

FIELD SURVEY OF WILDLAND SOILS AND PLANTS

BES 487B

Summer 2004

Instructors:

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Meeting times:

Preparation classes: TBD, during July, three night classes 6-9 PM. Meet in UW1 202.

Field trip: August 2-6

Final class: After the hike, we will get together to discuss what was learned on the trip, and for you to hand in your assignments.

Class description:

This class is designed to give you experience studying and locating soils and landscape/vegetation changes in remote alpine areas where little environmental information is currently. The focus of the class is a 5-day field trip in the Cascade Mountains. The route is primarily on the the crest and eastern side of the Cascades just north and east of Glacier Peak. Prior to the field trip, we will discuss the area you will be hiking, soil and plant ecosystem changes, wilderness use and other topics.

We will begin at Trinity, hike up Phelps Creek, and cross Spider Gap into Lyman Glacier. Most of our time will be spent studying the Lyman Glacier/ Lyman Lake/ Cloudy Pass areas. After two days at Lyman Lake, we will go down Railroad Creek to Holden, and visit the old Holden mine area. From Holden, we'll catch a bus to Lake Chelan, head down the lake in a ferry to Fields Point Landing, and return by van to Seattle. The high point of the trip is about 7100 ft, and total hiking distance is about 20 miles not including side trips. Additional side trips will be back and forth to Lyman Glacier, Cloudy Pass/Peak.

We may return late on Friday, so also bring money for dinner or snacks Friday evening.

Field Trip Fees:

University van, bus and ferry fee: \$60.00

Recommended Reading:

Brady, N. C and Weil, R. 1999. The Nature and Properties of Soils,12th Ed. Prentice Hall. pp. 65-116.

Class Requirements

Field presentation	20%
Field study	30%

Field journal	30%
Participation	20%

Field Quiz:

At one stop during the field trip, you will be given a field quiz. This will include describing the soil, vegetation, topography and other features of the area. Try to explain the type of soil and soil features that are present. You will NOT be given the quiz until you have time to familiarize yourself with the soils and vegetation.

Field Presentation:

During the field trip, each student will give an informal presentation about some aspect of particular interest to this area. Presentations should be 15-20 minutes long. These will be scheduled for around the campfire or at a stop relevant to the topic. If you wish to give a handout on your topic keep it short to save on weight! Choose your topic as soon as possible as you will have less than a week to prepare before we leave. Turn in your topic by July 8th. Some suggestions for topics are (but you are welcome to develop your own):

Alpine restoration	Wilderness use
Recreation impacts on soil	Fire
Mining reclamation	Volcanic soils/Andisols
Mapping wilderness soils	Alpine soils
Riparian soils	Spodosols
Glacial features/deposits	Wilderness Management
Under/overstory vegetation/soil relationships	Soil Organisms
Environmental Ethics	Nutrient Cycling

Field Trip Report:

Each student will keep a field notebook with a log of sites and information from the field trip. After the trip, you will write up a brief "report". The report should include a transect of the soils/vegetation/locations that we stop at. Keep the write-up part of this paper to 2-3 pages that very briefly summarize your observations and experiences of this transect of the Cascades. Your notebook will be the basis for this transect, so good notes during the trip will be important - don't try to rely on your memory. The summary should only be 4-5 pages long including the transect but not including references. You may need to include additional information that you research after the trip and references. Try to state what level of survey you have done, and how you would expand your transect into a larger survey of the Glacier Peak area. Field trip transect and field notebook will be due July 27th.

Some Suggested Equipment:

Remember--pack as lightly as you can and still be safe. Plan on washing some clothes and reusing them. Be sure you can always have a dry set of warm clothes in case of bad weather.

