Palisades Elementary School's
Native Plant Demonstration Garden
Final Report

922601

1. Summary of grant activities. The list of activities for this project is extensive. Initially we recruited parent participation through our school's parent leadership organization (PALS). We formed a garden committee to work on the project design and direction. We invited interested participants including the school chief of maintenance, the principal, parents and master gardeners to tour other school garden projects to get an idea of what had been done already. Through OSU Extension, a newly trained wildlife steward was matched to our school to participate in the project also.

   We asked teachers if they would like their students to participate in the project. We scheduled classes to perform a site assessment of what was already in the area designated for the garden. Students measured the area, mapped the existing plants and looked for "wildlife". Students in the first grade classes paired up with their 6th grade "buddy" classes and drew names of mammals, birds and insects that might want to live in our garden (i.e. butterflies, bees, worms, birds, ladybugs, salamanders, squirrels etc>). The students then drew pictures of their "dream gardens" that would provide a suitable environment for the species they had chosen.

   The design committee put together elements for the garden and we planned the first excavation (garden party). We publicized the event (Sunday afternoons) in the school Friday newsletter. All subsequent workdays were publicized the same way. A large gathering of parents and students, scouts and interested citizens turned out to remove existing shrubs. This activity included the removal of two very large holly trees growing into the school foundation. These were removed using hand tools and a cum-a-long attached to the back of a pickup truck.

   We installed a sign in the garden area that could be read from the driveway which read "Watch what happens here. A native garden will appear, if you volunteer." Under the sign we placed a plastic box used by realtors to place informational fliers on homes for sale. In the box we placed fliers giving information about the garden project and when the next activity would be held.

Subsequent garden activities were handled the same way. For materials for the site development, we called various suppliers of soil mix, gravel, compost and rocks to obtain the best prices. We solicited donations of rocks and plants from students and parents. We obtained native plants from local nurseries, donations from residents and also by obtaining a permit from the U.S. Forest Service to dig native plants.

After the site was cleared, the path design and percolation swale were laid out and diagrammed using non-toxic spray paint. A sod cutter was rented and used to remove the lawn. The sod was turned over and pilled in areas that needed to be "bermed". Soil mix was added to all areas of the site that were to be planted.
The swale (our creek) and walking path were excavated by hand. Landscape fabric was placed in the swale and river rock added over the top. Larger stone was placed by hand in the swale.

Planting days were publicized and various classes participated in these activities also. After planting, the drip irrigation system was installed and garden mulch added over all areas after that. The route of the path was covered with landscape fabric, as was the swale. Rock was added to the swale and gravel to the path. The large landscape boulders were placed by the landscape company prior to planting.

On going maintenance is managed by a garden coordinator who contacts parents and students when help is needed. The last week of school we found to be a great time to solicit help from the 5th and 6th graders as much of their work has been completed. Scheduling half -hour work periods during recess was a very successful strategy.

Special Project: As an extension of our native plant demonstration garden and the percolation swale, I initiated the development of an educational workshop called EarthPALS to teach the students about watersheds. The model for this type of workshop was the program developed by Madison High School and funded by this grant program. Had I not been able to participate in the mid-grant review where all grant recipients reported on their progress, I would not have had the inspiration to develop this program.

The program consisted of five stations to which students from each classroom rotated. The indoor stations consisted of two enviroscapes (plastic models for hands-on learning about how a watershed works); two air quality stations (one was a game structured like "Jeopardy", the other was a demonstration); and a display about salmon including examples of their lifecycle with eggs developing into baby salmon. The outdoor station included a discussion in the native plant garden about the role of native plants in a watershed; the function of the percolation swale (filtering and slowing rainwater run-off from the School roof); an examination of pollution sources from the Schoolyard, observations of erosion in the Schoolyard; and a walk which followed the path of the storm drain from the Schoolyard through an open drainage ditch to an open creek running directly into Lake Oswego. The final activity was to empower the students to use the information they learned to help reduce pollution from the Schoolyard. They determined the major source to be oil and other pollutants from cars washing down the driveway into the storm drain. We asked the students for one week to choose to walk, ride their bikes or ride the bus to school instead of having their parents drive them in their cars to school. The finale of our EarthPALs activities was to have the Warm Springs Tribal dancers perform for the students and explain the importance of salmon to their culture and their connection to the earth.

This program included training about 30 volunteers. We invited the Lakeridge High School's new environmental club to help (we had about 15 volunteers). We had a volunteer from Tualatin River Watershed Council and volunteer educators from Clackamas County recycling program and our volunteer Wildlife Steward from OSU Extension's program.

I include this information as an example of how our project inspired further environmental learning activities. It went far beyond our garden project. Other schools could use the model we developed.

2. Evaluation of the Project:
   Successful strategies:
   This project proved far more extensive than our first estimate (isn't that the way it always is!) The time we spent looking at prior projects and

talking to other schools was very helpful. Scheduling volunteer workdays on Sunday afternoons was quite successful. Also, involving student volunteers late in spring for site preparation and planting was effective when it was given as an optional activity for recess time. We had a large number of great workers from the 5th and 6th grade classes during the last two weeks of the year. Many of these students have completed all their coursework at this time so they were looking for things to do. Their teachers were happy to have somewhere for them to go with all their energy! Contacting our local high school that is within walking distance of our grade school proved to be a very successful plan in recruiting volunteers for our EarthPALS program. The grade school students loved having the high schoolers act as their teachers. It gave the older students experience speaking in front of groups and also helped educate them about watershed too. They could use this volunteer time to fulfill their community service requirements. Both groups had terrific time learning. Our partnership with OSU Extension's wildlife steward has been very successful. Her work with the students on various aspects of the project has been wonderful.

