

2008 Project Abstract

For the Period Ending June 30, 2010

PROJECT TITLE: Prairie Ecosystem Restoration Project
PROJECT MANAGER: Rich Perrine
AFFILIATION: Martin Soil and Water Conservation District
MAILING ADDRESS: 923 North State Street, Suite 110
CITY/STATE/ZIP: Fairmont, MN 56031
PHONE: (507) 235-6680
E-MAIL: Richard.perrine@mn.nacdnet.net
WEBSITE: [If applicable] www.martinswcd.net
FUNDING SOURCE: Environment and Natural Resources Trust Fund
LEGAL CITATION: M.L. 2008, Chp. 367, Sec. 2, Subd. 3(n)

APPROPRIATION AMOUNT: \$80,000

Overall Project Outcome and Results

31 prairie remnant owners gave written permission to collect native plant materials from their property. 18 Township Boards gave permission for the collection of native plant materials from township road right-of-ways. The Martin County Board of Commissioners granted permission to collect native plant materials from county road right-of-ways and native populations within county parks.

MCIA inspected nearly 700 acres on 28 collection sites and 578 acres on 23 planting sites. MCIA was contracted to perform site inspections, identification and verification of native species in order for the seeds collected to maintain their "Yellow Tag" eligibility.

Two interns hired in 2008 to assist with project implementation, secured permission and started the seed collection. In June, 2009 four interns were hired and they immediately went to work learning plant and seed identification and seed stratification requirements. Daily tasks included identifying and monitoring prairie remnants and sites with local ecotype native species, planting trays, using GPS to mark species locations, placing no mow and/or no spray signs in selected ditches, shelling and cataloguing seed types and amounts collected. Of the 104 different local ecotype native species collected, we consider at least 34 species to be at-risk for further decline.

As time ran out for the planting phase of the project, seed, rootstocks and cuttings from 104 native plant species had been collected from 40 local remnant populations. These remnants, ranged from less than an acre to over 100 acres in size, totaling almost 800 acres. Of these, only about 25 acres could be considered high quality, and almost no acres were without some impact from invasive species. Reed Canary grass, Smooth Brome and Kentucky bluegrass are major grass invaders found on nearly every site, along with Canada thistle. Sweet Clover and Buckthorn are starting to dominate areas as well. No chemicals were used or recommended within the higher quality portions of the remnants. Hand pulling seemed somewhat effective on low level Sweet Clover infestations. Stripping buds and Collecting seed heads from thistles was used primarily to reduce seed contamination as was done with smooth brome before collecting native seed in those areas.

In order to reduce the risk of entire collection sites from being sprayed or mowed, Canada thistle had to be kept from maturing past the bud stage. Hand pulling seemed to produce the least impact to the native plants.

With conversion of land to other uses, if given an opportunity to collect native plants, we learned to prioritize species to remove and salvage them in priority order in the time available, because once converted, there is not a single plant left on the site! Every year we seem to lose a site with remnant native plant populations.

Letters describing the project were sent to perpetual easement owners, inviting them to participate. With the wonderful response, we were able to plant on 758 acres of the 1,589 acres where permission was granted. Two landowners had significant acreage which allowed us to plant 15 smaller plantings within various landscape positions on their easements.

32.27 lbs of seed and about 3,000 propagated plants were then transferred to suitable locations on 1,589 acres of land protected by perpetual conservation easements. Planting sites were selected where niches remained between existing plants and where invasive species were absent. Species with a small seed supply were planted in plots of only a few square feet, while seed from many species were broadcast over much larger areas of 100 acres or more with a Vicon seeder mounted on an ATV. Seed supplies ranged from less than a gram to several lbs. for some of the more common species and those having a good seed year. Plantings were strategically located to expand over time, allowing many of the species to move into their preferred niches and increase diversity over the 1,589 acres of easement area.

Increasing the plant diversity will improve the natural functions, replace some of our rapidly declining native prairie habitats and provide a better habitat for our insects, birds, and mammals. Plant materials from these areas are to be made available as foundation seed sources, with their origination tracked in accordance to MN Crop Improvement Association's (MCIA) "Yellow Tag" program guidelines.

