CITY OF HILLSBORO

Butterfly Enhancement, Noble Woods Park 2000

Metro Greenspace Restoration Project # 921716
Project Funding Year: 2000
Hillsboro Parks and Recreation
Hillsboro, OR

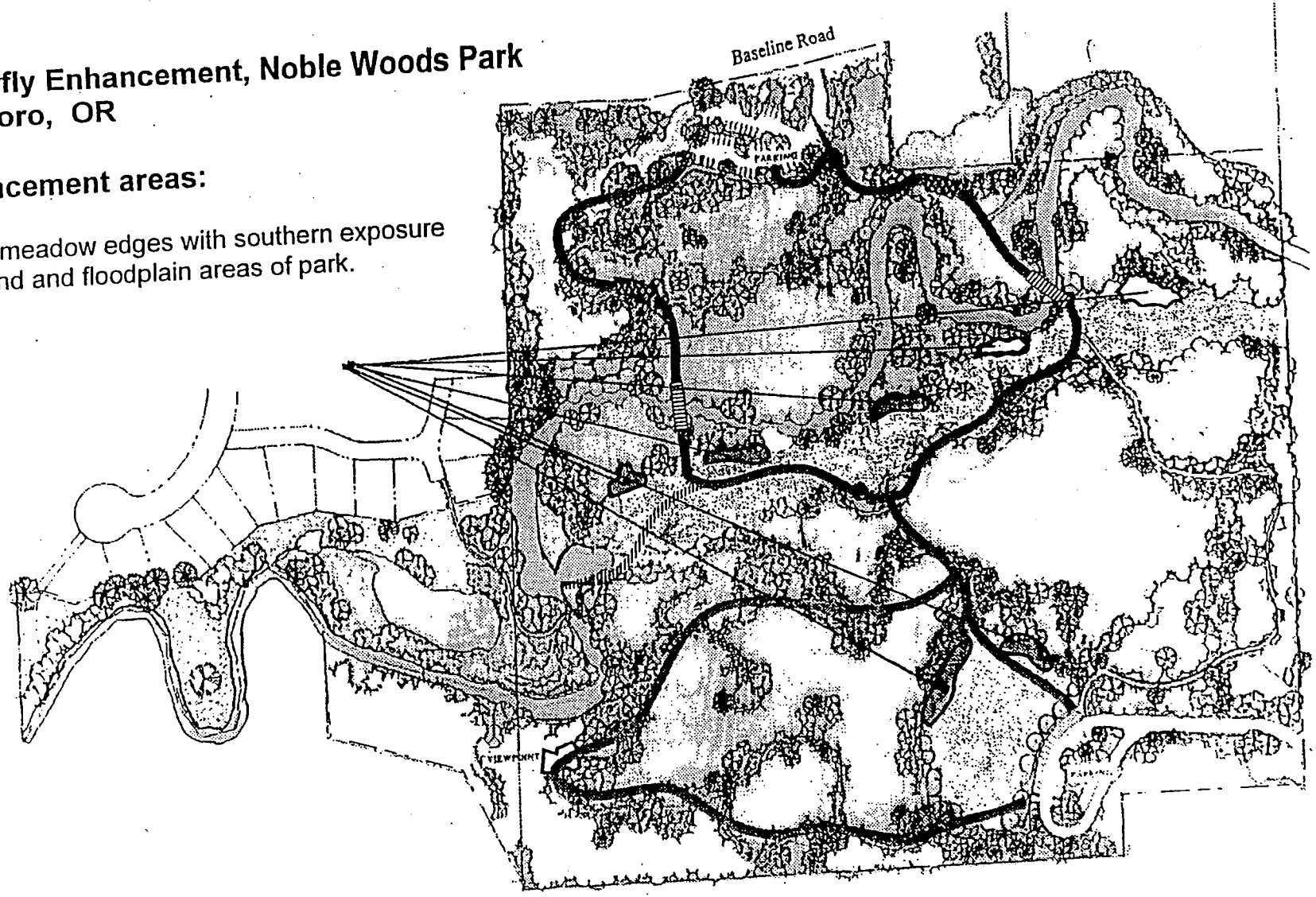
Parks & Recreation Department 4400 N.W. 229th Avenue, Hillsboro, Oregon 97124 · 503/681-6120 · FAX 503/681-6124


N
W
E
S
26
West Union Road
Helvetia Road
Shute Road Interchange
Shute Road
Pass Road
Jackson School Road
Evergreen Road
Evergreen Parkway
Cornelius
SUNSET HIGHWAY
185th Avenue
Glencoe Road
PORTLAND-HILLSBORO AIRPORT
Brookwood Parkway
25th Ave.
Cornell Road
TOWN CENTER MALL
WASH. COUNTY FAIRGROUNDS
25th Ext.
Brookwood
Elam Young Parkway
231st Ave.
Walker Road
Main Extension
1st Ave.
5th Avenue
Main Street
Washington St.
28th Ave.
Baseline Road
Oak
WALNUT
10th Ave.
53rd
Proposed Light Rail
Noble Woods Park
Brookwood Ave.
TUALATIN VALLEY HIGHWAY
247th Ave.
219th
Hillsboro-Silverton Highway
8
219
HILLSBORO AREA
Noble Woods Park
231st & Baseline
Hillsboro OR

Butterfly Enhancement, Noble Woods Park
Hillsboro, OR

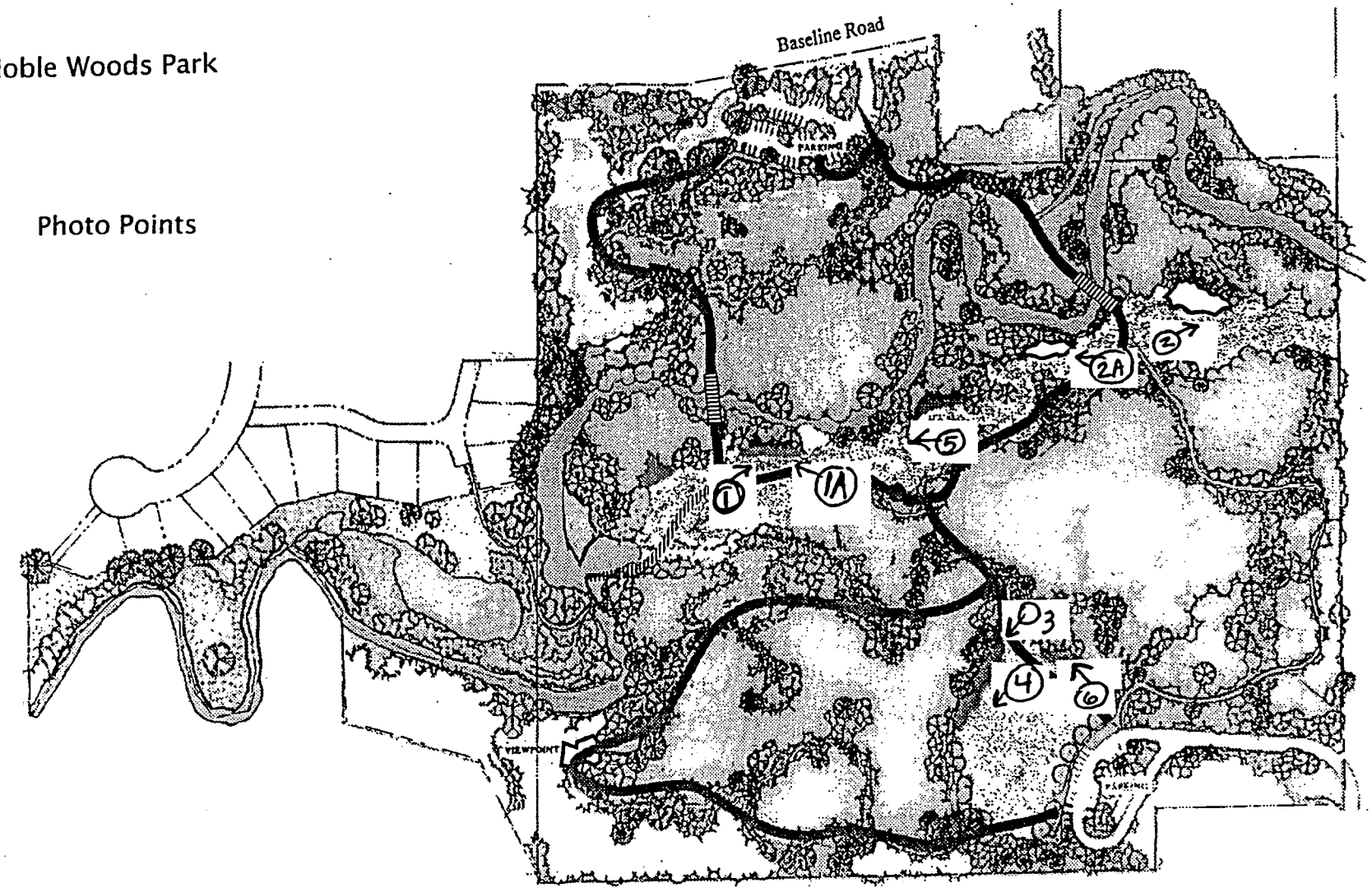
enhancement areas:

Forest/meadow edges with southern exposure in upland and floodplain areas of park.



