Environment and Natural Resources Trust Fund (ENRTF)
2010 Work Program

Date of Report: November 24, 2009
Date of Next Progress Report: July 1, 2011
Date of Work Program Approval:
Project Completion Date: June 30, 2013

I. PROJECT TITLE: Ecological Restoration Training Cooperative for Habitat Restoration

Project Manager: Susan M. Galatowitsch
Affiliation: University of Minnesota
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Location: St. Paul (with satellite field locations in Morris, Chanhassen, and 2-3 other locations to be determined).

Total ENRTF Project Budget:	**ENRTF Appropriation**	**$ 550,000**
	Minus Amount Spent:	**$ 0**
	Equal Balance:	**$ 550,000**

Legal Citation: M.L. 2010, Chp. 362, Sec. 2, Subd. 4a

Appropriation Language:
$550,000 is from the trust fund to the Board of Regents of the University of Minnesota for improving ecological restoration success in Minnesota by developing and offering training programs for habitat restoration professionals. This appropriation is available until June 30, 2013, by which time the project must be completed and final products delivered.

II. PROJECT SUMMARY AND RESULTS:

Ecological restoration is increasingly relied on as a conservation strategy in Minnesota even though project failure rates remain high. Although Minnesota has many competent restorationists, the quality of work varies across the profession and lack of expertise contributes to project failures. Existing workshop-based programs aimed at the public focus on a narrow range of practices that are feasible for individual landowners to implement. Currently, professional restoration training is limited to what is gained on-the-job, often through trial-and-error. Our aim is to improve ecological restoration success in Minnesota by developing training opportunities for practicing restoration professionals. High-quality training opportunities need to reach a large number of professionals statewide. Our solution is to establish the Ecological Restoration Training Cooperative, to be based at the University of Minnesota, and coordinated as a partnership between state agencies and the University. A program of web-based, instructor-guided learning, combined with field sessions offered at multiple locations will be the first of its kind in the US for restoration. Over 700 Minnesota restoration professionals actively involved in planning, plant or seed production, installation,

maintenance and monitoring, could benefit. As part of this project, the training cooperative will develop and offer five application-oriented courses accessible statewide through a combination of online and field-based instruction. These courses address the major aspects of restoration practice; the range of offerings can expand over time, in response to professional needs. Following basic courses, professionals can stay current through webinars, an online problem-solving forum organized by ecosystem and region, and annual conferences that will be launched as part of this project.

III. PROGRESS SUMMARY AS OF:

IV. OUTLINE OF PROJECT RESULTS*:*

RESULT/ACTIVITY 1: Develop ecological restoration training courses.
Description Web-based instructional technology has greatly advanced in recent years; people in remote locations can now effectively learn from instructor-guided multimedia lectures, collaborative projects and discussions. We will rely on web-based instruction for delivering much of the content of the courses. Some topics, though, require field-based instruction which will be offered at multiple statewide locations. Five application-oriented courses (12-16 hrs each) will be developed that fill an immediate need of multiple agencies: (1) Designing and using native seed mixes, (2) Vegetation management for restored ecosystems, (3) Monitoring restoration success, (4) Revegetating drastically altered lands, (5) Restoration for biodiversity conservation. The University of Minnesota will develop course content collaboratively with state agency staff. Course content will also be reviewed and tested by experienced practitioners. We will review other environmental training programs as precedents. We will also collaborate with agency and private-sector restoration professionals to identify key additional training needs, to determine how to apply training completion as a professional credential for contracts, and to plan for long-term program sustainability.

Summary Budget Information for Result/Activity 1:	**ENRTF Budget:**	**$ 389,500**
	Amount Spent:	**$ 0**
	Balance:	**$ 389,500**

Deliverable/Outcome	Completion Date	Budget
1. Detailed outlines for all courses (field & online components)	March 1, 2011	$ 19,475
2. Detailed instructor plans for field sessions of all courses	July 1, 2011	$ 38,950
3. Financial plan for program sustainability	July 1, 2011	$ 3,895
4. Pilot versions of all courses -online components	January 1, 2012	$ 194,750
5, Set up satellite training centers & complete training of field instructors	January 1, 2012	$ 93,480
6. Tested and refined versions of all courses (online and field components)	July 1, 2012	$ 38,950

Result Completion Date: July 1, 2012

Result Status as of July 1, 2011:

Result Status as of January 1, 2012:

Result Status as of July 1, 2012:

Final Report Summary: July 1, 2013

RESULT/ACTIVITY 2: Offer ecological restoration training courses.
Description Each course will be offered at least once/yr beginning in 2013. University faculty (Galatowitsch) will be the main instructor responsible for overseeing course quality and participant performance and will teach web-based parts of all courses. Field sessions will be taught by a group of trainers from state agencies, UM outreach centers, and the private sector. All trainers will have extensive prior experience and receive formal training from the project team. Courses will be marketed by the University of Minnesota- Continuing Education Professional Education Program.

