

Linking Habitat Restoration to Bioenergy: an East-Central Minnesota Partnership

**Annual report to the Minnesota Legislature:
Senate Environment, Energy and Natural Resources Budget Division
Senate Environment and Natural Resources Policy Committee
Senate Energy, Utilities, Technology & Communication Committee
House Environment and Natural Resources Finance Division
House Environment Policy and Oversight Committee
House Energy Finance and Policy Division**

(Laws of 2007, Chapter 57, Article 2, Sec. 3, subd. 6)

Submitted by the
Minnesota Department of Natural Resources
Division of Ecological Resources

Date of Report: June 1, 2009
For Project Work Completed Through May 31, 2009

Date of Report: June 1, 2009

Date of Final Report: July 1, 2010

I. PROJECT TITLE

Linking Habitat Restoration to Bioenergy: an East-Central Minnesota Partnership

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II. EXECUTIVE SUMMARY

The Department of Natural Resources, Division of Ecological Resources (DNR) received \$500,000 from the legislature as part of the 2007 environment, natural resources, energy, and commerce finance bill. The appropriation language is provided in Appendix 1.

“Linking Habitat Restoration to Bioenergy” is an innovative new project that unites two separate but linked aspects of environmental health: habitat restoration and bioenergy. The goal of this effort is to restore valuable habitats while providing a local source of energy. The funding provided by the legislature for this project is helping to facilitate habitat restoration efforts that might not have otherwise occurred while making the woody material generated as a by-product available to facilities that convert this material to energy.

Overall Status of Project as of April 14, 2008:

- A 50% time project manager began implementing the project in December 2007.
- Data about habitat restoration projects that could generate woody biomass within 75 miles of St. Paul were compiled; over 7,000 acres were identified. A contact list was created.
- The project is being conducted in two phases. Phase 1 pilot project sites were selected from the list of potential habitat restoration sites to develop procedures and test feasibility. In Phase 2, procedures developed in Phase 1 will be applied to additional sites until all project funds are expended.
- A process and criteria for selecting and implementing Phase 1 pilot habitat restoration project sites were developed.
- A Grant Agreement template was developed.
- Management Plan templates and examples were selected.
- Management Plan Review Team was established to review management plans to ensure that ecological restoration principles are adequately addressed and that plans include considerations for exotic invasive species management, threatened

- and endangered species, and short- and long-term maintenance and management strategies.
- Harvest Plan templates and examples were developed.
 - Potential woody biomass removal service contractors were identified and a list of contacts was compiled. This list is dynamic and will be updated as more contractors are identified.
 - Service Contract templates and examples were created.
 - A Cooperative Agreement was developed with Environmental Wood Supply, LLC, a subsidiary of District Energy St. Paul, a local energy generation facility. The agreement defines roles and responsibilities of the DNR and Environmental Wood Supply, LLC related to the project.
 - Four Phase 1 pilot projects were identified and implemented as described in detail in Section III, Result 3.
 - A fact sheet was prepared to describe the project.

Overall Status of Project as of May 31, 2009:

- As the project progressed, there became four distinct phases of implementation: Phase 1 involved two projects implemented winter of 2008; Phase 2 involved two projects implemented spring/summer 2008; Phase 3 involved six projects implemented fall 2008/winter 2009; and, Phase 4 involves an RFP due on June 26, 2009 for the final set of projects to be completed by April 30, 2010. Phase 4 was delayed due to temporarily unallotted funds that required rescinding the RFP initially posted in December 2008.
- Lessons learned during each phase helped to inform and refine the criteria, process, procedures and metrics applied to projects of each subsequent phase.
- The document “DNR Woody Biomass Project Guidelines for Grantees” was developed and is revised as needed.
- New Office of Grants Administration policies and guidelines implemented by the Minnesota DNR in August 2008 were applied to Phase 3 projects and resulted in the issuance of a formal Request for Proposals using the criteria and guidelines previously developed for Phase 1 and Phase 2 projects.
- Minnesota DNR Division of Ecological Resources Invasive Species Guidelines were adapted for woody biomass projects and provided to grantees for incorporation into the required Harvest Plan and to Ever-Green Energy, service provider to District Energy.
- A Management Plan review checklist has been developed.
- The Harvest Plan Template has been revised and an accompanying harvest plan review checklist developed.
- The example service contract template has been revised.
- A “DNR Woody Biomass Project Checklist” was developed.
- A filing system has been created to easily track project status and data.
- A database has been created to capture funded project information and information on others who have expressed interest in this project.
- A “Permit to Transport Noxious Weed Infested Material or Equipment” was obtained from the Minnesota Department of Agriculture.