_____ 2 long johns or pants	_____ backpack
_____ 2-3 T-shirts	_____ tent (arrange sharing)
_____ 2 shorts	_____ sleeping bag (good to freezing)
_____ 3 undies	_____ sleeping pad
_____ 3 socks	_____ paper plates (very optional)
_____ boots (waterproofed)	_____ toilet paper
_____ raincoat .	_____ pack cover
_____ rain pants	_____ water bottles (either 1 or 2)
_____ down coat	_____ compass (optional, group will have)
_____ bandanas	_____ map (optional, group will have)
_____ hat	_____ flashlight or headlamp
_____ gloves	_____ extra batteries, bulb
_____ wool/synthetic shirt	_____ sunglasses
_____ wool/snythetic undershirts	_____ water purifier or tablets (share)
_____ eating/cooking utensils	_____ small notebook (waterproof paper)
_____ watch	_____ knife
_____ toothbrush, toothpaste	_____ lighter/matches
_____ other hygiene items	_____ insect repellent
_____ sunscreen, chapstick	_____ cord to hang food (share)
_____ small towel or washcloth	_____ gaiters

Recommendations for Food

Pack Light! Use freeze-dried or homemade dry foods for dinners that you can cook in a roasting bag or your own bowl (but these should be quick cook). We need to keep the amount of fuel to a minimum, so do not bring foods that take long to cook. Oatmeal, soups or snacks for breakfasts. Bagels, cheese, crackers, salami, gorp and other similar foods for lunch. We will NOT set up stoves to make hot water for lunch. You will probably also want some snacks and desserts. Also, consider bringing coffee, tea, or other hot beverages. Mixes for cold drinks are nice if you can spare the weight. Suggest you leave the beer and wine at home!

Everyone will be responsible for providing their own clean water (using tablets or filters). We will provide 2-3 stoves, and 1 pot per stove. These pots will only be used for boiling water! If you want to bring something to cook in a pot, bring your own pot and soap to clean it! Everyone will help to carry community supplies, such as the maps, stoves, pots, shovels, field guides and fuel.

Try to keep your total pack weight proportional to your body weight:

45-55 lbs for large people

35-45 lbs for small people

Although your pack may seem heavy to start with, it will get lighter every day.

The Glacier Peak Area

Some Climatic Data

	Precipitation (cm)	Air Temp °C Minimum	Air Temp °C Maximum
Suiattle River	270	-8	22
West of Crest	310	-9	20
East of Crest	290	-9	20
Holden Village	100	-10	28
Lake Chelan	90	-9	29

Forest Zones

Riparian
Western hemlock-Douglas-fir-Cedar
Western slopes-abies amabilis
Subalpine-west
Alpine (Cascade Crest)
Subalpine-east
Eastern slopes-mixed conifer
Ponderosa Pine-Douglas-fir

Parent Materials

shist
granodiorite
alluvium
colluvium
glacial outwash moraines
pyroclastic materials (pumice, ash)
gneiss

Site/soil Information to Monitor:

Location	Vegetation
Soil Type	Soil Horizons (types, depths, textures, colors)
Parent materials	Elevation
Aspect, Slope	Special Features/Notes

Student Eligibility

Due to this being a wilderness area, the class size is limited to 10 students. No science prerequisites are required, but a comfort with chemistry and biology is recommended. A willingness for strenuous physical activity is necessary, as you will be carrying a 40-50 lbs. Pack for five days.

Academic Honesty

As UW Bothell students, you are expected to uphold the highest standards of academic conduct. In this class, you should be particularly aware that instances of cheating on exams or plagiarism in writing will be dealt with very seriously. A separate, more detailed handout on academic honesty will be provided to you on the first day of class. You are responsible for reading it thoroughly and understanding its contents.

All work on the exams and papers should be strictly your own and without the aid of any materials not specifically allowed. Plagiarism is defined in the UW Bothell catalog as follows (I have placed a section in bold and underlined it for emphasis):

“Plagiarism is the use of the creations, ideas or words of someone else without formally acknowledging the author or source through appropriate use of quotation marks, references, and the like. Plagiarizing is stealing someone’s work and presenting it as one’s own original work or thought. Student work in which plagiarism occurs will not ordinarily be accepted as satisfactory by the instructor, and may lead to disciplinary action against the student submitting it. **Any student who is uncertain whether his or her use of the work of others constitutes plagiarism should consult the course instructor for guidance before formally submitting the course work involved.**”