We found requesting discounts on the price of goods used in our site development to be quite successful. We were able to obtain sizeable price reductions for most items. Soliciting donations from parents was also successful. Recruiting various scouting organizations to help with excavation also worked well.

The actual physical development of the garden was a great success. The community uses this area for neighborhood walks. Many community members have found it to be a great destination and source of information. Parents frequently ask for additional information about plants to use in their yards. The students love to walk (or run) along the garden path. The School staff says thank you for the transformation! The area was previously unused but now is a destination. The kindergarten uses the area frequently for class activities such as drawing bugs. Our school chief of maintenance got on board and has been very supportive. He has an interest in gardening and now wants some of our native plants for his home landscape. Our transition classroom for special needs students has enjoyed the development right outside their window. One of the student's daily jobs is to fill the bird

feeders with sunflower seeds. It filled an activity need they had and has been a source of delight. The students love to hear the birds outside their window.

We included our School's chief of maintenance early in our garden planning process. He participated on the tour of other school gardens at the very beginning. He then had an idea of what was possible. We consulted him on all aspects of the construction that might impact the school – disconnecting old water lines, putting in the percolation swale, disconnecting the down spout, discussed materials to be used in the path, etc. He has been very helpful in the process and very interested in the success.

A significant success for our project has been to get participation from male parents in school activities. Many of the volunteer projects take place during school hours when most male parents are working. They had a chance to participate on weekends that had not been available previously. We have increased the connections between our parent community in general. As an "off-shoot" one of the parents started a study group for parents through the Northwest Earth Institute.

Project Challenges:

Our major challenge in this project was getting the teachers at our School to schedule time for students to participate. The only grades that consistently were allowed "outside" were the K, 1 and 2 classes. One thing that is severely restricting for our particular district is the fact (we learned late in the project) they use an "adopted curriculum" which does not allow much flexibility for teachers. They are so stressed for time to teach what is required that they don't willing give up time outside their structured lesson plans. This particular group of teachers seems to have a very difficult time understanding a multi-disciplinary approach to learning.

Not having planned something like this before we thought we had important school players on board prior to initiating the project. Our principal was very supportive and encouraging about the project. However, her support was not effective in gaining our teachers'

acceptance of activities. We had a teacher volunteer to be the staff liaison but she was not accepting of the garden as a new learning environment and did not recruit other teachers' participation. The final activity (having students develop a garden guide) was discussed with the teachers at a staff meeting in November. By January, we saw that we were going to have trouble getting them to schedule time for students. In March when they had not made any attempt to schedule the activities, the Librarian finally stepped in and decided to take on the student garden guide activities. However, because she had to teach certain activities, she turned the guide into an exercise for students to do research on the Internet. The results of that were basically printouts of plant descriptions off the Internet. The intent of the activity was discussed with her again and she was able to schedule the students to actually go out to the garden and identify their plants and practice writing descriptive "poems" about the plants. They were able to do sketches at that time also. Regretfully, the students were not monitored closely during this time so they did not necessarily study the same plant in the garden that they researched on the Internet. The result is that only about half the plants in the garden were illustrated and described. If there is interest, we may be able to expand the guide in the future.

We hope that gradually the teachers will understand how they can use the garden in learning activities. Our wildlife steward from OSU Extension's program will be offering on-going activities. The parent organization may start sponsoring optional learning activities for students during lunch recess, which will present additional time for garden activities.

Although we had a core group of parents and kids that showed up for every major activity, we found it difficult to get parent volunteers to be consistent about following up on jobs they made commitments to do. As an example, one parent volunteered to act as the photographer for our activities. She never showed up. Another person designated as the public relations contact for the parent organization had to be continually prompted to send information out to the media. Another parent who had all the software for the digital camera we used has been very hard to get to actually get the photos into a workable format. No one else had access to the software for this particular camera.

Page 7- Project Challenges

Another significant problem that came to light during our project was a failure in school administration to manage scheduling efficiently. We would schedule activities months in advance only to learn of a conflict just days before the scheduled event. During the EarthPALS event (an all-school activity spread over 3 days), they informed us they made an error and a band concert was to be held in the middle of the scheduled activities. We had to cancel part of the activities for students because they erred on this change twice.

One strategy during construction of the garden that did not work as well as we would have liked was the "recycling" of sod. During site excavation, we rented a sod cutter and cut up all the grass/weed lawn. We formed our "berms" by stacking the sod upside down. We then covered the sod with a thick layer of soil mix, planted the native plants and then covered all of the area with garden mulch. We thought this a good strategy until a mole moved into the garden. (We didn't think this would be a problem because the garden is surrounded by concrete or the school building.) The mole did his own excavation, turning up the sod and allowing air and light in for the weeds to grow through. This has increased our need to weed in the garden with a particular problem with Dandelions.

Hints for future project managers:

Find out who the real leaders are at your school before planning your project. Make sure you have a teacher that "really" supports the project.

Get clear, definite commitments for student activity time. Make sure the teachers are working with the same information you have. Re-check school schedules.

Network as much as possible with other organizations involved in environmental education. They are a good source of inspiration and trained volunteers!

Divide up the work into smaller, shorter jobs.

- i.e. grant administrator to manage the financial accounting, volunteer coordinator, public relations person, publishing coordinator etc.