- A resource contact list has been created for use by grantees that includes organizations and businesses involved in habitat restoration and management, and woody plant removal.
- Grantees are provided a copy of the “Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines” including the “Biomass Harvesting Guidelines for Forestlands, Brushlands and Open Lands” dated December 2007.
- Additional funding has been sought through the LOHC (unsuccessful) and the LCCMR (pending).

III. PROJECT RESULTS

Result 1: Compile information about habitat restoration sites with woody by-products within 75 miles of St. Paul.

Description: Information will be compiled on site location, distance from St. Paul, contact, acres, and biomass potentially available through contacts with public and private landowners and managers of sites undergoing habitat restoration.

Status as of April 14, 2008:

Planned and active habitat restoration sites comprising over 7,000 acres were identified and a contact list was created. Additional habitat restoration sites and acreage are added to this list as they are identified. Organizations involved in habitat restoration and management were also identified and are included in the contact list.

For practical purposes, the 75-mile radius for woody biomass procurement specified in the legislation will be measured from the Wood Recycling Center at 2165 Pigs Eye Lake Road, St. Paul where woody material is collected and processed for use by District Energy St. Paul.

Status as of May 31, 2009:

A database has been developed from the initial contact list and is regularly updated to include information on current and possible future projects.

Result 2: Coordinate with Environmental Wood Supply, LLC, their subsidiaries and contractors, document their business requirements related to the project, and develop an agreement covering respective roles and responsibilities of the DNR and Environmental Wood Supply, LLC.

Description: Project manager will make contacts at Environmental Wood Supply, LLC and determine their business requirements through conversations and meetings. An agreement will be developed that reflects the needs of industry and the state.

Status as of April 14, 2008:

Barb Spears, project manager, met with Jeff Guillemette of Environmental Wood Supply, LLC to tour the Wood Recycling Center wood yard and discuss project site and logistic requirements. A Cooperative Agreement was drafted and signing is in progress.

Status as of May 31, 2009:

A Cooperative Agreement has been signed and is in effect through June 30, 2010.

A good working relationship has been established between Barb Spears, DNR Woody Biomass Project Coordinator and Jeff Guillemette, Biomass Fuel Procurement Specialist with Environmental Wood Supply, LLC (service provider to District Energy St. Paul). Protocols have been agreed upon for final project site selection and overall communication among DNR, Ever-Green Energy and grantees to ensure successful project implementation.

Result 3: Conduct Phase 1 pilot projects during winter 2008 to test feasibility, criteria, costs and procedures.

Description: Phase 1 pilot projects will be selected from the list of potential sites, and implemented during winter 2008 to take advantage of frozen ground conditions. Criteria for Phase 1 project sites include: a current habitat restoration management plan, adequate biomass volume, accessibility for equipment and trucks, and capacity of the grantee to immediately implement the project.

