

THE PEAS PILOT

Volume 1, Issue 2

March 15, 1997

Newsletter for the Philomath, Eddyville, Alsea, and Siletz Internet Education Project

PEAS Update: School Students and Teachers Describe Current Science Projects

This issue of the PEAS Pilot newsletter has a very special list of authors, artists, and photographers. Most of the work that has gone into creating this publication was done by the students and teachers currently working on selected local environmental science projects at the five PEAS Project schools.

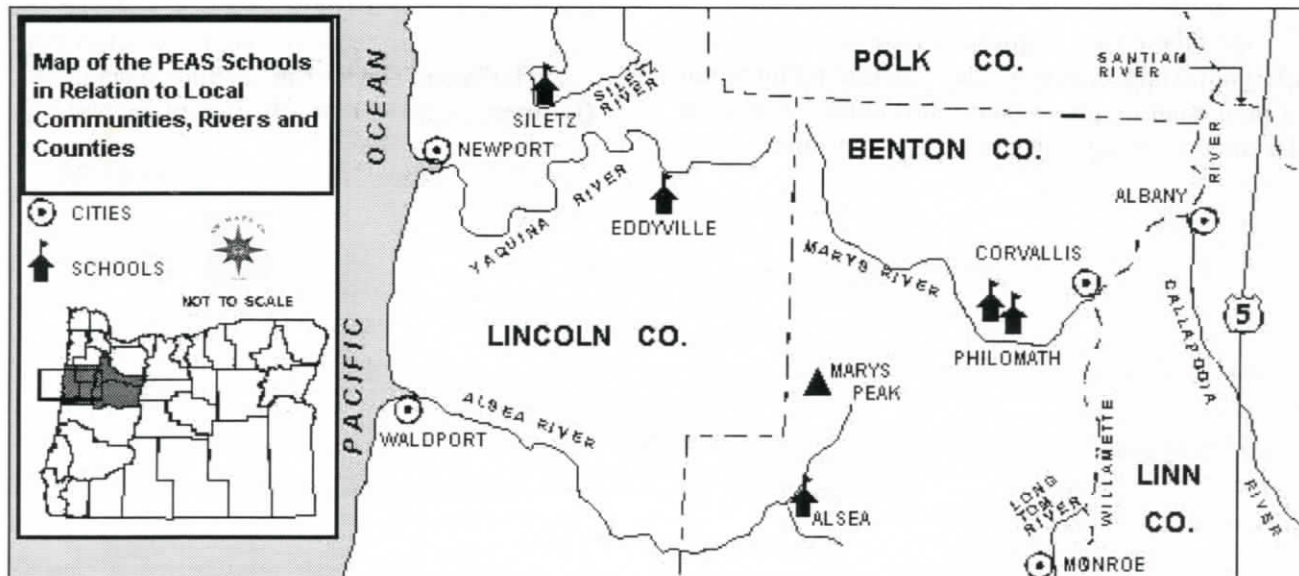
Selected projects are profiled on the following pages and cover a wide variety of disciplines, interests, and age groups. Selection of projects were based on five criteria: 1) the project must be directed by a science teacher or teachers at the school, 2) most research must be performed by grade school, middle school, or high school students under the direction of their teacher, 3) the project must have a natural or cultural science focus, 4) the project must take place within the local geographic area, and 5) students and teachers should be interested in researching and

sharing their work with others using Internet communications.

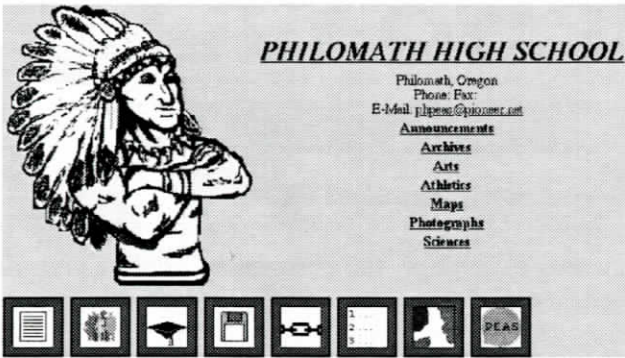
Selected projects represent a diverse group and are complementary in the types of information being developed.

Tom Thompson's Philomath High School Chemistry class is analyzing soil samples used for the school's horticultural projects. Jerry Kinney's Eddyville High School forestry class is profiling the school's 30-year tree planting and thinning project. Laurie Dvorak's Alsea Middle School and Pat Whetstone's Siletz Grade School STEP programs are aiding trout and salmon populations on two Oregon coastal rivers. And Pam Wilson's Philomath Middle School students are continuing to document the local environment through her unique "special places" program.

