BIOL 308 Pacific Northwest Ecology – 3 credits

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Dates:
This course will have an initial meeting on _____ to go over the syllabus and supply checklists.

There will be pre-trip meeting from _____ to_____. This overnight to Buffalo River State Park will give us a chance to learn about our regional ecology as well as to get to know each other and become familiar with the course expectations.

The actual dates for the travel portion of the course are: _____ to_____

All assignments, except for the video, will be due by the time we reach Fargo on _____.

Videos will be due by _____ during a final party and picture exchange (location TBA) and public presentations will be given on: _____ (location TBA).

Course description:
This 3 credit summer travel course allows students to study general ecological principles and regional natural history within the context of a variety of ecosystems in the Pacific Northwest, including coastal, alpine, freshwater stream, lake, and river, and temperate rainforest systems. The ecological consequences and the science behind specific environmental and conservation issues will also be explored. The concept of local and global sustainability will be a pervasive theme throughout the course.

Required Reading
- *The Natural History of Puget Sound Country* by A.R. Kruckeberg (1991) – Chapters 1 (Introduction)
- *A Naturalist's Seashore Guide* by G.J. Bruscha and R.C. Bruscha (1978) – Chapter III ("Ecology of the Seashore")
- Living Planet Report 2006 – World Wildlife Fund
- Assorted newspaper articles and short reports found in course booklet (see course schedule for titles)

Course objectives (and Dragon Core competencies)

1. To become familiar with general ecological processes as they apply to rocky coastal, temperate rainforest, freshwater, and alpine ecosystems in the Pacific Northwest.
   DC10: Identify the structure, function, and processes of ecosystems (ecosystems include environmental systems such as climatic, hydrologic, soils, social, and biological systems).

2. To become familiar with common organisms inhabiting the above ecosystems and begin to explore the natural history of these organisms.
   DC 10: Identify the structure, function, and processes of ecosystems (ecosystems include environmental systems such as climatic, hydrologic, soils, social, and biological systems).

3. To gain an appreciation for the field of conservation biology as it specifically applies to sustaining natural ecosystems in the Pacific Northwest.
   DC 10: Explain the concept of sustainability.

4. To appreciate the complexity of the balance between human activity, and habitat conservation.
   DC 10: Explain the concept of sustainability. Assess and analyze the environmental problems of a technological society using the framework of well-founded physical and biological principles.

5. To understand the contributions and limitations of science when applied to complex environmental issues.
   DC 10: Identify and evaluate possible pathways to a sustainable future and demonstrate an awareness of the tradeoffs necessary to achieve a sustainable future.

6. To experience the physical and the psychological connectedness that exists between humans and their environments.
   DC 10: Understand how socio-cultural variables affect the ways in which environments are perceived and managed, and the ways in which people or societies react to environmental challenges.

7. To recognize societal decisions and actions that move towards a sustainable future that includes humans.
   DC 10: Describe the relationships between environments and socio-cultural groups, and identify how natural resource challenges are being addressed by the social, legal, economic, political, cultural, and religious systems within societies.

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Course assignments:

Pre-trip quiz	Based on introductory readings	10%
Ecology Scavenger Hunt	Record examples applying basic ecological concepts to field trip experiences.	10%
Dinner Discussions	Facilitate an evening discussion on one of the required readings (10%) and be an active participant in discussions led by others (10%)	20%
Video Project I	Create a video about the Buffalo River State Park swimming pond	10%
Video Project II	Create a video on a Pacific NW topic/issue of your choice	30%
Field Journal	Keep a daily log of activities and experiences during the field trips *and* place-based reflections.	20%

