

UNIVERSITY OF VERMONT
RUBENSTEIN SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES

FORESTRY 73 -- SMALL WOODLAND MANAGEMENT

COURSE SYLLABUS

SPRING 2008

COURSE DESCRIPTION

This is a required course for forestry majors, designed to be taken during the spring semester of the sophomore year, although students in other majors and class years are welcome as well. The course covers concepts of forest ecology, inventory, stewardship planning, and management techniques for small woodlands using a weekly two-hour lecture period (with discussions, practice problems, and presentations); three Saturday outdoor labs; and a service-learning project.

COURSE GOAL

The course is intended to provide an introduction to and an overview of the philosophies, strategies, and techniques used in the stewardship and management of relatively small, privately owned forests in New England. Heavy emphasis is placed on developing basic proficiency in woodland assessment skills and an understanding of management strategies and constraints.

LEARNING OBJECTIVES

Students will demonstrate their understanding of the role of silvics, site factors, and natural communities in assessing woodlands for management.

Students will demonstrate their proficiency in basic woodland mapping and inventory design.

Students will demonstrate their proficiency in basic tree measurements and forest inventory and analysis and management planning.

Students will demonstrate their understanding of management strategies and silvicultural techniques as applied to relatively small, privately-owned woodlands.

Students will demonstrate their understanding of timber sale planning and marketing of woodland products.

EXPECTATIONS & POLICIES

There are no specific prerequisites for this course; but previous or concurrent coursework in tree identification, forest ecology, and/or measurements would benefit the student. **It is assumed that enrolled students are serious, adult university students with some interest in forestry and a desire to learn more.** This means that you are expected to attend classes and labs, to ask questions, to participate in discussions freely and politely, to understand and follow all University of Vermont policies and regulations, and to take personal responsibility for your own learning.

INSTRUCTOR:

Michael Snyder	E-mail:	msnyder@uvm.edu
	Off-Campus office:	State of Vermont, Forestry Division 111 West St., Essex Jct., VT 05452
	Off-Campus phone:	879-5694
	On-Campus office:	341 Aiken Center
	Home Phone:	(802) 253-9462
	Office Hours:	By appointment

TEACHING ASSISTANT:

Allaire Diamond	Email:	Allaire.diamond@uvm.edu
	On-campus office:	Field Naturalist Program; 129 Marsh Life Science
	Telephone:	879-6672
	Office Hours:	By appointment

COURSE WEBSITE: www.uvm.edu/envnr/msnyder

LECTURE: Tuesdays, 6:30 – 8:30 p.m., 104 Aiken Center,
January 16 - May 8
No class on March 6, 13.

LAB: Three (3) Saturdays – February 2, February 9, & April 12
Locations to be announced;
Transportation from and returning to Aiken Center by bus
Lab is required...an absence = a zero grade.

READINGS: As assigned in:

•REQUIRED TEXT: “Working With Your Woodland – A Landowner’s Guide”
by Beattie, et al. AND

•Additional readings available on course website and/or as handouts in class.

Readings will supplement lectures and will be covered on exams.

HOMEWORK: As assigned, will include practice problems and exercises. These are ungraded,
optional exercises designed to help prepare for exams.

BASIS FOR COURSE GRADE¹:

Mid-term Exam -- Feb. 26	25%
Service-Learning Project*	40%
Final Exam -- May 6	20%
Lab Attendance	<u>15%</u>
	100%

1. There is no extra credit; your course grade will be based on your mid-term exam grade, your service-learning project, your final exam grade, and your lab attendance grade.

* Service-Learning – See description below.

SERVICE-LEARNING:

This course will include a Service-Learning component in which students will work in small group teams on a forest measurements project for a local community partner. Students will design, prepare, implement, and report on this project. This service-learning project is intended to serve a need described by the community partner while directly relating to curricular goals (see course goals and learning objectives above) and giving students opportunities for applying class concepts and practicing fundamental field skills.

NOTE: The specific details of the service-learning project will be discussed in class and posted on the course website.