Project Results Use and Dissemination

Articles were published in Martin SWCD's Conservation Update and several radio spots were aired discussing this project and updating county residents on the projects progress. We also set up information booths at the annual County Fair, Corn and Soybean Days, Spring Expo, and talked about the project at our rain garden seminars and weed management workshops. An interpretive planting around the foundation of the Martin County Courthouse features the project which is referenced on a bronze plaque.

Trust Fund 2008 Work Program Final Report

Date of Report: August 10, 2010

Final Report

Date of Work program Approval: June 10, 2008

Project Completion Date: June 30, 2010

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Project Manager: Rich Perrine

Affiliation: Martin SWCD

Mailing Address: 923 North State Street, Suite 110

City / State / Zip : Fairmont, MN 56031

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Location: On cooperator's perpetual conservation easements, within Martin County and the portions of adjacent counties located within approximately 25 miles of the center of Martin County.

Total Trust Fund Project Budget:	Trust Fund Appropriation:	\$80,000.00
	Minus Amount Spent:	\$80,000.00
	Equal Balance:	\$ 0.00

Legal Citation: M.L. 2008, Chp. 367, Sec. 2, Subd. 3(n).

Appropriation Language: \$80,000 is from the trust fund to the Board of Water and Soil Resources for an agreement with the Martin County Soil and Water Conservation District to collect and propagate local ecotype native plant materials from prairie remnants for establishment on lands with perpetual conservation protection in Martin County. If the Martin County Soil and Water Conservation District sells seeds or plants that were collected or propagated using money from this appropriation, the net proceeds of the sale must be repaid to the trust fund.

II. and III. FINAL PROJECT SUMMARY.

31 prairie remnant owners gave written permission to collect native plant materials from their property. 18 Township Boards gave permission for the collection of native plant materials from township road right-of-ways. The Martin County Board of Commissioners granted permission to collect native plant materials from county road right-of-ways and native populations within county parks.

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broadcast over much larger areas of 100 acres or more with a Vicon seeder mounted on an ATV. Seed supplies ranged from less than a gram to several lbs. for some of the more common species and those having a good seed year. Plantings were strategically located to expand over time, allowing many of the species to move into their preferred niches and increase diversity over the 1,589 acres of easement area.

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IV. OUTLINE OF PROJECT RESULTS:

Result 1: Collect Native Plant Materials

Description: Prairie remnants will be inventoried. Permission to collect native plant materials will be secured and agreements will be completed. (Landowners who request compensation will be paid for the value of the seed harvested on their property). Prairie Remnants will be monitored. Native plant material, usually seed but sometimes root or shoot cuttings and plants will be collected from the prairie remnants. The Minnesota Crop Improvement Association (MCIA) will provide prairie remnant inspections.

Summary Budget Information for Result 1: Trust Fund Budget: \$30,000.00
 Amount Spent: \$30,000.00
 Balance: \$ 0.00

Deliverable	Completion Date	Budget	Status
1. Secure Access/Agreements	12-31-2009	\$2,000.00	100%
2. Inventory, Collect Seed	06-30-2010	\$12,000.00	100%
3. Pay Land Owners	06-30-2010	\$7,000.00	100%
4. MCIA Inspection	06-30-2010	\$9,000.00	100%

Completion Date: 06-30-2010

Final Report Summary: August 10, 2010

Written agreements granting permission to collect native plant materials were secured from 31 landowners. Collaboration with the State's Ecologist who is conducting the Minnesota County Biological Survey helped us locate additional prairie remnants and potential prairie remnant sites to look for local ecotype native species. Eighteen Township Boards returned written permission for collection of native plant materials within their township road right-of-ways. A contract developed with the MN Crop Improvement Association (MCIA) provided for the inspection and inventory of 28 native prairie sites and 23 easement sites.