Page 8 – Photos – Palisades Elementary

3. See photo pages attached.

4. See map of garden included in garden guide and photo pages. Note that we did not make slides at indicated photo points because we did not know that was needed. Perspectives on the garden were generally taken from the same places due to the layout of the property and school building.
5. We have a parent volunteer through our parent organization PALS who heads up maintenance activities. That person is in charge of scheduling activities and notifying students and parents through our Friday newsletter. PALS has agreed to budget monies each year for mulch and other needs of the garden. Fundraising activities specifically for the garden will be scheduled this next year. Collecting seeds from plants in the garden and starting seedlings and cutting to be sold by students is one project anticipated.
6. See attached species list. We are adding to this list as the garden develops. We did not keep documentation of exact numbers of different species, as this is a demonstration garden rather than a habitat restoration project. It is working to attract wildlife to our schoolyard never the less!
7. See the enclosed copy of our garden guide.

6. Plant Species List

TREES:
Vine Maple, *Acer circinatum*, deciduous (4)
Mountain Hemlock, *Tsuga mertensiana* (2)
Quaking Aspen, *Populus treuloides*, deciduous (5)

SHRUBS
Indian Plum, *Oemlaria cerasiformis*, deciduous (3)
Red Flowering Currant, *Ribes sanquineum*, deciduous (3)
Salal, *Gaultheria shallon*, evergreen (6)
Tall Oregon Grape, *Mahonia aquifolium*, evergreen (2)
Dull Oregon Grape, *Mahonia nervosa*, evergreen (6)
Pacific Wax Myrtle, *Myrica gale*, evergreen (2)
Hardhack (Douglas spirea), *Spiraea douglasii*, deciduous (6)
Snowberry, *Symphoricarpos albus*, deciduous (5)
Oceanspray, *Holodiscus discolor*, deciduous (3)
Evergreen Huckleberry, *Vaccinium ovatum* (3)
Blue Elderberry, *Sambuscus caerulea*, deciduous (1)
Pacific Ninebark, *Physocarpus capitatus*, deciduous (1)
Saskatoon Berry (also Serviceberry), Amelanchier alnifolia, deciduous (1)
Nootka Rose, *Rosa nutkana*, deciduous (3)
Blackcap (black raspberry), *Rubus leucodermis*, deciduous (2)
Red-Osier Dogwood, *Cornus stolonifera*, deciduous (3)
Silk-tassel, *Garrya eliptica*, evergreen (2)
Pacific Rhododendron, *Rhododendron macrophyllum*, evergreen (1)
Mock-orange, *Philadelphus lewisii*, deciduous (2)

PERENNIALS AND ANNUALS

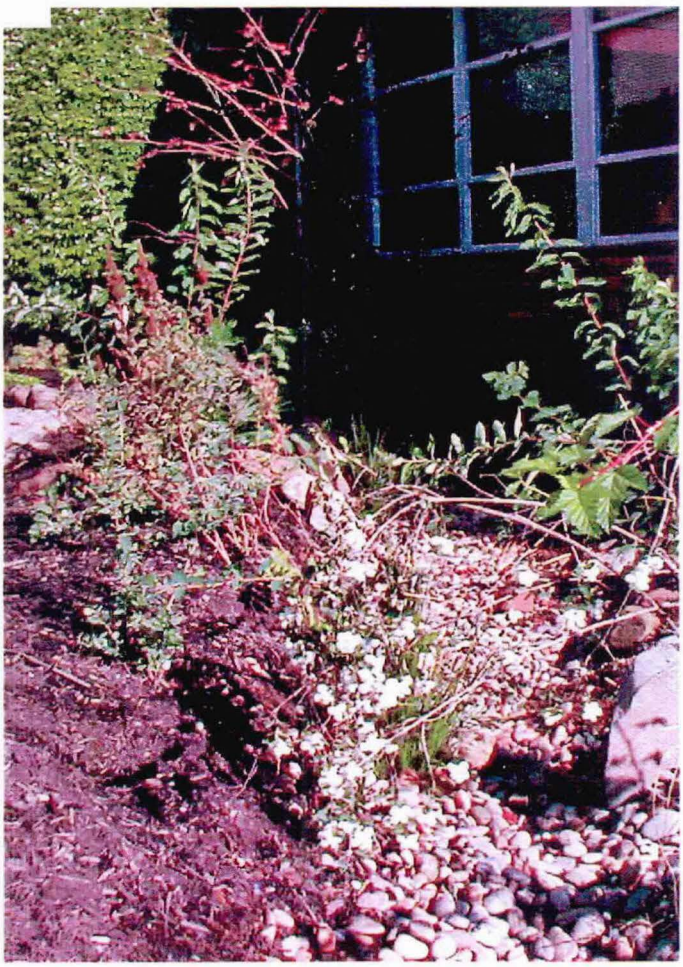
Sword Fern, *Polystichum munitum*, evergreen (8)
Bracken Fern, *Pteridium aquilinum*, deciduous (removing, too invasive!)
Slough Sedge, *Carex obnupta*, evergreen (3)
Soft Rush, *Juncus effusus*, evergreen (3)
Small-flowered sedge, *Scirpus microcarpus*, evergreen (2)
Bog sedge, *Carex kelloggii*, evergreen (2)

