WILD AND WONDERFUL

A DISCOVERY HIKE:

ILLUSTRATED MAP & INTERPRETATIVE GUIDE OF THE NATURAL FEATURES, HABITAT, AND HUMAN INFLUENCES ALONG THE LOWER MACLEAY TRAIL, WILDWOOD TRAIL, HOLMAN LANE, AND CITY STREETS LOOP

Prepared by
Friends of Forest Park's
Ivy Removal Project Youth Crews and Volunteers

Seed Money Sponsor:
Metro Greenspaces Enviromental Education Grant Program

1996 Youth Crew Members pause for lunch on site and feature identification walk of Wild and Wonderful loop.

A great illustration of a snag serving as habitat is located.

A group of Urban Ecosystems Adventure Learning youth who helped with site and feature identification by asking questions and giving feedback.

Members of the Urban Ecosystems youth group enjoying a great section along the Wild and Wonderful loop.

They asked why these trees were leaning -- this became a site and feature for the self-guided tour map.

Urban Ecosystems youth taking a chat break at Holman Meadow before beginning the city streets section.

Youth from the Westview High School Key Club and the Youth Volunteer Corps meet to plan the Hispanic Youth service learning project which will feature the Wild and Wonderful map guide.

Youth volunteer crew leaders in training point to the map as they examine the nurse "stump" along the trail. They used the preliminary map and supplemental information prepared as a result of field testing and feedback.

Hispanic youth from north and northeast Portland gather to organize with youth volunteer crew leaders before beginning the Wild and Wonderful nature walk.

They proceeded in staggered groups of 8-10 to avoid off-trail impacts and provide safe passage for other park users.

Kristin helps her group identify the native species of plants.

The Hispanic youth teamed with youth volunteers found their own pace as different sites and features held varying levels of fascination and interest. But the stream always intrigues!

The map provides the chance to locate and to reflect.

Another group from Urban Ecosystems helped with additional field testing of the map and supplemental information the following summer.

Plant identification is a favorite activity as groups enjoy the trail.

A new feature is the gargantuan root mass which now fascinates first time trail walkers.

N96

Wild and Wonderful Geology
Draft--8 March 1997

1. You are walking along Balch Creek through an erosional valley. Balch Creek was named after Danford Balch, who had a 640 acre land claim in this area. Balch shot his son-in-law, and was the first man to be legally hanged in Oregon. You are walking on Lower Macleay Trail, which lies at the eastern edge of Forest Park. The park is part of the Tualatin Mountains, which are composed of Columbia River Flood Basalt, underlain by marine sedimentary deposits, folded into a broad anticline, or folded, stratified rocks which dip away from a crest in two directions. All along this trail and throughout Forest Park Columbia River Flood Basalt can be easily seen. It is a dark, black, volcanic rock which often forms columns. In areas of the park, it is more than 1000 ft. thick.

explain C.R.F.B →

2. You will notice that Balch Creek goes underground at the beginning of the trail.

where does B.C. go and why was it covered? →

3. Along the creek are the remains of old mining bridges.

explain →

4. Both sides of the valley that you are walking through are unstable and there are many mud slides. AT this point, on the left side of the trail, you will notice a large slide overlooked by houses at risk. Mud slides like this one occur naturally during times of high rainfall. Once the soil becomes saturated with water, the added weight can be too much for the slope, and a slide occurs. However, mud slides become more common when humans alter a slope by removing vegetation, cutting into the slope to build a trail or road, or adding the weight of a structure. This area was clear-cut. Houses built on top add weight, increasing slide risk. Also, English Ivy, which is a non-native species, introduced to the area, increases the potential for mud slides. Its shallow root system does not hold the slope together like native species would. Ivy only adds more weight to the slopes.

date of clear-cut →

5. At places along the trail where landslides have gone into the stream, small alluvial fans are visible. Alluvial fans form when a stream carrying lots of sediment, slow down.

6. On both sides of the trail you will notice that the trees are bent. This is a sign of soil creep. As the tree grew, the soil has moved downhill. The tree continues to upright itself, growing toward the light (phototropism) and away from the earth (gravitropism).

7. Here you will find a huge tree which, roots and all, slid down the hillside in a heavy rainfall. This tree is destined to decompose, retaining its nutrients to the soil and providing a homes to many insects and rodents.