Noble Woods Park

Photo Points



Butterfly Enhancement, Noble Woods Park
2000

Metro Greenspace Restoration Project # 921716
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Project Description as it really happened

The purpose of the project was to enhance natural areas within Noble Woods Park, a 37 acre nature park in Hillsboro, with a variety of native plants specifically selected to provide habitat for butterflies and other pollinating insects. The project was designed to enhance the "edge areas" along the riparian corridor and woodland with plantings. The edge areas selected include segments along the existing riparian corridor in the floodplain along Rock Creek as well as edges in an upland area of the park between the forest edge and a mowed turf lawn. The project also included manual removal of invasive plants (Himalayan blackberry, some English ivy) prior to planting installation. A variety of youth and adult volunteer groups were involved with the project, which was broken down into many smaller projects so that many groups could participate over the course of implementation. The major group helping with the project was the Miller Education Center, Hillsboro's Alternative High School; this school has have helped throughout the course of the project, and helps with on-going maintenance through year round service days at the park.

While the project was originally intended for planting installation in the fall of 2000, the project was delayed because of other events in the City of Hillsboro, which disrupted planning and work schedules. (The City had just completed construction of a new sports stadium, and was asked to host Portland State University and other private school games when Portland's Civic Stadium was undergoing renovation. The level of effort required to host these huge events pre-empted other projects for the fall of 2000, so this was postponed.)

Riparian corridor: The south side of Rock Creek was targeted for enhancement plantings, because it offered open area, the solar exposure preferred by insects, and proximity to water (Rock Creek and an enhanced wetland area.) The extent of existing riparian corridor vegetation varied, from areas with minimal buffer (ie < 20 foot buffer) to areas with extensive buffer of native shrubs and trees (>50 feet of intact buffer vegetation). Over 20 years ago, the floodplain had been disturbed when a trunk sewer line was installed, clearing a wide swath through the existing ash woodland forest. When the property was purchased for a park in 1992, the disturbed area over the sewer line was largely open, with reed canary grass and other meadow grasses, and few small trees. As a now developed park, the grassy open area is mowed several times a year, primarily to prevent expansion of blackberries, and also to reduce seasonal fire danger. The enhancement plantings were planted to broaden the width of the riparian corridor, and to create a transition between woodland and the occasionally mowed grass.

Plants selected for the riparian enhancement include plants that were suitable for floodplain conditions, and also on published lists of plants preferred by butterflies at

various stages (larval, pupa, adult). While many of the selected plants flower, others provide habitat as a food source through foliage. (Information on preferred plants was provided by National Wildlife Federation, Xerces Society, and research by a local high school student.)

Upland forest edge: There is a 1+ acre open turf area on the south side of the park, near the parking lot and trailhead that is surrounded by native woodland. This is the only area of the park with a maintained turf area, and in the future it will be developed with a small picnic shelter. Enhancement plantings were planted on the west, north and east edges of the lawn/forest edge, where they would get full fun at different times throughout the day. An edge area of roughly 8-15 feet in width was cleared around the perimeter of the lawn, and top dressed with wood chips as a mulch cover to prevent weed growth while waiting for plantings. Some areas had blackberries that needed to be removed prior to planting. There was existing irrigation in the turf grass areas, and this was modified to provide some irrigation of the edge plantings.

Plant materials selected for this area of the park were chosen from a wider variety of native plants because the conditions were upland in nature, with conditions ranging from areas with more sun to fairly shady, dryer areas to moist areas. As this is a more developed, entry area to the park, effort was made to select plants with a wide range of bloom time, from early spring to late summer. The blooms would not only attract butterflies (which are interesting and attractive to park visitors) but provide color in and of themselves so make the park more appealing to human visitors. Also, as the adjoining turf is mowed, we could use lower growing plants, including perennials such as bleeding heart, lupine and camassia because they would not be overgrown with the tall meadow grasses.

Native plants are not typically available in large sizes; for most shrubs or trees, only 1 gallon plants were available. For the perennials, typically only 4" pots were available. Plants were spaced out according to their eventual size, so the first season there was not a dramatic visual impact after the plantings.

We were cautious in using some of the perennials, as we had not used those in park settings before and did not know what to expect in terms of survival rates under various conditions. These plants were small when purchased, typically 4" size. We experimented with small quantities of these plants.

Other aspects of habitat enhancement will be implemented in the summer of 2003. This includes adding boulders and sand / gravel areas to provide "mineral licks" and basking areas for butterflies. These were postponed during summer 2002 because the heavy equipment needed to bring boulders on-site was not available during the student work crew period. Also, as the habitat plantings mature and become taller than surrounding grasses, then the nearby grass areas will be mowed less often or not at all (they are mowed initially to reduce competition for the new plants as they are getting established). This will allow for tall grasses and meadow habitat to complement the other plants serving pollinators.

Goals and benefits of the projects:

Primary goals:

- Enhance habitat for pollinating insects, especially butterflies
- Involve community in the enhancement project
- Expand breadth of vegetated riparian corridor

Secondary goals:

- Provide environmental educational opportunities through service learning
- Use native plants to discourage unwelcome human access (ie block informal trails to creek and woodland)

Project Staff / workers / volunteers

The primary project staff included Mary Ordal, Project Manager for Hillsboro Parks and Recreation, members of the Hillsboro Parks Maintenance Department, and the Miller Education Center (the Alternative High School for Hillsboro School District 1J). Other volunteer groups included several groups of girl scouts and boy scouts, the Washington County Juvenile Crew, adults with Centro Cultural and Lauri Mullen and Courtney Drake with the Tualatin River Keepers. A student from Century High School did a senior project researching butterfly species native to this part of the Williamette Valley and their habitat requirements. Matthew Shepard of Xerces Society and Beth Stout of the National Wildlife Federation also provided information on native habitat plants.

The Miller Education Center runs a summer student work and learn program, and has partnered with the City of Hillsboro Parks and Recreation Department for many years. The program provides service learning opportunities for disadvantaged youth, and links the service learning to academic work. This makes for a meaningful project for the students, and a productive work crew for the Department, enabling the completion of numerous habitat enhancement projects. The work crew fee (grant funded) paid to the MEC program crew is leveraged by the school to secure other funds for their program, to the benefit of both the City and school. The student work crew of up to 25 students and three teachers worked on the project. (The actual on site crew size varied daily, as some students spent time on related classroom activities. Two of the three teachers were always on site with the crew students, and serve as work crew supervisors.)

The Miller Education Center teachers included Jerry Johnson, Pete Moshinsky, Greg Jensen, Pete Daggett. Other MEC staff support was provided by Beth Johnson and Larry Veltrie. The list of student work crew participants is attached.

How project relates to the Greenspace Program:

Noble Woods Park is on Rock Creek, which is one of the target greenspace areas adopted by Metro in their Greenspace planning efforts. Local Share Funds from the Greenspace program were used in the original development of the park. This park is near and dear to the hearts of Hillsboro residents, who created the park as a result of a massive fundraising effort. The park has been used by many schools as part of their outdoor education and

science curriculum, and the community looks to it as their primary nature park. The City of Hillsboro's Vision 2020 Plan specifically lists habitat enhancement at Noble Woods Park as one of the community goals, demonstrating that citizens are interested in continuing to work at the site.

The implementation of this project was broken down into multiple smaller projects so that a greater variety of groups and individuals could participate in the project, and learn about habitat requirements for pollinating insects. There was a significant environmental education outcome to this project, although the primary goal was habitat enhancement.