Penstemon, (Small flowered), *Penstemon procerus* (2)
Penstemon, *Penstemon serrulatus*, Beard tongue (adjacent to bird feeder) (1)
Penstemon cardwellii, Shrubby Penstemon (near big rock) (1)
Bleeding Heart, *Dicentra Formosa* (3)
Yarrow, *Achilles millefolium* (removing, too invasive)
Wild Ginger, *Asarum caudatum* (6)
Mt. Avens, *Dryas drummondii* (2)
Foxglove, *Digitalis purpurea* (5)
Pearly Everlasting, *Anaphalis margaritacea* (1)
Fireweed, *Epilobium angustifolium* (1)
Yellow Monkey Flower, *Mimulus guttatus* (2)
Trillium, *Trillium ovatum* (a bulb, dies back completely in winter) (4)
"Tiger Lily", *Lilium columbianum* (a bulb, dies back completely) (2)
Camas, *Camasia quamash* (a bulb, dies back completely) (2)
Lewisia, *Lewisia columbiana* (1)
Oregon Iris, *Iris tenax* (2)
Yellow Iris, Iris Innominata (3)
Lupine, *Lupinus polyphyllus* (1)
California Poppy, *Eschschoizia californica* (too many!)
Oregon Stonecrop, *Sedum spathulifolium* (4)
Broad-leaved Stonecrop, *Sedum spathulifolium* (2)
Piggy-back Plant, *Tolmiea menziesii* (3)
Small-leaved Montia, *Montia parvifolia* (2)

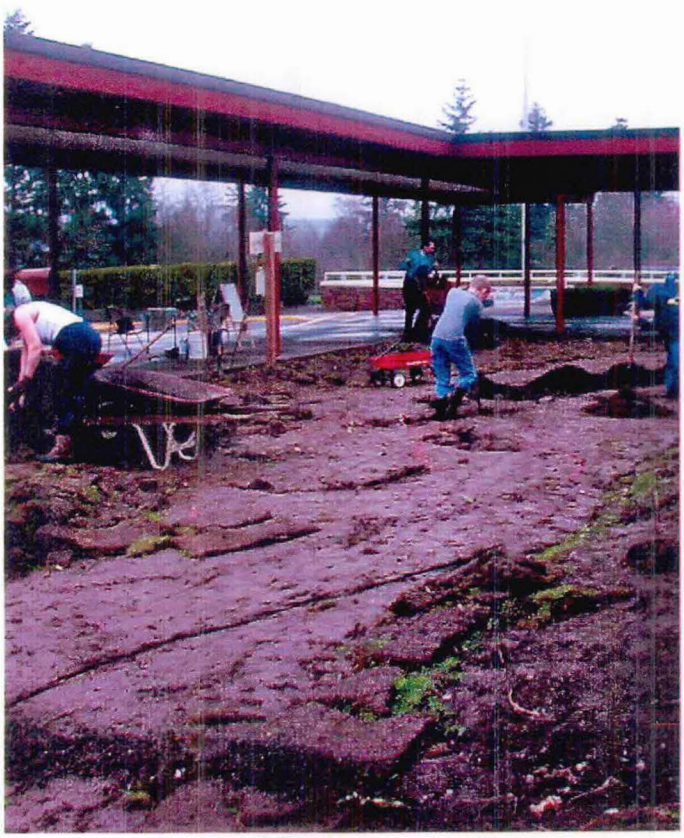
In the beginning...

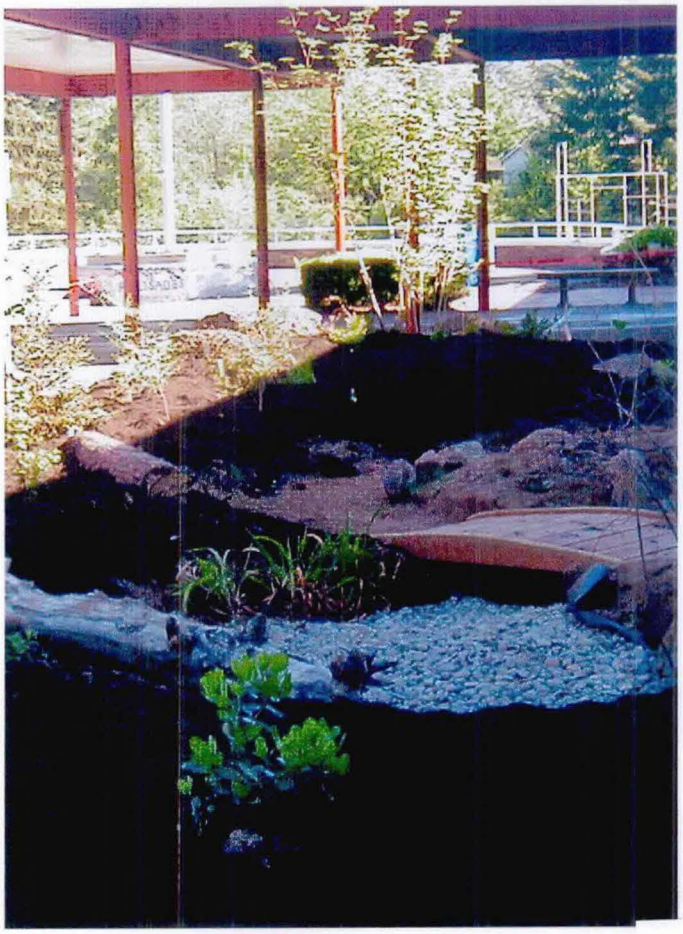
Clearing out the old

Growing!

