

Wilderness & Civilization I Field Studies

RSCN 273 Fall 2008

2 Credits, Traditional Grade

Course meets Monday or Wednesday mornings (9:10-10:40 am) and most Fridays.

Instructors

Sarah Potenza— 243-6956; Paul Alaback—243-2913; Nicky Phear—243-6932

Course Description

The Field Studies class is an experiential course designed to develop your capacity to observe, describe, and interpret the natural world. The course takes place outdoors during a ten-day wilderness backpacking expedition, weekly naturalist walks, and field trips around Montana. Field journals are used as a forum to describe observations and develop your naturalist skills. The goal of this course is to develop observation skills that will assist you in reading the landscape not only in Montana, but wherever you call home or go from here. Each student on this course will:

- develop a field journal with weekly field notes and species lists,
- record field observations during a ten-day trip in the Bob Marshall Wilderness,
- study grassland and forest ecosystems across Montana,
- identify Montana's common plant and animal species,
- teach an environmental education lesson, and
- contribute to an on-line field ecology guide through the Adopt-A-Plant assignment.

Course Requirements

Evaluation

Environmental Education Lesson (Fall Trek)	15%
Field Journals (<u>due Oct. 6 and Dec. 3</u>)	
Fall Trek (1 general field note and 4 spp observations)	15%
General Field Notes (3 Friday field trips)	10%
Weekly Walks (10)	30%
Species List	10%
Adopt-A-Plant Assignment (<u>due Oct. 8</u>)	15%
Participation	5%

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VPSA/index.cfm?page?1321>.

Participation (5%)

Participation is a critical component of field studies. We visit places around western Montana and meet with a variety of people who generously share their time with us. Your participation will be evaluated on your active engagement, careful listening, full involvement, questions/comments during field trips, and on your timeliness and preparedness.

Absence: You are allowed one excused Friday Field trip and one excused Weekly Walk absence during the semester. Your absence must be excused by Nicky or Sarah before the date. Additional absences result in no points for that field note. You do have the option to make up additional absences by completing a field note and receiving up to half credit for that field note.

Environmental Education Lesson (15%)

See guidelines on assignment sheet

Field Journals (65%)

Due dates: Monday, October 6, and Wednesday, December 3

Why keep a field journal?

There are many reasons to keep a field journal that range from recording scientific facts for research to finding inspiration for a piece of art or literature. In general, a field journal is an important tool that will help you to better see and understand the natural world. Below are a few more reasons why field journaling is important:

- Sharpens your observational skills
- Helps you build knowledge of the land (i.e. ecological literacy)
- Documents natural history events
- Slows you down so you can appreciate nature's detail, beauty, and complexity
- Helps you rediscover and/or develop all your senses by engaging with nature
- Transforms you into a better naturalist, artist, poet, writer, scientist, and neighbor
- Make connections between places, critters, and your reflections on them
- Develops your eye--you will never see the world in the same way
- Develops your skills as a naturalist that you can build on for the rest of your life
- Helps you be present in the moment

Field Journal Requirements

During the Fall Semester you will be required to do two types of entries in your field journals. During our Fall Trek and select Friday field trips, you will complete a **General Field Note** entry. On your *Weekly Walks*, you will complete a **Naturalist Field Note** entry. **Both entries require *Orienting Information***. The third type of journal entry you are required to do is create a **Species List**. We suggest that you divide your journal into three sections:

1. General Field Notes
2. Weekly Walks Naturalist Field Notes
3. Semester Species List

We will often facilitate field notes in some way, shape or form, in order to help focus your entries as we encounter different environments throughout the year. We provide you with a general outline of what to include in a good field note (see below), however, you are strongly encouraged to add other questions, observations, etc. that interest you and help make your journal more meaningful.

Orienting Information

Each Field Note needs to include the following *Orienting Information*:

Date: Write the date and time out in the following format: "10 January 2008, 10:00 am " in the left hand margin.

Location/ route: Be as concise as possible without sacrificing accuracy. Order the information so that it goes from the most specific to general, or from local to landscape level. If you are in the same place two or more days running the location information can just be "as previous". Ex:

Location: Rattlesnake Creek, 2 miles north of River Corridor Trail, 'South Zone' of Rattlesnake Recreation Area, 4 miles north of Missoula, Missoula County, western Montana¹.

Distances should be straight-line distances, not route distances. The DATE and LOCATION should be underlined. Start the underlining under the date and continue straight across the page.

