

# A Handbook for South Sound and Nisqually Education Project GREEN Teachers

## Why a Handbook?

During the past 16 years, teachers have continued to ask and deliberate over the question, "What does it mean to be a 'GREEN' teacher?". Many teachers new to GREEN have wondered the following questions:

- "What have I gotten myself into?"
- "Am I a GREEN teacher?"
- "What will I get out of this training?"
- "How am I supposed to do this?"
- "Does watershed education address the EALR's and will it help my students on the WASL?"
- "Is GREEN a curriculum or are there some examples of integrated lessons & units?"
- "How do I report my monitoring data?"

To begin to address these questions, a Nisqually River Education Project (NREP) and South Sound GREEN (SSG) teacher handbook has been created. It is designed to provide teachers with some basic information about the program, how to participate in it and local resources available to GREEN teachers. Consider this a dynamic, evolving reference guide, much like the GREEN programs!

## What does it mean to be a "GREEN" teacher?

The opportunities for educational experiences and community service activities abound within the context of watershed education. We encourage teachers and students to engage in activities that best suit their needs and the resources they have available. We are committed to providing you with assistance whenever possible! To establish some common ground, and promote networking amongst teachers and students in GREEN, we do ask teachers to participate in some collective events.

### ***The "basics" for GREEN teachers:***

- If new, attend Institute and monitoring training in the Fall
- Keep track of your monitoring equipment, update chemicals yearly (most refills provided by GREEN programs)
- Incorporate integrated watershed education into the curriculum
- Participate with students in the Fall and late Winter Monitoring
- Get data to coordinator in a timely fashion
- Prepare and bring delegates to the annual Student Congress (end of March)
- Involve students in action projects (ex. Storm drain stenciling, native landscaping/rain gardens on your school grounds, re-vegetating a stream, presentations to other students, teachers, neighborhoods, elected officials, etc.)

### ***Other things we encourage you to do:***

- Attend networking meetings (as often as possible)
- Attend monitoring training in the Fall occasionally for review (required every two years)
- Attend Benthic Macroinvertebrate trainings for students and teachers (middle school & above)

- Involve community members in projects with your students
- Participate in Summer Teachers' Institute occasionally after 1<sup>st</sup> year
- Share experiences and data on-line between teachers and students from other schools, cities, states, countries...

South Sound and Nisqually GREEN programs offer a variety of resources to support their participants in developing a quality watershed education program. These resources vary from year to year and between programs, as funds are available. The programs work to deliver resources equitably and reasonably between participants, while simultaneously recognizing and honoring the varying needs of individuals.

***Examples of resources potentially available to GREEN teachers:***

- Monitoring test kits
- Chemical refills for monitoring kits
- Substitute teachers for Water Quality Monitoring, Congress & Benthics Training, as needed
- Bus transportation for some monitoring days, some action projects and some field trips (varies yearly and between South Sound and Nisqually programs)
- Miscellaneous educational materials including maps, curriculum, software, etc.
- Ongoing training and action project opportunities
- Frequent networking events to meet with other teachers and community members
- Networking information for community members, guest speakers and action projects
- Ongoing support and technical assistance from Program Coordinators
- Information about current local issues and potential supplemental funding sources

## **Calendar Information for New Watershed Educators – 2008-2009**

Greetings to those of you who are new to our watershed-based education program! The Nisqually River Education Project and South Sound GREEN are here to offer you and your students many opportunities for making a difference in your community this year through Science activities such as water quality monitoring and salmon habitat restoration action projects. **Listed below are upcoming events!**

### Chemical Water Quality Monitoring Training

Saturday, September 13th, 9:00 AM to Noon

Location: Tumwater Falls Park

Take advantage of this Saturday morning hands-on training and overview of: water quality parameters, why we test for them, how to collect a grab sample and a dissolved oxygen sample, how we record our data, etc. Get master direction sheets to laminate for use in the field. At rotating stations each of you will get a turn to try each kit (DO, pH, nitrates, fecal coliform, and turbidity).

You will receive clock hours for this training. Hope to see you Saturday, the 13th. Water quality training is required once every two years.

## Nisqually Watershed Festival

Saturday, September 27 (10 AM to 6 PM)

Location: Nisqually National Wildlife Refuge

Fun & Educational Activities for Students and Families! Birds of Prey presentations, nature walks and entertainment will fill the entire day. NREP will be sponsoring its now famous salmon life-cycle key chains in which kids make beaded key chains or zipper pulls which represent the life cycle and habitat requirements of Pacific Salmon. Also, Japanese fish printing activity with fresh Nisqually River Chinook salmon.

This is the 3rd year for the Nisqually Watershed Festival Poster Contest. This year's winners will receive awards and prizes. This is a great family event for folks of all ages. Look for some Watershed Festival flyers to arrive in your mail box in the fall.

## Fall Networking Meeting

Thursday, October 9, 2008 (4-6pm)

Location: River Ridge High School

We only have 2 meetings a year so please mark this one down in your planner now.