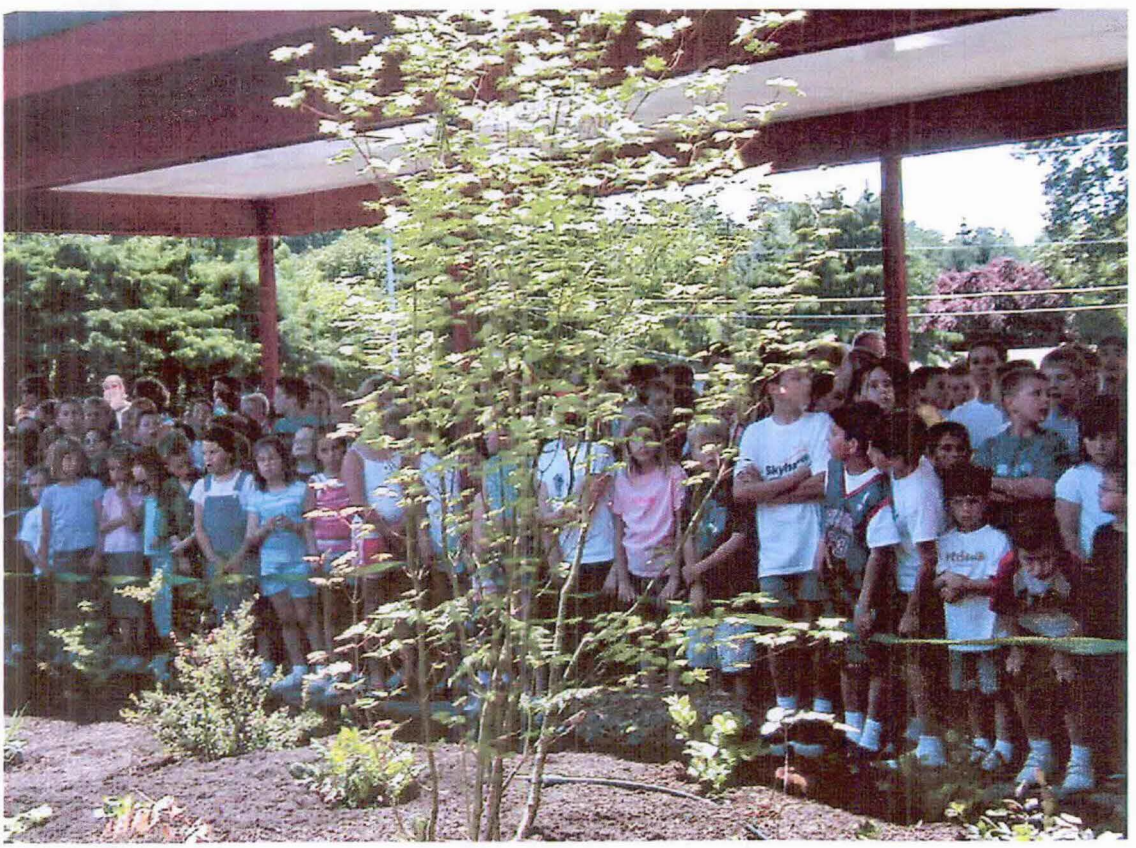


Recycling sod





Planted!

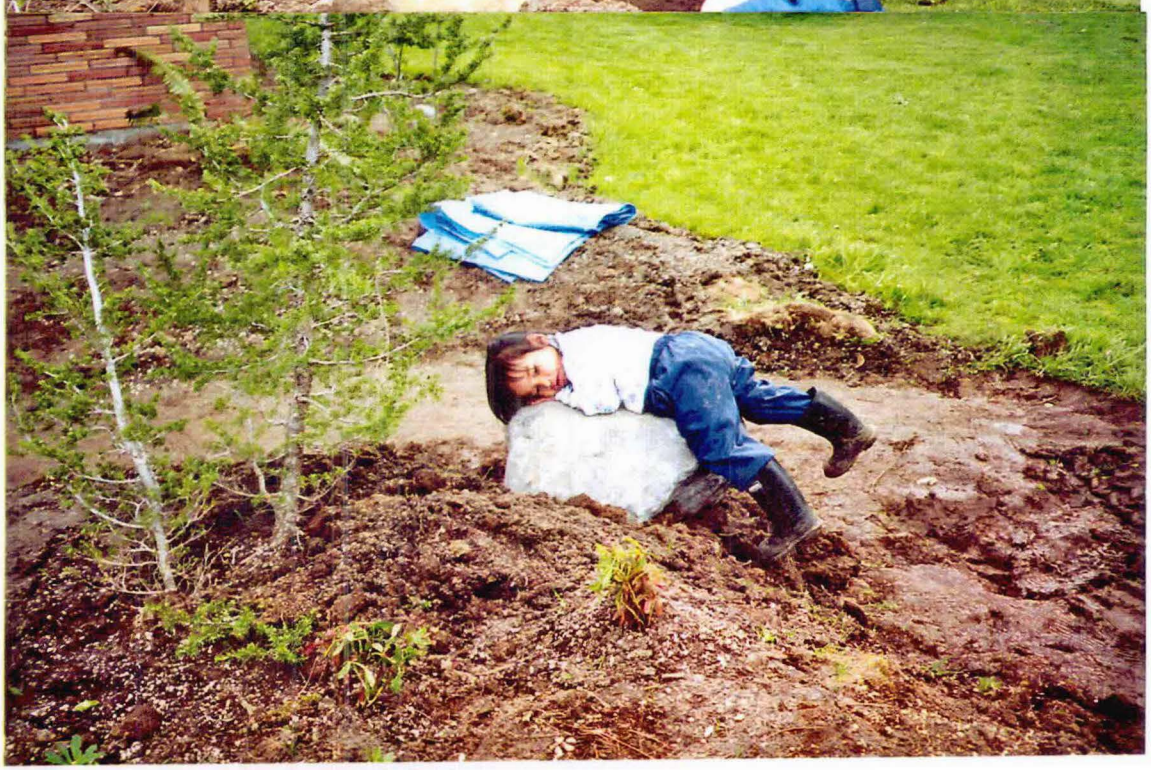


Dedication Day

All that mud!

