

SYLLABUS

ECOSYSTEMS OF MOUNT DESERT ISLAND

ESF 540

Spring 2009

Feb. 18, 6-9 PM

May 13-19

TOM WESSELS

2 CREDITS, COST \$160

Mount Desert Island arguably offers the most scenic landscape in New England with its exposed, glaciated, granite mountains rising dramatically out of Penobscott Bay above its wave swept, rocky coast. The island is perhaps the best example in the northeastern United States of a glacially scoured landscape and has the only true fjord—Sommes Sound—in the New England. Its proximity in the Gulf of Maine creates alpine-like conditions on the summits of the island's one thousand foot summits and its fog bathed forests host thick, elegant, cryptogamic carpets of lichen and moss. It is a marvelous place to explore a variety of terrestrial communities, all packed into a tight, ever-changing mosaic.

COURSE CONTENT

The course will focus on the terrestrial ecosystems common to Mt. Desert Island, the geological and climatological conditions that have given rise to them, and the island's rich cultural history. Specific ecosystems will include coastal heath communities, fire ecosystems (pitch pine, jack pine, and upland heaths), rock outcrop communities, conifer forests dominated by red spruce, white pine, northern white cedar, northern hardwood forests, and the unusual transitions that arise as all of these communities mix and merge. Glaciology and fire ecology will be examined in relationship to the variety of ecosystems studied. Cultural history and present impact on these systems will also be examined.

COURSE OBJECTIVES

To become familiar with the diversity of terrestrial ecosystems found on Mt. Desert Island.

To understand the dynamics of rock outcrop succession.

To learn about plant adaptations to fire and the relationship between glaciated granite and fire ecosystems.

To investigate the impact of human visitation on fragile heath and outcrop communities.

To learn about the island's rich cultural history.

EVALUATION CRITERIA

1. In pairs, students will research and write a 5-10 page paper (**due on May 1**) on one of the following topics. The paper will prepare students for a field presentation (20-30 minutes) on their particular subject during the trip. The paper and presentations should focus on unique adaptations of organisms, the dynamics of geological or climatological phenomena, or cultural history pertinent to Mount Desert Island.

Glaciation and visible surficial features: glacial polish, glacial striations, glacial grooves, crescentic gouges, roche moutonees, glacial boulders, notches, tarns

Crustose and foliose lichens on granite bedrock: *Lecanora sp.*, *Rhizocarpon geographicum*, *Arctoparmelia centrifuga*, *Umbilacaria sp.*, *Aspicilia sp.*

Mount Desert's cultural history: Native cultures up to European contact

Mount Desert's cultural history: Champlain up to the early 1800s

Mount Desert's cultural history: Thomas Cole up to the 1947 fire

The 1947 Fire

Fire and pitch and jack pine:

Acadian weather: ocean fog and nor'easters

Wings over granite: ravens and peregrine falcons

Hiker impacts and management on outcrop communities:

2. Collaborating in the writing of one scientific paper on field research conducted during the trip. The paper will focus on the relationship between substrate depth and composition of outcrop crevice communities.

3. A summary, reflective paper that merges Mt. Desert Island's natural and cultural history with your personal experiences of it **due June 13.**

USE OF FIRST CLASS

First class will be used to post materials, pose questions, and work out logistical planning.

TEXT

Wessels, Tom. 2001. *The Granite Landscape: A Natural History of America's Mountain Domes from Acadia to Yosemite*. The Countryman Press. Woodstock, VT.

COURSE SCHEDULE

February 18 Pre-trip meeting to go over trip logistics including transportation, meals, and topic assignments. **For those waitlisted come to this pre-trip meeting since this class historically has a somewhat active drop/add period. Anyone not in attendance for the pre-trip meeting without making arrangements with me will be dropped from the class and replaced by people from the waitlist.**

May 13-19

Wednesday 13 Arrive by 3 PM to Black Woods Campground, Acadia National Park (it is about a 6 hour drive from Keene), set up camp, overview of Mount Desert Island and the week's presentation schedule

Thursday 14 Depart Black Woods for a ten mile introductory loop hike through Hunters Brook old growth to Pemetic Mountain to the south ridge of Cadillac Mountain. **Presentations on lichens and glacial features.**

Friday 15 AM—Crevice community study at Seal Harbor, PM—group write-up of crevice community scientific report

- Saturday 16 Champlain Mountain and Sand Beach 6 mile loop hike. **Presentations on wings over granite, the fire of 1947, Acadian weather and possibly the cultural history of MDI.**
- Sunday 17 Open day for personal exploration of MDI
- Monday 18 AM—Great Head, PM—South Ridge of Cadillac Mountain. **Finish the remaining presentations.**
- Tuesday 19 Break camp and depart Blackwoods Campground by 11 AM

DIRECTIONS TO BLACK WOODS CAMPGROUND

Follow Interstate 295 from Portland to Augusta, ME where it rejoins Interstate 95. A few miles north of Augusta leave Interstate 95 and take route 3 east all the way to Mount Desert Island and through Bar Harbor, ME. A few miles south of Bar Harbor on route 3 you will come to the small village of Otter Creek. The Blackwoods Campground will be on your left as you pass out of the village. Check in at the campground entrance to find out where we will be camped. Our campsites will be either under Antioch or Tom Wessels.

EQUIPMENT LIST

comfortable walking/hiking shoes

warm weather clothing (tevas, shorts, t-shirts, sunglasses, sun hats, bathing suit if you can handle ocean temps in the 40s or lake temps in the 50s)

lots of cold weather clothing for wind chills in the 20s (gloves, warm hat, wind pants, wind jacket, warm pants and shirt, sweater or vest)

wet weather clothing (complete good quality rain gear, rain hat, polypropylene or wool pants and shirt)

day pack

minimum 2 quart water bottle capacity

sleeping bag good to 30 degrees and foam pad

flashlight

eating utensils (plate, bowl, spoon, knife, fork)

toiletries and medications

towel and shampoo

binocs, camera and accessories, field guides, books, hand lens

field journal, pens, pencils, writing paper, calculator (one per group of four)

bathing suit for the hearty