Summary Budget Information for Result/Activity 1:	**ENRTF Budget:**	**$ 50,900**
	Amount Spent:	**$ 0**
	Balance:	**$ 50,900**

Deliverable/Outcome	Completion Date	Budget
1. Market and offer five courses	July 1, 2013	$ 50,900

Result Completion Date: July 1, 2013

Result Status as of July 1, 2011:

Result Status as of January 1, 2012:

Result Status as of July 1, 2012:

Result Status as of January 1, 2013:

Final Report Summary: July 1, 2013

RESULT/ACTIVITY 3: Establish opportunities for continued restoration training.
Description For recent advances in restoration practice and science, a webinar series and an annual conference will be offered. Some examples of webinar topics include: effects of seed source location, wave breaks for lakeshore restoration, direct seeding and forest regeneration. These will be 1-2 hr on-line presentations by experts with Q & A sessions. Information on webinars, conferences, and courses will be available on a training coop website. This stand-alone University of Minnesota-hosted website will also provide links to new restoration ecology publications, plant identification resources, and to the “Community of Practice” online discussion forums, where practitioners can exchange ideas on finding solutions to restoration problems.

Summary Budget Information for Result/Activity 1:	**ENRTF Budget:**	**$ 109,600**
	Amount Spent:	**$ 0**
	Balance:	**$ 109,600**

Deliverable/Outcome	Completion Date	Budget
1. Launch website	March 1, 2011	$ 21,920
2. Establish web-hosted online forums	July 1, 2011	$ 10,960
3. Offer first annual ecological restoration training conference	March 1, 2013	$ 38,360
4. Offer 5 webinars	July 1,2013	$ 38,360

Result Completion Date: July 1, 2013

Result Status as of July 1, 2011:

Result Status as of January 1, 2012:

Result Status as of July 1, 2012:

Result Status as of January 1, 2013:

Final Report Summary: July 1, 2013

V. TOTAL ENRTF PROJECT BUDGET:

Personnel: $ 382,500

1.Postdoctoral Associate (100%, 2.5 yrs, 75.6% salary, 24.3% fringe) Responsible for working with project manager to develop course content, gather input from stakeholders, arrange webinar speakers, conduct analysis of comparable training programs, train trainers, offer field sessions of courses, facilitate instruction of on-line portion of courses.

2. CCE* Program Director-Online Distance Learning (3%, 2.9 yrs, 75.6% salary, 24.3% fringe). Responsible for entire online course development process-including tech support & production.

3. CCE Program Director - Professional Education (10%, 2.9 yrs, 75.6% salary, 24.3% fringe). Responsible for planning, development, marketing & promotion.

4. CCE Online Distance Learning Team: Instructional designer @12%, course developer @10%, Editor @10%, 2.7 yrs, 73% salary, 27% fringe. The instructional designer will develop learning experiences for each course so they are effective for online instruction. The course developer / editor is responsible for building the Web-delivered course site so it provides an optimal online experience for the learner.

5. CCE New Media Group: Multi-media programmers @10%, Audio Visual Specialist @10%, Web Developer @10% each for 1 yr, 73% salary, 27% fringe. The multimedia programmer will design and implement interactive elements (flash cards, simulations). Audio visual specialists will produce the media elements needed for the course (onsite videos, recorded presentations) and the Webinar and conference programs. The Web developer designs and implements the functionality of the program Web site.

6. CCE Program Planning Team: Program associate @10% and program secretary@10% for 2.6 yrs, 73% salary, 27% fringe. This staff will provide on-going assistance in making

arrangements for satellite training locations and trainers. Collecting information for website updates and communicating with University and state agency personnel on timelines and needed contracts are also their responsibility.

7. CCE Marketing Team: Graphic designers@5% and Marketing manager@10% for 1.2 yrs, 73% salary, 27% fringe. Responsible for setting up the "Ecological Restoration Training Cooperative" website including the design, communicating tools, webinar hosting, as well as the overall look and feel of what will be included in later marketing of the courses.