8. BRIDGES

what pebbles? Bretz's Flood Deposits platform? →

The trail takes a turn at the bridge. Take a moment to look off of the bridge at the pebbles.

. . .

which side of trail →

9. On the___side of the trail you will notice an intermittent stream. During the wet season the stream runs, but it is dry during late summer and fall.

10. Soil Profile

Litter- recently dead
Duff- recognizable to amorphous
Humus- fine, mixed in soil
Nutrient ions in soil water

11. This little waterfall formed because the C.R.F.B., which the water drops from, is resistant to erosion while the sedimentary rocks next to it are more easily eroded. This is a good place to notice the columnar cooling pattern of the basalt.

12. The platform you see on your right was built to allow wheelchair access to Balch Creek. Here you will see more trees growing uphill.

13. See all of the English Ivy covering the trees? The ivy can actually kill the trees by covering their apical stem so that they can't grow any more, and by blocking out all of the sunlight that the trees need for photosynthesis. Ivy adds weight to dead trees, making them more susceptible to blow-downs.

14. At the waterfall, the C.R.F.B. is eroded by ice wedging. Ice erosion occurs when water seeps into the cracks of the basalt's pentagonal columns. In cold temperatures (at night and during cold winter days) the water freezes and expands, widening the cracks and causing the basalt to break.

15. As you continue on your walk, the trail moves high above the creek. The canyon is more steep at this point. On the opposite side of the trail, more slides are visible.

16. The little bridge which you're walking on crosses over an intermittent stream. This is a dry stream bed during late summer and fall, and a bubbling creek in late winter and spring.

17. More trees along the trail are bending upward, demonstrating that the soil in this area is slowly creeping downhill.

18. As you look for fish in pools, notice the basalt and rounded boulders. The boulders are Bret's flood deposits.

19. After walking around a corner, notice a deep pool. Here there is a sandy beach, and ripples in the sand show wave action.

20.

21. Here, some trees are growing in the river bed.

22. At this stream junction, a stream joins Balch Creek. Where the smaller stream slows down at the bottom of the slope, it drops the load of rocks and plant material that it was carrying, creating an alluvial fan.

23. Notice baby trees growing out of a fallen tree? The fallen tree is called a nursery tree. The dead tree is extremely important to the forest ecosystem. AS well as providing habitat to insects and animals, it provides the nutrients for a new tree to grow!

24. As the trail moves uphill to another bridge, you'll notice more nursery trees. Here, at a waterfall, you can look down on the columnar basalt and see its pentagonal/hexagonal (?) pattern.

25. Stone house

26. AT the stone house, the wild and wonderful loop takes a hairpin turn to the right. You'll walk up above Balch Creek on the Wildwood Trail, which is a National Scenic Trail (the only one in OR). The Wildwood Trail is also part of the 40 mile loop. As you walk, you will notice more trees growing up the steep slope. Here, there are old-growth remnants left behind from before the area was logged.

27. Take a moment to catch your breath and look out across the river valley. If you look down the slope, you will notice that there are few trees to stabilize the slope. This hillside is eroding rapidly due to the lack of vegetative cover.

28. A small intermittent stream passes under the trail.

29. You are arriving at Holman Meadow. Bumpy, hummocky topography, with Portland's Industrial Area below. Frederick Holman - founded Portland Rose Society

Forest Park Ivy Removal Project
1996 Summer Youth Crew
Accomplishments

- Removed English Ivy and other non-native species at 29 different sites in Forest Park: over 300 full lifesavers(tree girdled with full six feet radius ground removal around base of tree), over 70 partial lifesavers, over 80 girdled where Ivy close to blooming or other special circumstances; over 11,000 square feet of additional ground removal including ground areas of "ivy dessert-like" growth; over 20 trees cleared of Clematis and 40 square feet of Clematis surrounding trees; substantial Himalayan Blackberry and Morning Glory removal. Emphasized removal work in areas visible to the public to educate and motivate and worked to develop safe methods for working on very steep slopes.

- Completed site documentation, site maps, and overall summary data and map for crew removal work.

- Mastered morning shape-up, afternoon shake-down, weekly headquarters maintenance.

- Conducted weekly crew meetings to update, solve problems, consider good ideas, plan work sites, and sometimes ask very pointed questions.