The following pages contain descriptions of these projects, as written and illustrated by the people who are working on them. In the weeks and months to follow, it will be interesting to note the results of these efforts, as students display their findings on the Internet.



A series of computerized GIS (Geographic Information Systems) maps using precise satellite "georeferencing" data are being developed to monitor and display the results of PEAS student projects via school Internet websites.



Philomath High School Class Analyzes Soil Chemistry

by Tom Thompson, Science Teacher at Philomath High School

The Philomath High School environmental chemistry class has been spending the year trying to understand the local environment from a chemical perspective. One major project has been the analysis of the water quality on the Mary's River watershed.

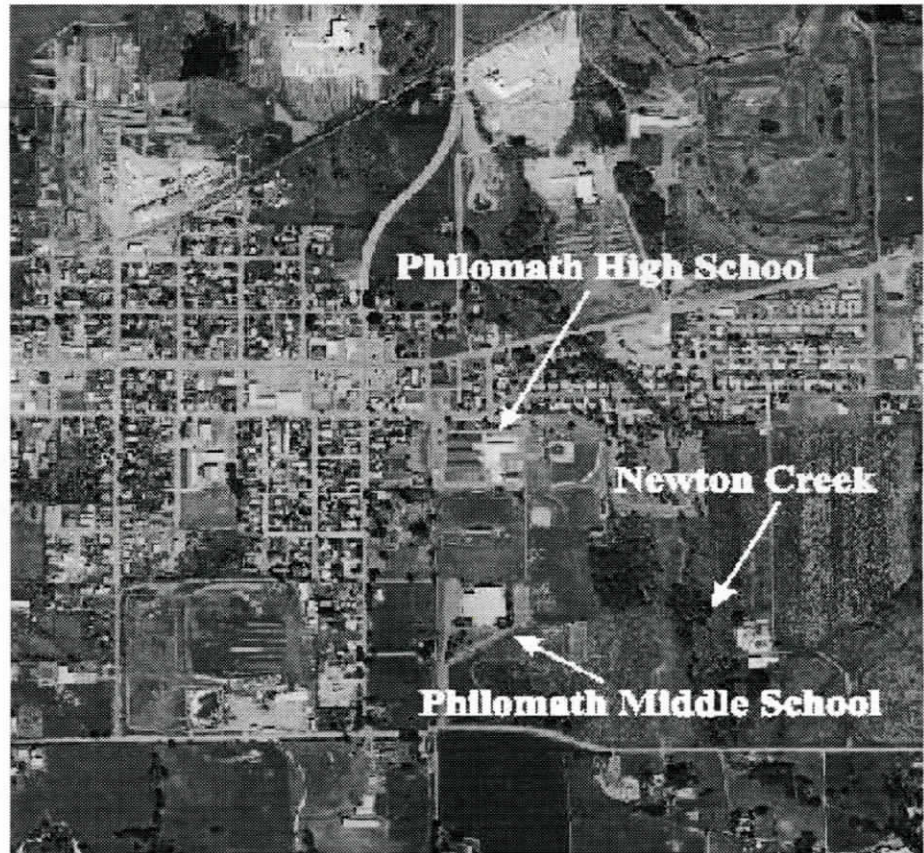
As we wrap up that investigation for the year, we are moving our focus away from the water and onto the land.

The ten students in the Philomath High School environmental chemistry class are up to their elbows in mud. They are working with two horticulture classes to analyze soil chemistry. Students in the horticulture class collected soil samples from a series of 20 raised beds that they maintain on the high school grounds. Each student in the environmental chemistry class is responsible for analysis of two of the soil samples. When analysis of each sample is complete, the results will be posted on a web page for horticulture students this year and students in future classes. Eventually we hope to have a yearly record of each bed so horticulture students can

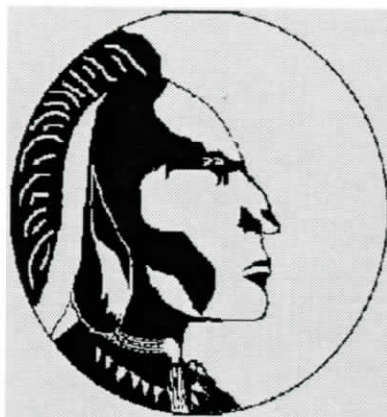
improve the quality of their soil.