The goals of these include...

- Coordinate WQ monitoring practices
- Receive kits and supplies
- Meet your fellow watershed educators.
- Browse available watershed curriculum items.
- Receive updates on possible habitat restoration work (tree plantings, salmon carcass tossing...)

## Fall Monitoring Day

Thursday, October 23, 2008 (any time)

Location: Your monitoring site!

This is the day everyone heads out with their class to their site on the river or tributary stream to gather data in the field.

- Make a point of visiting your site at least once before Monitoring Day to become familiar with its challenges & hazards.
- Let's hope for good weather, but we go rain or shine!
- You can take your whole class or a select group.
- Reserve your bus, substitute & chaperones ahead of time. Prepare ahead of time which activities in addition to Water Quality monitoring you would like your students to do (examples: Stream Survey, GREEN Site Survey, Nature Journal, etc.)
- Get your data back to your coordinator two weeks after monitoring day

## Winter Networking Meeting

Thursday, February 19, 2008

Location: River Ridge High School

We only have 2 meetings a year so please mark this one down in your planner, now.

The goals of the Winter Networking Meeting are very similar to the Fall Networking meeting with the addition of...

- Receive materials & information pertaining to the upcoming GREEN Student Congress.

## Winter monitoring Day

March 5, 2009

Location: Your monitoring site!

Again, this is very similar to the Fall Monitoring Day.

- Make a point of visiting your site at least once before Monitoring Day to become familiar with its challenges & hazards.
- Let's hope for good weather, but we go rain or shine!
- You can take your whole class or a select group.
- Reserve your bus, substitute & chaperones ahead of time. Prepare ahead of time which activities in addition to Water Quality monitoring you would like your students to do (examples: Stream Survey, GREEN Site Survey, Nature Journal, etc.)
- Get your data back to your coordinator two weeks after monitoring day

## 17<sup>th</sup> Annual Student GREEN Congress

March 26, 2009 9am-3pm

Location: TBA

Each year we cap off the students Watershed Education Experience more than 350 student delegates (grades 3 through 12) attending the annual GREEN Student Congress, A Gathering of Student for Watersheds. The students have gathered water quality monitoring data throughout the school year in their respective watersheds. Led by community resource professionals, the students will share their data in State of the Rivers sessions, talk about water related issues in their communities, and generate recommendations for solving problems.

Delegates are from schools in South Sound (North Thurston, Olympia, Griffin and Tumwater School Districts) and Nisqually Watersheds (Yelm, Clover Park, Steilacoom Eatonville, and North Thurston School Districts).

In the afternoon, community volunteers and resource professionals will be on hand to conduct over 25 skill-building workshops. The workshops include living in the shadow of a volcano, making bird boxes, making Public Service Announcements, determining ways of transportation that are healthy for the body as well as the environment, learning how aquatic insects indicate a stream's health, getting up close with inter-tidal creatures and shellfish, and discovering the power of nature through journaling and art.

The day concludes with students adopting the Nisqually and South Sound Watershed Action Declaration, which will include activities the students have agreed to participate in to protect and restore their local watersheds.

Students have an alternate opportunity to give a presentation on a topic related to their watershed. A separate track provides a venue for senior project presentations.

## Summer Teacher Institute

June 18 & 19, 2009

Continues the cycle with learning opportunities for new and continuing GREEN teachers. Summer Teacher Institute is an enrichment opportunity with scientists sharing watershed related research, community and curriculum resources, and fun field trips! The Institute is our best entry point for new teachers to learn about these two watershed education programs, South Sound GREEN and Nisqually River Education Project.

## Additional Opportunities....

### **SSG: Nearshore/marine education field trips**

South Sound GREEN offers trips to South Puget Sound shorelines. Students learn about relationships in the nearshore food web between plankton, bivalve shellfish, other species living in the mud, fish, and marine and aquatic birds. They explore the mud flats, and use binoculars and spotting scopes to view birds, as well as field scopes for viewing plankton and invertebrates. A classroom presentation before the trip provides background on tides and intertidal habitats. The purpose of the trip is to introduce students to the habitats of our South Sound shorelines, our shellfish industry and water quality, and the connection between the upland watershed and the Inlets of the Sound, including the role of human populations.

**NREP:** We have received grants for salmon habitat restoration projects on Tanwax Creek and the Nisqually Estuary. This year we have many opportunities to get students out planting native trees and shrubs along salmon bearing tributaries to the river. Hundreds of trees need to be planted both this fall and spring. Also, we will hear back in October about a Pierce County Community Salmon Fund grant to continue and expand our Salmon Carcass Tossing program and that will be a ton of fun for many lucky students. This too, is a great opportunity to get your students out in the field and experiencing the watershed in person as they also learn about the salmon life cycle and nutrient/food web system.

### **Senior projects and other research and service opportunities**

South Sound GREEN and Nisqually River Education Project hope to provide a role connecting seniors interested in environmental topics for their senior project and others with community organizations needing help with research and projects.

### ***For further information and assistance contact:***

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