TENTATIVE COURSE CALENDAR AND TIMELINE

(Please Note: subject to change; come to class and check email for updates)

<u>Week</u>	<u>Date</u>	<u>Topic</u>
1	January 15	Registration, syllabus, objectives, etc. Introduction to small woodland management
2	January 22	Woodland ecology/Introduction to Forest Assessment & Quantification
3	January 29	Forest Inventory Design and Procedures S-L Project Description and Team Assignments
*	February 2	Lab #1 – Tour of Service-Learning Project Site (Green Mountain Audubon Center, Huntington), including active logging job.
4	February 5	Forest Inventory Design and Procedures
*	February 9	Lab #2 – Inventory Tools and Practice at GMAC During this lab day you will be performing the basic forest inventory and collecting data in teams.
5	February 12	In-class exercise: using plot data from Lab, compile and interpret field data from Lab, answer questions about written stand descriptions.
6	February 20	Mapping/Assessment/Inventory Homework – problem set to prepare for exam.
7	February 26	MID-TERM EXAM
8	March 4	<i>No Class – Town Meeting</i>
9	March 11	<i>No Class – Spring Break</i>
10	March 18	Stand Structure and Dynamics
11	March 25	Management Techniques I
12	April 1	Management Techniques II
13	April 8	Project Presentations Review and Discussion; lecture
*	April 12	Lab #3 – GMAC: S-L Project Oral Presentations and Demonstrations
14	April 15	Management Plans/Timber Sale Planning, Marking, Layout Written Project Portfolio Due
15	April 22	Timber Sale Administration: Markets/Contracts, Non-timber products.
16	April 29	Individual Reflective Essay Due Field Exercise (Centennial Woods) to prepare for Final
17	May 6	FINAL EXAM – 7PM, 104 Aiken

Individuals and teams working on project (research, additional field time, consultations, computer time,

FORESTRY 73/285: SMALL WOODLAND MANAGEMENT -- Spring 2008

SERVICE-LEARNING PROJECT OVERVIEW

BACKGROUND

FOR73/285 includes a service-learning component for which students work in small group teams on a forest measurements project for a local community partner. Students will design, prepare, implement, present, and reflect on this project. This service-learning project is intended to serve a need expressed by the community partner while directly relating to curricular goals (see course goals and learning objectives in syllabus) and giving students opportunities for applying class concepts and practicing fundamental field skills.

PROJECT DESCRIPTION

Please see and refer to the "Letter of Request" from the community partner, Audubon Vermont, dated 1/24/08 (attached) for a description of the project, the scope of work, and specific required deliverables. In addition, a representative from Audubon Vermont will formally present this project request on 1/29/08 and will be available throughout the semester to answer any questions you may have during your work.

SUMMARY OF PROJECT COMPONENTS/DELIVERABLES:

Once students have received team assignments, the 4 students on each team will be collectively responsible for completing all four components of the project:

- 1) **Conduct an on-site assessment and inventory** a forested portion of Audubon Vermont's Green Mountain Audubon Center (GMAC) in Huntington.
- 2) Interpret compiled data and use it to **produce** for Audubon Vermont **a written management plan**, including:
 - a) a written report on the current condition of the forest and,
 - b) written recommendations for silvicultural treatments.

Due on: April 15, 2008.

- 3) **Give an on-site oral presentation** to Audubon Vermont on 4/12/08 explaining your procedures, findings, and recommendations.

In addition to those collective team products, each team member will individually produce the following deliverable:

- 4) **An individual reflective essay** and 6-8 reflective free-writes about your service-learning project and how it was integrated into the learning objectives for the course. Please see and refer to the Reflection Guidelines attached.

PROJECT GRADING:

Your grade on your Small Woodland Management service-learning project will count for 40% of your course grade. This S-L Project Grade will be calculated as follows:

Written Management Plan = 50% of project grade (20 % of course grade)

On-site Oral Presentation = 25% of project grade (10% of course grade)

Reflective Writing = 25% of project grade (10% of course grade)

Free Writes = 5%

Essay = 20%



January 24, 2008

Letter of Request

From: Audubon Vermont, Green Mountain Audubon Center

Contact: Kristen Sharpless, Teacher/Naturalist

To: Small Woodland Management students, Forestry Program, Rubenstein School of
Environment and Natural Resources, UVM

Introduction

Audubon Vermont is a non-profit organization whose mission is to protect birds, other wildlife and their habitat by creating a culture of conservation through education, science, and advocacy. Audubon Vermont is particularly concerned about the documented decline in the populations of many migrant songbird species that return every spring to breed in Vermont's forests. Audubon Vermont's Forest Bird Initiative is a program that is working to conserve forests within Vermont that are important to birds, by identifying, monitoring and stewarding a network of Important Bird Areas (IBA) that support a significant number of breeding forest birds. Small woodland owners comprise a large proportion of the landowners in these IBAs. Therefore, an important component of the Forest Bird Initiative is helping these individual landowners to plan and implement bird-friendly forest management practices in their woodlands.

The 225-acre Green Mountain Audubon Center (GMAC) in Huntington has been identified as an IBA and is managed by Audubon Vermont for its ecological, scientific research, and educational values. The parcel is dominated by northern hardwood forest, and also includes coniferous forests, wetlands, open fields and meadows, ponds, and the Huntington River and some of its tributaries.