Contracts: $ 103,500
Field trainers - $2500 pp x 10 trainers -- to complete training curriculum and co-teach field sessions of a course 4 times (for non-agency, non-UM personnel only)

Restoration professionals featured in teaching videos (non-UM, non-agency) (5 @$1000)

Restoration professionals (private sector) serving as beta-testers for 5 training courses ($500 pp x 5 classes x 5 per class)

Video simulations (5-10, $25K total) - for online courses - Digital media specialist – development video simulations of natural processes to illustrate course concepts

Graphic designer – ($1000) Creation of the design and/or branding image to be used by the training cooperative for all promotion and website identification.

Webinar technical and speaker support ($5000 x 5 webinars). Web conference coordination including software set up, arranging speaker participation, audio visuals, and interaction with participants during webinars.

Conference services - for annual conference ($10000) Facility rental, audio visual support, registration, conference materials.

Equipment/Tools/Supplies: $ 50,000
Tools, implements and supplies for field training centers ($10,000 x 5 locations), e.g., seed drills, field guides, backpack sprayers, soil & seed testing reagents

Acquisition (Fee Title or Permanent Easements): $ 0

Travel: $ 14,000
Travel to field training centers to develop & offer training, production of training materials (e.g., videos): CCE: 8 trips x 500 x .50/mi, 8 nites food and lodging (2 people). Hort: 16 trips x 500 x .50.mi, 16 nites food and lodging (2 people).

Additional Budget Items: $ 0

TOTAL ENRTF PROJECT BUDGET: $ 550,000

Explanation of Capital Expenditures Greater Than $3,500: N/A

VI. PROJECT STRATEGY:

A. Project Partners:

University of Minnesota – Horticultural Science – Susan Galatowitsch - $ 270,100
Continuing Education – Lori Graven, Mary Davis - $ 279,900
Minnesota Department of Natural Resources – Jason Garms - $ 0
Minnesota Board of Water and Soil Resources – Dan Shaw - $ 0
Minnesota Department of Transportation – Ken Graeve - $ 0

B. Project Impact and Long-term Strategy:

Initiatives to restore prairies, wetlands, streams, lakeshores, and forests have been supported anticipating improved environmental quality. Despite an expanded knowledge base, restoration project failure rates remain high. For example, poor plant selection and installation results in a substantial loss of expensive native seed in both prairie and lakeshore restoration. By adopting best-practices, high-quality restorations more frequently can be economically feasible. Although Minnesota has many competent restorationists, the quality of work varies across the profession and lack of expertise contributes to project failures. A variety of workshop-based programs educates the public about restoring ecosystems, but these must focus on a limited range of practices feasible for individual landowners. Some colleges offer a restoration ecology course; these are typically global in scope and focus more on concepts than techniques. Currently, professional restoration training is limited to what is gained on-the-job, often through trial-and-error.

Our aim is to improve ecological restoration success in Minnesota by developing training opportunities for practicing restoration professionals. High-quality training opportunities need to reach a large number of professionals statewide. Our solution is to establish the Ecological Restoration Training Cooperative, to be based at the University of Minnesota, and coordinated as a partnership between state agencies and the University. Web-based, instructor-guided learning, combined with field sessions offered at multiple locations will be the first of its kind in the US for restoration. At least 700 Minnesota restoration professionals actively involved in planning, plant or seed production, installation, maintenance and monitoring, could benefit. Increased professional competency should improve restoration outcomes not only for state programs, but also local government and private sector initiatives.

By the end of the three project period, the training opportunities will be routinely available to the practicing restoration professionals of Minnesota and able to be relied by agencies as one form of a professional credential. The first year of the project will focus on planning and curriculum development and launching website. During the second year, the training program will be tested and refined; web forums will be established. Full implementation year will occur in the third year; courses will be available to the public for enrollment In the third year, agencies can pilot use of credential in contracting.

Beginning in 2013, training courses will be offered at least once/year. Professionals will be able to stay current through webinars,the online “community of practice” online forum, and annual conference. The training cooperative will be financially sustainable over the long-term, relying on tuition revenues and recurrent instructional and technology contributions from the University of Minnesota, and minimal staff contributions from state agencies.

C. Other Funds Proposed to be Spent during the Project Period:

In kind:

UM Galatowitsch Salary ($50,600) – 65% Result 1, 20% Result 2, 15% Result 3

DOT – Graeve Salary ($10,650) - -- 80% Result 1, 10% Result 2, 10% Result 3

BWSR – Shaw Salary ($12,000) – 80% Result 1, 10% Result 2, 10% Result 3

Other Funds: Participation fees from courses, webinars, conferences - $36,000

Result 1 – 0, Result 2 – 16,000, Result 3 – 20,000

D. Spending HIstory:

VII. DISSEMINATION: The website that will be developed for the training program (Result 3) will provide information on webinars, conferences, and courses. We will make practitioners aware of the new opportunities by providing information directly to professional groups (e.g., native seed producers), natural resource agency offices (e.g., watershed districts and extension offices), and through an email distribution list developed to market the program.