What worked / What didn't / Helpful Hints

1. Volunteers loved the idea of working to improve habitat for butterflies. This project had lots of community appeal, to both youth and adult groups. One group new to volunteering with the parks was the Hispanic community. Through a partnership with Centro Cultural and Tualatin River Keepers (relating service learning at the park to habitat restoration job training), we involved four groups of Latino adult learners. It was very successful; we had eager learners who appreciated learning about the role of native plants and habitat. Many of these immigrants were from crowded communities in Mexico where natural areas are non-existent or deeply degraded. They value green, vegetated natural areas and ecosystems, and appreciated knowing how their efforts helped. (see article attached.) We have had feedback that these adult students are regular visitors to the park to see how "their" plants are doing. Getting volunteers involved with this project helped them to understand larger resource management issues at the park, as well as helped us to reach out to a segment of a community with which we previously had had little contact.

2. Bigger plants would have had more visual impact in an established park setting. Native plants, particularly perennials / wildflowers, often come as small units, ie 4" pots or 1 gal size at the most. We should have used a lot more of the 4" pots to get a greater mass effect. However, we were cautious because we had little experience with some of these types of plants, were unfamiliar with their survival rate in a park setting and planted conservatively.

3. Adaptive Management. Things don't always go exactly as you plan, be flexible. Our project was implemented on a different timetable than originally envisioned. However, if we'd been on the original timetable, we never would have had the opportunities with Centro Cultural. We used different volunteer groups than we originally planned, primarily because of the change in schedule. Our original partner organizations (Rotary and Tualatin Valley Garden Club) gradually worked with the Parks department on other major projects (a community cultural arts center and a rhododendron display garden) that have been beneficial to the community. With the youth organizations and Centro Cultural, we had more than enough volunteers for this effort.

4. Tag plants. We used bits of colored flagging to tag every plant planted whether in the upland area or floodplain meadow. This helps the public and our own maintenance folks

to know this plant is intentional. With the high number of seasonal workers in the parks, this is important to avoid mowing errors. We also helped to identify plants as intentional by mulching them, particularly in the floodplain. The mulch helped to retain moisture in this non-irrigated area, but also made new plants distinct from surrounding grasses, and let park visitors know this was an intentional planting. We even tagged very small plants that were in a dormant stage, ie blue eyed grass, to make it visible. These plants die back from year to year, so it will require regular staff training to avoid having them mistaken for weeds in the future.

This project was implemented in a park site open to public use, so consideration had to be given to how the public might interact deliberately or accidentally with work in progress. For the most part, the public is very respectful of the park. Eventually, we hope to add some interpretive signage, and may expand the butterfly garden concept to be educational display (giving information on how each plant and how it relates to pollinators) and not merely functional habitat (providing habitat for butterflies).

5. Color coded planting plan. We used different colored flags to mark the locations for different species of plants in preparation for planting times. To help match plant with flag, we attached colored bits of paper (with the plant name on it) to the plant or pot. This was particularly helpful during the winter when leaves have dropped.

6. Hand dug holes. We used hand dug holes for all plantings because part of the training for the groups included planting technique. However, the heavy clay soils of the floodplain area were very clumpy, and in wet winter weather it was challenging to properly backfill the holes around the plant. Augered hole work very well, and expedite planting. (This technique has been used on other sites.)

7. Breaking the project down into numerous smaller projects made more opportunities for community involvement, but required more staff time in coordination and planning. It would have been more cost effective from a staff standpoint to implement the entire project as one or two mega planting days, but this would have precluded the wide range of groups participating. Also, the limited parking at the park meant that smaller work groups were more easily accommodated.

Monitoring and Maintenance Plan.

Planting sites will be monitored through site visits seasonally, spring, summer and fall to assess plant survival and growth. Miller Education Center Students will provide help with hand watering during summer months, control of invasive plants, and replenishing mulch as needed. Students will also help with on-site observations of presence of butterflies and other insects.

Park maintenance employees will mow to prevent encroachment of invasive species in the floodplain enhancement areas for a few years, until the new plants are fully established. As these plants mature, mowing will be reduced or curtailed so that tall grasses and meadow plants can flourish and also provide habitat. Other volunteer groups may assist with a variety of maintenance tasks such as watering, mulching etc.

Expenses / Summary:

Plant Materials			
12/5/2001	Northwest Native Plants, Inc.	$ 641.25	
12/28/2001	Northwest Native Plants, Inc	$ 371.75	
03/13/2002	Northwest Native Plants, Inc	$ 419.00	
04/10/2002	Northwest Native Plants, Inc	$ 404.75	
07/17/2002	Northwest Native Plants, Inc	$ 157.50	
	Subtotal:		$1,994.25
Film:			
04/23/03	Caren's Photo – film & slide developing	$ 10.00	
Work Crew			
10/24/02	Miller Education Center		$3,000.00
Total expenses		**$ 5,004.25**	

Project Match Summary:

Volunteer time:	101 people, 429 hours @ $4.75	$ 2,037.75
Donations:	plants and materials	$ 525.00
Project Manager Time:	100 + hours @ $31.24	$ 3,124.00*
*(* considerably more than 100 hours were spent coordinating this project)*		
MEC match time (summer crew & supervisors)		$ 1,875.00
Total match:		**$ 7,561.75**
Total project value:		**$12,566.00**
Greenspace grant amount:		**$ 5,000.00**

Work Tasks and Timelines as it actually happened

Spring 2000	Conduct research on habitat plants for butterflies Student research paper Consult with Xerces Society Other reading & contacts
Fall /Winter 2000	Site prep begins – removal of invasive plants, mowing tall grass to create areas for future planting
12/01 – 10/02	Series of planting days, various groups participating each planting day includes additional site prep as needed, planting plants as per plan, tagging plants for later identification. Planting days focused on a sub-area within the park.
5/01 – 7/02	Follow-up and maintenance including mulching, watering, tagging plants, quality control (creating watering rims around plants), weeding, removing encroaching invasive plants etc.

NOBLE WOODS PARK BUTTERFLY ENHANCEMENT PLANTINGS

	QUANTITY	DATE	TOTAL QTY
TREES			
Acer circinatum (Vine Maple)	10	12-05-01	15
	5	12-28-01	
Acer macrophyllum (Big Leaf Maple)	10	12-05-01	17
	2	12-28-01	
	5	3-13-02	
Alnus Rubra (Red Alder)	10	12-05-01	30
	10	3-13-02	
	10	4-10-02	
Amelanchier alnifolia (Serviceberry)	5	12-28-01	5
Crataigus douglasii (Black Hawthorne)	1	12-28-01	6
	5	3-13-02	
Fraxinus latifolia (Oregon Ash)	5	12-05-01	25
	15	3-13-02	
	5	4-10-02	
Malus fusca (Pacific Crab Apple)	5	4-10-02	5
Oemleria cerasiformis (Indian-Plum)	10	12-05-01	20
	10	3-13-02	
Prunus emarginata (Bitter cherry)	10	12-05-01	20
	10	3-13-02	
Rhamnus purshiana (Cascara)	5	4-10-02	5
Thuja plicata (Western Red Cedar)	5	4-10-02	5
			153 trees
SHRUBS			
Cornus stolonifera (Redtwig Dogwood)	30	12-05-01	50
	20	3-13-02	
Holodiscus discolor (Oceanspray)	15	12-05-01	22
	7	12-28-01	
Lonicera involucrate (Twinberry)	5	4-10-02	5
Mahonia aquafolium (Oregon Grape)	7	12-28-01	16
	9	4-10-02	
Philadelphia lewisii (Mock Orange)	5	12-05-01	13
	3	12-28-01	
	5	7-17-02	
Ribes sanguineum (Red Flowering Currant)	3	12-28-01	8
	5	7-17-02	
Rosa gymnocarpa (Little Wild Rose)	5	4-10-02	5
Rosa nutkana (Nootka Rose)	20	12-05-01	42
	7	12-28-01	
	15	3-13-02	
Rosa pisocarpa (Clustered Rose)	5	12-28-01	35
	15	3-13-02	