The New Perspective

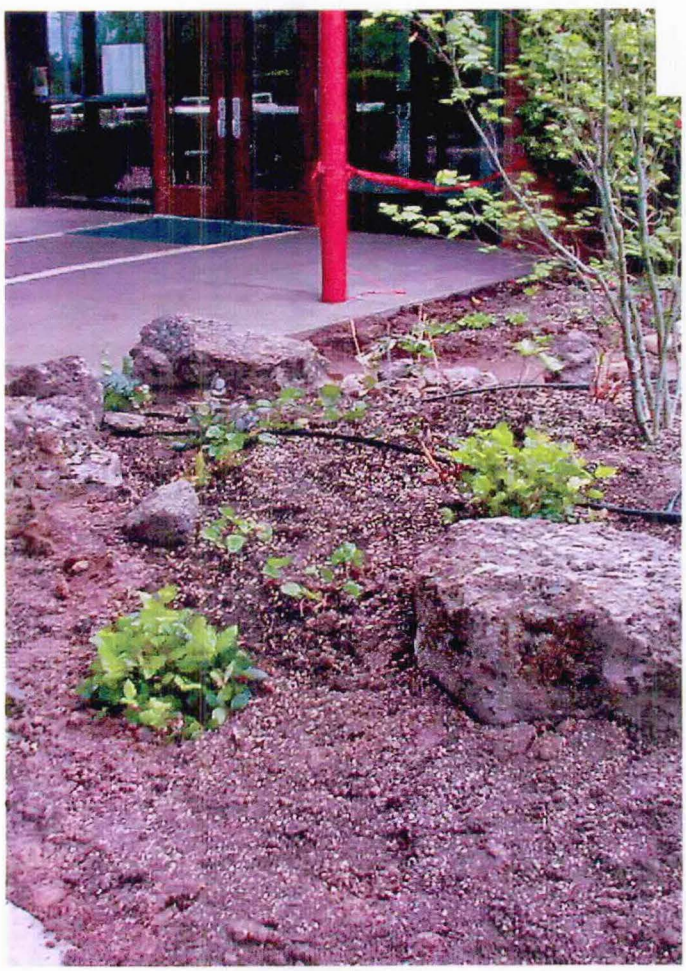
Boulder day!



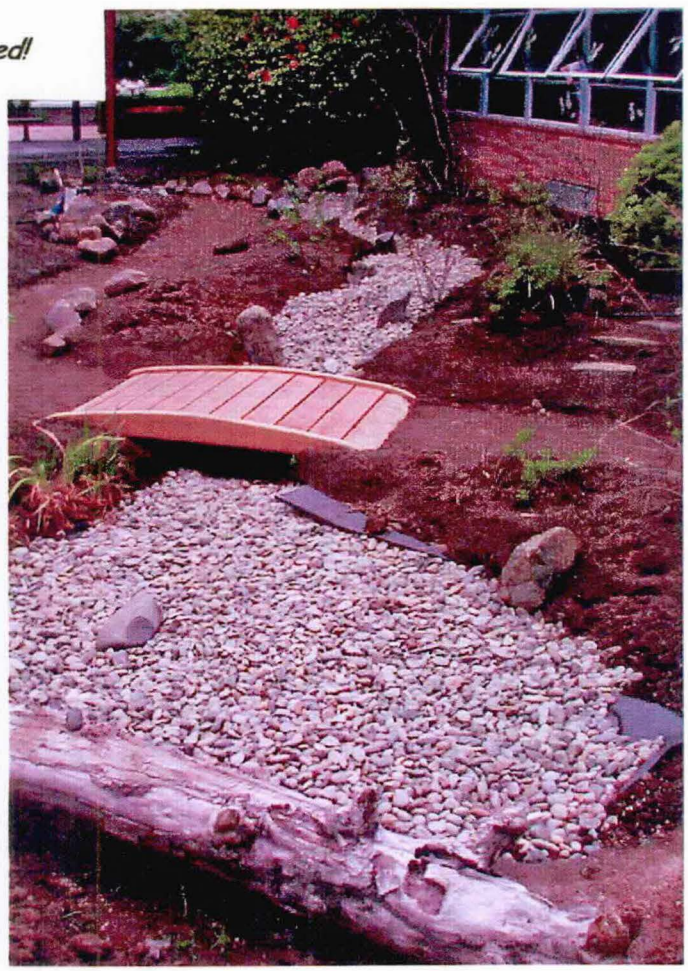
A rock can be a comforting friend!