A renewed permit from the DNR was acquired to collect, propagate, and plant three threatened or endangered species. After the accidental mowing of Sullivant's Milkweed (State Threatened), on one of our right-of-way sites, signs requesting no mowing or spraying with Minnesota Trust Fund recognition were posted with great success on selected ditches. These signs also included our phone number with instructions to call if any invasive/noxious weeds were visible within our project area.

Collaboration with the Martin County Biological Survey has resulted in efficiency with landowner contacts and has helped produce some significant finds in the field. The Small White Ladyslipper was found on one of the inventory trips and the Tuberous Indian Plantain was found on three privately owned parcels.

21 sites were monitored closely and seeds from 104 local ecotype plant species were collected, with 61 of those species coming from multiple properties to provide genetic variation for these local ecotypes.

GPS was used to place location waypoints on plant species at two large private property sites with more than 30 different plant species. Waypoints can be used again for relocation and collection of seed in the future.

\$7,000 in compensation was provided to private landowners for allowing the collection of 32.27 lbs of seed from their property. Collection site spreadsheets were updated with species, date collected, and weight for calculating compensation.

Seeds were collected into late November. Cool summer temperatures slowed maturation. Drought conditions and insect predation impacted seed production of some species. Dry conditions helped keep feet dry, but prevented Carex species from filling seed and holes in seed pods were evidence of insect damage.

Time limited our spring 2010 seed collection to only a few species that were ready to pick by mid-May due to the enormous response from 18 easement owners to plant our collected seed on their properties and the preparation needed for planting.

Result 2: Propagate Native Plants

Description: Purchase containers and ingredients for growing medium. Prepare trays, seeds and cuttings. Start plants under grow lights. Move plants to a greenhouse, a nursery plot or plant directly into easement protected sites.

Summary Budget Information for Result 2: Trust Fund Budget: **\$34,000**
Amount Spent: **\$34,000**
Balance: **\$ 0**

Deliverable	Completion Date	Budget	Status
1. Purchase materials	06-30-2010	\$5,000.00	100%
2. Propagate plants	06-30-2010	\$29,000.00	100%

Completion Date: 06-30-2010

Final Report Summary: August 10, 2010

Planting trays, inserts and growing medium ingredients were purchased. The special tray inserts and tubes with deep planting cells will allow the development of deep root systems. (The procedure used for propagation came from the Iowa Ecotype Project, University of Northern Iowa.) Plants started in these tube/cone shaped cells transplant with roots deeper in the ground which should result in better access to soil moisture as the soils dry out. Over 3,000 tubes were planted with seed. Successful germination rate of planted seeds is about 85% to 90% for grasses and a few of the forbs. Many forbs had about 50% to 60% germination rate. Some seeds such as the Prairie Blazing Star, Prairie Turnip, Ground Plum, and Pasque Flower had 0 to 10% germination rate.

Hoary Puccoon cuttings were collected and transplanted to large tubes that had been seeded with Sideoats Grama, Porcupine Grass, and Big Blue Stem. We had zero success with the Hoary Puccoon cuttings growing with the grass seedlings but we did have some success with germination of Hoary and Fringed Puccoon seeds with established grasses. Early plantings of Monkey flower required thinning and were transplanted to larger tubes in the process.

In 2009 seed trays were housed in a nursery for most of the summer, but by late October, were moved to the SWCD's shed to harden off for winter. In 2010, we leased space in what was once a pharmacy and it had limited windows for fresh air ventilation. Use of the furnace fan to provide air movement helped but the high humidity levels caused mold spores to develop. The Prairie Turnip is notoriously susceptible to damp-off, a type of mold that is already a part of the seed. We removed the Prairie Turnip to a protected outdoor area but the plant would grow to its second leaf stage and then die out. We placed the plant trays into a water bath in order for the plants to soak up water from the bottom which is a recommended means of keeping the seeds/seedlings hydrated without soaking the surface, but it did not make a difference with the Prairie Turnip. All the grasses had 90% or better germination and growth. One forb species that was picked in 2008, Prairie Blazing Star, had 0% germination. We do not have a hypothesis as to why none of the seed from this species reached maturity, but undeveloped seed seems to be common with blazing star species.