Elevation: Approximate elevation in meters or feet above sea level. (get from topo maps or altimeter)

Environmental/ Additional information: Give a description of the landscape and vegetation type, including dominant or important species where possible. Refer to NOTES ON KEEPING A NATURAL HISTORY FIELD JOURNAL for habitat descriptions. When traveling, give a synopsis of the vegetation types passed through during the day. Such as second growth lodgepole pine forest, young clearcut, mixed large-ponderosa pine mature forest. In addition, please include information such as land ownership, watershed, mountain range, basin/valley, habitat, aspect, elevation, roads, towns, and any other creative way you want to demonstrate location.

¹ If your whole notebook is devoted to your field trips for this semester then you should have the general location (such as western Montana) at the beginning of the book. You then do not need to repeat this in all the field observations unless you are in a different area such as Yellowstone, the Rocky Mountain Front, or Central Montana (the Missouri River Trip).

Example: Additional info: East bank of Rattlesnake Creek, riparian habitat, heavy trail use. Rattlesnake Creek is a municipal watershed for the city of Missoula. The Rattlesnake flows into the Clark Fork which flows into the Columbia River and to the Pacific Ocean.

Time: Recording time is important for special events, or for describing how long was spent in a particular location or at a particular activity. If you have two or more entries on the same day and location, write a new entry immediately under the previous one, with an updated time.

What was happening: species seen, behaviors, lecture notes, etc.

Fall Trek Journaling Assignment

During the *Fall Trek* in the Bob Marshall Wilderness there are specific journaling assignments. During this time, you will need to:

- Complete one **General Field Note** entry (see below)
- Document four plants/trees/shrubs/grasses/etc and two critters using the **Species Observations Guidelines** below.
- You will need to include unique orienting information for each entry unless you are in the same place.

The Fall Trek Journaling Assignment is in addition to the “Adopt-a-Plant” assignment, see page 4 for details on this assignment.

1. General Field Note

Several of our Friday field trips will focus specifically on the ecology of regional grassland, forest, river and other ecosystems. You will need 4 General Field Notes from the ecological field trips. Document your observations and interpretations from these trips using your own creative style. Be sure to capture what you found to be significant points made by the speakers, in addition to your personal observation. Use creative drawings, diagrams, color, words, and other techniques. In order to encourage you to diversify your field journal and be creative, you are required to include (in addition to orienting information) at least one of the following assignments in each of your field journal entries:

1. An event map
2. A series of Contour Sketches or Modified Contour Sketches
3. A full page drawing and text spread (a journal entry that takes up both sides of your journal)
4. An original poem or creative writing inspired by being in the field
5. Species Observations--An entry of two species (plant or critter) according to the outline below

We encourage you to try all of the above at some point during the semester.

Species Observations Guidelines

Plants/trees/shrubs/grasses/etc.— observations include:

1. Common name(s) and Scientific name
2. Describe three distinguishing characteristics (see observation guidelines under “Adopt-a-Plant”, page 4)
3. A field sketch of some distinguishing part (cones/fruit/needles/etc.) and the whole plant and label parts if necessary; include the scale that the plant (or part of plant) is drawn at (i.e. 1/2 life size), and reference any guide book used in helping your field sketch. It is very important to have some sort of sketch of what whole plant looks like, not just a sketch of a small part like a leaf. This will make it a more scientifically valuable and useful observation. Note height of plant.
4. Describe habitat plant was found growing in (what are the other plants growing with it, wet or dry site, aspect, canopy cover, soil, etc., on top of log, in wet depression, in grassy opening, along trail...)
5. Explain why you choose these particular plants
6. Include interesting facts, observations, or questions (e.g. plant is native or invasive, Latin name comes from Lewis and Clark, plant has been browsed on by elk or is a favorite food for grizzly bears, etc.)

Animals that you see/hear or find signs of— observations include:

1. Common name and Scientific name (or general description if name unknown)
2. Describe distinguishing characteristics if you saw critter, or describe signs that indicated the critters presence including calls or sounds that they made.
3. Sketch critter or some sign of critter that is relevant and meaningful to the encounter. If you actually saw critter try and draw from memory or use field guides to fill in the blanks. If you saw a track or scat, then sketch that.
4. Give a habitat description and include what the animal was doing there, or why you think it was found in particular habitat.

2. Naturalist Field Note

Weekly Walks provide an opportunity for us to explore the natural world right here in Missoula each week. Consistent observation of what composes our home is something many of us may aspire to but rarely take the opportunity to do; now is your chance! During these walks we will document our observations over time as the seasons change, birds come and go, plants start to flower or drop their leaves, snow falls, and animals wander leaving their tracks. This is also a good time to practice field sketching and other field journaling skills if you get inspired. For walks we will break into two groups. Groups will be determined on Monday, Sept. 8. **You are required to complete ten *Naturalist Field Notes*.**

For each entry, include:

- Detailed orienting information and
- Detailed notes, sketches and/or observation on the assignment or topic of the walk

3. Semester Species List

Your *Species List* is a way to document all of the plants and animals that you encounter this semester, whether on our trek, walks, or field trips. By the end of the semester, create an alphabetized species list; with the species first, then where **you** saw it, and the date. Either one list or sub-divided into species types is fine (i.e. trees, shrubs, flower, lichen, critters). Then, if you see it again somewhere else, just add the place and date to the entry. That way you get an idea of the distribution and abundance of the species.

