CONSERVATION STRATEGY

for the Powell Butte Nature Park Population of

CIMICIFUGA ELATA

tall bugbane

MAY 1999

CENTRAL CATHOLIC HIGH SCHOOL BIOLOGY STUDENTS

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Project Supervisor: Dan Vasen

RARE PLANT MONITORING PROJECT AT POWELL BUTTE NATURE PARK BY CENTRAL CATHOLIC HIGH SCHOOL STUDENTS

During the last two school years, 97-99, Central Catholic students in Dan Vasen's biology classes, designed and carried out a monitoring project of a rare species of native plant called Cimicifuga elata, tall bugbane, found in Powell Butte Nature Park. The students worked in participation with U.S. Forest Service Botanist Marty Stein, Portland State University Capstone students, Portland Community College students, and parent volunteers. Jim Sjulin of the Portland Parks Bureau and Bruce [illegible] of the Friends of Powell Butte served advisory roles during the planning and implementation of the program and have both participated as evaluators of the project's outcomes to date.

This rare species monitoring project was funded by a Metro Environmental Education Grant, as well as a Laird Norton Foundation grant, and financial resources were also provided by Portland State University Center for Science Education. A handful of the students who participated last year, who are now seniors, served as mentors to train the more recent research group which was composed of juniors from Vasen's biology class. Outcomes of the project to date include:

• Four field trips to Powell Butte to locate and identify the Cimicifuga population, establish monitoring plots and mark the sites, and record orienteering directions to the sites using a compass.

• mapping the project area and the locations of forty-three Cimicifuga plants including the permanent marking of reference trees which are used to locate the individual plants.

• two sets of plant monitoring data were taken, including the condition of individual plants, and relevant data such as slope of terrain, soil pH, and age of tree stand as determined by inclement boring.

• the donation of aerial photographs of the project site by a local business.

• students conducted an analysis of the environmental & human impacts present at Powell Butte that potentially are limiting the distribution of this rare plant and produced written reports on land-use history, human-impacts on site, and trail use.

• students used their results to formulate conclusions, then used this information to assess whether these Cimicifuga populations are integral to the species long-term viability. Following this, the students created a conservation strategy for the Powell Butte Cimicifuga populations.

• addition of an insect survey component to the project, in which students used pitfall traps to collect insects and other terrestrial arthropods that inhabit the soils of Powell Butte. The students sorted the

insects back at school and then compared them to insects collected in the Mt. Hood National Forest near another Cimicifuga population.

• addition of a soil study component to the project, in which students measured a set of soil data at five different locations elsewhere on Powell Butte to assess whether they were suitable Cimicifuga habitat.

• dissemination of the project's outcomes though numerous media sources including: A web-page describing the project with photos of students doing research on the Central Catholic web-site, http://www.cchs-ptld/rareplant.htm -articles in the student newspaper the Rampart at C.C., local television news-media (KATU) coverage of one of our field trips, and an Earth Day event at Mt. Tabor Park hosted by the National Wildlife Federation.

A primary goal of this project was to expand student's learning opportunities beyond the classroom to include authentic scientific monitoring experiences in a local outdoor setting. More specifically, the goal was to provide students with hands-on learning opportunities and training in the field sampling techniques used in forestry and then undertaking a plant monitoring project at Powell Butte.

The targeted audience of this project included the students who participated in it, users of Powell Butte Nature Park, the U.S. Forest Service which monitors Cimicifuga on federal lands, and the residents of the Portland/Metro area. Over the two school years that this project took place, 18 students directly participated, working with City of Portland Parks Bureau and four participating volunteers on the project, from the Forest Service, Portland State University and the Friends of Powell Butte. Indirectly the project results were intended to reach the Central Catholic student body and families, local residents who live in the proximity the park, and city planners responsible for its stewardship.

There was a clear and obvious need for this project. Cimicifuga elata, whose common name is tall bugbane, is on the U.S. Department of Agriculture Region 6 and Bureau of Land Management Sensitive Plant lists, and is a Candidate Plant Species under review for state listing as threatened or endangered.

The Powell Butte population of Cimicifuga is the only one known to exist within Portland city limits. The environment surrounding the project site is composed of nearly 90% native species, making it one the largest blocks of mostly native vegetation that has never been developed left on the east side.

Some of the Cimicifuga plants are most likely affected by human impact and proximity to unofficial trails. Severe trail erosion in the area has caused loss of topsoil and mountain biker use of the area despite its designation as hiking only, contributes to its degradation. There are no signs or clear trail markings to indicate the correct route or to inform users of the sensitive plants in the area.

A new dimension of this year's project was the terrestrial arthropod survey in the park to determine the types of insects present in proximity to the Cimicifuga plants. Students made insect pitfall traps using household materials and temporarily installed the traps in a number of locations on Powell Butte. After a month had elapsed, the traps were collected, the insect sorted and identified by the students. Students compared this data to the list of known insects commonly found in the Mt. Hood National Forest.

An extension of this portion of the project was for students to hypothesize about the observed differences in the insect populations between the sites, both of which contain Cimicifuga plants. Assistance in this endeavor was provided by new project partner Dr. Andy Moldenke, of Oregon State University, though the use of his web site used to key out insect species. Dr. Moldenke extended an invitation for the students to send any unknown and unidentifiable insects to his lab for closer scrutiny.

The purpose of adding an insect survey component to the plant monitoring was to stimulate an awareness of the bigger picture of forest ecology that influences plant populations, and to have students hypothesize about the reasons for any observed differences between the locations.

The Central Catholic students' undertaking of this project has fulfilled the need for information on the Powell Butte Cimicifuga population. A monitoring plan was used that adhered to the USDA conservation strategy for Cimicifuga to assure that the actions that were implemented were consistent with the conservation of this species. The cooperating partners were the appropriate ones to carry out the project: the Forest Service is responsible for managing Cimicifuga populations in the Mt. Hood National Forest, the Portland Parks Bureau manages Powell Butte and granted us the permission to do a monitoring project there, the Friends of Powell Butte meets monthly to discuss park issues and coordinate trail maintenance efforts, and served as an independent evaluator.

The criteria by which the success or failure of this project to realize its objectives was to be assessed was by the detailed mapping of the Cimicifuga population that is useful for monitoring and planning and the presentation of a final report and conservation strategy to the agencies involved at public meeting and the student press.

The long-term benefits of this project will include: 1) having a detailed map of the Cimicifuga populations on Powell Butte to utilize for planning and restoration efforts; 2) raising public awareness about the rare plants and the need to monitor their condition over time; 3) utilizing the students' conservation strategy for Cimicifuga to manage the trails in the project area.

Costs of this project included: the purchase of equipment and supplies that the students used to map the populations of Cimicifuga elata on Powell Butte and mark the project sites, monitor the plant's distribution and physical environment over time and photo document the events, transportation of students to the park, teacher release-time for planning, substitute pay, and web-page creation.

As biology students at Central Catholic High School, we are working with the U.S. Forest Service and affiliates to monitor the population of rare indigenous plants called Cimicifuga elata in the Powell Butte Nature Park in Portland during the 1997-98 school year.

In October, our initial group went to the designated area of Powell Butte to survey the plants' location and to record the surrounding foliage. We wrote detailed orienting instructions to the labeled plant sites from the trail.