- Provided orientation, training, and environmental education activities to 35+ participants in the Urban Ecosystems Program of PSU for youth from middle and high schools in North and Northeast Portland; for 15 participants in Outdoor Recreation Program; for 30+ participants in an Eagle Scout project; for six free-lance work parties and a major community service project day. Led Ivy, Blackberry, and Morning Glory removal with these groups.

- Provided training, orientation, environmental education, and support for the eleven member Wildwood Ranger group during their eight-day 1996 summer program with the Forest Park Ivy Removal Project.

- Helped educate youth groups and other Park visitors about the Ivy problem.

- Met with a group of teachers taking a graduate seminar at

PSU to discuss the perspectives of crew members about "hands on" learning in a natural setting while working in community service.

- Assisted in the development of the "Wild and Wonderful" interpretative trail guide for the Lower Macleay-Wildwood-Holman-city street loop by identifying and locating natural features and human impacts along the loop; developed pictographic map of these features for use with groups and use by the public.

- Learned how to work together as a team and how to train and educate others as a team.

- Gained greater understanding of natural resources, resource management, and human experience through visits to the Metro Recycling Center, Elk Rock Island, T-house, the Jeremiah O'Brien, Metro's GIS mapping center, and with Ivy researcher Amanda Durkee.

- Organized the crew for and participated in the statewide OYCC Overnight Rally in Salem which included a service project to remove Himalayan Blackberries. Demonstrated effectiveness of new Blackberry removal technique invented by crew member Micah Hamer.

- Prepared exhibit about the 1996 Ivy Youth Crew for OYCC Rally - the best one there! - which will continue to be used to educate and involve public.

- Assisted project up-date scrapbook; develop additional information and illustrations for the Ivy Removal Project Handbook; prepared a crew story booklet; collected additional native plant specimens for project's educational work; cataloged slides; organized slide presentations for group presentations/orientation, exhibit presentation, and flood damage; completed first crew video diary; assisted in production of videos for community presentations, outreach to inner-city youth, and native plant identification; assisted in maintaining project materials, educational resources, and records of volunteer involvement.

- Worked to inform the public on the leash requirements for dogs in the Park.

- Wrote letters to persons who assisted with educational activities, field trips; to crew sponsors and project partners.

- Visited Portland Parks and Recreation Director Charles Jordan to share crew activities and to learn his perspectives on the project.

- Sent delegation to the Friends of Forest Park Board of Directors meeting to provide a report on the crew's activities and accomplishments.

- Removed a "ton" of litter from Forest Park while removing Ivy.

- Built new 70 foot trail near Pittock Mansion at the request of Fred Nilsen.

- Provided training to group of volunteers at the Marquam Nature Trails on how to remove Ivy from trees and clear lifesavers around the trees in order to help their chapter of the No Ivy League develop.

- Participated in "around the circle" discussions re: work place and work ethic; alcohol-drug-tobacco use; cultural diversity and gained much from these conversations and shared experiences.

- Maintained a good sense of humor as a group and bonded in very interesting ways such as yelping like a coyote when needing to locate the rest of the crew in the forest.

- Learned more about the PIC Trail Repair Crew's work and learned how to share a work space with a group of people working on a different project.

- Maintained project recycling efforts for our own garbage and for litter removed.

- Completed a safe summer with no youth crew injuries thus enjoyed pizza to celebrate this achievement.

- Learned a great deal about the native flora and fauna of Forest Park from Crew Leader Intern Heather Arndt.

- Collected awesome Ivy and Clematis trophies.

- Acquired the Ivy Clipper -- the project's own mini-van!!

- Hiked rather than drove to nearby work sites.

- Crew leaders biked or used public transit to work; majority of crew members did the same.

- Mastered the secret ninja art of Ultimate Frisbee.

- Performed as featured characters in the first Ivy Removal comic book.

- Consumed 8000 bags of Dave Senders's sunflower seeds.

- Watched in awe as Super Dave was born.

- Attacked a portion of the Stenzel Property's Ivy Dessert with consummate authority and help from the Wildwood Rangers and Jim Sjulin.

- Inducted the Wildwood Rangers into the Forest Park No Ivy League.

- Organized the end of summer celebration as a potluck; invited friends, family, supporters; shared the celebration with the PIC Trail Repair Crew; enjoyed meeting and sharing with City Commissioner Charlie Hales.

- Brought 3, 871 smiles to the Project Coordinator's face.