This year the environmental chemistry students will be measuring eight different soil parameters. Soil texture will be analyzed using a simple field test to estimate sand, silt and clay percentages. Soil samples will be dried to measure water content and then treated with hydrogen peroxide to measure organic content. Soil pH will be measured using digital pH meters. LaMotte soil test kits will be used to measure the soil macronutrients of nitrogen, phosphorus and potassium. A final test is more unusual. Each soil will be analyzed for its bacterial activity using an enzyme assay technique.

This year is a year for establishing baseline data on the raised beds. Each year students in the horticulture classes change the soil through new plantings and addition of compost and nutrients. In the future we hope to track how these changes affect the soil in each bed.



This aerial photograph shows Philomath High School and Middle School in relation to the eastern part of the city of Philomath and to Newton Creek, a tributary of Marys River. The color version of this aerial can be seen (and downloaded) from the Internet version of this newsletter at: <http://www.pioneer.net/~PEAS>. The photograph was taken in the early 1990s by W.A.C., of Eugene, Oregon.



PHILOMATH MIDDLE SCHOOL

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Philomath Middle School Special Places Program

by Sarah Tofflemire and Chelsea Gunn, fifth graders at P.M.S.

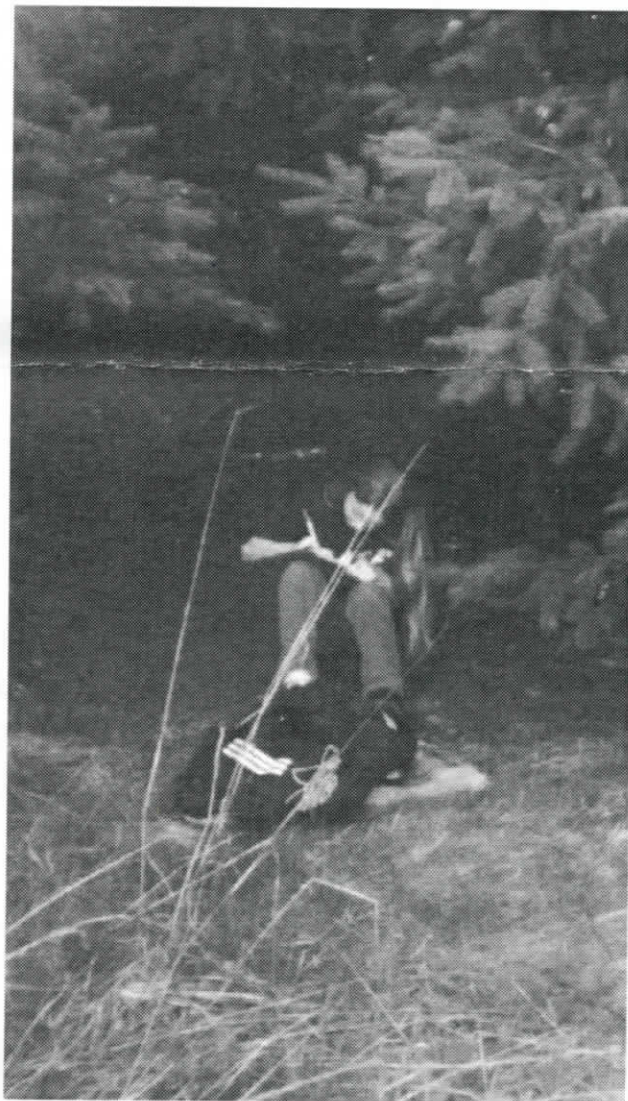
Special Places is a program started by Pam Wilson, a fifth grade teacher at Philomath Middle School. She has gathered ideas from many different people over several years and combined them into one program. The Special Places program is a great environmental science class for middle school students. During Special Places, teachers take their students outside to an old overgrown Christmas tree farm on the school grounds. In Special Places, we spend a lot of time with field work. We go out once a month and begin each outdoor visit with group measurements. For group measurements, we always meet in the same spot. During group measurements, we do wet bulb/dry bulb, which will give us relative humidity. We also take soil temperature, soil pH, wind speed/direction, sunrise/sunset, cloud type, and general weather observations. Once group measurements is over, we head out to our individual Special Places with our assignments.

Our Special Places assignments are usually pretty fun. Sometimes we collect mushrooms to make spore prints and things like that. We often have charts to tell what our special place was like the month before, what it's like now, and what we predict it will be like next month. Sometimes we write poems or stories. We always have more than one assignment to keep us busy.