A refrigerator was acquired as an in-kind contribution for the project and was used extensively for seed storage and stratification.

Result 3: Establish Plants on Easements

Description: Select suitable sites on protected easements for each species being planted. Prepare site by providing mechanical and/or chemical weed control if needed and achieve proper soil conditions for the species being planted. Plant and/or transplant local ecotype native plants directly into existing stands or into prepared areas. Continue weed control until seedlings and transplants become established, water as needed.

Summary Budget Information for Result 3: Trust Fund Budget: \$16,000.00
Amount Spent: \$16,000.00
Balance: \$ 0.00

Deliverable	Completion Date	Budget	Status
1. Select Sites	05-15-2010	\$1,000.00	100%
2. Prepare, Seed/Transplant	06-30-2010	\$10,000.00	100%
3. Site Maintenance	06-30-2010	\$5,000.00	100%

Completion Date: 06-30-2010

Final Report Summary: August 10, 2010

Letters were sent to all Martin County CREP and RIM easement owners explaining the project and invited them to participate by allowing us to plant the collected seeds and plant materials on their property. We had an overwhelming response from our residents, with 18 landowners providing 23 sites and 1589 acres, which were inspected by MCIA prior to planting. Dormant seeding during the winter of 2009/2010 was not done due to late seed collection being required after unexpected snow fell in early October, delaying collection until warmer weather returned in November. As soon as collection was completed in November, snow fell again but we did not have enough seed cleaned to get out on the sites.

Two people went out to each site, conducted a plant inventory, site evaluation and determined soil type by using the Web Soil Survey on the USDA's Natural Resource Conservation Service web site. We also checked the CREP and RIM files for the species that were already seeded on to the easements, to avoid planting species already growing on the site

Prior to planting, the easement sites were assessed for suitability. Heavy Spring 2010 rain, produced populations of grasses and weeds that were overwhelming in areas, preventing the planting of all of the acreage available. Weedy areas were avoided when selecting planting sites. Very little chemical control was used, with Roundup and 2-4D being used primarily adjacent to planting areas to slow encroachment.

Easement owners were encouraged to only use mechanical weed control in the future and to contact the SWCD for help with selection of chemicals, timing and location of applications and then for use only when absolutely necessary.

Follow-up monitoring will be provided for all planting sites with weed control and maintenance strategies communicated with the landowners and operators as issues arise.

Seeds were mixed with vermiculite and hand seeders were used on smaller sites and at sites that were difficult to get to with the Vicon seeder. The project ended with 758 acres planted with additional species, using 32.27 lbs. of seed and approximately 3,000 transplants.

Coordinating planting permission, researching the species that were already planted on their 23 sites, and identifying suitable planting areas took three weeks to complete. Seeding was completed on June 28, 2010.

V. TOTAL TRUST FUND PROJECT BUDGET:

Staff or Contract Services: \$75,000

Equipment: \$0.00 All equipment will be provided in-kind

Development: \$0.00

Restoration: \$0.00 On at least 30 selected sites, approximately 1,000 acres.

Acquisition, including easements: \$0.00 Within approximately 2,500 acres or more of existing perpetual conservation easements, under private ownership.

Other: \$5,000.00 for supplies, primarily growing medium and containers, needed for plant propagation.

TOTAL TRUST FUND PROJECT BUDGET: \$80,000.00

Explanation of Capital Expenditures Greater Than \$3,500: None

VI. OTHER FUNDS & PARTNERS:

A. Project Partners: Martin Soil and Water Conservation District: \$80,000.

Fox Lake Conservation League, Tim Eisenmenger; Watonwan Pheasants, Everett Garlsich; Fox Lake Association, Mark Stoffel; MN Department of Natural Resources Wildlife Manager, Randy Markl; and Ecological Services, Jason Garms; U. S. Fish and Wildlife Service Private Lands, Gerry Shimek; and many prairie remnant and easement owners providing in-kind.

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

C. Past Spending: \$10,000 of in-kind time, mileage, supplies and equipment will be used for this project in the two years prior to July 1, 2008. Maintenance of existing

plant materials and preparation for an increased workload for the two-year LCCMR funded project period will continue through July 1, 2008.