Example: Douglas Fir, *Pseudotsuga menziesii*; Rocky Mtn Front, 9/1-9/8; Lolo Peak, 9/28, etc.

- You can either reserve pages at the back of your journal for your Species List or type it, but it needs to be alphabetical. If you want to ‘roughly’ alphabetize the list in your journal, that is fine, i.e. have all the ‘A’s together, all the ‘B’s together. That way you can set aside pages/ sections of pages in your journal for each letter and add species as you go. Either way is fine, as long as the species are ordered.
- Remember to add in any animals **you** see!
- Check spelling on plants and animals

Journal Grading and Evaluation

Field journals are graded based on demonstrated attention to the natural world, completeness, thoughtfulness, and organization. You will not be marked down for things like artistic ability, but we will be looking for things like improvement and evidence of challenging yourselves. Late journals will be marked down a ½ grade. Here is a list of the specific categories you will be graded on:

- Completeness (followed the full assignment)
- Observation skills (paid attention to the land, species composition, ecological processes, and trip speakers)
- Organization (entries organized with clear and thorough Orienting Information)
- Thoughtfulness
- Making connections (exploring the relationships among place, ecology, people, history, etc.)
- Getting your journal in on time

Please Note: We always try to give you some time on the Monday walks and Friday/weekend field trips to start your field notes. However, there is not enough time on the trips, and so it is expected that you will finish your journal entries as homework.

Adopt-A-Plant

Assignment Due: Weds, October 8, to Paul Alaback (send completed spreadsheet template and photos/drawings to: palaback@montana.com)

Evaluated based on completeness, accuracy, presentation, use of references, creativity, and adherence to a scientific format*.

Each of you will be required to complete a detailed study of a plant species during and after the Fall Trek. *You will need to select a species from a list provided by us. You need to choose your species by at least the middle of the Fall Trek.* The purpose of this assignment is to hone your observation and research skills, share this information with the group. While in the field, watch for your plant and record detailed and descriptive information about it in your journal. Draw or photograph the plant and collect a sample (if possible) to press in your journal. Use your Plants of the Rocky Mountains in addition to the list of websites and books/articles, and what you can find in the library to help you with your research. It is particularly valuable to use journal articles wherever possible to provide newer information which has been critically reviewed by scientists. You need to use at least 5 extra published articles or books in your final paper.

Your Adopt-A-Plant assignment should include discoveries from your field observations in addition to details from your library research. A drawing or photo** must also be included. Drawings can be turned in as hard copies, or as electronic scanned copies. A special spreadsheet template will be posted on the Wilderness and Civ website which you need to use to fill in all the information you learn about your plant. Please try to be as complete as possible, and keep track of your sources so they can be cited consistently.

Observations during the Fall Trek should include:

- Appearance
 - Texture/Smell/Color/Shape/Size, overall shape and structure of plant
- Leaves: how arranged, hairiness, color top/bottom, simple or compound, teeth on leaves, lobes, etc.***
- Phenology: developmental stage (flowers, fruit, leaves changing color)***
- Environment
 - Soil (color, texture, moisture, litter/humus layer, depth)
 - Slope (angle) & aspect (direction of slope, north-facing/south-facing etc.)
 - Elevation (look at topographic map)
 - Habitat (riparian, conifer forest, wet meadow, road cut, etc.)***
- Associations with other plant species
- Ecological pattern: how common, how widely distributed (keep a look out for this plant on all your travels during the semester to see what it can do and where it can grow, and how different it might look in different places)
- Note: for many species they will be dried up or at least past flowering when you see them on the Trek. In this case you still should make detailed observations on what they look like in the field.

Your library research should include:

- Common Name(s) & where they came from
- Genus/Species (Subsp., if it has one). Where do they come from or mean?
- Identification: what are the best characteristics to distinguish this species from similar looking species or other species in this genus? The Vascular Plants of Montana, The Flora of Glacier National Park or the Flora of the Pacific Northwest are particularly good references for this.
- Family
- Reproduction and dispersal: how does it reproduce, how do seeds, spores get distributed; pollinated? (e.g. mammals, birds, insects, which ones?) What do the fruits/cones look like?
- Distribution: where else does it occur a) within northern Rockies and b) North America or the world?
- Requirements: soils, climate, can it grow in shade, full sun, etc., anything known about cultivation? (If your reference is from other geographic areas this needs to be noted, since habitats and growth characteristics are usually quite different in different climatic or geological zones.)
- Habitats***

- Uses for wildlife
- Uses for humans
- Other ecological significance--what species grow with it, interactions with other species, is it locally common, or dominant, or just scattered individuals? Compare this with what you observe in field.
- Cool facts, myths legends, stories involving the organism.