If you are walking along Balch Creek through an erosional valley. Both sides of the valley are steep and have a high risk of landslides. As you walk into the park, look to the left side of the trail. You will notice a large slide overlooked by houses at risk. Landslides occur when the driving force (gravity) is greater than the resisting force (the force holding the rock material together). Since gravity is constant, a slide only occurs when the resisting force is changed by steepening or adding weight to the slope or removing native vegetation. Landslides like this one may occur naturally when saturated soil is followed by another period of heavy rainfall. Many landslides occur after humans alter a slope by removing vegetation, steepening the slope (cutting into it to build a road, trail, or house), and/or by adding weight to the slope (the weight of a structure at the top of the slope). In this case, the driving force was changed when the houses were built on the top of the slope. This slope became more unstable when English Ivy, a non-native, invasive species, out competed native plants and added weight to the slope. Native plants have varying root depths which work well to hold the slope together. In contrast, ivy has an extremely shallow, matted root system, which adds weight to slopes and causes water to pool at the top layer of soil.

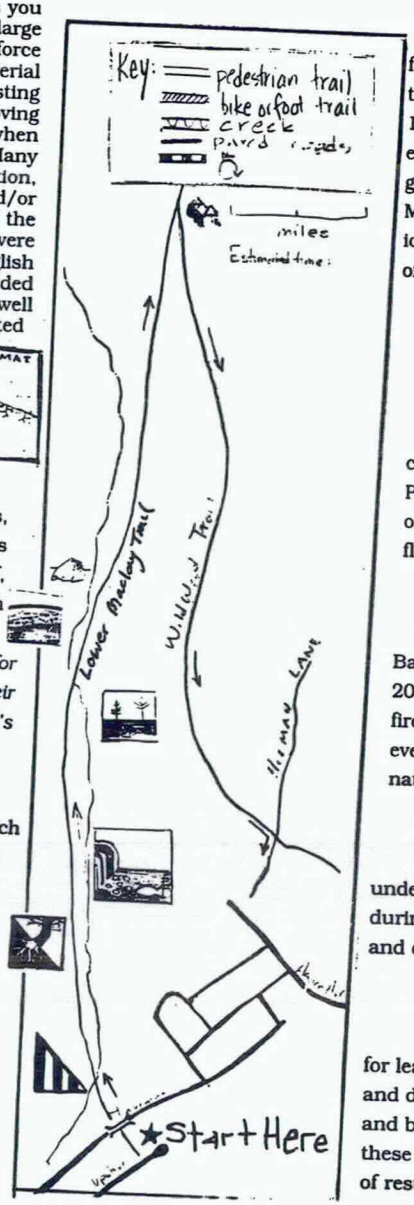
On both sides of the trail you will notice that the trees are bent. This is a sign of **soil creep**, which is the very slow, yet continuous, downhill movement of the uppermost layers of soil. As the soil moves downhill it tilts the tree ever so slightly. The tree continues to upright itself, growing toward the light (phototropism) and away from the earth (gravitropism). Soil creep is the slowest type of landslide, moving at only a few millimeters every year. *Look for other types of erosion working their way through the Wild Loop Trail's topography.*

Balch Creek is home to a species of native cutthroat trout. Notice that plants grow down to the edge of the creek and trees tower above, providing the dappled shade which characterized a healthy stream ecosystem. The creek is a series of riffles (important to adding oxygen to the water) and pools lined with pebbles (important spawning grounds for fish).

Notice the baby trees growing out of a fallen tree on the left side of the trail? The downed tree is called a nurse log. It is an extremely important part of the forest ecosystem. As well as providing habitat to insects and animals, it provides the nutrients for other plants, including a new tree, to grow!

Soil Profile

Litter - recently dead
Duff - recognizable to amorphous
Humus - fine, mixed in soil
Nutrient ions in soil water



Along the trail and in the stream bed, there are extremely large rounded boulders. These are Bretz flood deposits. In the 1920's, J. Harlen Bretz developed a theory that a series of huge floods occurred between 15,500 a 13,000 years ago. The volume of water in each flood is estimated to have been as large as 400 cubic miles. When glaciers melted, huge lakes were formed. Lake Missoula in Montana filled until a chunk of glacial ice formed a dam. The ice dam would melt and a flood would occur until another pie of ice blocked the flow of water to start the cycle again.