VIII. REPORTING REQUIREMENTS: Periodic work program progress reports will be submitted not later than January and July of each year. A final work program report and associated products will be submitted between June 30 and August 1, 2013 as requested by the LCCMR.

IX. RESEARCH PROJECTS: N/A

ECOLOGICAL RESTORATION TRAINING COOP

PROPOSED TRAINING COURSES

1. Designing & Using Native Mixes
2. Vegetation Management
3. Monitoring Restoration Success
4. Revegetation of Drastically Altered Lands
5. Restoration for Biodiversity Conservation

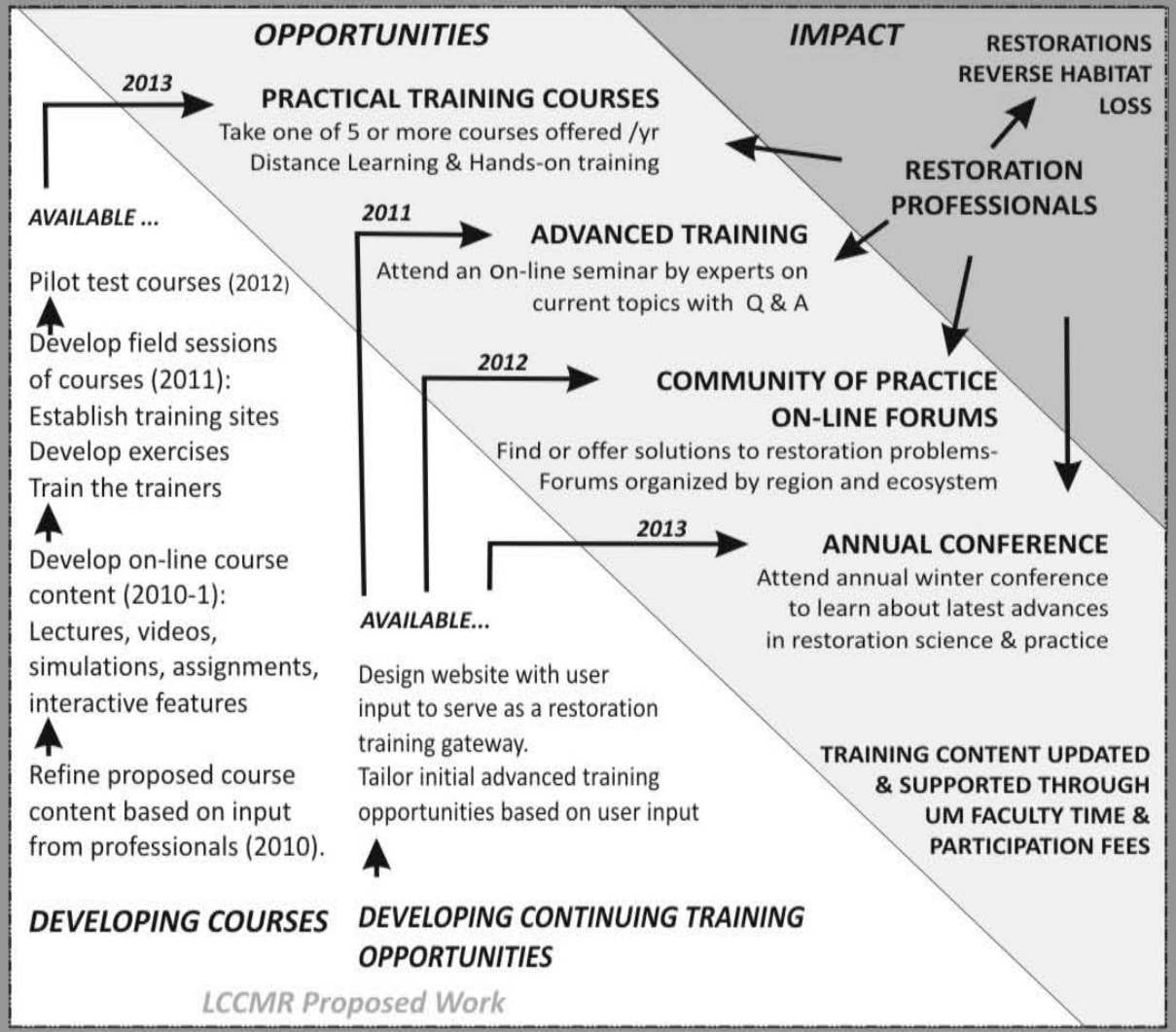
Others will likely be developed over time, based on need.