D. Time: Work needed to establish plants on protected sites will continue beyond the two years funded through the LCCMR. Work started prior to the LCCMR funded portion of the project will be continued and completed. Work with additional species that cannot be completed within the LCCMR funded project timeframe will continue until the plants can be established on protected easement sites. Additional in-kind, local funding and grant funding will be secured if needed to complete any unfinished work.

VII. DISSEMINATION: Information will be documented in conservation plans for participating landowners. Copies of the plans will be provided to the BWSR Central Office in St. Paul to be included in cooperator files there. Project progress and results will be posted on the SWCD web site. The project will be featured in the Martin SWCD annual publication, the "Conservation Update" in January of 2008, 2009, 2010 and 2011.

Final Report Summary: August 10, 2010

Articles outlining the project and project progress were written for the Conservation Update published twice a year. These articles generated interest within the community and we received a few calls from citizens wanting to volunteer. We also posted these articles on our web site www.martinswcd.net. One of the local radio stations provides about 5-10 minutes of air time per week where this office discusses all of our projects and programs that are available to eligible landowners. We spoke about this project at least quarterly. We provided a planting and an interpretive display around the foundation of the county courthouse to showcase the project of local ecotype native plants. Boy Scout Troop 55 from Truman, MN made aluminum stakes to mount laser etched plant labels which were well received by the public. A bronze plaque features the project and recognizes the LCCMR and the Environment and Natural Resources Trust Fund.

VIII. REPORTING REQUIREMENTS:

Periodic work program progress reports will be submitted not later than January 31, 2009, July 31, 2009, January 31, 2010. A final work program report and associated products will be submitted between June 30 and August 1, 2010 as requested by the LCCMR

IX. RESEARCH PROJECTS: This project does not involve a research component. Propagation techniques used in this project were acquired through training provided by the Tallgrass Prairie Center, University of Northern Iowa, Cedar Falls, IA and the Iowa Ecotype Project.

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Attachment A: Budget Detail for 2008 Projects											
Project Title: Prairie Ecosystem Restoration Project											
Project Manager Name: Rich Perrine											
Trust Fund Appropriation: \$80,000											
2008 Trust Fund Budget	Result 1 Budget 05/13/10	Amount Spent (06/30/10)	Balance 06- 30-2010	Result 2 Budget 05/13/10	Amount Spent (06/30/10)	Balance 06-30-2010	Result 3 Budget 05/13/10	Amount Spent (06/30/10)	Balance 06-30-2010	Total Budget 05/13/10	Total Balance 06/30/10
	Collect Native Plant Materials		0	Propagate Native Plants		0	Establish Plants on Easements		0		
BUDGET ITEM			0			0			0		
PERSONNEL: wages and benefits One new full time staff person doing all aspects of project work, with the assistance of 4 to 5 seasonal workers during busy times, working with native plant materials.	12,180	12,180	0	28,600	28,600	0	15,000	15,000	0	55,780	0
Contracts			0			0			0		
Agreements with prairie remnant owners to donate or receive payment for plant materials collected from their property. Agreements with easement owners outlining their responsibilities and the procedures for the planting and maintenance of local ecotype plants on their property.	7,000	7,000	0			0			0	7,000	0
The Minnesota Crop Improvement Association will provide field certification of prairie remnants. Inspection fee: \$50.00 per hour. Planting sites will be documented, to allow for the development of "Yellow Tag Seed".	9,000	9,000	0			0			0	9,000	0
Other Supplies: Plant trays, inserts, growing medium ingredients, inoculants, rooting hormone, plant food.			0	5,000	5,000	0			0	5,000	0
Travel expenses in Minnesota Travel to, from and between sites for monitoring, seed collection, propagation, planting and maintenance activities.	1,820	1,820	0	400	400	0	1,000	1,000	0	3,220	0
COLUMN TOTAL	\$30,000	\$30,000	\$0	\$34,000	\$34,000	\$0	\$16,000	\$16,000	\$0	\$80,000	0

