

Ecological Restoration or Schoolyards & Water Quality Monitoring

Summer Teachers Institute 2011

Nisqually National Wildlife Refuge

June 27-30, 2011

Monday - June 27 *Introduction and Study the Model*

8:30 Coffee/Tea and Socializing (Optional)

9:00 Welcome and Introductory Activities *Kathy Jacobson, Chehalis Basin Education Consortium*

- *Botany Bouquet (1-3)* Jan Strong, Chehalis Land Trust
- *Observations from a Single Spot (1-1)*, Kathy Jacobson CBEC

10:15-11:00 Keynote Presentation: Cheryl Bauer-Armstrong
Earth Partnership RESTORE, Director

11:00 -12:00

- What's Green and Grows All Over? Studying Ecosystem Biodiversity (1-4), Ryan Misely, Tacoma Public Utilities, Environmental Educator

12:00 – 12:30 Lunch

Studying the Model Investigate Site History & Perform Site Analysis

12:30-1:00 Compass Basics (3-1), *Ryan Misely*

1:00-2:00

- Ecosystem Observations (1-15) Kathy Jacobson and Ecosystem Comparisons (1-5) Ryan Misley, **OR** Plant Families (1-10), Jan Strong, CLT & Sheila Wilson, Nisqually River Education Project

2:00-3:00

- Plant Families (1-10) **OR** Ecosystem Observations (1-15) and Ecosystem Comparisons (1-5)

3:00

- Land History through Survey and Ownership Records (2-4), Anne Mills, South Sound GREEN

3:45-4:00 Final Thoughts and Daily Wrap-Up, Kathy Jacobson, CBEC

Tuesday – June 28 *Perform Site Analysis, Plan the Restoration*

8:30 Coffee/Tea and Socializing (Optional)

9:00-9:30 Getting the Big Picture with Michelle Salgado, 3rd grade teacher, Chloe Clark Elementary and RESTORE graduate

9:30 Field Trip to Chloe Clark: Tour of Chloe Clark Elementary School

15-20 minutes to walk around the rain garden...

- *Conducting a Site Analysis (3-0)* Kathy Jacobson, Ryan Misley
- *Soil Texture Feel Test (3-14)*, Anne Mills, SSG
- *Infiltration Tests (3-15)*, Sheila Wilson, NREP

10:45-11:45 Plan the Restoration

- *What's A Square Foot Anyway? Laying Out the Design Plan (5-5)* Kathy Jacobson, CBEC
- *Discussion – Species Selection: Herbaceous and Woody Plants (5-6) and (5-7)*

12:00 -12:30 Lunch

Make Community Connections, Plan, Prepare & Plant the Site

12:30 Make Community Connections, Plan the Restoration

Rochester Middle School Prairie Planting Project- Martin Woodruff (short PowerPoint)

Speaker: Erica Guttman, Native Plant Salvage Project

1:15

- *Designing a Restoration (5-2)*
- *Up Close and Personal (5-8)*
- *Balancing the Budget (5-10)* Michelle Salgado
- *Site Preparation Techniques (6-0)* ***bring tools to use as examples***
- *How Much Mulch? (6-2)*

1:45 Plant the Site

- *Planting Native Plants (7-6)* Afterwards hand out sets of plant cards.
- *Planting Birthday Celebrations (7-7)* (Kathy Jacobson) bring books as references/ hand our slips of paper with activities listed on them?

3:00 Break

3:15 Matt Samson

3:30 Becky Hendrickson

-4:00 Final Thoughts and Daily Wrap-Up

Wednesday – June 29 *Manage the Site*

8:30 Coffee/Tea and Socializing (Optional)

9:00-9:15 Recap of Tuesday

9:15-9:45 Manage the Site & Conduct Research (Kathy, Anne and Sheila)

9:45-10:45 Invasion of the Non-Natives (8-2) (Worst Weed in WA activity, Erica Baker, Pacific Education Institute)

10:45-11:00 Young Restoration Checkup (8-5)

11:00-12:00 Working Lunch - It's Your Turn – In small groups decide how you'd like to engage your students in inquiry research Ryan Misley will kick off (9)

Possible Activities:

- *Inquiry-Based Field Problems (9-1)*
- *What Does a Seed Need? (9-3)*
- *Sweeping Discoveries (9-10)*
- *Inquiry Learning: Students as Ecological Researchers (9-11)*
- *Inquiry Learning: Favorite Color? (9-12)*

Use the Learning Grounds

12:00-12:30 Introduction to Phenology and Birthday Phenology - Activity (1-1) Website Kathy Jacobson, CBEC

12:30-1:20 Choose 1 of 3

- *Phenological Nature Walks 10-9 and Plant Power! (10-11)* Jody Ashton and Margaret Lambert
- *Phenology: Climate Change in Your Schoolyard (10-18)* Ryan Misely, TPU
- *Wheelscapes: Enhancing Sense of Place with Phenology Wheels - Activity (1-2)* Website Anita Eisenman, artist

1:20-1:30 Transition

1:30-2:20 Choose 1 of 3

- *Wheelscapes: Enhancing Sense of Place with Phenology Wheels - Activity (1-2)*
- *Phenology: Climate Change in Your Schoolyard (10-18)*
- *Phenological Nature Walks (10-9) and Plant Power! (10-11)*

2:20-2:30 Transition

2:30-3:00 Small group report out

3:00-3:30 Observations from a Single Spot (1-1) Reflect on training and how we will implement and involve students in a school restoration project.

3:30-4:00 Wrap up, sharing, and evaluations

Thursday – June 30 Water Quality Monitoring Training

9:00 am – Introductions, review of day *** **Reminder*** Late lunch eat lots of snacks now!**

9:10 Introduction to Optimal Water Quality Parameters and Introducing your Water Quality Unit

- *SW will share intro to WQ parameters chart from classroom presentations*
- *WASL scenarios, HW,HP, Project WET, etc. to demonstrate activities related to each parameter (DO, pH, etc.)*

- SW will research activities to include, also KJ “PPM” activity
- “Water We Doing to our Watersheds” unit (from Maggie Meyers)
- Analyze RSVPs and possibly invite teacher to demonstrate the activities?
- AM will leave Maggie a message and contact Dixie about possible presenting activities?

9:55 Break & walk to Nisqually River at end of river trail on log jam (SW will check with NNWR)

10:15 Stream Survey Activities and Factors Effecting Results – Maggie Bell McKinnon

(clipboards, handouts, etc.)

(Maggie’s hand out, HW/HP chart: Interpreting your WQ Data”...)

- What is there to celebrate? Why is the water quality good?
- What are the “hot spots”?
- What could be causing the hot spots?
- What could be done to improve the water quality here?

11:00 Getting Your Water Samples – Anne Mills, SSG

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

11:15 Water Quality Monitoring Training -1st Rotation

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

11:45 2nd Rotation

12:15 3rd Rotation

12:45 Lunch at Twin Barns picnic tables (hand sanitizer!)

1:15 Overview of the Restoration and hike back to Education Center

1:30 **New teachers** Water Quality Monitoring Day and Logistics discussion

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

Returning Teachers NREP/SSG/CBEC Program Assessment

2:30 Technology Integration

- **South Sound GREEN- Google website**
- **Nisqually River Education Project – EPA Storet Website**
- **Chehalis Basin Education Consortium – Crowdmap?**

3:15 Tying It Together- Weaving New Experiences into Your Watershed Year

- Calendar overview and additional opportunities through SSG/CBEC/NREP
- 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)
- STI evaluations and feedback forms