Grading Scale: A =90-100%, B = 80-90%, C = 70-80%, D = 60-70% F <60%

Tentative Schedule

Date	Location and Topics	Activities	Readings
TBA	Meet at MSUM: Travel to Buffalo River State Park	Explore ecosystems of Buffalo River state park, learn about the swimming pond issue, collect pictures and info for video, begin journal entries	• Swimming pond articles • Role of Science in Decision Making • Everybody's Ditch
TBA	Pack up camp, back to MSUM to create videos	At MSUM main campus, create iMovie videos using rubric as a guide	
Day 1	Depart Fargo Arrive in Seattle	Pre-trip quiz – group discussions on the plane Pick up vans, go shopping for food, take ferry to OP, pick up beach hike permits, visit Hurricane Ridge to get an overview of the area (if time), arrive at OPI in the late afternoon. Intro to OPI and overview of Elwha dam removal story	• Natural History of Puget Sound – Introduction • Living Planet Report • Vegetation excerpt • Tides excerpt • Ecology of the Seashore
Day 2	Upper Elwha River: ecosystem effects of dams and dam removal	Visit sites along the Elwha, collect water quality data	*ACT – The Elwha Dam removal is a story of society taking action towards sustainability!* • Early days on the Elwha

		Discussion #1	• History and timeline • Freeing the Elwha • Restoration of the Elwha river ecosystem • Dear Reader letter from Lower Elwha Klallam tribe
Day 3	Lower Elwha River: ecosystem effects of dams and dam removal; effects on human inhabitants	Explore the "other side" of the dam on the Elwha. Learn about the Lower Elwha Klallam Tribe and their role in the dam removal **Discussion #2**	• Dam's removal will have to wait • Water quality permit boosts plan for dams • Dam is gone, salmon are back • Solving for pattern
Day 4	Lake Crescent: lake zones, zooplankton, fish and productivity or Salt Creek: Puget Sound rocky shores vertical and horizontal zonation Depart for the coast, backpack in to explore and enjoy: nature immersion!	Pure natural history I: Touch an anemone! Follow a hermit crab! **Discussion #3**	*MOTIVATE – People are motivated to care about what they value and value what they experience…and they want to keep it that way.* • In praise of idleness • Between the grains • Save the steelhead, save ourselves • Dead orca is a red alert • Recovery plan for orcas • Seafaring scientists seek clues to toxins
Day 5	Hike out from the beach, travel to Hoh Rainforest to explore and enjoy: nature immersion in a totally different environment!	Pure natural history II: Revel in the bryophytes! Follow a banana slug! **Discussion #4**	• Ecopsychology: eight principles • Deep ecology platform • Prescribing nature • Nature-deficit disorder • Where names vanish • After four years of amphibian research
Day 6	Travel to Mt Rainier	Jackson Visitor Center (Paradise) 3 PM presentation on 2006 flood and recovery **Discussion #5**	*ACKNOWLEDGE – All humans are good at denial. Acknowledging unsustainable practices and recognizing their consequences is a crucial step towards sustainability.* • Facing the challenge about climate change • Facts about Washington's retreating glaciers • November 2006 flood makes history • Steps now could lesson harm to fish
Day 7	Mt. Rainier: climate change impacts	Long hike!! Look for signs of fall flooding. Attend campfire talk on unknown (but surely interesting!) topic and rest weary muscles	

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Day 8	Travel to Wind River house by way of Mt. St Helen's.	Observe examples of ecological succession and recovery. **Discussion #6**	*INFORM – The earth experiences other gigantic changes that are not anthropogenic!* • Wind River fact sheet • Plan B: Building a New Future • The tragedy of maximization • Raising taxes to save the salmon • Buying into the green movement • Seven sustainable wonders of the world • 10 top reasons to buy organic • An Earth without people
Day 9	Wind River Canopy Research Station: ecosystem research, species and microhabitats Bonneville Dam and fish hatchery tours; fish conservation and energy production Elowah Falls	Take a tour up into the forest canopy and learn about science in the treetops! Tour the Bonneville Dam Hike to the falls Salmon dinner, celebration, play the Carbon Mitigation Initiative Wedge Game!	*INFORM – Complex problems require multifaceted information to be gathered and analyzed.*
Day 10	Travel to SeaTac, leave large items in airport, catch bus to downtown Seattle hotel Explore Seattle on your own	On your own	
Day 11	Seattle: zoology in Pike Place fish market? Catch bus back to airport , fly home to Fargo	On your own	
TBA	Get together: location and time TBA	Party, picture exchange, and video preview	
TBA	MSUM: location and time TBA	Video Presentations	