We plan on taking two more field trips in the spring to determine their growth rate, seed dispersal, and reproduction of the Cimicifuga elata plant.

After all the data is gathered and the results are put together, we will assemble a conservation strategy. We will then present our recommendations to local agencies and to the public at meetings and through the Rampart student newspaper at Central Catholic.

By doing this, we, the students, have, and will continue to, have respect for our suburban wildlife inform others to do the same.

Recommendations for preserving Cimicifuga Elata

1. Reconditioning and improvement of trail quality

2. Accessible garbage cans

3. Signs that notify visitors of the rare species of plants that are growing at Powell Butte

4. Better enforcement of proper trail use

5. Clearer, more specific trail signs

6. In areas of rare plant growth, post signs that state STAY ON TRAIL

7. Continued monitoring of rare plant specie growth and preservation

8. Establish a volunteer program for trail maintenance

9. More culverts to prevent erosion of trails.

10. Inform other High School or local college biology students and get them involved.

MRV

Cimicifuga elata Nutt

Description:

The Cimicifunga elata Nutt, otherwise known as the tall bugbane. It is a member of the family Aranunculaceae, or buttercup. It is a herbaceous perennial, stems branched above, 1-2 meters tall, more or less finely pubescent and somewhat glandular above. The leaves and biternate; maple-like leaflets are shallowly 3-lobed, ovate orbicular, finely sevatedentate up to 1.5 cm long. The flowers are apetalous, in a large compound panicle, glandular sepals (4)5, cream to pinkish. Petals are lacking, stamens are numerous. Pedicel which are 2 to 4 mm long, shorter than the flowers. Sepals are 3 to 4 mm long, and are caduceus. The fruit are follicles and there are 1 or 2, which are subbasal, very finely glandular-puberulent, 9 to 12 mm long. The stripe, if any, is scarcely 1 mm long. Numerous follicles have been reported from populations in the SW portion of the species range. The flowering period for the Cimicifuga elata Nutt is June to August.

Habitat:

The Cimicifuga elata Nutt is a temperate forest herb of generally north facing slopes. It tends to grow in small groups at moderate to low elevations in forests with fairly closed canopies. The amount of light in natural populations appears low (14%), and the average plant size appears to increase in the higher light levels found in managed stands and clear cuts. Even though it is found within coniferous forests, deciduous tree species are almost always near by. Typical populations occur with a moderately diverse shrub and herbaceous layer. It also lives in a area with will drained soils with continuous subsurface water from up slope. Observations suggest that some source of water, such as a nearby stream or subsurface flow, is usually in evidence at Cimicifunga elata Nutt populations. Still further study is needed to confirm the importance of

moisture to Cimicifuga elata Nutt. Deciduous trees which usually have Cimicifuga elata Nutt growing nearby, may allow additional light to reach the forest floor in early spring, thus enabling the plants to grow rapidly early in the season while moisture is plentiful. Later in the summer when deciduous trees have leaves and precipitation is less abundant, the shade they provide may help to conserve soil moisture. In several respects, Cimicifuga elata Nutt is typical of shade-tolerant temperate deciduous forest herbs. The seedlings that are transplanted into a natural habitat with ample light have grown to reproduction size in 3 years. Under unimproved conditions of natural recruitment, it appears that the time to first reproduction is somewhat longer, around 6 years, depending on local conditions. This is normal for herbs of temperate deciduous forests. Cimicifuga elata Nutt reproduces mainly by seed, is self compatible, is frequently pollinator limited, it lacks a special seed dispersal, and requires cold stratification for seed germination-- all these traits are typical of shade tolerant deciduous-forest herbs.

Protection:

Cimicifuga elata Nutt is on the U.S. Department of Agriculture Region 6 and Bureau of Land Management Sensitive Plant lists, and is a Candidate Plant or endangered. The population of Cimicifuga elata Nutt found on Powell Butte is the only one known to exist within Portland city limits. The Cimicifuga elata Nutt is potentially being affected by human impact and proximity to unofficial trails. There has been a large amount of trail erosion and loss of topsoil and mountain bikes use of the area despite its designation as hiking only, continues to its degradation. Unfortunately, there are no signs or clear trail markings to indicate the correct route or to inform users of the sensitive plants in the area.

Emily Hatten

In Southeast Portland is one of a series of volcanic lava domes which forms the Boring/East Buttes Lava Domes, it is Powell Butte. Powell Butte has a very long and conflicting history. It all began on April 8, 1925, when ordinance 46671 passed to allow Water Bureau to purchase 555.7 acres from George Wilson for 135,000 cash. At this time, it was called Camp Butte's. This piece of property was primarily purchased to preserve a site for future water reservoirs.

During its early history, there were many proposed alternatives for land use purposes. Some of the more interesting purposals were a prison farm, public shooting range and clubhouse, a golf course, and a police academy.

In 1935, a purchase of an acre at the top of Powell Butte by the federal government for the purpose of a world wide radio monitoring station. The Southeast Chamber of Commerce also proposed that an airport be established on the Butte at that time, to put 2,000 men to work for a ten month construction period.

By the 1960's the original purpose for the Butte became significant, a 1968 proposal included a community rifle range and clubhouse, plus a developed park which would include ball fields, archery, swimming, tennis, golf, and horseback riding. The Water Bureau did not support these improvements, and was key in blocking these developments throughout the years.

Most recently, as the residential area surrounding Powell Butte grew many realized what the Butte had to offer recreational. Wildlife, panoramic views, hiking, horseback riding, bird watching, and other various activities were some things available.

However, with the residential growth, the Butte has suffered. Hikers off trails, dirt bikes,

horseback riding on vegetation has caused damage throughout the Butte. Litter and pollution also contribute to the damage at the Butte.

The future plan for the Butte is a wildlife only loop, a pedestrian only loop, and a separated trail use for equestrians, bicyclists, and walkers.

Laura Steenson

As part of our study, we looked around at the human impacts of that part of Powell Butte when we arrived, we noticed several houses close by, and so we knew there would be a lot to report.

Among our findings were paint balls, pet droppings, an old car, cigarette butts, beer cans and bottles, spray paint, paper cups, metal stakes, and other trash. While looking we attempted to pick everything up, but some smaller things, such as the cigarette butts and plastic wrappers, were fairly numerous and it was difficult to collect it all.

Also, we noticed some of the plants on the forest floor had been trampled, and foot paths were evident off the trail. Not only that but it appeared that bikers had been jumping the switchbacks instead of following the path.

Nikki Neuburger
Rough Draft/Directions to P.B.

1. FROM NORTH: Take I-205 south to I-84 interchange so that your heading east towards The Dalles. Take 181st exit from I-84 and proceed to take a right on 181st. Go south on 181st until you reach Powell Blvd. Take a right on Powell Blvd. so that you are heading west. Go then two lights and at the third light (162nd), make a left into the entrance of Powell Butte Park.

2. FROM SOUTH: Take I-5 north to I-205 north to Powell Blvd. exit. At the bottom of the off ramp take a right on to Powell. Go east on Powell to 162nd. Take right and you are at the Powell Butte Park entrance.

3. FROM WEST: CITY CENTER- Take I-405 east across the Marquam Bridge (or cross river on Morrison Bridge). Take ramp to I-84 (towards The Dalles), then go east on I-84 to the 181st exit. From there follow the same directions as from #1 (from north).

