

## ENSC 201 – RESTORATION ECOLOGY

### Spring 2007 Final Project

Your restoration project has three parts:

- (1) preparation of a detailed proposal to restore two stream reaches along tributaries of the Winooski River [guidelines for the proposal are outlined in the attached Request for Proposal (RFP)]
- (2) participation in a “work” day orchestrated by the Conservation Reserve Enhancement Program on Saturday, April 28, 2007
- (3) an oral presentation to the class and invited visitors

The class will be divided into teams of 5-6 students per team. Each team has the latitude to develop its own restoration approach, so long as it is realistic and it uses the plant materials available for planting in April 2007. Additional restoration strategies can be proposed for implementation in later in 2007 and in subsequent years. These will be provided to the Conservation Reserve Enhancement Program of the Vermont Agency of Agriculture and the property owner (The Farr Farm).

The following due dates apply:

- Tuesday, April 10: Submit a list of your team’s specific goals and objectives (must relate to the general goals in the RFP)
- Tuesday, April 24: All groups submit a planting plan for the plant materials available for use on the site on April 27
- Tuesday, April 24 and Thursday April 26: Oral presentations – each group will have 15 minutes to present and 5 minutes for discussion; each member of each group must speak on some aspect of the project in the presentation.
- Saturday, April 28: Work day
- Tuesday, May 1: Submit final draft of your proposal in class

All members of a team will receive the same project grade. Scoring of this grade will be based on the quality of the final written proposal (65%), the quality of the oral presentation (25%), and participation in the work day (10%).

Initial submission of the goals and objectives is meant to provide you with useful feedback to fine-tune your project. This submission will not be given a letter grade.

# REQUEST FOR PROPOSALS

## THE CONSERVATION ENHANCEMENT RESERVE PROGRAM (CREP), VERMONT AGENCY OF AGRICULTURE

**Deadline for submission:** Tuesday, May 1, 2007

The Conservation Enhancement Reserve Program (CREP) of the Vermont Agency of Agriculture is interested in supporting projects aimed at restoring a degraded site in Richmond, Vermont. This property is privately owned by Mr. Chuck Farr. The proposal must respond to the interests of the landowner and address realistic restoration challenges.

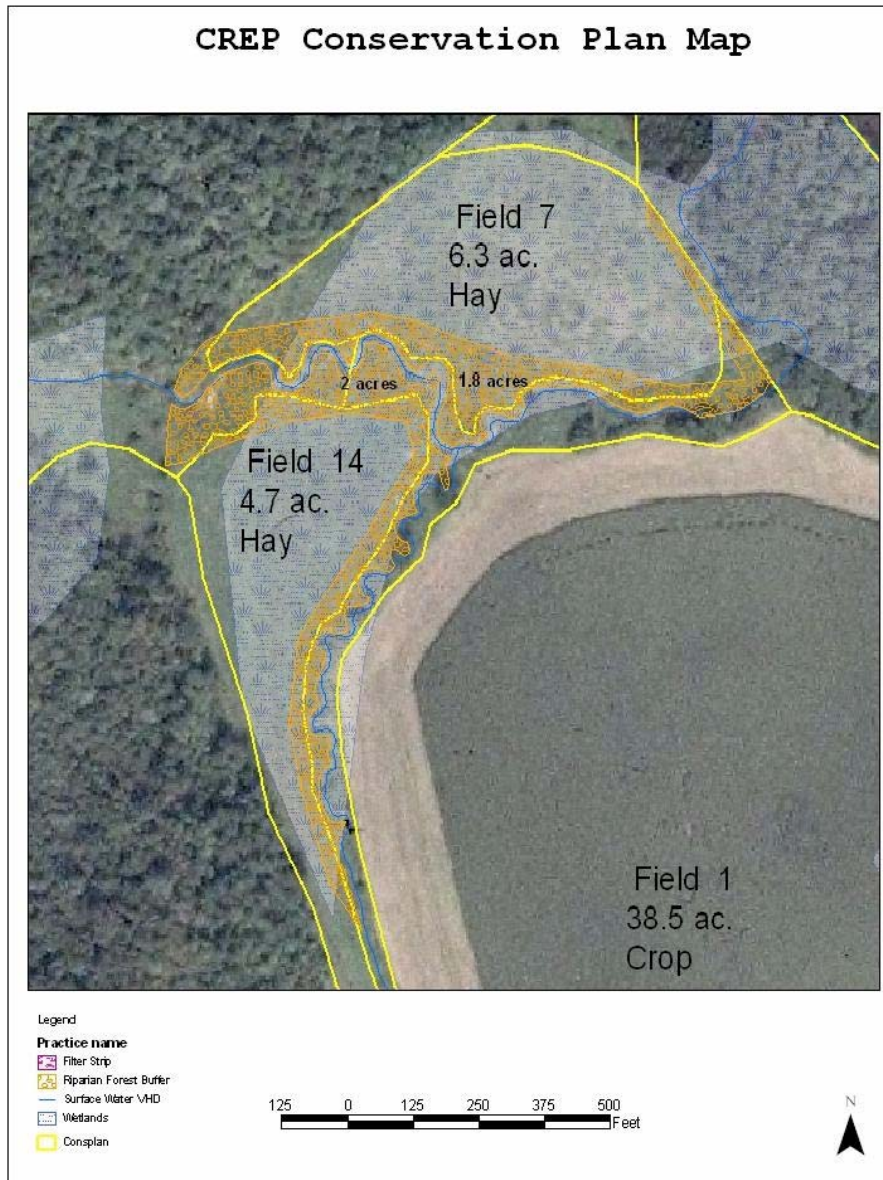
### Background and Restoration Goal

The site is located along two small tributaries (Johnnie Brook and an unnamed stream) of the Winooski River in Richmond (Figure 1). It includes three pastures that the landowner, Mr. Farr, intends to use for hay and crop production.