	15	4-10-2	
Rosa Woodsii (Woods Rose)	5	4-10-02	5
Rubus parviflorus (Thimbleberry)	10	12-05-01	15
	5	12-28-01	
Sambucus caerulea (Blue Elderberry)	5	4-10-02	5
Sambucus racemosa (Red Elderberry)	20	12-05-01	35
	5	12-28-01	
	10	3-13-02	
Spiraea douglasii(Douglas spiraea)	10	12-05-01	30
	10	3-13-02	
	10	4-10-02	
Symphoricarpos albus (Snowberry)	15	12-05-01	15
Vaccinium parviforium (Red Huckleberry)	3	12-28-01	3
			284 shrubs
PERENNIALS			
Achillea millefolium (Western yarrow)	15	7-17-02	15
Aquilegia Formosa (Red Columbine)	5	4-10-02	14
	9	7-17-02	
Camassia quamash (Common Camas)	30	7-17-02	110
	80	12/28/01	
Dicentra formosa (Bleeding Heart)	7	12-28-01	7
Iris tenax (Oregon Flag)	30	12-28-01	39
	9	4-10-02	
Lonicera ciliosa (Western trumpet honeysuckle)	3	12-28-01	3
Lupinus polyphylus (Large-leaved Lupine)	11	12-28-01	27
	5	4-10-02	
	11	7-17-02	
Mimulus guttatus (Monkey Flower)	7	12-28-01	7
Sisyrinchium Agustifolium (Blue-eyed Grass)	10	12-28-01	19
	9	4-10-02	
Sysrinchium Californicum (Golden-eyed Grass)	14	12-28-01	23
	9	4-10-02	
Wildflower Mix	126	3-13-02	180
	54	4-10-02	
			444 perennials

Summary of items planted:

Trees:	153
Shrubs:	284
Perennials:	444
Total items planted:	881 items

Volunteer Hours Summary

Date	Person / group	Project / task	Total hours	Value*
May 2000	Wendy Burr, Century High School Student	Compiled research on varieties of butterflies native to area and their habitat needs. 1 person x 40 hours	40 hours	$190.00
December 2000	Washington County Juvenile Crew	Site preparation: remove invasives in upper meadow, 9 people x 5 hours	45 hours	$213.75
12/05/01	Centro Cultural & Tualatin Riverkeepers	invasive removal and plantings in floodplain 14 people x 5 hours	70 hours	$332.50
12/29/01	BSA Troop 585	plantings in upper meadow area 12 people x 5 hours	60 hours	$285.00
3/13/02	Centro Cultural & TRK	invasive removal & plantings in floodplain 14 people x 5 hours = 70 hours	70 hours	$332.50
4/10/02	Centro Cultural & TRK	invasive removal & plantings in floodplain 14 people x 5 hours	70 hours	$332.50
05/07/02	Julie Nix & Girl scouts	plant small trees and wildflowers 8 people x 1.5 hours	12 hours	$ 57.00
05/0802	Miller Ed Ctr students	remove invasives, spread mulch on meadow 28 people x 2 hours = 50 hours	56 hours	$266.00
10/21/02	Nancy Macy & Girl Scouts	plant donated plants, upper meadow 6 people x 1 hour	6 hours	$ 28.50
	TOTAL	**101 people, 429 hours**	**$2,037.75 value***	

**value based on $4.75 / hour wage. If based on $5.50 wage, then value would be $2,359.50*

Miller Education Center – Summer work crew:

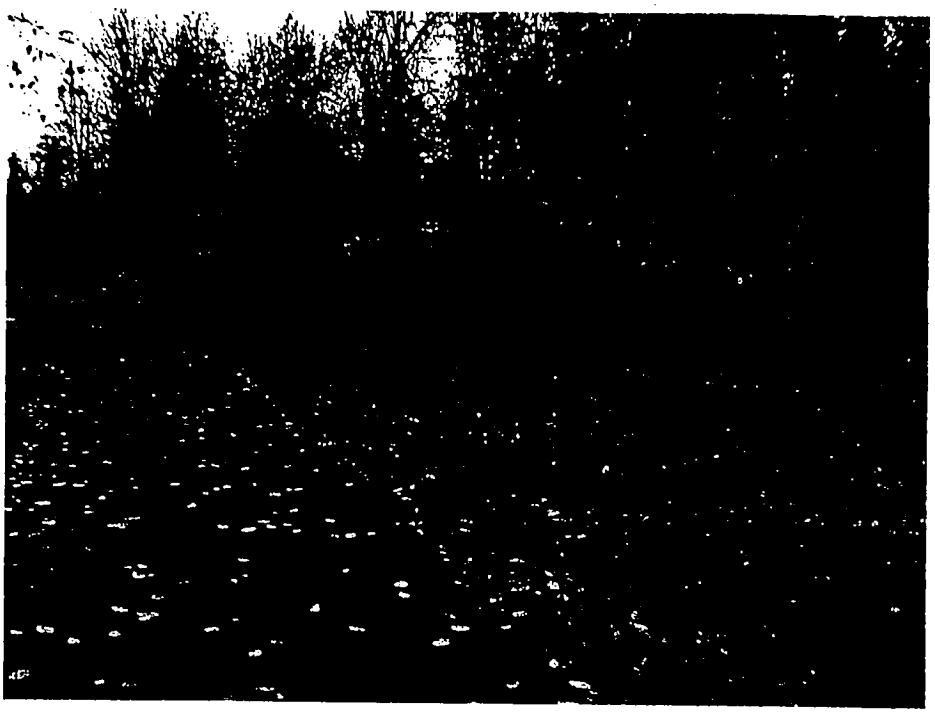
Student work crew: 135 student work days, total of 570.50 student hours @ $6 / hour = value of $3,423

Teacher supervisors: 2 teachers x 33 hours x $22 / hours = 66 hours @ $22 / hour = value of $1,452

Total value:	$ 4,875
Contract fee paid:	$3,000
Value of labor over amount paid:	**$1,875**

Before Pictures:

Near Photo Point 1A: west end of floodplain shows mowed area next to riparian corridor on right of photo. Enhancement plantings will add buffer plantings to riparian area to create a transitional edge between mowed area and woodland.

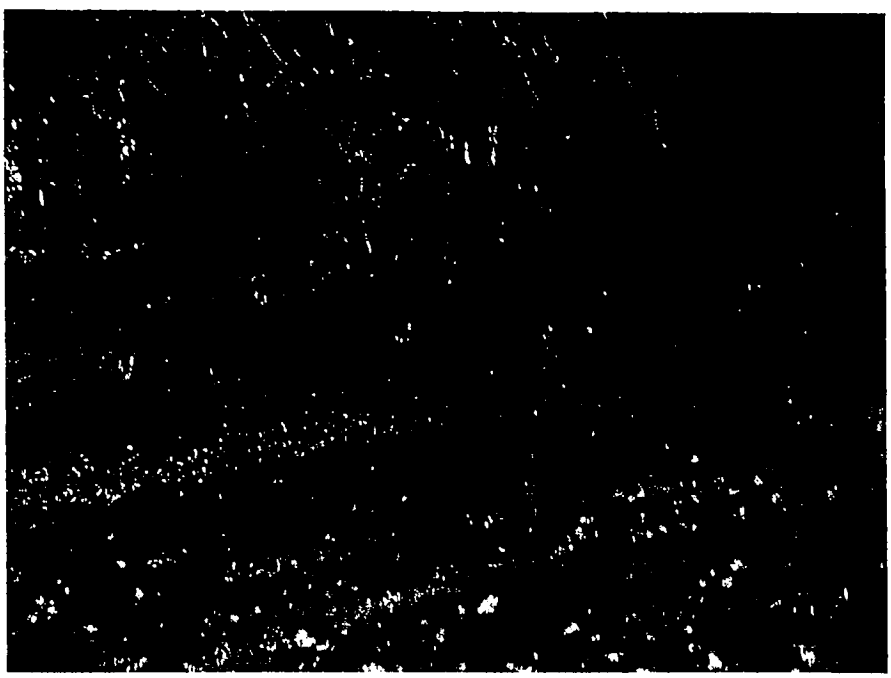


Near Photo Point 2: floodplain meadow edge shows typical blackberry encroaching on grass area. Will be cleared, prepped and replanted. Grass has been mowed short for easier planting. November 2001

Before Pictures:

Near Photo Point 3: (view in opposite direction) West edge of turf. Area has been cleared, weeded, and mulched to create a space for planting with transitional edge habitat (perennials and shrubs) November 2001

Near Photo Point 4: West edge of upland lawn. Lots of HBB remains to be cleared. A home made trail to right of center is not part of park plan, and will be planted as part of enhancement project to block access. Although an upland area, this edge is fairly wet so plants will be chosen that tolerate this moisture.