4. FROM EAST: THE DALLES- Take I-84 towards Portland. Exit the freeway at the 181st exit. Turn left on 181st at the bottom of the off-ramp. Go south on 181st and from there you can also follow the rest of the directions from #1 (from north).

The Field Form

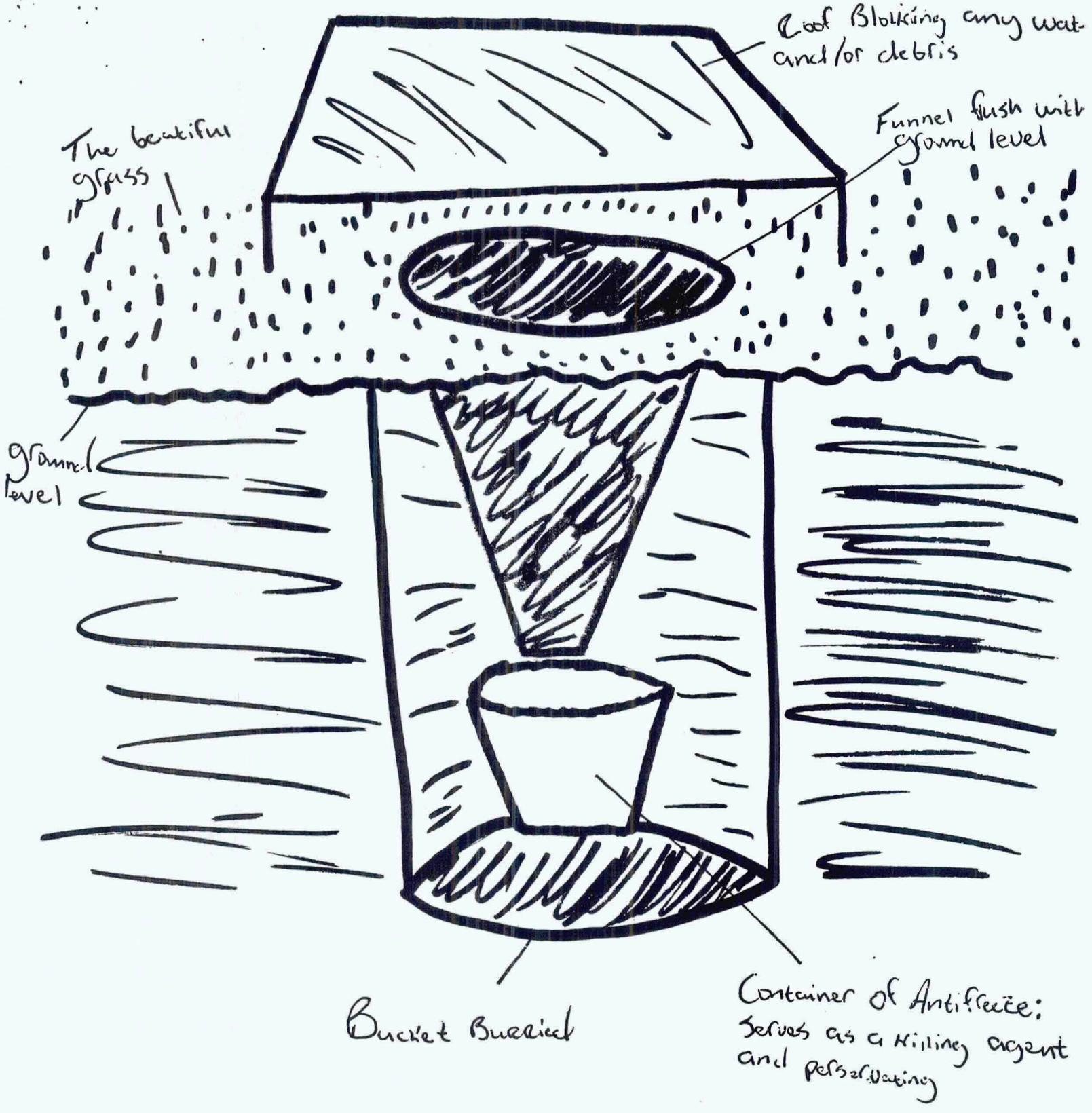
On our last adventure to Powell Butte, we encountered many new and exciting plants and insects. From the many pit-fill traps that had been previously placed in the spring of 1998. WE discovered some of the following insects: Beetles, spiders, microscopic insects, tics, microscopic scorpions, etc.

We were able to capture these extraordinary organisms by the pit fall trap. The traps were placed in various places on the Butte.(A1:334 degrees from manhole to base of Hawthorne tree, 230m feet from path. A2: !92 degrees from old holgate trail sign to far right tree, 168 feet from sign. A3 162 degrees from noble fir to far right of the group of fir trees. B1: 100 degrees from reference mushrooms. 55ft from tree. B2: 172 degrees from reference tree E, behind large tree directly off path. B3: Middle of second switchback. B4: 5 clamps in on pipe from the trail bend.)

The pit-fall trap works in a very unique manner. They are made of plastic containers with fitted lids on top. A smaller container is fit into a larger container. On the top, the only part that is left protruding out of the ground, there is a covering where the bugs fall through little holes into tubs of non-toxic anti freeze to preserve them. The roof blocks the rain and the debris. The insects fall through the funnel that is flush with the ground(the bucket that holds all of this is buried) into the container of antifreeze that serves as a killing agent and a preservative.

By Tiffany Warner

Mike Barron



"The PitFALL TRAP"

Insect Traps on Powell Butte

A1	334 degrees from manhole to base of Hawthorne tree. 230 ft. from the path.
A2	192 degrees from Old Holgate Trail sign to far right tree. 168 ft. from the trail sign.
A3	162 degrees from Noble Fir to middle of tree 3. 113ft. from Noble.
B1	100 degrees from reference tree B. 55 ft. from tree.
B2	172 degrees from reference tree E. Behind large tree directly off path.
B3	Middle of second switch back.
B4	5 clamps in on pipe from trail bend.

Time frame for overall plan of student field-work project

Summer 1997 - Coordination and planning phase of the project. Work with local agencies to plan, apply for grants, curriculum and assessment design. Forming partnerships and introduction of project to school administration, logistical planning and paperwork.

September 1997 - Introduction of project to students involving an introduction to field data collection skills. The biology students will examine an empty field to practice mapping and investigating plant distribution.

October 1997 - The students will travel to Powell Butte to locate and identify the Cimicifuga populations, map and mark the locations of the plants in the park, establish monitoring plots, write a set of instructions for locating the project site by orienteering, and photo record the project.

December 1997 - The students will complete the investigative portion of the project, determining the environmental and human impacts affecting the plants, by doing an analysis of the land use history of Powell Butte, and writing a report on the subject.

April/May 1998 - The students will undertake the monitoring project on two field trips to Powell Butte to locate the plants using orienteering skills, set up and carry out the monitoring, collecting data and observations and photo recording the events.

June 1998 - The students will generate conclusions from results and propose related monitoring projects, produce a conservation strategy for Cimicifuga, publish their findings in school newspaper, and meet with the agencies involved to get feedback and allow for evaluation.