A detailed inventory of the natural and cultural features of the GMAC property was conducted by a group of UVM graduate students in 2005, which informed the writing of a management plan for the property by Audubon Vermont conservation biologist, Steve Hagenbuch, in 2007. The GMAC Management Plan calls for the

maintenance and/or enhancement of a diversity of habitat types for wildlife, with a focus on breeding forest birds, thereby creating opportunities for scientific research, environmental education, demonstration of bird-friendly land management practices that include the production of agricultural and forest products, and low-impact outdoor recreation.

The GMAC is currently in the process of planning for and implementing the management activities and treatments prescribed in the plan ranging from a 2-acre clearcut that will create additional early-successional habitat, to invasive plant species removal along the Huntington River, to small-scale crop tree release in the GMAC sugarbush.

Problem and Project Justification

One of the goals identified in the GMAC Management Plan calls for the monitoring of wildlife responses – particularly those of breeding forest birds – to changes in forest habitat conditions. Bird populations are monitored at the GMAC in a variety of habitats throughout the year. Vegetation data have been collected for the areas of the property where active management has been prescribed, but not for those areas where no active management has been recommended.

Descriptive and quantitative vegetation data in these areas are critical for improving Audubon Vermont's understanding of how birds respond to natural disturbances and forest processes, in addition to those caused by management activities. Comparing birds' responses to natural vs. human-caused changes in forest habitat will allow Audubon Vermont to best make and demonstrate bird-friendly forestry management practices in the future.

Scope of Work

- Document the current condition of an approximately 80-acre forested portion of the GMAC property (map to follow) through a timber inventory. This portion of the property is currently being passively managed for the continued development of interior forest habitat critical for many wildlife species and as an area for researching birds' responses to natural forest processes, including a recent wind disturbance
- Make recommendations for silvicultural treatments that could be implemented in these stands as a demonstration for other small woodland owners and the public of how to co-manage for forest products and wildlife habitat.

Deliverables

1. Written report on current condition of the forest in the study area, including:
 - Descriptive narrative for each delineated stand including:
 - Physical features (slope, aspect, soils, topography, hydrology, geology)
 - Access
 - Age class
 - Species composition
 - Successional stage
 - Timber quality
 - Coarse woody debris
 - Natural community type
 - Signs of past human land use and/or management
 - Wildlife sign and critical habitat features
 - Trails
 - Digital spreadsheet of raw plot data and summarized stand statistics, including:
 - Mean stand diameter
 - Total basal area
 - % species composition
 - # stems/acre (living and dead)
 - Merchantable Volume
- ** Distinguish between AGS and UGS where appropriate
2. Written recommendations for silvicultural treatments that meet the dual goals of improving wildlife habitat and generating forest products to be implemented in the stands for demonstration purposes, including:
 - Description of treatments that includes justification and explanation of links to the GMAC goal of:
 - managing for forest products as a demonstration of how to conduct these activities while simultaneously promoting a diversity of wildlife habitats.
 - Suggested timeline for the implementation of the treatment(s).
3. On-site presentation of methods, findings, and recommendations to Audubon staff with Q&A at the GMAC.



February 22, 2008

Dear Small Woodland Management students,

Currently, the Green Mountain Audubon Center does not have any active management planned for Units 3 and 9, which make up your study area. Our plan is to monitor vegetation and bird populations in this part of the forest over time to better understand how birds respond to changes in forest habitat caused by natural disturbance and succession.

However, we are very interested in your thoughts on how Units 3 and 9 could be actively managed for enhanced wildlife habitat and forest products in a way that could demonstrate Audubon Vermont's *Bird-Friendly Management Recommendations* to other small woodland owners. We would like you to help us identify specific possibilities for where and how our own *Bird-Friendly Management Recommendations* could be implemented within these Units.

To help focus your recommendations, we have prioritized our goals for active management in Units 9 and 3 below. We have also given examples of responsibility bird species we would like to improve habitat for in this part of the forest. We expect that improving habitat for these species would also create and enhance habitat for a diversity of other wildlife species, which is one of our over-arching management goals for the entire Center property.