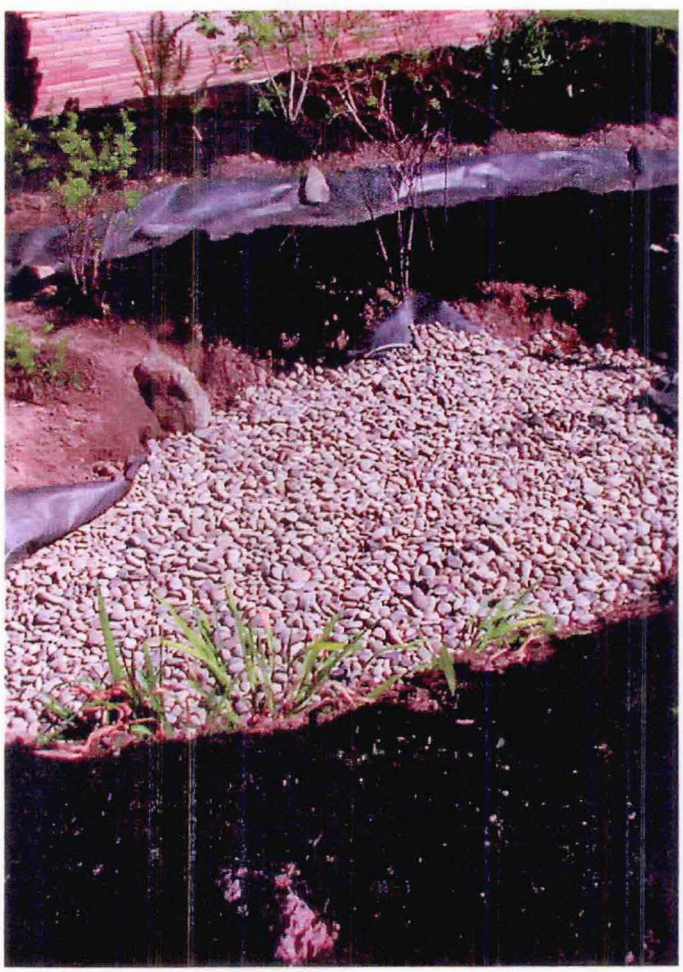
Kindergartners on Earth Day

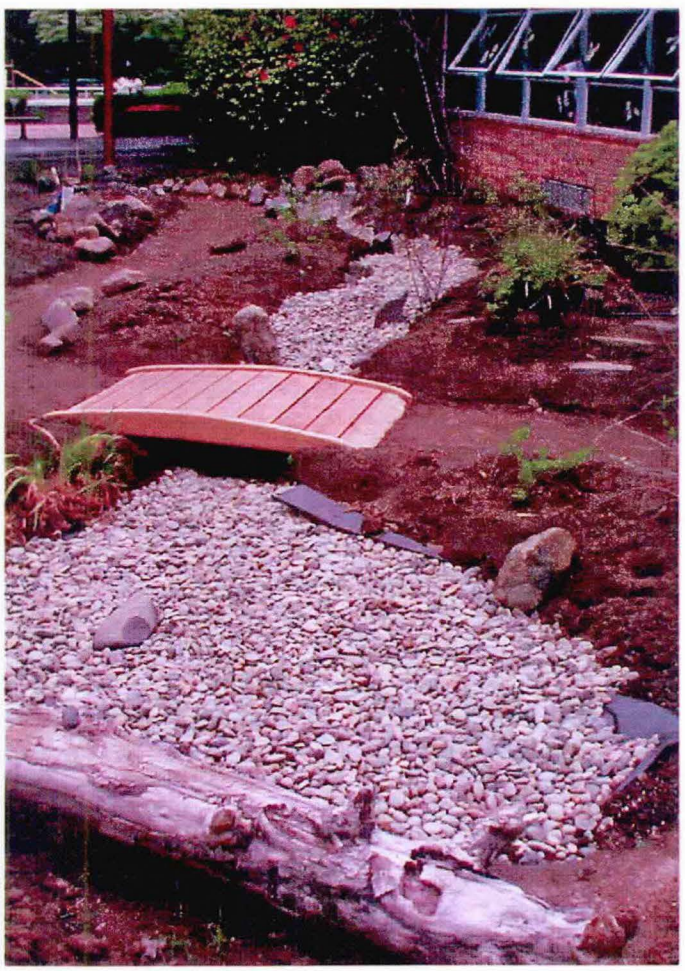
Working together



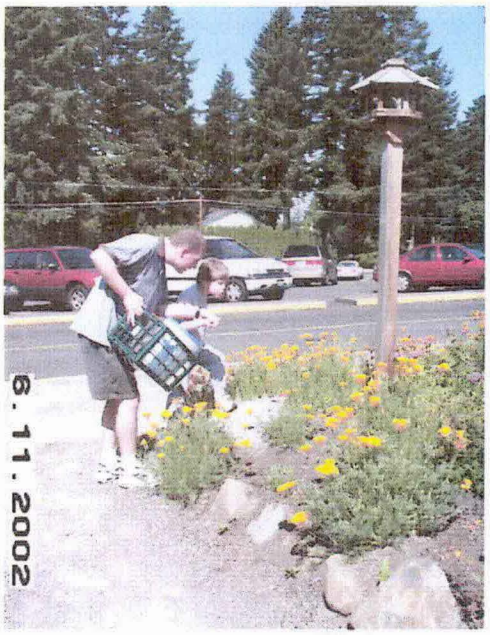
Planted!