As you walk above Balch Creek on Wildwood Trail, look down at the different layers of canopy. Each canopy layer corresponds with a different niche for species. Plants requiring more sunlight dominate the uppermost layer of the canopy, while shade loving ferns are happy on the fores floor.

Forest Park has been logged many times in the past. However, there are remnants of old growth forest alo Balch Creek. Look up at the huge, old Douglas Fir trees over 200 years old. When an area is disturbed, by logging, forest fires, volcanic eruptions, landslides, or other catastrophic events, it goes through different stages. This is known as natural succession.

Several intermittent streams run down the side of the canyon towards Balch Creek. These streams run under the trail through culverts. They are babbling brooks during the winter and early summer, but dry out in late summe and early fall. Watershed concept.

Heading towards Holman Meadow, you may notice that the forest is much drier and sunnier. Watch out for leaves of three, because poison oak thrives in rocky, sunny, and dry areas like this. You will probably see lots of clematis and blackberry along the trail. Many non-native invasives like these need sun in order to survive. For this reason, one method of restoration involves planting trees to sha

NATIVE SPECIES

Small Flat Moss, *Pseudotaxiphyllum elegans.* Found on soil banks, trees bases, and rotten logs

Maiden Hair Fern, *Adiantum pedatum.* Delicate foliage. Medicinal properties

Sword Fern, *Polystichum munitum.* Hardy, one of the few native plants that can live among ivy

Western Trillium, *Trillium ovatum.* Beautiful white lily

Thimbleberry, *Rubus parviflorus.* Very soft, occasionally extremely large leaves. Sometimes called "toilet paper plant."

Vine Maple, *Acer circinatum,* Found under openings in the canopy where light reaches the forest floor, will turn fire engine red in the fall

Oregon Grape, *Mahonia nervosa.*, Common to second growth closed canopy Douglas fir forests. Inner bark can be used as bright yellow dye

Western RedCedar, *Thuja plicata.* Drooping branches, striped bark

Water Skimmer

Banana Slug,

Salamander

Other Animals

Non-Native Invasive Species

English Ivy, *Hedera helix*

Clematis

Starling

Forest Park Facts

Sponsors

Forest Park's

Wild & Wonderful Loop

An Interpretive Trail of the Balch Creek Watershed

Lower Macleay Trail, which lies along Balch Creek at the eastern edge of Forest Park, is one of the most used areas of the park because it is so close to the highly populated, urban area of Northwest Portland. It is also unique due to the natural beauty of the healthy, diverse, Balch Creek ecosystem. Balch Creek is one of two year-round, or perennial, streams in Forest Park. Many species of plants and animals depend on Balch Creek for their livelihood. The creek was named after Danford Balch, who had a 640 acre land claim in this area. Interestingly enough, Balch was convicted of shooting his son-in-law, and was the first man to be legally hanged in Portland.

AUDUBON SOCIETY OF PORTLAND

Inspiring people to love and protect nature.

Sandra Diedrich
117 NW Trinity Place #10
Portland, OR 97209

October 13, 1997

Dear Sandra,

I am pleased to extend support from Portland Audubon's education department for your "Wild and Wonderful" team and their design of the interpretive trail. This project is a logical extension of your Forest Park Ivy Removal Project. Further, judging by the myriad of questions we field at our nature store and on our free Saturday hikes, people have a strong thirst for information about the Forest Park and Balch Creek.

For our part, we can commit staff time for natural history content edit on final design for information trail, any educational materials needed or graphics (we now have a scanner). I estimate this support as an approximately $500 match for your grant writing purposes.

If you need further support, let me know.

Thanks for improving the neighborhood!

Sincerely,

Jennifer Devlin

Jennifer Devlin
Education Director

5151 NW Cornell Road, Portland, Oregon 97210 503/292-6855 FAX 503/292-1021

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FINAL REPORT

Greenspaces Environmental Education Projects

Friends of Forest Park: WILD AND WONDERFUL Discovery Guide

1. Summary of Grant Activities

The 1996 Summer Youth Crew of the Forest Park Ivy Removal Project developed an illustrated nature walk guide for the Lower Macleay-Wildwood-city streets loop.

In preparation for this activity, the Project Coordinator conferred with Audubon Naturalists, Parks and Recreation Natural Resource personnel, and Bureau of Environmental Services stream watch personnel and reviewed curriculum guides such as from the Oregon Department of Fish and Wildlife, Naturescaping, and other life and earth science guides.

