing drawing into your curriculum with an emphasis on building confidence in teaching basic drawing techniques for close observation, application of drawing into an event map approach to nature journaling. Teachers will create illustrated nature journal entries in the Riparian zone of NNWR to see what the future of Braget tree planting will bring.

12:00 Lunch at Nisqually Nat'l Wildlife Refuge

- *Reminder to complete Assessment Survey Form for Returning Teachers*

12:30 Teachers will choose 1 Field Trip:

- **School Gardens: Models and Overviews and Tour of Olympia School Gardens,** *Thurston County Food Bank Schools Garden Coordinator, Karen Ray and Kari Winsor of Blue Earth Farms* Tour Madison Elementary, Lincoln Elementary, &/or Roosevelt Elementary lessons to be gleaned from each of them.

OR....

- **Incorporating Drawing into Watershed Studies**, *Lucia Harrison, Member of the Faculty in Visual Arts at The Evergreen State College, local artist, and salmon watcher for the Nisqually Tribe.* Teachers will continue their illustrated nature journal entries in the freshwater and saltwater marsh areas of Braget Marsh. Please bring rubber boots, sunscreen, a hat, sunglasses, camera, and binoculars (optional). We will be walking at a botanical crawl for at least an hour out along the Nisqually River in the Braget Marsh.

---Return the Nisqually Nat'l Wildlife Refuge---

3:00 Work groups

- New Teachers: Orientation
- Returning Teachers: Assessment, feedback

3:45 Looking Ahead and Planning for next year

Opinion Spectrum and Discussion, Sheila Wilson NREP

- **4-Corners:** Which *new* activity are you most likely to incorporate into your classroom next year? (Washington Green Schools, Shadow of the Salmon, School Garden, Water Quality Monitoring)
- **Opinion Spectrum:** How likely are you to implement one or more of these things?

4:00 Summer Teacher Institute Evaluation and Wrap Up

4:15 Dismissed