Fall 1998 - Introduction of project to this year's biology students by mentors from last year's research group, including a presentation of current findings and selection of participants.

October 1998 - Field trip to Powell Butte Nature Park to place insect pitfall traps. Meeting with Metro to present preliminary results to the grant committee.

November 1998 - Field trip to Powell Butte to collect insect traps, monitor existing plots and map/mark new Cimicifuga plants located during the summer. Meet with Portland State University students at the project site to explain and give examples of the project objectives.

Winter 1998 - Investigative portion of the project, analyzing insect traps to identify species, and generate an insect population list for Powell Butte. Students work on the production of web page on Central Catholic's web site.

April/May 1999 - Continuation of the monitoring project on a 3rd field trip to Powell Butte, collecting data and observations on plants, flowers, soil pH, slope, etc.

May/June 1999 - Analysis and write-up phase. Students generate conclusions from results and produce final version of conservation strategy, publication of project results in school newspaper, and report to cooperating agencies.

Time frame produced by Kimberlee DeSantis

Location: Powell Butte Park - On north side of trail.

Species: Cimicifuga Elata - TALL BUGBANE

Date: 10-24-97

G.P.S. COORDINATES OF REFERENCE TREES

A: 45°29' 500"N 122°30' 587"W
B: 45°29' 28"N 122°30' 32"W
C: 45°29' 562"N 122°30' 556"W
D: 45°29' 559"N 122°30' 531"W
E: 45° 29' 550"N 122° 30' 493"W
F: 45°29' 498"N 122°30' 489"W

Reference Tree

PLANTS

	A	B	C	D	E	F
1	B.R. = 142° D.R = 12ft. 2in D.T = 47ft 11in	B.R = 157° D.R = 17ft. 10" D.T = 14ft. 4"	B.R = 61° D.R = 20ft. 10"	B.R = 88° D.R = 12ft. 7" D.T = 31ft	B.R = 97° D.R = ~~17ft. 1"~~ 22FT. D.T = 4ft. 8"	B.R = ~~344°~~ 328° D.R = ~~16ft. 9in~~ 11'8" D.T = 13ft
2	B.R = 151° D.R = 17ft. 2in D.T = 53ft. 8"	B.R = ~~150°~~ 144° D.R = 38ft 7" D.T = 35ft 1"	B.R = 151° D.R = 27ft 8"		B.R = 150° D.R = 39ft 5" D.T = 39ft.	B.R = ~~42°~~ 318° D.R = ~~15ft. 10"~~ 20'4" D.T = 12ft
3	B.R = 175° D.R = 15ft. 2" D.T = 52ft. 1"	B.R = 140° D.R = 43ft 5" D.T = 39ft 11"	B.R = 158° D.R = 32ft	B.R = 170° D.R = 40ft	B.R = 178° D.R = 40ft 3" D.T = 40ft. 1"	B.R = 157° D.R = 8ft. 4" D.T = 13ft. 4"
4	B.R. = 141° D.R. = ~~14ft 5"~~ D.T. = 51ft 2" ★	B.R = 136° D.R = 46ft 10" D.T = 43ft 4"	B.R = 150° D.R = 42ft 6"		B.R. = 97° D.R. = 23FT. D.T. = 4FT. 8" ★	B.R = 157° D.R = 9ft. 2" D.T = 13ft 6"
5		B.R = ~~130°~~ 142° D.R = 41ft 2" D.T = 36ft 8"	B.R = 143° D.R = 73ft 6"		AGE OF STAND	
6		B.R. = 146° D.R. = 50FT ★	B.R = 130° D.R = 93ft.		C 81 YRS. BIG LEAF MAPLE F4 155 YRS. DOUGLAS FIR	
7			B.R = 98° D.R = 17ft 8"		LOCATION / AGE / TYPE	

DBH of REF. TREES
-27"
-11"
-42"
-GONE
-14"
-18½"

B.R. = Bering Readings
D.R. = Distance From Plant to Reference Tree
D.T. = Distance From Plant to trail.

SOIL pH = 6
Slope/Aspect = 48%-57%

1998-1999

POWELL BUTTE RARE PLANT STUDY

Reference Clamp

Reference Tree

	T	U	V	W	X	Y	Z	G	H	I	J	K	L
1	B.R.: 110° D.C.: 34'2"	B.R.: 179° D.C.: 43' 6"	B.R.: 164° D.C.: 32'5"	B.R.: 134° D.C.: 57'	B.R.: 119° D.C.: 35'	B.R.: 180° D.C.: 46'3"	B.R.: 346° D.C.: 48'6"	B.R.: 220° D.R.: 14'	B.R.: 160° D.R.: 6'3"	B.R.: 313° D.R.: 17'		B.R.: 214° D.R.: 15'	B.R.: 340° D.R.: 10'
2				B.R.: 134° D.C.: 58'		B.R.: 202° D.C.: 30'3"	B.R.: 358° D.C.: N.F.	B.R.: 40° D.R.: 19'	B.R.: 94° D.R.: 23'				
3									B.R.: 2° D.R.: 34'6"				
4													

B.R.: Bering Readings

D.C.: Distance From Reference Clamp

D.R.: Distance From Reference tree

N.F.: Not Found

GPS:

G → 45° 29' 32" N
122° 30' 28" W

H → 45° 29' 29" N
122° 30' 29" W

I → 45° 29' 30" N
122° 30' 31" W

K → 45° 29' 30" N
122° 30' 33" W

L → 45° 29' 31" N
122° 30' 31" W

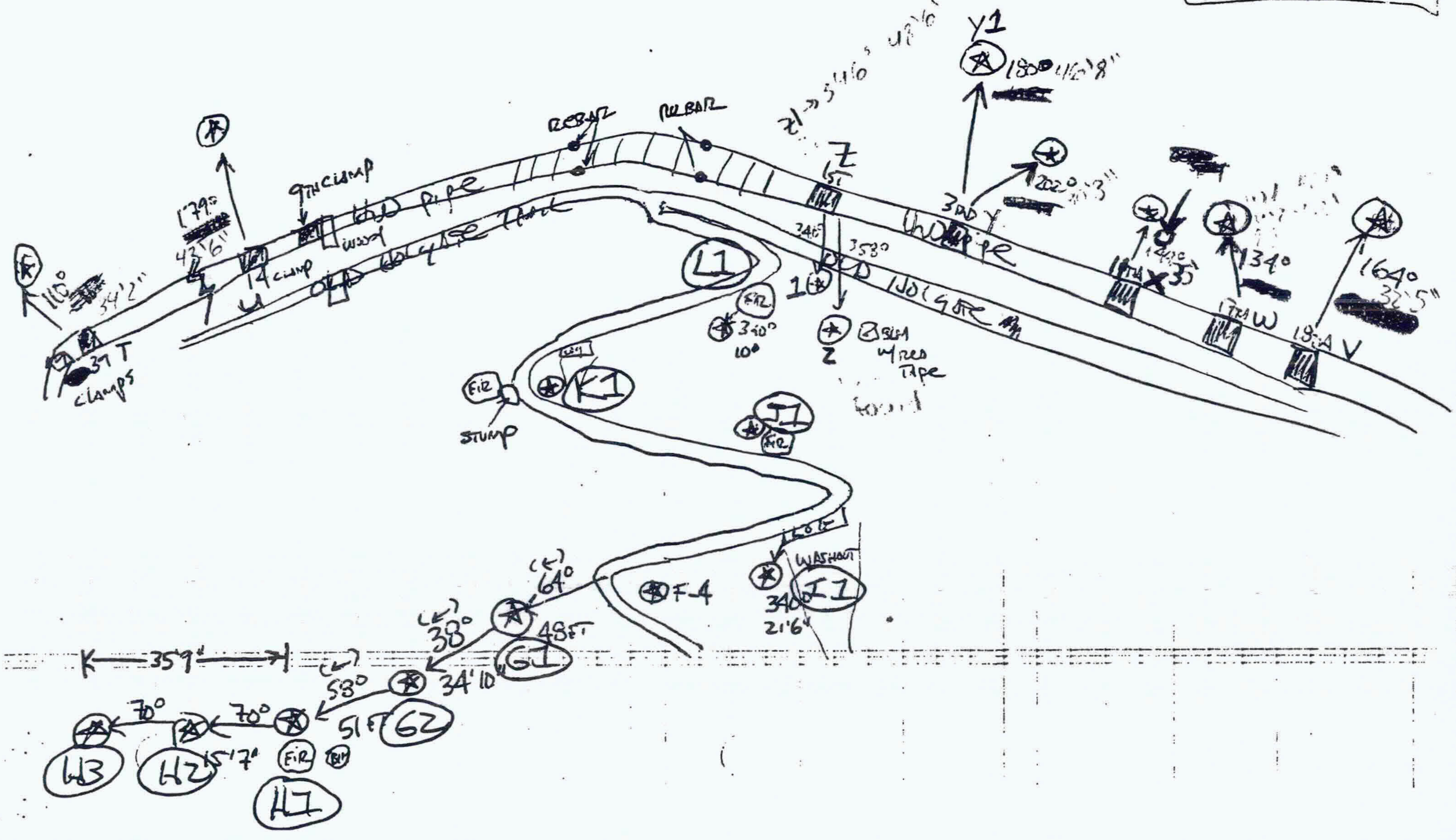
Manhole
45° 27 min 27 sec N
122° 27 min 58 sec W

NEW PLANTS
18E

JULY 5th, 1998
POWELL BUTTE NATURE

mike
tiffany

2 hours of volunteer work



TREES
Big leaf Maple
Douglas Fir
Red Alder
Cascara
Vine Maple

SHRUBS
Eldeberry
Oregond Grape
Red Huckleberry
Indian Plum
Vanilla Leaf

VINES
Thimbleberry
Baneberry
Blackberry
Ivy
Honey Suckle

GRASSES/WILDFLOWERS
Roberet's Geranium
PiggyBack Plant
Stinging Nettles
Water Leaf
Trillium
FairyBells Lactuca
Wild Ginger
Sedge (Henderson)
Inside Out Flower
Fescue Grass
Solomon Plume
Lactuca

VANilla leaF

FERNS
Sword Fern
Brackin Fern
Lady Fern

MOSSES
Mosses-no distinct name

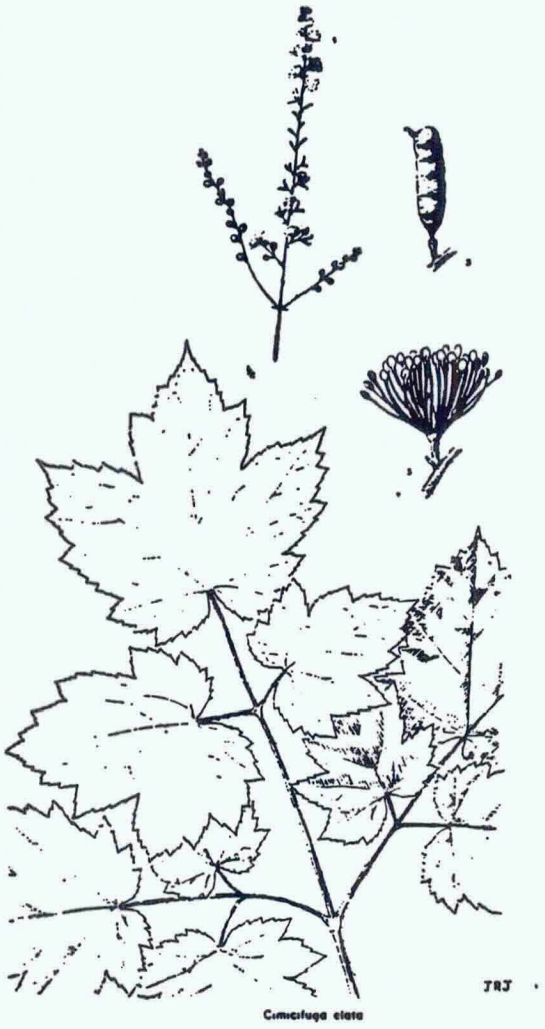
MUSHROOMS
Mycena
Honey Mushroom

SEAN NOLAN

BIOLOGICAL INFORMATION

Species Description

The following information was compiled from Hitchcock et al. (1964), Kaye and Kirkland (1993, 1994) and Alverson (1995). The illustration was copied from Hitchcock et al. (1964), with copyright permission.



Family - Ranunculaceae - buttercup family

Scientific Name - *Cimicifuga elata* Nutt.

Common Name - tall bugbane

Description - Herbaceous perennial, stems branched above, 1-2 meters tall, more or less finely pubescent and somewhat glandular above.
Leaves - Biternate; maple-like leaflets are shallowly 3-lobed, ovate-orbicular, finely serrate-dentate up to 1.5 cm long.

Flowers - Apetalous, in a large compound panicle, glandular sepals (4) 5, cream to pinkish. Petals are lacking, stamens are numerous. Pedicels 2-4 mm long, shorter than the flowers. Sepals are 3-4 mm long, caducous.

Fruit - Follicles 1 or 2, subsessile, very finely glandular-puberulent, 9-12 mm long. The stipe, if any, is scarcely 1 mm long. Numerous follicles have been reported from populations in the SW portion of the species range (Alverson 1995).

Flowering Period - June to August

Range and Distribution

In the United States the species occurs from northern Washington to southern Oregon, entirely west of the Cascade Range. In Oregon it is found on USFS and BLM lands of the Willamette, Mt. Hood, Umpqua, and Rogue River National Forests; and the Salem, Eugene, Roseburg, and Medford BLM Districts. In addition, a few populations are known from State forests and State and County parks and road right-of-ways, Army Corps of Engineers' lands, as well as private lands (Kaye and Kirkland, 1993). The species is also known from British Columbia.