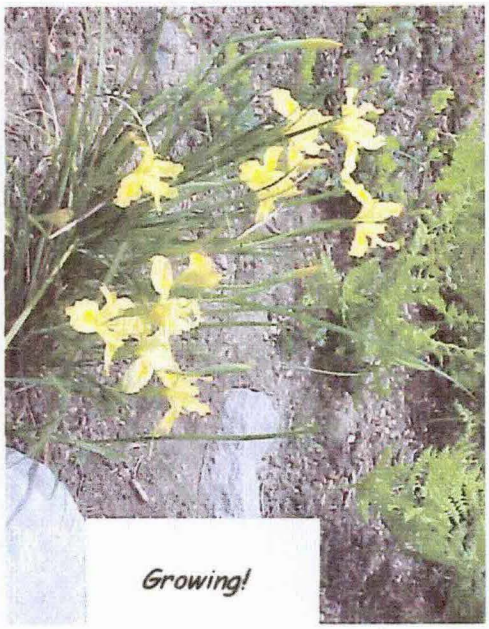




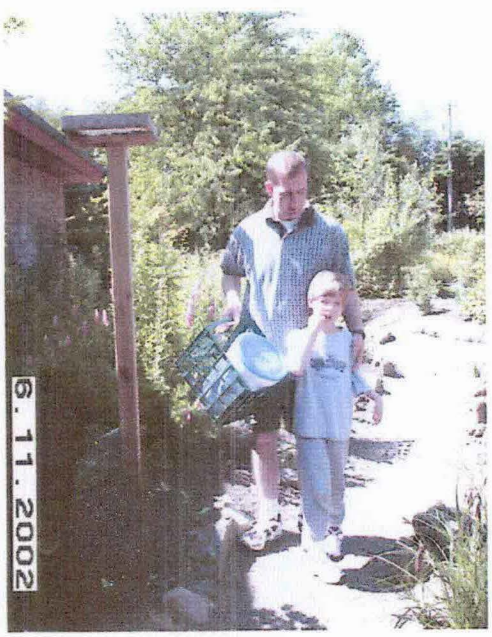


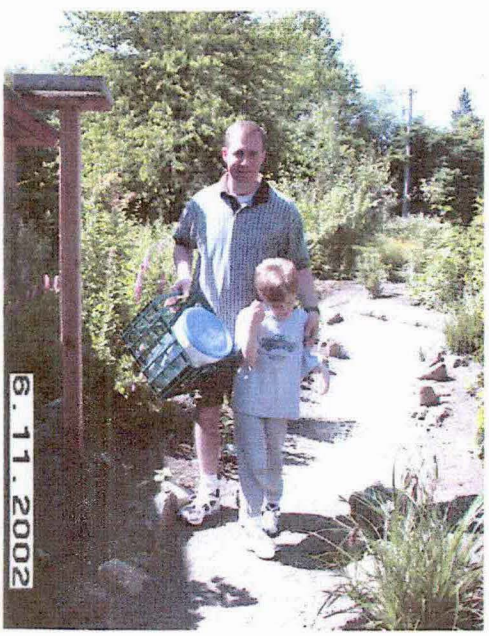
Developing the Swale



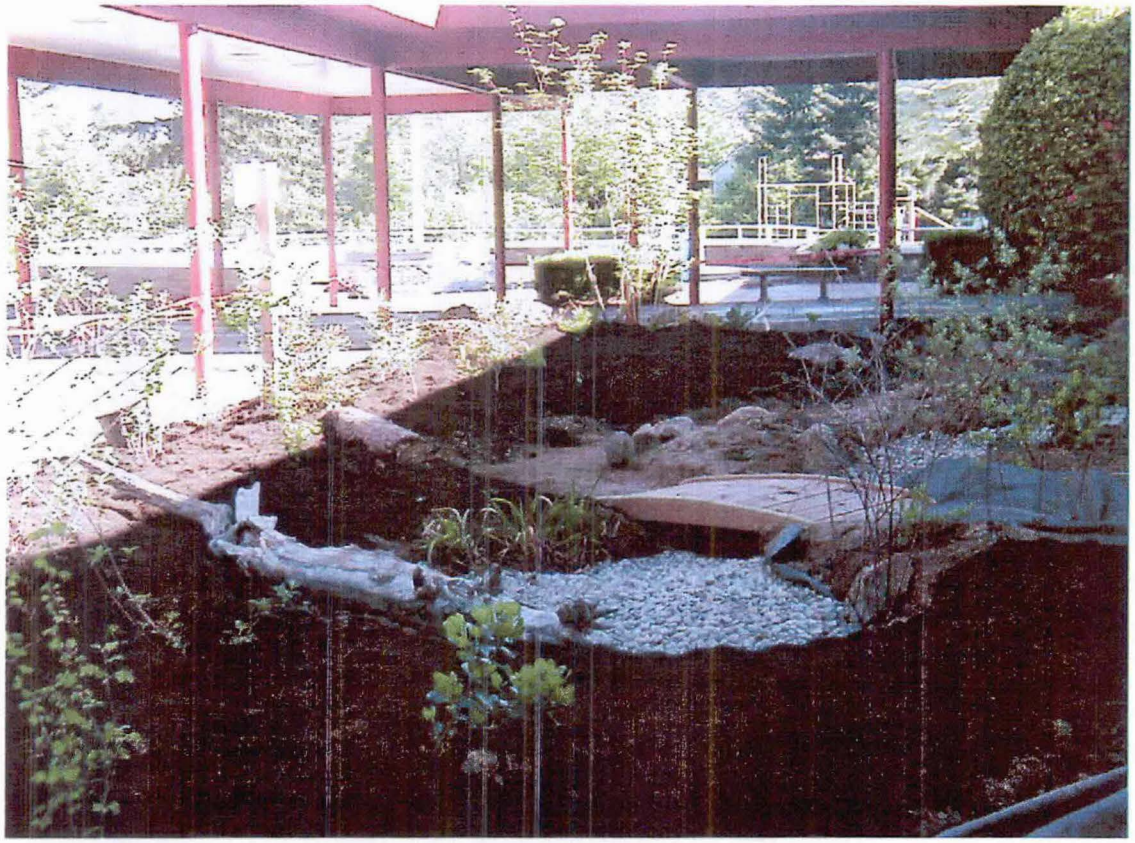


Growing!





Feeding our birds



Finishing touches