Work in progress: These photos are typical of the volunteers helping with the project.

Photo Point 2: Adult learners from Centro Cultural install habitat plantings. March 02

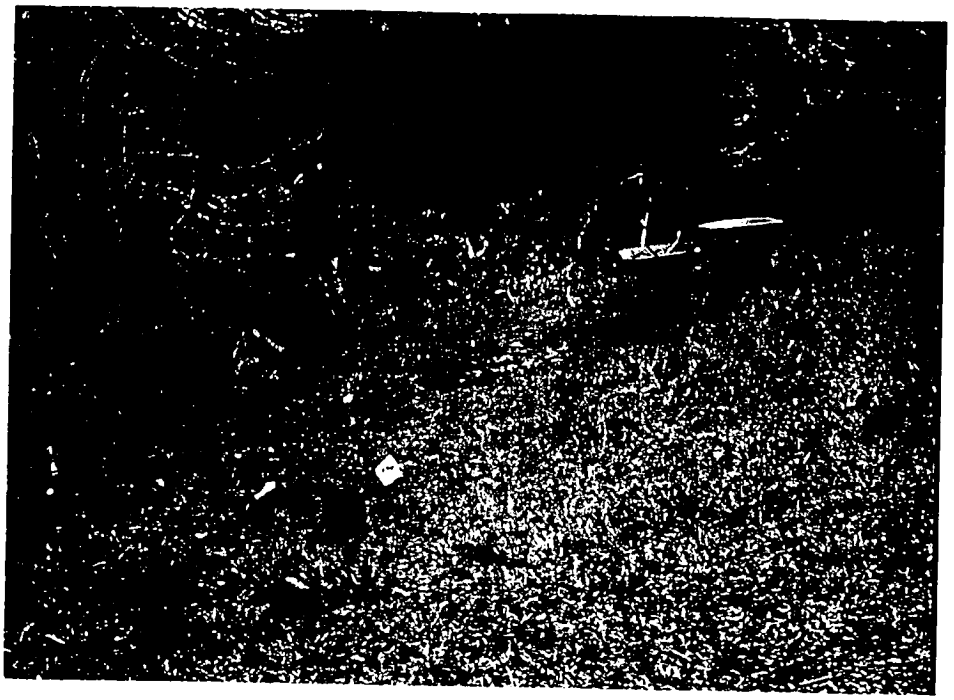


Photo Point 2A: Dense plantings being installed to broaden riparian corridor. This will also discourage human access to this portion of the creek, which has a very steep bank.

Photo point 1: west side of floodplain, looking east. April 03
Tree and shrub plantings have faded orange ribbon, mulch circles. Hard to discern, not yet fully leafed out.

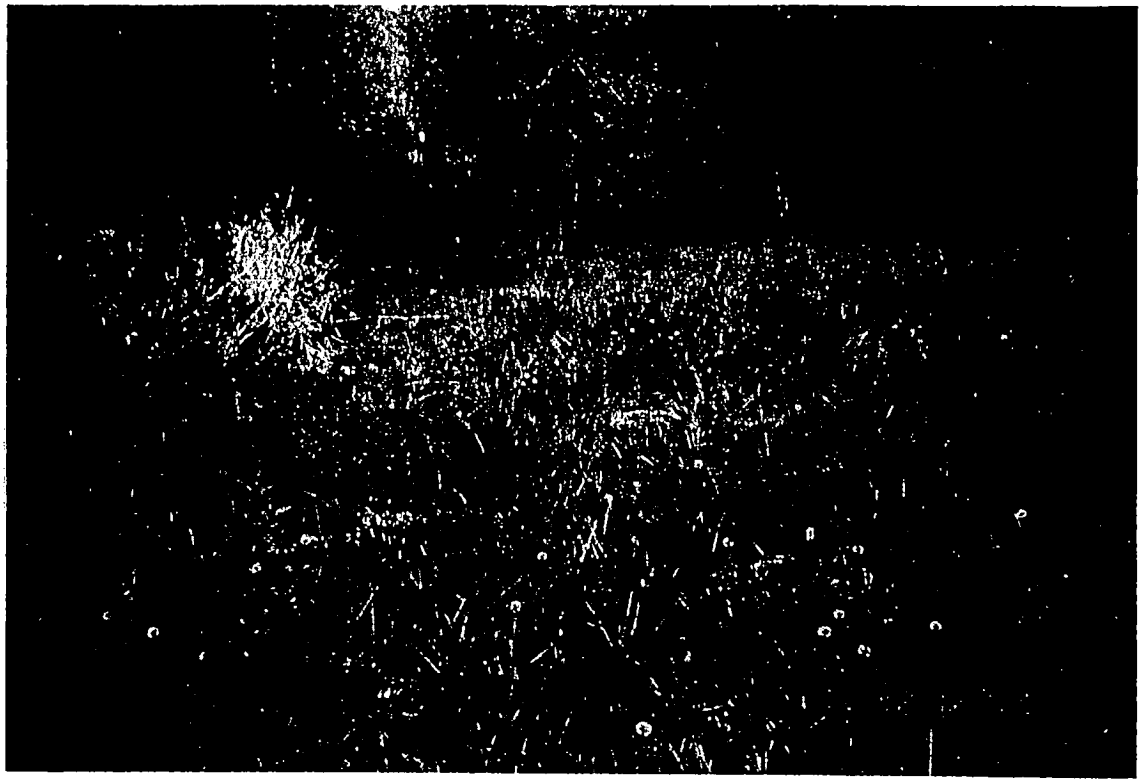


Photo Point 1A: west edge of floodplain, looking northwest towards trail. April 03
Trees and shrubs extend riparian buffer. Plants just starting to leaf out.

Photo point 2 east side of floodplain, looking east. April 03
Tree and shrub plantings have faded orange ribbon, mulch circles. Hard to discern against grass, not yet fully leafed out. Extensive HBB removed prior to planting.

Photo Point 2A: east edge of floodplain, looking west towards trail near creek. April 03
Trees and shrubs extend riparian buffer, goal is to create a thick barrier, block access to streambank. Plants just starting to leaf out.

Photo point 3: north edge of upland meadow, looking southwest April 03
Photo shows the mulched transitional edge, camas lily plants visible in foreground.

Photo Point 4: west edge of upland meadow, looking south across planted edge April 03
Large amounts of HBB have been removed in preparation for planting. Perennial plants just starting to grow, can see some shrub plants growing.

Photo point 5 floodplain, looking west toward trail. April 03
Tree and shrub plantings have faded orange ribbon, mulch circles. Hard to discern against grass, not yet fully leafed out.