To find journal articles you should search using Agricola or Biological Abstracts on the find article section of the library website, then you can see if it is available online by searching for ejournals on the website (or just find a hardcopy in the library). If the library does not have the reference you can order an interlibrary loan copy, which should only take a few days to get.

*All facts and ideas must be clearly referenced so that it is clear which are field observations, personal observations or ideas, and ideas or facts that were derived from the published literature. Also this implies that references include at least one peer-reviewed journal article, and species names and characteristics are verified with a reputable source, such as the Vascular Plants of Montana or the Flora of the Pacific Northwest. Books and websites are fine references, but critical ideas and information need to be verified with journal articles or scientific books. The problem is that web sites are not scientifically reviewed, so are not generally a reputable source by themselves, unless they are copies of published articles. Exceptions are websites sponsored by reputable scientific organizations such as the USDA (Plants database) and Kew or Missouri Botanical Gardens.

**Only include your own photos. If you do not have a photo you should make a drawing from your species in the field, or you can do a drawing from photos if you did not see it in the field or it was past flowering/fruitletting in the case of plants. Photos/drawings can also be submitted as separate files if that is more convenient. Drawings should illustrate key features of plant that help in identification.

***See handouts for Fall Trek that outline plant phenology stages, how to describe plant leaves and arrangements and habitats.

Note: Some species may not be described in sufficient detail in Plants of the Rocky Mountains. For trees, Arno's Northwest Trees is a good reference. Hitchcock's 3-volume set on grasses is the definitive reference for this family. There are several other good books available on medicinal values and ecological characteristics. See references in your reading packet, in Plants of the Rocky Mountains, and the library or ask Paul.

Rubric: Adopt-A-Plant

Field		Library	
Description	20	Reproduction	5
		Distribution	10
Ecological Role	10	Habitat requirements	10
Nomenclature/ID	5	Human/wildlife uses	10
		References	10
		General writing quality	10
		Creativity/graphics	10
Total possible	100		

References Cited

Dorn,R.D. 1984. *Vascular Plants of Montana*. Mountain West Publishing. Cheyenne. 276 pp.
 Lesica, Peter. 2002. *Flora of Glacier National Park*.
 Hitchcock. C. Leo and Arthur Chronquist. 1973. *Flora of the Pacific Northwest*. Univ. Washington Press. 730 pp.

Wilderness and Civilization
Fall 2008
Schedule of Field Trips

What to Bring

All weather gear (clothing and shoes), lunch, water, your field journal, and Plants of the Rocky Mountains

Instructors

Sarah Potenza— 243-6956; Paul Alaback—243-2913; Nicky Phear—243-6932

Schedule

August 27-September 6 Fall Trek: Rocky Mountain Front and Bob Marshall Wilderness

September 12 Moon-Randolf Homestead and Waterworks Hill
9:00 AM Depart from Oval on Bikes (9:00-4:00)

September 19 No Field Trip

September 26 Ecology at Timberline (Lolo Peak)
9:00 AM Depart from Motor Pool (9:00-5:00)

October 3 Wildland Restoration – Federal, Tribal, and NGO cooperation on the Clearwater NF
9:00 AM Depart from Motor Pool (9:00-6:00)

October 10 No Field Trip

October 17-19 Flathead Indian Reservation and Transboundary Conservation
9:00 AM- Depart from Motor Pool, return Sunday at by 5:00 PM (possibly Sat. evening)

October 24 Ecotones of Lolo Pass
9:00 AM Depart from Motor Pool (9:00-5:00)

October 31 Optional – HomeWORD green building and social justice
9:00 AM Depart from Oval on Bikes (9:00-5:00)

November 7-8 Blackfoot and Swan Valleys – working ranch and forest lands
9:00 AM- Depart from Motor Pool, return Saturday by 7:00 PM

November 14 No Field Trip

November 21 Bitterroot Resort – development on the wildland/urban interface
9:00 AM Depart from Motor Pool (9:00-4:00)

November 28 No Field Trip – Thanksgiving

December 5 No Field Trip

December 8-9 Lubrecht Winter Retreat
9:00 AM Depart from Motor Pool (return Tuesday 4:00)