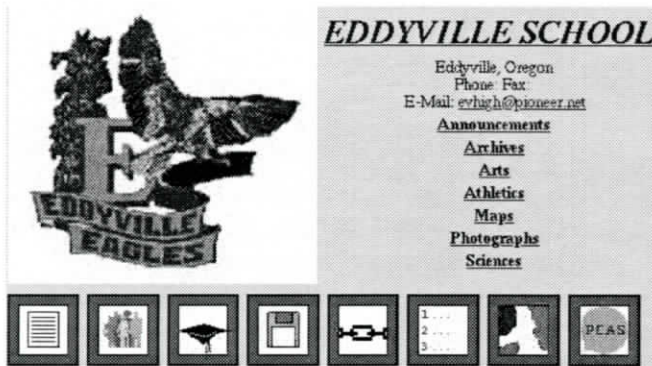
Once we are back in our classroom, we transfer our information to an index card. We get one card per month. At the end of the year, we will each make a

book out of the cards. The cards will be in proper order, first month to last. The books will contain the information that each student has collected during the year.

It not only provides very important information about the community's environment, but it also gives kids a chance to learn skills that will be useful in many fields of science. This program will give kids a head start on science classes they will have to take in the future. As you can see, Special Places is a great learning experience for all involved.



This photograph of Suzanne Phillips was taken at her "special place" by teacher Pam Wilson in 1995. The students' special places are located between the Middle School and Newton Creek, as shown on the aerial photograph on page 2.



Eddyville School Tree Planting Project

by Erik Badzinski, Freshman at Eddyville High School

Eddyville High School is currently working with three other schools to bring our science projects together and collaborate on them through the Internet. Here at Eddyville, we have decided to work on a tree planting project, originally started in 1966. All thinning and planning during the past 30 years were done by Eddyville students. The project was recently digitally videotaped as part of the PEAS pilot project.

We have five different sites on our property that we are using for the experiment. Some sites were thinned during different years, others were not thinned at all. We will bring forward information from these sites like number of trees and diameter with and without bark. The class is planting a site with new trees this year which will provide new data.

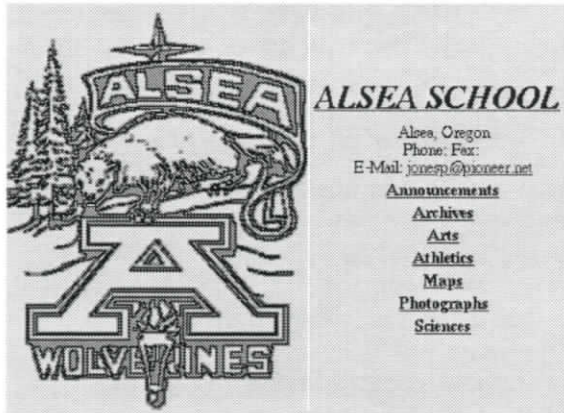
We hope that with the information we provide and the information coming from the other schools, a picture of how the region is shaped will develop. If you have any questions, the PEAS project web page is located at <http://www.pioneer.net/~PEAS/>. As it becomes available, more information will be put onto that page.



The "Eddyville Weeping Fir" is a landmark located by the entrance to the school's football field. Its importance to local students can be shown by its presence on the Eddyville School Home Page logo and on the entry sign to the school's parking lot. This photograph was taken on a Kodak digital camera and downloaded directly to a computer by Rod Slattum, a horticulture student at Linn-Benton Community College.

Top 10 Contest Note

Because of problems with E-mail systems in a number of schools participating in the PEAS Project, the time limit for contest entries has been extended until April 20. This extension will allow students who have not yet had an opportunity to obtain an E-mail address from their school, or who have been unable to visit the contest web page, to still have plenty of time to enter. Prizes supplied by the sponsors of PEAS will be awarded to students voted to have submitted the best reasons that the project is named "PEAS."



Alsea Students Fish Hatchery Project

by Chris Doig and Chaylan Savage 8th graders, and Laurie Dvorak, Alsea School science and math teacher

Over the past four years, Alsea Middle School students have embarked on an educational journey that has involved assisting Alsea Fish Hatchery workers

with the raising of cutthroat and steelhead trout. In doing so, the students have been able to profit from a hands-on learning experience while helping young fish begin their incredible journey.

The students have been working at the hatchery under the direction of Oregon Department of Fish & Wildlife Salmon and Trout Enhancement Program (STEP).

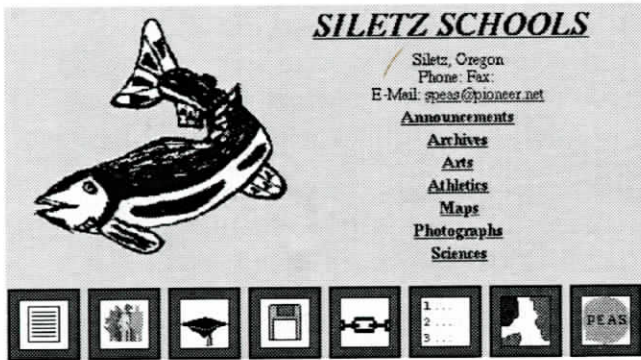
While at the hatchery, students have participated in a variety of different tasks from spawning fish to clipping fins and releasing fish for the opening day of fishing season. High school students have been active in feed studies to determine the cost and nutritional efficiencies of dry versus wet food.