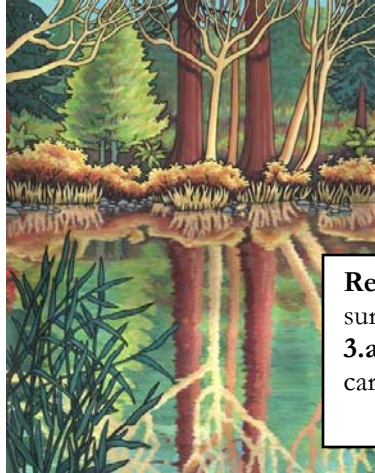
Management goals for Units 9 and 3

1. **Maximize forest interior** (*Bird-Friendly Management Recommendations #8*) for responsibility species such as: Scarlet Tanager, Eastern Wood-pewee, and Black-throated Green Warbler.
2. Improve existing interior habitat for a diversity of species **by creating/enhancing vertical structure** (*Bird-Friendly Management Recommendations #1*) where appropriate.
***We are particularly interested identifying (1) areas where structural diversity is currently well-developed and (2) where it is poorly-developed. In the areas where it is poorly-developed, we would like recommendations for promoting and diversifying the understory and shrub layer in particular since this forest layer provides critical habitat for a number of responsibility species including: Veery, Wood Thrush, Black-throated Blue Warbler, and Scarlet Tanager.
3. Implement other *Bird-Friendly Management Recommendations* as part of any strategies toward meeting goals 1 and 2 above:
 - a. **Limit management activities during breeding season** (#2)
 - b. **Keep forest buffers along streams** (#3)
 - c. **Retain overstory trees when harvesting** (#4)
 - d. **Retain deadwood** (#5)
 - e. **Minimize linear openings** (#7)

Sincerely,
Green Mountain Audubon Center Staff

FORESTRY 73/285: SMALL WOODLAND MANAGEMENT
Spring 2008

SERVICE-LEARNING PROJECT: Reflective Writing



Reflect *v.* **1.** To throw or bend back from a surface. **2.** To form an image of an object. **3.a.** To think seriously. **3.b.** To express carefully considered thoughts.

~*The American Heritage Dictionary*

Reflection is a critical part of your work in Small Woodland Management and particularly regarding the Service Learning Project. You will reflect on ideas or experiences 6-8 times over the course of the semester, and then use these to produce a final reflective essay. We want you to truly go through the process of reflection, rather than merely produce a “reflective-type” product.

What does this mean? Real and effective reflection on an idea can take many forms, but truly reflective work often has one or more of these qualities:

- ✦ Effective reflection integrates ideas and experiences from **many moments in time**. How does the idea relate to any previous experiences, how does it relate to your current experience, and how will it inform your future thinking?
- ✦ Effective reflection traces “**cognitive dissonance**”, the clash of new ideas with previous thinking. What difficulties do you experience with the idea? Do you have any conflicting ideas? How can you reconcile them, if that is even possible? What will you have to stop doing in order to accept this new idea?
- ✦ Effective reflection draws on **specific experiences**. How can you connect the idea with specific moments in class, with specific parts of readings, specific experiences in the field, or specific interactions with your group, to respond as precisely as you can?
- ✦ Effective reflection has a **larger purpose**. Think about the first definition of “reflect” above, “to throw or bend back”. Reflection isn’t just a self-satisfying exercise, but a way to connect your work to the larger world. How will you take the idea or question beyond this assignment? How can it help

you to better contribute to your group, your field of work, or your community?

Short Reflective Assignments, or Free-writes:

Since reflection can take many forms, your short free-write assignments do not have to follow a specific format as long as they demonstrate *at least one* of the qualities of effective reflection outlined above. A good way to start reflecting is to pick up a pen, turn on your brain, and write continuously for five to ten minutes. Don't worry about editing or saying "the right thing", just keep writing. This is an opportunity to crank out and shape ideas that will be useful in your final reflection assignment. Some of you may find that drawing pictures, maps, diagrams, or outlines instead of writing in sentences and paragraphs are better ways for you to reflect. As long as your work is legible and truly demonstrates reflection, you are free to respond any way you choose.

Allaire will collect and give you feedback on your reflections. Our goal is for these assignments to help you make connections between...

- course objectives and the service learning project
- you and the community partner (Audubon Vermont)
- individual work/contribution and the team product
- professional development and process/deliverables of project
- good ideas and the reality of making them happen
- crunching numbers and a living/changing/growing system of living organisms

Reflective Essay:

The final reflection essay (**due April 29**) will be 3-5 double-spaced pages describing your service learning experience. Make good use of and incorporate your previous reflections! The essay should have **all four** of the qualities of effective reflection outlined above – many moments in time, cognitive dissonance, specific experiences, and a larger purpose. This shouldn't be a huge undertaking or drain on your time, but it should be representative of the whole service-learning and reflection process.

GRADING

Reflection is worth 25% of your Service Learning project grade, or 10% of your course grade.

Free-Writes will be evaluated on a pass/fail basis using the Free-Write checklist. Cumulatively, they will be worth 20% of your reflection grade. Late free-writes will not be accepted.

The **Reflective Essay** will be evaluated using the Reflective Essay grading checklist and will be worth 80% of your reflection grade.

Image credit: Kim Hunter