Once on board, the crew participated in an orientation to the project purpose: to develop a self-guided discovery map of the Lower Macleay-Wildwood Trail, Holman Lance, city streets loop. Lead responsibility was assigned to a crew leader intern who was studying forestry and who had skill in illustrating.

The crew participated in a nature walk as an environmental education activity to identify sites and features along the loop with guidance from the crew leader, the intern, the project coordinator, and each other. They then led nature walks along the loop with two groups from the Urban Ecosystems Adventure Learning program, the Summerbridge youth program, and the Wildwood Rangers (a partnership project between the Forest Park Ivy Removal Project and the Youth Volunteer Corps) program to continue site and feature identification and to obtain feedback and reflection.

The results of these walks were compiled on an enlargement of that section of the Forest Park map with illustrations and annotations.

Youth Crew members and community volunteers then field checked the preliminary map. They concluded that the preliminary had too much focus on life sciences and insufficient attention to earth sciences. A volunteer offered to conduct field investigations and research then provide commentary to be incorporated into a revised map guide. The Coordinator worked closely with the volunteers and with winter youth crew members to continue this amplification of the map guide.

The preliminary map guide was field tested with several groups including Portsmouth Middle School students, TAPS (Teen Parent Program), an Environmental Middle School class, and a group of adults involved in an employee service-learning activity.

The earth science supplemental was ready for use with the Hispanic Youth Project whereby Hispanic youth from north and northeast Portland were recruited by the Youth Volunteer Corps to participate in a service learning project with the Forest Park Ivy Removal Project. In order to have a high quality environmental learning experience for 100-150 elementary, middle school, and high school youth, most of whom had never been in a forest environment, high school youth who were Ivy Project Volunteers were recruited to serve as volunteer crew leaders. Westview Key Club took a lead role in planning the project and in recruiting volunteer crew leaders.

A training session using both the preliminary map guide and the supplemental information was held prior to the environmental education part of the service learning project. This training session and the Hispanic youth environmental education day provided an excellent field testing and feedback opportunity.

The preliminary map guide with the supplemental earth science information was also field tested for focus, feedback, and reflection with a group of 45 LaSalle High School students as a part of a service learning activity.

Additional field testing for focus, interest, feedback, and reflection was conducted by the 1997 Summer Youth Crew with two Urban Ecosystems groups and with a Teen Parent group from Helensview. One of the 1997 Crew Leaders was the volunteer who had developed the earth science supplemental information; the other had been a crew member in 1996 when the preliminary map guide had been developed.

A proposed revision was developed as a prototype.

A source of funding as been secured to complete the discovery guide. All material will be presented to a group of natural resource and environmental educators associated with Forest Park. They will make the "final cut" and format revisions. The proposed discovery guide will then be developed and presented to them for review and revisions. Publication is expected to occur in March.

The Forest Park Management Plan calls for the development of an interpretative trail in the Southern Management Unit with Lower Macleay Trail designated as the preferred segment. The interpretative trail project is being integrated with the Wild and Wonderful Discovery Guide project. Focus areas will be identified for the guide which will be reflected in appropriate interpretative signage along the loop. A corporate funding source has made a commitment to supporting the signage.

2. Evaluation and Comments

The most outstanding elements of this project were:

• development of the discovery guide by youth working and learning in Forest Park: the 1996 and the 1997 Summer Youth Crews and the 1996-97 Winter Youth Crews

• the opportunity to field test for interest, clarity, focus, feedback, and reflection with diverse age, background, and interest groups who were participating in the Forest Park Ivy Removal Project.

Only a portion of the groups who participated in the field testing are identified in the report but these are representative. The discovery guide was tested with over 25 different groups.

The two greatest problems were: balancing the life science and earth science site and feature identification; and photography. While the discovery guide also identifies human influence, there is a tendency among individuals attracted to outdoor work and education to give heavy emphasis to plants and animals and short attention to the physical characteristics except for the dramatic instances such as landslides. It was an incredible struggle to bring physical characteristics and earth science issues into the discovery guide development. Fortuitously, a volunteer who principal interest was geology became the driving force to amplify preliminary work with a broader approach.

This plant and animal thought dominance may reflect the prevailing approach to how forestry as a subject is viewed and taught: a place for plants and animals.