Habitat Description

Plot data and observational data collected by ODA during 1992, 1993, and 1994 through Challenge Cost Share Projects suggest the following habitat characteristics for this species:

TRAP B3

Pitfall Samples

Sample number: _____ Your names: Emily hatten

Date Sorted: _____

Beetles	**Description**	**Number**
	Scaphinotus	10
	Pterostrichus	1
	rove beetles	5

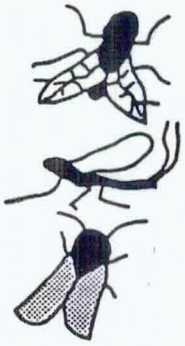
Ants:	**Description**	**Number**
	ant	1
		

Spiders:	**Description**	**Number**
	~~SPIDER (small)~~	TEN
	SPIDER	11

Mites:

Description	Number
velvet mite	4
unknown mite	1
MITES	1

Flying Insects:



Description	Number
fly	1

Millipede:

Description	Number
stylodolus	2
unknown	1

Centipede:

Description	Number

Other Types:

Description	Number
spring tail	111
pseudo-scorpion	1

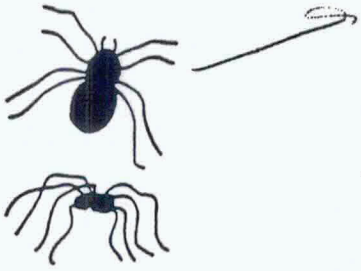
Pitfall Samples

Sample number: _____ Your names: _____

Date Sorted: B2

Beetles	Description	Number
		
	9 Rove Beetles + 5	
	23 - Ground	

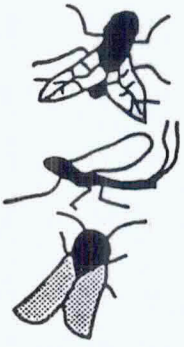
Ants:	Description	Number
	11	

Spiders:	Description	Number
	HHT |	|

Mites:

Description	Number
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	

Flying Insects:



Description	Number
1 mosquito	

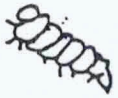
Millipede:

Description	Number
1	

Centipede:

Description	Number
𝍸	

Other Types:

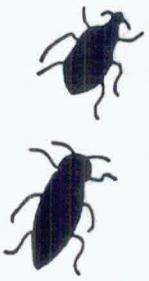


Description	Number
[illegible] 𝍸 𝍸	
Ticks 𝍸	
Pseudo scorpion 1	

A2

Pitfall Samples

Sample number: A2 Your names: Gloria Walker
Date Sorted: 2-26-99 Meredith McDermott
Adriana Pierre

Beetles	Description	Number
	Rove Beetle	~~20~~21
	Pterostrichus	4
	Earth Worm Eater	3

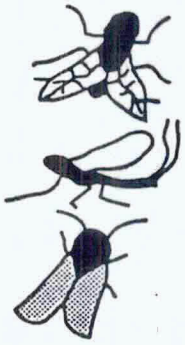
Ants:	Description	Number
	Ants	~~12~~15

Spiders:	Description	Number
	Daddy long leg	~~12~~
	Trap door	7
	Fly	6
	Spiders	~~136~~

Mites:

Description	Number
Spider Mites ||	

Flying Insects:



Description	Number

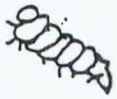
Millipede:

Description	Number

Centipede:

Description	Number

Other Types:



Description	Number
Springtail ||||	
Isopods	6
2 Unknown	2

Pitfall Samples

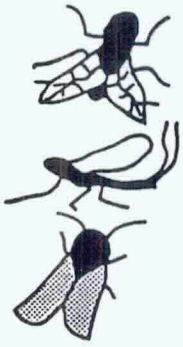
Sample number: B4 Your names: Sara Schoebel
Date Sorted: _____ Clair Gamalo
Allison Speer
Tiffany Warner

Beetles	Description	Number
	Scapunoks Angusticollis	5
	~~Pt~~ Pterostrichus crennicolls	2
		

Ants:	Description	Number
		
		

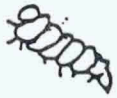
Spiders:	Description	Number
	Cybaeus	5
	Tick	1
	tick	2
	Spider	≠6

Mites:	Description	Number
		

Flying Insects:	Description	Number
	Surface Gnat (very small)	1
	Fly	1

Millipede:	Description	Number
		

Centipede:	Description	Number
		

Other Types:	Description	Number
	Spiny tail	1
		

STATION # 1

Which best describes the site? (FOREST) GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF (FERN) GRASS MOSS

Next to water

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH WEST

What is the condition of the canopy? CLOSED (INTERMEDIATE) OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 5'11

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? disease, dead tree, broken and bare branches. human disturbance

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? (YES) NO

Light 1/8
moisture 1/7
Ph = 7

yes, North face, intermed Canopy
plenty of moisture
- mixed trees

STATION # 2

Which best describes the site? FOREST (GRASSLAND) RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN (GRASS) MOSS

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH (WEST)

What is the condition of the canopy? CLOSED INTERMEDIATE (OPEN) (NONE)

DISTANCE OF SOIL SAMPLE TO TRAIL 29 ft

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? NOT available

NOTES / SOIL DATA: light/# moisture = 2

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

no mixture of trees
grassland
moisture in low
faces west
Very bright

Ph = 7

STATION # 3

Which best describes the site? (FOREST) GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? (CONIFER) (BROADLEAF) FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST (SOUTH) (WEST)

What is the condition of the canopy? CLOSED (INTERMEDIATE) OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 5ft 10% sky

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? disease, wind storm, bikeriding

NOTES / SOIL DATA: light/A moisture/1 → bottom of tree was dry
on trail is 3

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

ph=7

not on North face
moisture is low

main factor why it is not suitable

mixture of trees intermediate canopy.

STATION # 4

Which best describes the site? FOREST (GRASSLAND) RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER (BROADLEAF) FERN (GRASS) MOSS

What is the aspect of the site? (FACES) NORTH EAST (SOUTH) WEST

What is the condition of the canopy? CLOSED INTERMEDIATE (OPEN) (NONE)

DISTANCE OF SOIL SAMPLE TO TRAIL 12 ft 12 inches

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? early year clear cutting

NOTES / SOIL DATA: light 4 moisture 3

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

ph=7

to bright
facing south
open canopy
low moisture
no mixture of tree

STATION # 5

Which best describes the site? FOREST GRASSLAND RIPARIAN (BERRY BRAMBLE)

What is the dominant plant type? CONIFER (BROADLEAF) FERN GRASS (MOSS)

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH WEST

What is the condition of the canopy? CLOSED (INTERMEDIATE) (OPEN) NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 8 ft

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED (HIGH) (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? very bad erosion, bear bottles, pollution, house building dirt biking

NOTES / SOIL DATA: moisture/3 light/0

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

Ph=6.9

low moisture not a mixture of trees

STATION # _____

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL _____

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? _____

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES NO

STATION # 1

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 5' 19"

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? Trash, erosion, run off, broken trees

NOTES / SOIL DATA: Neutral pH6.9 Light D Moisture 3

Is this site a suitable habitat for Cimicifuga elata? YES NO

STATION # 2

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 22' 5"

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? Garbage, erosion

NOTES / SOIL DATA: pH 7 Neutral Light H Moisture 3

Is this site a suitable habitat for Cimicifuga elata? YES NO

STATION # 3

Which best describes the site? (FOREST) GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? (CONIFER) (BROADLEAF) FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST (SOUTH) (WEST)

What is the condition of the canopy? CLOSED (INTERMEDIATE) OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 8', 5"

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? fallen trees

NOTES / SOIL DATA: pH 7 Neutral Light A Moisture

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

STATION # 4

Which best describes the site? FOREST (GRASSLAND) RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN (GRASS) MOSS

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH (WEST)

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN (NONE)

DISTANCE OF SOIL SAMPLE TO TRAIL 31'

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? erosion

NOTES / SOIL DATA: pH 7 Neutral, Light H, Moisture 2

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

STATION # 5

Which best describes the site? (FOREST) GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? (CONIFER) BROADLEAF (FERN) GRASS MOSS

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH WEST

What is the condition of the canopy? CLOSED (INTERMEDIATE) OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 5'8"

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? erosion.