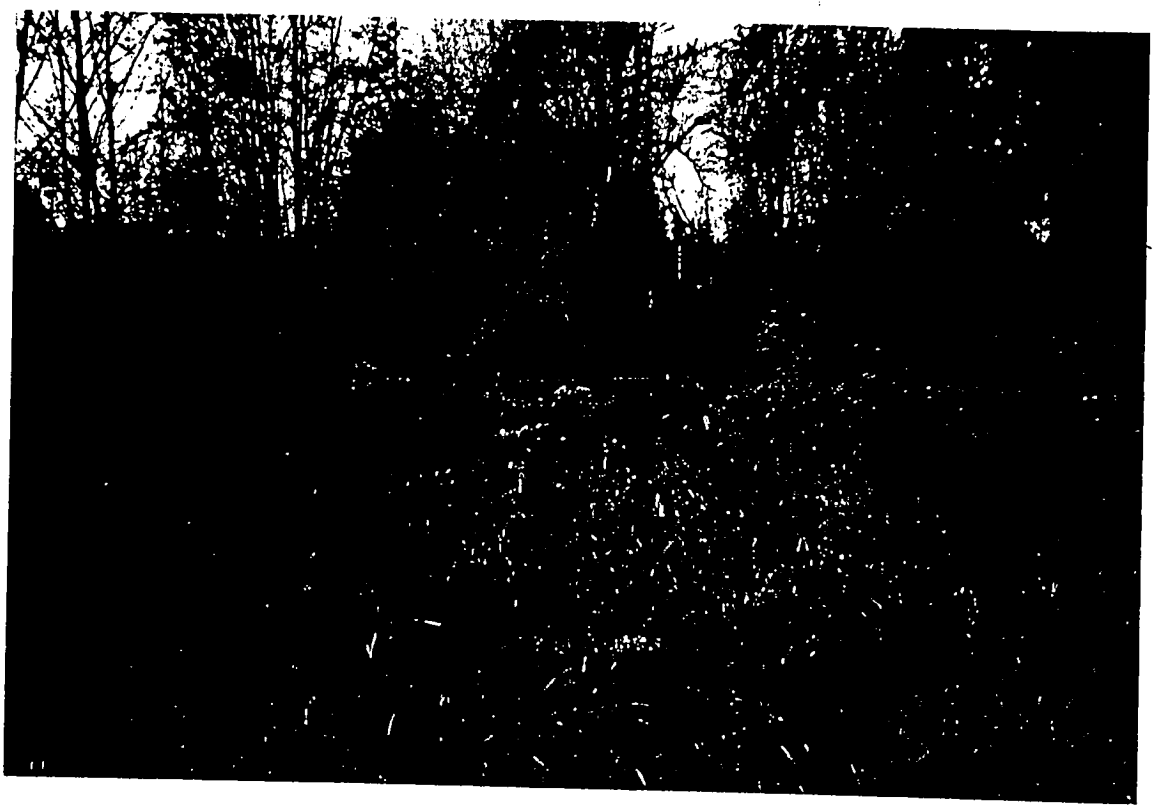
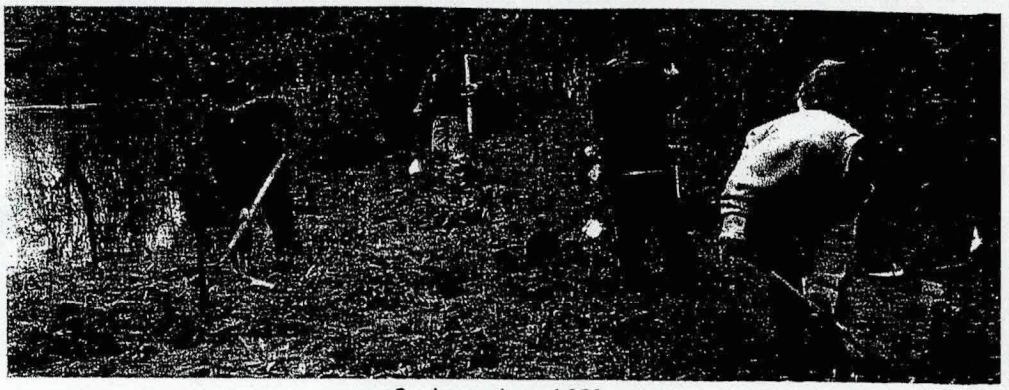


Photo Point 6: upland area, looking northwest towards trail. April 03
Shrubs and perennials create transitional edge from woodland to turf. Includes camassia, Oregon grape, wildflowers.

Restoration Program

Latino Community Put New Training to Work at Streamside Restoration



Students planted 200 native trees and shrubs along Rock Cre and a nearby wetlands as part of the hands-on traini

The Tualatin Riverkeepers has entered a unique new partnership with Centro Cultural to provide watershed and restoration education for the Latino community in Washington County. Centro Cultural, located in Cornelius, provides community and social services for low-income Latino families, including basic classes in English and math, and job training opportunities. The idea for the partnership came out of the desire to improve job opportunities for day laborers and to provide environmental education to the Latino Community.

This last fall, Tualatin Riverkeepers conducted two streamside restoration workshops that were designed to reinforce basic concepts by going over them in a variety of different ways. The workshops started out with a couple of hours of classroom discussion about watershed function and the importance of streamside restoration. Then Pam Herinckx with the Washington County Soil and Water Conservation District provided a visual demonstration using the District's table top watershed display. By using Kool-Aid to represent herbicides and pesticides and cocoa to indicate erosion, Pam demonstrated how the use of Best Management Practices in urban, agricultural, industrial and forestry sectors could greatly reduce the amount of pollutants and sediment entering our streams and rivers.

Juan Saldano, one of the students, helped with some of the translations throughout the day. As Pam demonstrated the table top display, he elaborated on her descriptions. "Here we have a watershed where there are no trees or plants along the rivers and there is a lot of erosion, like we see in Mexico," commented Juan in describing Pam's example of a poorly managed watershed. Then when showing a model watershed, where best management processes had been put into place, Juan jumped in and said, "And here we have Oregon, with trees along the rivers and grass in the ditches."

After all the Kool-Aid and cocoa was cleaned up, students learned about native and invasive plants and were able to pass around samples of some of the more common species of each. Armed with basic understanding of watershed function, the importance of riparian buffers and native vs. invasive plants, participants spent the rest of the day outside, putting in to practice what they had learned. Mary Ordal, Parks Project Coordinator with the City of Hillsboro, played an important role in this portion of the training by providing plant material and restoration sites at three parks along Rock Creek. Here students learned how to plant native trees, prepare and plant willow cuttings, control invasive plant species and conduct maintenance of project sites. By touring each of the parks and observing areas along Rock Creek that were in good or bad shape, students were able to get a better sense of the importance of riparian corridors and how the techniques they were learning could make a difference in the health of Rock Creek.

At the end of the day Centro Cultural staff helped the students reflect on what they had learned throughout the day. Juan Valdez was very thankful, "I knew that it was not good to throw garbage in the river, but now I understand why it is important to plant trees and keep other types of pollution out of the river. I would like to learn more about taking care of the environment an maybe someday I can return to Mexico and share my knowledge with others."

The streamside restoration training was part of a $104,980 grant that Centro Cultural received from the Regional Investment Program, a state lottery-funded effort to stimulate community development. This grant has allowed Centro to offer many other job training workshops, including plant identificatic basic horticulture, Christmas tree pruni and fruit tree pruning.

English Ivy growing at the entrance of Noble Woods Park removed by Latino students, most of which had just lear that day about the invasive nature of

Habit	Scientific Name	Common Name	Light	Height	B'fly Stage	Hummers	Fruit/Seed	Other Values	
Perennials	*Achillea millefolium*	Yarrow	Sun		Adult			Fire retardant	
	Anaphalis margaritacea	Pearly Everlasting	Sun	1-2.5 ft.	Larval/Adult				
	Aquilegia formosa	Red Columbine	Mostly Shade	1.5-3 ft.	Adult	Yes	Seed		
	Asclepias spp.	Milkweeds	Sun	1.5-4 ft.	Larval/Adult	Yes			
	Aster spp.	Asters	Some Shade	Varies	Larval/Adult		Seed		
	Delphinium spp.	Larkspurs; Delphiniums	Mostly Sun	Varies	Adult	Yes			
	Dicentra formosa	Pacific Bleeding-heart	Mostly Shade	8-20 in.	Larval/Adult				
	Erigeron spp.	Fleabane Daisies	Sun	Varies	Larval/Adult		Seed		
	Fragaria spp.	Strawberry	Some Sun	6-12 in.	Larval		Red "fruits"		
	Gaillardia aristata	Blanket flower	Sun		Adult	Yes	Seed		
	Geum macrophyllum	Large-leaf Avens	Mostly Shade	2-3 ft.	Larval				
	Helianthus spp.	Sunflowers	Sun	Varies	Larval		Seed		
	Heuchera spp.	Alumroot/Coral Bell	Varies			Yes			
	Lupinus spp.	Lupines	Sun	Varies	Larval	Yes			
	Mimulus lewisii	Pink Monkeyflower	Some Shade			Yes			
	Penstemon spp.	Beard-tongues	Sun	Varies	Larval/Adult	Yes			
	Phlox spp.	Phlox	Sun	Varies	Adult				
	Solidago spp.	Goldenrods	Sun	3-6 ft.	Adult				
Shrubs; Vines	*Arctostaphylos spp.*	Manzanita	Sun	Varies	Adult	Yes	red fruits	Evergreen cover	
	Amelanchier alnifolia	Western Serviceberry	Mostly Sun	10-20 ft.	Larval		purple fruits		
	Berberis/Mahonia spp.	Oregon Grape	Some Shade	Varies	Adult		Blue berries	Prickly, evergreen cover	
	Ceanothus spp.	Snowbrush, Deerbrush, etc	Sun	Varies	Larval/Adult	Yes	seeds		
	Clematis ligusticifolia	Western clematis	Some Sun	20-25 ft.		Yes		Dense, tangled cover	
	Cornus stolonifera/sericea	Red-osier dogwood	Some Sun	to 15 ft.	Larval/Adult		Whitish berries	Cover, erosion	
	Eriogonum spp.	Buckwheats	Sun	Varies	Larval/Adult				
	Garrya spp.	Silk-tassel	Sun				Black berries		
	Gaultheria shallon	Salal	Some Shade	1-10 ft.	Larval/Adult		Blue berries	Evergreen cover	
	Holodiscus discolor	Ocean-spray	Mostly Sun	to 15 ft.	Larval/Adult		seeds		
	Lonicera ciliosa	Orange honeysuckle	Mostly Sun	to 30 ft.	Adult	Yes	Orange berries		
	Lonicera involucrata	Twinberry	Mostly Shade	to 7 ft.	Adult	Yes	Black berries	Erosion, wet soils	
	Oemleria cerasiformis	Indian-plum, Osoberry	Mostly Shade	5-16 ft.			purple fruits	Early flowers	
	Philadelphus lewisii	Mock-orange	Sun	5-10 ft.	Adult			Fragrant	
	Rhododendron macrophyllum	Pacific rhododendron	Some Shade	3-15 ft.	Larval			Evergreen cover	
	Ribes spp.	Currants & Gooseberries	Mostly Sun	Varies	Larval/Adult	Yes	berries	Some spp. Thorny	
	Rosa spp.	Roses	Mostly Sun	3-6 ft.	Larval/Adult		Red "hips"	Thorny, tangled cover	
	Rubus parviflorus	Thimbleberry	Mostly Sun	2-10 ft.	Adult		red fruits	Cover, erosion	
	Rubus spectabilis	Salmonberry	Some Shade	3-10 ft.	Adult	Yes	Orange fruits	Cover, erosion	
	Sambucus spp.	Elderberries	Mostly Sun	to 20 ft.	Adult	Yes	Red or Blue berries		
	Spiraea spp.	Spireas	Mostly Sun	Varies	Larval/Adult		seeds	Wet soil, cover	
	Symphoricarpos albus	Snowberry	Sun or Shade	2-6 ft.	Adult		White winter berries	Cover, erosion	
	Vaccinium ovatum	Evergreen huckleberry	Some Shade	4-12 ft.	Adult		Blue berries	Evergreen cover	