The intent was to have the discovery guide backed up with photos and slides of the sites ad features. Using a point and shoot 35 mm camera produced very uneven and unsatisfactory results for this purpose. A 35mm SLR camera with a good photographer would have produced more than "nice" scenes in the low light and visually competitive trailscape. However, only personal cameras were available and given the replacement cost of fine camera equipment, personal cameras used were only of the point and shoot variety. At that, the Coordinator's personal point and shoot 35mm camera was stolen from the project site on a day when numerous personnel and volunteers were present.

3. Photo Documentation

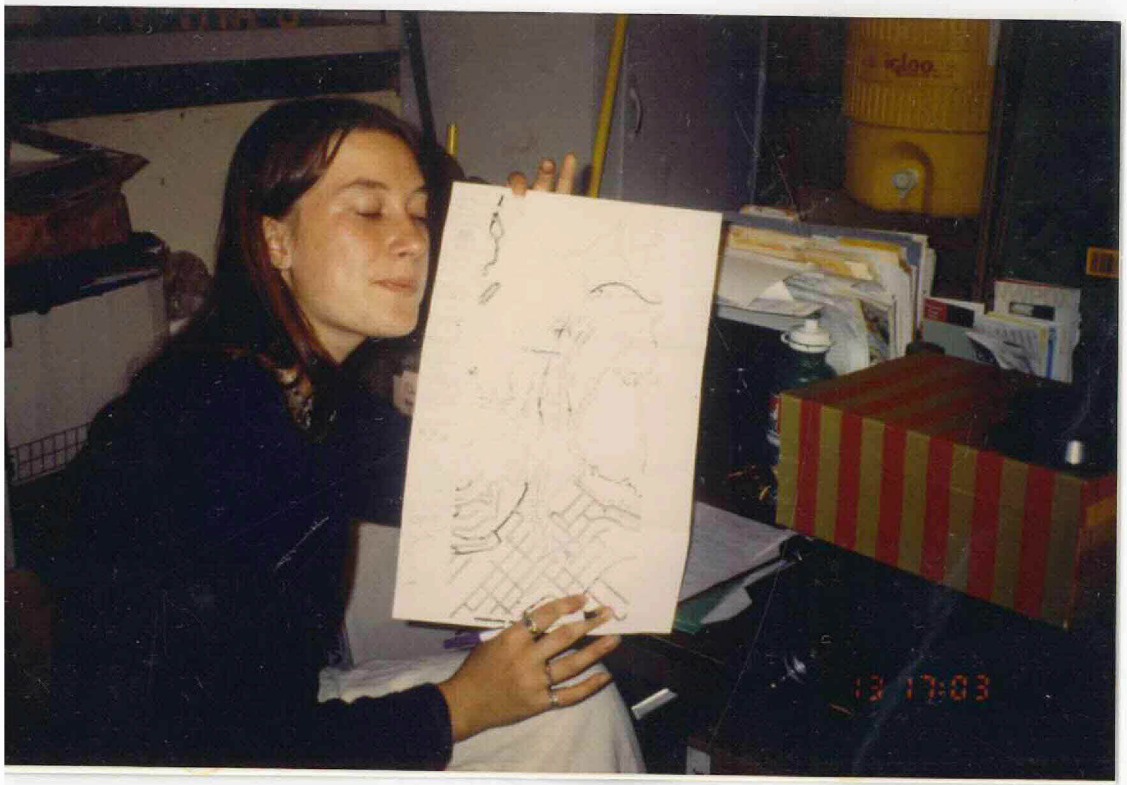
A selection of photos illustrating how the project was accomplished is included with the report.

4. Before and After Photos and 5. Maintenance Plan

These report requirements are not applicable to this project.

6. Products

The preliminary map guide, the prototype discovery guide and other materials of interest are attached to this report.



Preliminary map in development.

Summerbridge youth walking the Wild and Wonderful loop while providing feedback for the project.

One of several landslides along the loop. Time will bring changes to this slide area but the slide's presence will be visible to the careful observer as these changes occur.

A winter youth crew member helps lead Portsmouth Middle School youth on a field test of the Wild and Wonderful map guide.

This sculptured snag was a favorite of the adult service-learning employee group which helped field test the map guide.

A group member checks with a walk leader to reference the site and features along the Wild and Wonderful loop.