NOTES / SOIL DATA: pH 7 Neutral, light E, Moisture 7,

Is this site a suitable habitat for Cimicifuga elata? (YES) NO

STATION # _____

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL _____

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? _____.

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES NO

STATION # 1

Which best describes the site? (FOREST) GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? (CONIFER) (BROADLEAF) FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST (SOUTH) (WEST) west southw

What is the condition of the canopy? CLOSED (INTERMEDIATE) OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 4 feet

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? people's tracks, bikes, horses

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

more canopy
farther down the hill away from trail

pH 7
light A
moisture 1

STATION # 2

Which best describes the site? FOREST (GRASSLAND) RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER (BROADLEAF) FERN (GRASS) MOSS

What is the aspect of the site? (FACES) NORTH EAST (SOUTH) WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN (NONE)

DISTANCE OF SOIL SAMPLE TO TRAIL 7 feet

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? human tracks, bikes

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

pH 7 7
light >8
moisture 7 8

STATION # 3

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 3 feet

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? beer bottles, ruts, erosion

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES NO

pH > 6.9
moisture 3
light > d

STATION # 4

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL 4 feet

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? human tracks

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES NO

pH > 7
light > e
moisture > 7

STATION # 5

Which best describes the site? FOREST (GRASSLAND) RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN (GRASS) MOSS

What is the aspect of the site? (FACES) (NORTH) EAST SOUTH (WEST)

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN (NONE)

DISTANCE OF SOIL SAMPLE TO TRAIL 28 feet

DEGREE OF DISTURBANCE IN AREA OF SITE: (LOW) MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? human tracks

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES (NO)

pH 7 7
light "h"
moisture 2

STATION # _____

Which best describes the site? FOREST GRASSLAND RIPARIAN BERRY BRAMBLE

What is the dominant plant type? CONIFER BROADLEAF FERN GRASS MOSS

What is the aspect of the site? (FACES) NORTH EAST SOUTH WEST

What is the condition of the canopy? CLOSED INTERMEDIATE OPEN NONE

DISTANCE OF SOIL SAMPLE TO TRAIL _____

DEGREE OF DISTURBANCE IN AREA OF SITE: LOW MED HIGH (CIRCLE ONE)

WHAT SIGNS OF DISTURBANCE ARE PRESENT? _____

NOTES / SOIL DATA:

Is this site a suitable habitat for Cimicifuga elata? YES NO

Professional Partners Involved In Project

Jim Sjulin, Portland Parks Bureau: supervisory role in project, granted the permission to do monitoring in Powell Butte, will evaluate the project at conclusion.

Marty Stein, Botanist - Mt. Hood National Forest - U.S. Forest Service: directly involved in project's planning and implementation on a volunteer-basis.

Dan Vasen, Biology Teacher - Central Catholic High School. On-site project manager.

Bruce ?, Interim Chairperson - Friends of Powell Butte: supervisory role in project, will volunteer on a limited-basis and help to evaluate the project at conclusion.

Dr. Andy Moldenke, Entomologist, Oregon State University, terrestrial arthropod I.D. expert and source of motivation to expand current project to include insect survey.

Lynn Wilson, Grant Coordinator, Metro Parks and Greenspaces Program, primary funding source of current project, will help to evaluate the project at conclusion

Dr. Marion Dresner, Center for Science Education - Portland State University: advisory role, source of training for planning forest research project.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oregon State Office
2600 S.E. 98th Avenue, Suite 100
Portland, Oregon 97266
(503) 231-6179 FAX: (503) 231-6195

February 19, 1998

Dan Vasen
Central Catholic High School
2401 SE Stark Street
Portland, Oregon 97214

Dear Mr. Vasen:

Thank you for your cooperation in assisting the U.S. Fish and Wildlife Service (Service) with ensuring that your Greenspaces grant project is in compliance with the National Environmental Policy Act (NEPA), National Historic Preservation Act, Endangered Species Act, and the Department of the Interior Policy for Level 1 Environmental Contaminant surveys, as required for all federally funded projects and programs. We are pleased to inform you that the project, as described in Metro Contract # 920253, is in compliance with these regulations and you may move ahead with implementation. However, because the Service cannot guarantee that issues pertaining to these mandates will not arise as on-the-ground work begins, you are responsible for ongoing site inspection and compliance as described below.

GENERAL

If there are any changes in the project location, dimensions, or activities described in your contract with Metro, you must notify the Service so that we will be able to evaluate the changes and ensure compliance with the mandates listed above. In addition, grantees are solely responsible for following all other local, state, and federal regulations and obtaining all necessary permits for project activities.

CULTURAL RESOURCES:

The appearance of cultural properties can never be predicted with certainty. The presence of arrowheads, rock chips, ground stone, square nails, "purple" glass, bone or even tin cans my indicate a subsurface deposit that is greater than 50 years old and should be looked at by a professional archaeologist. Should any cultural deposits be encountered during any phase of the project, work shall halt and the Service's Cultural Resources Team based out of the Tualatin River National Wildlife Refuge should be notified by calling them at (503) 625-4377. An assessment of the deposits should be made by a Service Archaeologist, or other similarly qualified individual, before work may resume in the area of discovery.

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CONTAMINANTS:

Environmental contaminants such as toxic chemicals or hazardous debris are widespread and can pose a problem for people or the environment, especially in urban areas. Accurately assessing contaminant conditions at a site can be difficult because the contaminants may be covered by soil or sediment, or appear only after a site is disturbed. Indications of contaminants include dead or dying animals in the vicinity, localized spots of dead vegetation different from surrounding areas, discolored or oily water or soil, or strange smells. If these contaminant indicators or other suspicious signs are encountered during any phase of a project, the Service should be contacted immediately. An assessment of the potential contaminant situation should be made by a Service Environmental Contaminants Specialist or other similarly qualified individual before work resumes in the area of discovery.

ENDANGERED SPECIES:

The Service has determined that your project will not result in any adverse impacts to Federally listed and proposed endangered, threatened, or candidate species. However, please be aware that all in-stream work or activities which may affect a stream must be in compliance with the Oregon Department of Fish and Wildlife's "Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources." The Service is enclosing the list of "Federally listed and proposed endangered and threatened species, candidate species and species of concern" developed for your project site for your information so that you will consider these species as you conserve fish and wildlife habitat, and to make you aware of the possibility that these species may occur on or near your project site.

Please contact Jennifer Thompson of my staff at (503) 231-6179 if you have any questions or if you need assistance with meeting these requirements. Thank you for your involvement with the Metropolitan Greenspaces Grant Program, and good luck with your project.