**Figure 1.** This photo shows the aerial image taken in March 2007 of the project area which includes two Winooski River tributaries, Johnnie Brook and an unnamed brook. The lack of vegetation on these tributaries is very apparent.

The property includes mature upland forests, but the stream reaches are largely deforested as they run through the agricultural fields, except for a few small patches of early-successional forest. Beavers are active at the site, which will make forest restoration challenging. A berm has been constructed along one side of Johnnie Brook. This has channelized the stream in that section. Background information about the project site is available on the class web site.



**Figure 2. Map of agricultural fields at the Farr Farm.**

**Restoration Goals:** Mr. Farr’s goals for his riparian restoration include:

- Bank stabilization
- Providing fish and wildlife habitat
- Controlling ice damage along the river and in the pastures

In addition, CREP and the US FWS’s Partners for Fish and Wildlife Program are interested reducing soil erosion and improving water quality and ecological integrity in the Winooski River Watershed. These two organizations are working together to bring back a healthy fish and wildlife community, a natural forest plant community, and an attractive landscape in this section of the Champlain Valley.

This RFP is soliciting three-year, phased proposals for the site. Proposals can address any of the listed goals for the site, but Phase 1 of every proposal must include the establishment of a natural forest buffer in the spring 2007 using the plant materials listed in Table 1.

**Table 1. Plant materials available for phase 1 of the restoration. For each plant species provided, the number of stems, by height and stock type, is listed.**

Species	Height	Stock Type	Number
Red Maple	3-5'	bareroot	50
Silver Maple	3-5'	bareroot	290
Red Osier Dogwood	6-18"	8" tube	150
Cottonwood	1'-3'	bareroot	65
Cottonwood	3'-5'	bareroot	85
Black Willow	6-18"	8" tube	150
Shrub Willows	6-18"	8" tube	300
Butternut	2-3'	bareroot	50
Box elder	3-4'	bareroot	150
Speckled Alder	4-5'	bareroot	150
			Total 1440

The plants listed in Table 1 may be used anywhere in the “riparian forest buffer area.” All planting materials will be supplied by the Intervale Conservation Nursery.

## **Format and Content of the Proposals**

Each proposal must be typed, double spaced, on standard 8-1/2 x 11 inch paper, with typing on only one side of the page. Margins must be 1 inch all around, type size must be 12 characters per inch or larger. All pages should be numbered and should include running headers of the proposer's last names, or a shortened project title.

Organize your submission as follows:

### **1. Cover page**

Include the project title, investigators' names, addresses, telephone numbers, and e-mail addresses.

### **2. Table of contents with page numbers.**

### **3. Project summary (no more than 250 words).**

The project summary should be a self-contained, specific description of the activity to be undertaken and should focus on (a) overall project goal(s) and supporting objectives, (b) plans to accomplish project goal(s) and objectives, and (c) expected results and significance of the project. Center the project title at the top of the page, above the project summary.

### **4. Project description**

The written text may not exceed 12 double-spaced pages. Figures and tables are not included in the 12-page limitation. The project description must contain the following components.

**A. Introduction and Background.** The introduction should present a clear rationale for the proposed project, including a statement of the long-term project goal(s) and supporting objectives. As background, present a summary of the information base you used to support the proposed project. All work cited should be referenced.

**B. Restoration Methods.** Explicitly state the methods you will employ to accomplish the project. More specifically, this section must include:

- a description of the work proposed, in the sequence in which tasks will be performed
- techniques that will be used to carry out the proposed project, and any limitations you perceive in these techniques
- results expected
- means by which the success of the project will be assessed and evaluated (a monitoring plan)
- pitfalls that may be encountered
- a tentative schedule for conducting major steps of the project

**C. A monitoring table using the categories listed below** (and discussed in class).

Indicator	Measurement Schedule	Acceptable Level	Management Response if Unacceptable
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**D. A map** (e.g., polygons drawn on an orthophoto) of the project site showing where restoration activities will occur.

## 5. References for the Project Description

All references cited should be complete and should conform to an accepted journal format.

## 6. Budget

The total project request should be as cost effective as possible. The total period shall not exceed 3 years. In addition to a summary budget for the entire project period, individual budget breakdowns are required for each year of requested support.

Format the budget page(s) in the manner suggested below:

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Total</u>
Personnel				
person/position a				
person/position b				
etc.				

Subcontractors (for example, if you need a bulldozer and operator)

Materials and supplies (including plant materials)

Equipment (itemize pieces of equipment that cost more than \$500)

Travel

Other expenses

TOTAL

## 7. Budget Justification

Use this section to explain why the budget items are needed and how you estimated the costs. Be realistic.