EXAMPLE COURSE CONTENT

Designing & Using Native Seed Mixes

Professionals completing this course will:

1. Be familiar with basic seed biology.
2. Understand role of seeds in MN ecosystems.
3. Be capable of conducting seedbank assays.
4. Be capable of formulating seed mixes.
5. Be able to design mixes for specific project goals & for specific ecosystems.
6. Understand how genetic make-up of seed sources affects short-term and long-term revegetation success.
7. Know how to store seed to maintain viability.
8. Know how to treat seed to promote germination.
9. Be capable of installing seed to maximize establishment.
10. Know if a seedbed is properly prepared.
11. Know how to encourage seeding success on problematic sites.
12. Know the limitations of seeding (i.e., When not to seed).



Developing Training Opportunities (2010-3)

Delivering Training Opportunities (2011 & Forward)

Attachment A: Budget Detail for 2010 Projects - Summary and a Budget page for each partner (if applicable)

Project Title: *Ecological Restoration Training Cooperative*

Project Manager Name: *Susan Galatowitsch*

Trust Fund Appropriation: $ *550,000*

2010 Trust Fund Budget	**Result 1 Budget:**	**Amount Spent** *(date)*	**Balance** *(date)*	**Result 2 Budget:**	**Amount Spent** *(date)*	**Balance** *(date)*	**Result 3 Budget:**	**Amount Spent** *(date)*	**Balance** *(date)*	**TOTAL BUDGET**	**TOTAL BALANCE**
	Develop Ecological Restoration Training Courses			*Offer Ecological Restoration Training Courses*			*Establish opportunities for continued restoration training*				
BUDGET ITEM											
PERSONNEL: wages and benefits											
Postdoctoral Associate (100%, 2.5 yrs, 75.6% salary, 24.3% fringe)	117,900			24,800			24,400			167,100	
CCE* Program Director-Online Distance Learning (3%, 2.9 yrs, 75.6% salary, 24.3% fringe).	3,600			2,800			2,000			8,400	
CCE Program Director - Professional Education (10%, 2.9 yrs, 75.6% salary, 24.3% fringe).	8,000			3,800			19,900			31,700	
CCE Online Distance Learning Team: Instructional designer @12%, course developer @10%, Editor @10%, 2.7 yrs, 73% salary, 27% fringe.	120,300			0			0			120,300	
CCE New Media Group: Multi-media programmers @10%, Audio Visual Specialist @10%, Web Developer @10% each for 1 yr, 73% salary, 27% fringe.	15,000			0			5,000			20,000	
CCE Program Planning Team: Program associate @10% and program secretary@10% for 2.6 yrs, 73% salary, 27% fringe.	1,000			0			13,600			14,600	
CCE Marketing Team: Graphic designers@5% and Marketing manager@10% for 1.2 yrs, 73% salary, 27% fringe	5,700			5,000			9,700			20,400	
Contracts											
Professional/technical											
Field trainers - $2500 pp x 10 trainers -- to complete training curriculum and co-teach field sessions of a course 4 times (for non-agency, non-UM personnel only)	12,500			12,500			0			25,000	
Restoration professionals featured in teaching videos (non-UM, non-agency) (5 @$1000)	5,000			0			0			5,000	
Restoration professionals (private sector) serving as beta-testers for 5 training courses ($500 pp x 5 classes x 5 per class)	12,500			0			0			12,500	
Video simulations (5-10) - for online courses	25,000			0			0			25,000	
Graphic designer -Creation of the design and/or branding image to be used by the training cooperative for all promotion and website identification.	1,000			0			0			1,000	
Webinar technical support Web conference coordinationl inc. software, speakers, audio visuals, and interaction with participants during webinars.	0			0			25,000			25,000	
Conference services - for annual conference	0			0			10,000			10,000	
Non-capital Equipment / Tools: Tools, implements, and supplies for training centers ($10,000 x 5 locations), e.g, seed drills, field guides, backpack sprayers, soil& seed testing reagents	50,000			0			0			50,000	
Travel expenses in Minnesota: Travel to field training centers to develop and offer training, production of training materials. CCE: 8 trips x 500 x.50/mi, 8 nites food & lodging for 2 p. Hort: 16 trips x 500 x .50 mi, 16 nites food & lodging for 2 p.	12,000			2,000			0			14,000	
COLUMN TOTAL	**$389,500**	**$0**	**$389,500**	**$50,900**	**$0**	**$50,900**	**$109,600**	**$0**	**$109,600**	**$550,000**	**$0**