	Vaccinium parvifolium	Red huckleberry	Shade	4-10 ft.			Red berries		
Flmg. Trees	*Acer spp.*	Maples	Mostly Sun	Varies	Larval/Adult		seeds	Seasonal dense cover	
	Alnus spp.	Alders	Mostly Sun	to 120 ft.	Larval		seeds	Fixes Nitrogen; tolerant	
	Arbutus menziesii	Madrone	Sun	30-50 ft.	Larval/Adult		Red fruits	Evergreen cover	
	Betula spp.	Birches			Larval				
	Cornus spp.	Dogwoods	Some Shade	Varies	Larval		Red fruits		
	Crataegus douglasii/suksdorf	Black Hawthorn	Mostly Sun		Larval/Adult	Yes	Red fruits	Thorny cover	
	Malus/Pyrus fusca	Western Crabapple	Some Sun	to 40 ft.	Larval		Reddish fruits		
	Populus spp.	Poplar, Cottonwood, Aspen	Mostly Sun	Varies	Larval			Seasonal dense cover	
	Prunus spp.	Cherry, Chokecherry, etc.	Some Sun		Larval		Red fruits	Nesting sites	
	Quercus garryana	Oregon White Oak	Sun	to 75 ft.	Larval		Acorns	Nesting sites	
	Rhamnus purshiana	Cascara	Sun or Shade	to 35 ft.			Black berries	Cover	
	Salix spp.	Willows	Mostly Sun	Varies	Larval/Adult			Cover & nest sites	
	Sorbus spp.	Mountain Ash					Red fruits		
Conifers	*Abies spp.*	True Firs	Mostly Sun	to 200 ft.			Seeds	Evergreen cover, nesting	
	Larix occidentalis	Western Larch	Mostly Sun	to 50 ft.			Seeds	Cover & nest sites	
	Picea sitchensis	Sitka Spruce	Sun or Shade	100-200 ft.			Seeds	Evergreen cover, nesting	
	Pinus spp.	Pine	Sun	Varies	Larval		Seeds	Evergreen cover, nesting	
	Pseudotsuga menziesii	Douglas Fir	Sun	100-250 ft.	Larval		Seeds	Evergreen cover, nesting	
	Thuja plicata	Western Red Cedar	Some Shade	to 200 ft.	Larval		Seeds	Evergreen cover, nesting	
	Tsuga heterophylla	Western Hemlock	Some Shade	to 225 ft.			Seeds	Evergreen cover, nesting	

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Various articles by the butterfly guy in Portland!

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The Pacific Northwest Butterfly Guide

By Wendy Burr

Name	Caterpillar food	Adult food	Habitat
Acmon Blue	Various species of buckwheats, lupines, trefoils, and milkvetches	Flower nectar	Desert, fields, prairie hills, weedy areas, road edges
Anise Swallowtail	Many species in the parsley family, some in the citrus family	Not reported	Barehills, mountains, gardens, fields, vacant lots, and roadsides
Boisduval's Blue	Various lupine species in the pea family	Nectar from flowers including *Eriogonum* and various composites	Forest clearings and edges, prairie, sagebrush, chaparral, coastal dunes, fields
Brown Elfin	Madrone and dodder	Blueberry, footsteps-of-spring, spicebush, willow, winter cress, wild plum	Mixed coniferous woods, barrens, bogs, sandy coasts, chaparrali
Cabbage White	Mustard family	Flower nectar-mustards, dandelion, red clover, asters, and mints	Open space including weedy areas, gardens, roadsides, cities, and suburbs
California Tortoiseshell	Various species of wild lilac	Flower nectar	Chaparral, woodland, brush areas, forest clearings and edges
Clodius Parnassian	Bleeding heart family	Flower nectar	Open woods, alpine areas, meadows, and rock outcrops
Common Ringlet	Grasses and rushes	Flower nectar	Grassy, open areas in a wide variety of habitats, including fields, meadows, grasslands, and tundra
Common Roadside-Skipper	Various grasses including wild oats, bent grass, bluegrass, Bermuda grass, and Indian	Nectar from low-growing blue flowers including verbena and selfheal	Open areas in or near woodland, often close to streams

	woodoats grass		
Common Wood Nymph	Purpletop and other grasses	Rotting fruit, flower nectar	Large, sunny, grassy areas including prairies, open meadows, bogs, and old fields
Dreamy Duskywing	Willows, poplars, aspens, and occasionally birch	Nectar from flowers of blueberry, wild strawberry, blackberry, Labrador tea, dogbane, New Jersey tea, winter cress, purple vetch, and lupine	Woodland openings or edges
Eastern Tailed-Blue	Many plants in the pea family including yellow sweet clover, alfalfa; various species of vetch, clover, wild pea, and bush clover; and others	White sweet clover, shepherd's needle, wild strawberry, winter cress, cinquefoils, asters, and others	Many open, sunny places including weedy areas and disturbed habitats
Field Crescent	Various asters	Flower nectar	Flats and open areas, fields, meadows, and streamsides from plains to mountains
Great Spangled Fritillary	Various violet species	Nectar from many species of flowers including milkweeds, thistles, ironweed, dogbane, mountain laurel, verbena, vetch, bergamot, red clover, joe-pye weed, and purple coneflower	Open, moist places including fields, valleys, pastures, right-of-ways, meadows, open woodland, prairies
Green Comma	Small pussy willow, black birch, alder, western azalea, and gooseberry	Flower nectar, dung, carrion	Forests, mountain streamsides, canyons