Students are also involved in monitoring water quality of the Alsea River and report the results to the Oregon Department of Fish and Wildlife.

In May, trout that students have raised will be released above Mill Creek, a tributary to the Alsea River.



Alsea Middle School 8th grader, Sean Cox, helps Oregon Fish & Wildlife workers extract eggs from a female steelhead at the Alsea Fish Hatchery. Photograph by Laurie Dvorak.



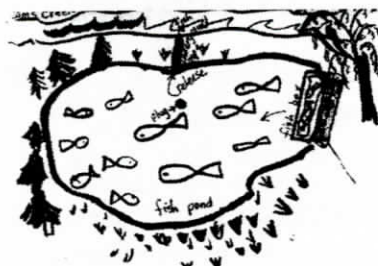
Siletz Students Raise Coho Salmon

by Pat Whetstone, Siletz School 4th Grade science teacher

Siletz Elementary and Middle School students have been involved in a Salmon Trout Enhancement Program (STEP) for more than 6 years. Raising "fish eggs to fry" has been the product of an ongoing environmental educational partnership between Siletz students and Tony Stein of the Oregon Department of Fish and Wildlife.

Daily caring for the fish, as they develop from egg to fry, has been instrumental in developing a sense of stewardship for the environment and living creatures among multi-grade level students. Staff has found that this is a program that catches and stimulates student interest in the "real world." For many students, meals which include salmon, are an important part of their diet and tribal tradition.

Students are excited about sharing what they have learned about raising fish in their classrooms on the PEAS web page. Brady Hogevooll, currently a fourth grade student, has been involved with the STEP program for two years now. "Every time I've got to help raise fish has been different," says Brady. "I've done everything from helping to set up the tank and collecting the river water to help make a good place for the fish to live." Brady and other students willingly do their part to keep the water cold enough and have learned to take accurate water tempera-



Sam Creek Holding Pond
by Travis Weaver & Brady Hogevooll

tures. They are also very aware of each stage of development and watch for the signs that the fry are at the "button up" stage and are ready for release.

Prior to the release of the last batch of eggs from the Middle School's box, located at nearby Scott Creek, and the Elementary classroom's aquariums, Brady advocated strongly to students in his classroom, to release their fish to a special holding pond, rather than direct deposit into the Siletz River. He was concerned that "predators and other things would make it so that the fish would not have such a good chance at survival." With a true sense of "stewardship," two elementary classrooms and the Middle School, decided to release their fish to the holding pond. "Here," Brady explains, "they will be fed grinded up fish stuff and they will learn how to eat, so that they will do better when they reach the river."

For Stevie Beard, a fourth grade student, raising fish eggs to fry, is a new experience. She has been able to help set up the fish tank that will be home to the Coho Salmon eggs for the next two and a half months. "Our tank is covered with styrofoam to keep the water cold for the fish, but there is a rectangle window that we can see the fish through." Stevie is glad that students had to only use a turkey baster to "suck up about 10 eggs that didn't make it past the eyed stage because it's important to get the eggs that don't develop out before they turn white and fuzzy looking." Students are willing monitors of tank conditions because they want to raise a successful batch of fish. In addition to expressing a sense of stewardship for the environment,



Fish Box
by Stevie Beard

Stevie says that, "raising salmon is important to my family because my dad is a commercial fisherman and there needs to be salmon out there for him to catch."

Students will be posting pictures and graphs on the PEAS web site to show what they have learned through involvement with this project. Maybe other schools will become interested in developing educational partnerships with the Oregon Department of Fish and Wildlife after learning about this project on the Internet.

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The PEAS Project is directed by NW Maps Co. in cooperation with Urban Forestry, Inc. and the Environmental Justice Action Group (EJAG). West Oregon Timber Supporter (WOTS) continues to function in an oversight capacity.

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PEAS is a private/public partnership dedicated to improving educational opportunities for Oregon school children in the fields of Internet communications and environmental sciences:

- ◆ geography
- ◆ forestry
- ◆ agriculture
- ◆ local history
- ◆ fisheries
- ◆ water quality
- ◆ wildlife management

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Please contact us at: **766-8118**

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