Sincerely,

Acting Russell D. Peterson
State Supervisor

Enclosure:
Federally listed and proposed endangered and threatened species list

cc:
Lynn Wilson, Grant Coordinator; Metro Parks and Greenspaces

ATTACHMENT A

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR IN THE AREA OF THE PROPOSED 1998 GREENSPACES ENVIRONMENTAL EDUCATION PROJECT CENTRAL CATHOLIC HIGH SCHOOL TALL BUGBANE 1-7-98-SP-051

LISTED SPECIES[1/]

Birds		
Peregrine falcon	*Falco peregrinus*	E
Bald eagle	*Haliaeetus leucocephalus*	T
Plants		
Golden paintbrush[2/]	*Castilleja levisecta*	T
Bradshaw's lomatium	*Lomatium bradshawii*	E
Nelson's checker-mallow	*Sidalcea nelsoniana*	T

PROPOSED SPECIES

None

CANDIDATE SPECIES

Plants	
Willamette daisy[3/]	*Erigeron decumbens* var. *decumbens*

SPECIES OF CONCERN

Mammals	
Long-eared myotis (bat)	*Myotis evotis*
Fringed myotis (bat)	*Myotis thysanodes*
Long-legged myotis (bat)	*Myotis volans*
Yuma myotis (bat)	*Myotis yumanensis*
Pacific western big-eared bat	*Plecotus townsendii townsendii*
Birds	
Olive-sided flycatcher	*Contopus borealis*
Little willow flycatcher	*Empidonax traillii brewsteri*
Amphibians and Reptiles	
Northwestern pond turtle	*Clemmys marmorata marmorata*
Northern red-legged frog	*Rana aurora aurora*
Plants	
Howell's bentgrass	*Agrostis howellii*
White top aster	*Aster curtus*

NATIONAL WILDLIFE FEDERATION

2031 S.E. Belmont, Portland, Oregon 97214-2812
503-230-0421
Fax: 503-230-0677

April 20, 1998

TO:

Portland Nursery	Metro
Berry Botanic Garden	The Nature Conservancy
U.S. Fish & Wildlife Service	Environmental Middle School
Native Plant Society	Central Catholic High School
Friends of Trees	OSU Master Gardeners

FROM: Beth Stout, Educational Outreach Coordinator, National Wildlife Federation
Rosanne Marmor, Tenant Services Coordinator, REACH Community Development

RE: HOME IS WHERE THE HABITAT IS Earth Day Celebration

We had a very successful Earth Day event on Saturday -- thanks to all of you! We estimate that about 200 people came to HOME IS WHERE THE HABITAT IS at Mt. Tabor Park. Thank you for making the day a special one for everyone and for sharing your time, materials and information -- we appreciate it.

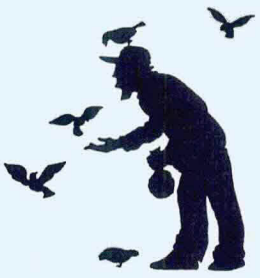
Thanks again -
Beth & Rosanne

Celebrate EARTH DAY at Mt. Tabor Park Saturday, April 18 from 11am-3pm

Join the National Wildlife Federation and REACH Community Development for Home Is Where The Habitat Is in Mt. Tabor Park's Covered Picnic Area "A"

Activities for kids, nature walks, information tables, clearing ivy and blackberry from park trails!

For more information contact Beth Stout, Educational Outreach Coordinator, National Wildlife Federation, 230-0421



PORTLAND PARKS AND RECREATION

1120 SW FIFTH AVE, SUITE 1302, PORTLAND, OREGON 97204-1933
TELEPHONE (503) 823-2223 FACSIMILE (503) 823-5297

JIM FRANCESCONI, COMMISSIONER CHARLES JORDAN, DIRECTOR

October 15, 1997

Dan Vasen
Central Catholic High School
2401 SE Stark Street
Portland, OR 97214

Dear Mr. Vasen:

On behalf of the City of Portland, I am pleased to offer this letter of cooperation and support for your rare plant monitoring project at Powell Butte Nature Park. Monitoring the existing small population of tall bugbane (*Cimicifuga eluta*) at Powell Butte and the development of conservation strategies should provide us with information useful for its protection within the park. And of course, careful monitoring may provide new information useful for its conservation throughout its range.

By this letter you have the City's permission to (with proper discretion and observation of regulations and protocols) mark plants of the species in the field and to mark a small number of reference trees as required to locate individual plants over time.

If I can be of any additional help, please feel free to contact me at 823-5122. The City is eager to accept the results of your students' work.

Sincerely,

Jim Sjulin
Natural Resources Supervisor

c: Bob Willis, Portland Water Bureau
Steve Bricker, Portland Parks and Recreation
Marty Stein. US Forest Service

United States Department of Agriculture | Forest Service | Mt. Hood National Forest | 16400 Champion Way Sandy, OR 97055

October 10, 1997

To Whom It May Concern:

The Mt. Hood National Forest has agreed to provide technical assistance, labor and equipment for the Rare Plant Monitoring Project taking place within Powell Butte Nature Park. This assistance will be provided to Mr. Dan Vassen by the Forest Botanist on a volunteer basis and does not include a commitment of funds.

The Mt. Hood National Forest manages for a number of rare plant species including tall bugbane, Cimicifuga elata, and is therefore interested in sharing data and other information which could improve management techniques.

Martin Stein
Forest Botanist

PORTLAND STATE UNIVERSITY

October 13,1997
Metro Parks and Greenspaces Grants
600 N.E. Grand Ave.
Portland, OR 97232

Dear Lynn,

I am writing this letter in support of Dan Vasen's biological monitoring proposal. Dan worked with us this past summer in our National Science Foundation funded FOREST Project. He enthusiastically participated in 6 weeks of training and field monitoring work with the Mt. Hood National Forest and with Metro Parks and Greenspaces. Currently, he is working with Marty Stein (botanist) of the Forest Service and us at the FOREST Project to establish a monitoring site at Powell Butte. We will continue, wholeheartedly, to support his work with his students to implement his proposed monitoring project over this academic year.

In particular, we will provide

- approximately $400.00 for materials and supplies to implement the project,
- two program graduate students (Debbie Tolman, as a plant biologist, has and will continue to provide advice in botanical monitoring and Brad Rawls) and myself, faculty member at Portland State University. All of us will be available to visit his classroom and assist with the field work.
- two capstone students from Portland State University have volunteered time and will continue to be available for two academic quarters (through March 15).
- In addition, other faculty from both PSU and OSU will be available to consult with him about his work.

Dan's proposal to monitor the status of the plant *Cimicifuga elata* at Powell Butte will no doubt have benefits for his students, the local community, and far-reaching implications for the local environment. I urge the committee to fully fund his proposal.

Thank you,

Marion Dresner

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As biology students at Central Catholic High School, we are working with the U.S. Forest Service and affiliates to monitor the population of rare indigenous plants called Cimicifuga elata in the Powell Butte Nature Park in Portland during the 1997-98 school year.

In October, our initial group went to the designated area of Powell Butte to survey the plants' location and to record the surrounding foliage. We wrote detailed orienting instructions to the labeled plant sites from the trail.

We plan on taking two more field trips in the spring to determine their growth rate, seed dispersal, and reproduction of the Cimicifuga elata plant.

After all the data is gathered and the results are put together, we will assemble a conservation strategy. We will then present our recommendations to local agencies and to the public at meetings and through the Rampart student newspaper at Central Catholic.

By doing this, we, the students, have, and will continue to, have respect for our suburban wildlife inform others to do the same.