Hydaspe Fritillary	Violets	Flower nectar	Moist forest openings and mountain meadows
Juba Skipper	Slender hairgrass, needlegrass, foxtail brome, and bluegrass	Nectar from flowers including rabbitbrush	Sagebrush, chaparral, hilly grasslands, open woodland
Lorquin's Admiral	Wild cherry, willows, poplar and cottonwood, and orchard trees	Flower nectar from plants including California buckeye, yerba santa, and privet; bird droppings; and dung	Forest edges, mountain canyons, orchards, parks, streamsides, fencerows and groves of cottonwood and poplar
Margined White	Mustard family	Flower nectar from mustard family	Forests, meadows, deciduous woods, streamsides
Mariposa Copper	Plants from the heath family	Flower nectar	Forest openings and bogs where host plants grow
Milbert's Tortoiseshell	Nettles	Usually flowers, such as thistles, goldenrods, and lilacs; probably also sap and rotting fruit	Wet areas near woodlands, moist pastures, marshes
Monarch	Milkweeds	Milkweeds Also dogbane, lilac, red clover, lantana, and thistles	Many open habitats including fields, meadows, weedy areas, marshes, and road sides
Mourning Cloak	Willows including black willow, weeping willow, and silky willow; also American elm, cottonwood, aspen, paper birch, and hackberry	Tree sap, especially that of oaks. Also rotting fruit, and occasionally flower nectar	Almost anywhere that host plants occur including woods, openings, parks, and suburbs; and especially in riparian areas
Mylitta Crescent	Native thistles, milk thistle, and European thistles	Flower nectar	From sea level to 8000 feet in mountains, fields, meadows, roads, vacant lots, parks, and fencerows

Nelson's Hairstreak	Incense cedar, western red-cedar	Flower nectar from buckbush, pussy-paws and composites	Openings in coniferous forests
Orange Sulpher	Pea family	Flower nectar-dandelion, milkweeds, goldenrods and asters	Opensites, clover and alfalfa fields, vacant lots, mowed fields, meadows, road edges
Pacific Fritillary	Violets	Flower nectar	Openings in moist forests, wet meadows, streamsides
Pacific Orangetip	Mustard family	Mustards, thistles, fiddleneck, brodiaeas	Open oak woods in hills, orchards, fields, meadows, streamcourses, canyons
Painted Lady	Thistles, hollyhock and mallow, and various legumes	Nectar from composites 3-6 feet high, especially thistles; also aster, cosmos, blazing star, ironweed, joe-pye weed, red clover, buttonbush, privet, and milkweeds	Almost everywhere, especially in open or disturbed areas including gardens, old fields, dunes
Propertius Duskywing	Coast live oak and garry oak	Flower nectar	Open oak woodlands, forest openings and edges, meadows and fields near oaks. Does not occur in deserts or hot central valleys
Purplish Copper	Knot weeds and docks from the buckwheat family, cinquefoils from the rose family	Flower nectar	Disturbed areas including roadsides, open fields, wet meadows, marshes, streamsides, and valleys
Red Admiral	Plants of the nettle family	Sap flows on trees, fermenting fruit, and bird droppings. Visiting common milkweed, red clover, aster, and alfalfa	Moist woods, yards, parks, marshes, seeps, moist fields

		when these are not available.	
Sachem	Grasses including Bermuda grass	Nectar from many flowers including swamp and common milkweeds, buttonbush, dogbane, peppermint, red clover, tickseed sunflower, thistles, New York ironweed, marigold, and asters	Disturbed, open areas such as roadsides, landfills, pastures, meadows, fencerows, yards, parks, and lawns
Satyr Comma	Various nettles	Tree sap, rotting fruit, flower nectar including that from blackberry and almond	Valley bottoms, along streams, wooded prairie ravines, marshes, openings in riparian woods, fields and edges near moist woods
Silver-Spotted Skipper	Many woody legumes	Blue, red, pink, purple, and sometimes white and cream-colored flowers including everlasting pea, common milkweed, red clover, buttonbush, blazing star, and thistles	Disturbed and open woods, foothill streamcourses, prairie waterways
Silvery Blue	Astragalus, Lotus, Lupinus, Melilotus, Oxytropis, Lathyrus, Vicia, and other species in the pea family	Nectar from flowers including Asteraceae	A variety of locations including open woods, coastal dunes, prairies, meadows, road edges, rocky moist woods, and brushy fields

Spring Azure	Flowers of a variety of woody shrubs and occasionally herbs including dogwood, New Jersey tea, meadowsweet, and Collinsia	Flower nectar from dogbane, privet, New Jersey tea, blackberry, common milkweed, and many others	Openings and edges of deciduous woods, old fields, wooded freshwater marshes and swamps
West Coast Lady	Many plants in the mallow family including checkerbloom and hollyhock	Flower nectar	Open places including weedy areas, gardens, roadsides, fields, foothills, chaparral, disturbed areas
Western Green Hairstreak	Various plants from the Erigonum, Lotus, Ceanothius species	Flower nectar	Brushland, chaparral, woods, and scrub
Western Tailed-Blue	Legumes such as false lupine, milkvetch, crazyweed, and vetches	Flower nectar	Open areas with low shrubs including chaparral, meadows, and open woodland
Western Tiger Swallowtail	Leaves of cottonwood and aspen, willows, wild cherry, and ash	Nectar from many flowers including thistles, abelia, California buckeye, zinnia, and yerba santa	Woodlands near rivers and streams, wooded suburbs, canyons, parks, and roadsides
Western White	Flowers and fruits or various members of the mustard family	Flower nectar	Mountain peaks, slopes, hilltops, railroad yards, open plains, and roadsides
Woodland Skipper	Various grasses including Bermuda grass, wheatgrass, and canary grass	Flower nectar	Grassy areas in chaparral, sagebrush, woodland, gardens, and small streams

Plant	Stage	Butterflies	Habitat/ Conditions	Companion/ Grows well with...
Checker Bloom	Caterpillar	Painted Lady West Coast Lady	Full sun to light shade Well drained soil	Fare-well to spring, Washington lupine, leopard lily
Flower Nectar	Adult	Acmon Blue, Cabbage White, California Tortoiseshell, Clodius Parnassian, Common Ringlet, Common Wood Nymph, Field Crescent, Green Comma, Hydaspe Fritillary, Lorquin's Admiral, Margined White, Mariposa Copper, Mylitta Crescent, Nelson's Hairstreak, Orange Sulpher, Pacific Fritillary, Propertius Duskywing, Purplish Copper, Spring Azure, West Coast Lady, Western Green Hairstreak, Western Tailed-Blue, Western White, Woodland Skipper	N/A	N/A
Grass Family	Caterpillar	Sachem Woodland Skipper Common Ringlet Common Roadside-Skipper Common Wood Nymph Juba Skipper	Various conditions	Not Available

any generic flower nectar

Labrador Tea	Adult	Dreamy Duskywing	Poor soil Sun to partial shade Moist soil	Not Available
Milkweed Family	Adult Caterpillar	Monarch Orange Sulpher Painted Lady Red Admiral Sachem Silver Spotted Skipper Spring Azure Great Spangled Fritillary Monarch	Temperate Regions Bloom from July to September look for "Butterfly milkweed"	Not Available
Mustard Family	Adult Caterpillar	Cabbage White Margined White Pacific Orangetip Western White Cabbage White Margined White Pacific Orangetip	Biennial or annual plants Grown in most parts of the world	Not Available
Nettle Family	Caterpillar	Red Admiral Satyr Comma Milbert's Tortoiseshell	Various conditions	Not Available
Oregon Ash	Caterpillar	Western Tiger Swallowtail	Partial sun to shade Moist soil	Not Available
Washington Lupine	Adult Caterpillar	Dreamy Duskywing Acmon Blue Boisduval's Blue	Adequate moisture throughout the year Full sun to partial	Leopard lily, giant evening primrose, western bleeding heart,

		Western Tailed-Blue	shade	checker bloom
Western Bleeding Heart	Caterpillar	Clodius Parnassian	Woodland soil with light shade or filtered sun Soil: rich in organic material, well drained, moist	Washington lupine, leopard lily, western Solomon's seal, giant trillium
Wild Lilac	Adult Caterpillar	Monarch Milbert's Tortoiseshell California Tortoiseshell	Not Available	Not Available

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Anise Swallowtail (*Papilio zelicaon* Lucas)

Wing span: 2 3/4 - 3 1/2 inches (7 - 9 cm).

Identification: Upper surface of hindwing has yellow-orange eyespot near tail with round black center that is not connected to hindwing margin. Anal cell of hindwing is primarily yellow.

Life history: Males perch on hilltops and patrol for receptive females. Female lays eggs singly on host plant leaves and flowers. Young caterpillars eat leaves while older ones eat flowers. Chrysalids hibernate.

Flight: One flight from April-July.

Caterpillar hosts: Many species in the parsley family (Apiaceae), and some in the citrus family (Rutaceae).

Adult food: Not reported.

Habitat: Bare hills, mountains, gardens, fields, vacant lots, and roadsides.