Status as of April 14, 2008: Phase 1 Pilot Projects

- **Pilot Knob Hill, Mendota Heights, City of Mendota Heights.** Oak savanna and mesic prairie restoration. Located 10 miles from the Wood Recycling Center in St. Paul. This is a unique site of significant cultural, historic and natural significance with many entities, including the DNR Metro Greenways program, involved in purchasing the land (a/o January 31, 2008) and working to restore its varied features. The City of Mendota Heights received funding to remove overgrown mixed hardwoods from three acres. Cutting, staging, grinding, and transport of the material was completed on March 8 with a total of 16 semi-truckloads of material equaling 1,280 cubic yards and 320 tons for use by District Energy in St. Paul. KMSP-TV, Channel 5 aired a 2:19-minute segment on this project titled "Pilot Knob Energy Project in Mendota Heights" on March 7 at 6:00 p.m.
- **Hastings Sand Coulee SNA, Hastings, MN DNR.** Sand-gravel prairie restoration. Located 24 miles from the Wood Recycling Center in St. Paul. Approximately 6.8 acres of planted red pine, white pine, mixed spruce and encroaching red cedar was cut and staged for future grinding and transport. District Energy contractors will grind and collect the material when road and site soil conditions allow during spring or early summer 2008.
- **Indian Mounds Regional Park, St. Paul, City of St. Paul.** Oak savanna and oak forest restoration. Located 1 mile from the Wood Recycling Center in St. Paul. Approximately 9 acres of predominantly buckthorn with additional mixed tree species will be removed. Cutting will begin the end of May/early June. On June 21, 300-400 volunteers will move the material to staging area(s) for collection by Environmental Wood Supply, LLC. The

volunteer coordination is in partnership with Hands-on Twin Cities and Minnesota Conservation Corps. The City of St. Paul Mayor's office, KARE-11 TV and other sponsors are coordinating public relations and media activities.

- **Zumbro Falls Woods SNA, Zumbro Falls, MN DNR.** Oak forest and oak savanna restoration. Located 75 miles from the Wood Recycling Center in St. Paul. Approximately 25 acres of planted red pine, white pine, and encroaching mixed hardwoods to be removed and thinned resulting in approximately 500 cords of biomass material. The initial site visit with DNR SNA and Forestry staff and Environmental Wood Supply, LLC, determined that the size and complexity of this project warranted the delay in the actual harvesting until frozen ground conditions in late-fall 2008/early-winter 2009. DNR Foresters and Society of American Foresters (SAF) worked closely with the MN SAF Student Chapter on March 29 to mark the trees and boundaries of the specific biomass harvest areas and collect additional information necessary to solicit bids for biomass removal contractors.

Procedures followed in Phase 1:

- Make initial contact with landowner/manager to assess distance from the Wood Recycling Center in St. Paul, habitat restoration goals, written management plan, species to be removed, estimate of acreage/biomass volume, overall site characteristics, potential staging area(s), and accessibility for equipment and trucks.
- If proposed project appears viable, visit the site with Environmental Wood Supply, LLC representative to ensure that the project will meet their needs.
- Upon approval of project site, complete Grant Agreement to encumber project funds and activate the project.
- Management Plan. Request a file copy. If none, request that one be written. If one exists but is more than 10 years old, request updated plan. If the plan is less than 10 years old, review and determine if project site(s) involved are adequately addressed. If not, request an amendment to update information on site(s) involved in this project.
- Provide management plan templates and examples to grantees as needed.
- Management Plan Review Team reviews management plan for site.
- Harvest Plan. Request a file copy. This provides more details and information on the site-specific considerations and process for removing undesirable woody plant material during habitat restoration activities.
- DNR project manager reviews and approves Harvest Plan in consultation with Environmental Wood Supply, LLC and others as appropriate.
- Provide list of potential woody biomass removal service contractors to grantee to assist in their efforts to solicit bids. Obtaining a minimum of 3 bids is recommended utilizing this list and other sources.
- Provide Service Contract templates and examples to grantees. This relates directly to the Harvest Plan but is more specific with regards to actual work and expectations of the service contractor.

Status as of May 31, 2009:

Two projects originally identified as Phase 1 projects, Pilot Knob Hill and Hastings Sand Coulee SNA, were implemented during the winter of 2008 as planned. The other two projects originally identified as Phase 1 projects, Indian Mounds Regional Park and Zumbro Falls Woods SNA, could not be fully implemented until a later time.

Phase 1 Pilot Projects – Winter 2008 (updated):

Pilot Knob Hill, Mendota Heights, City of Mendota Heights

Status: Completed March 2008.

Description: 3 acres. Oak savanna and mesic prairie restoration. This is a unique site of significant cultural, ecological and historic significance. The City of Mendota Heights, with many partners including the DNR Metro Greenways program, Trust for Public Land, and Dakota County, purchased a 15 acre addition (Phase II) to the 8 acres (Phase I) of existing public natural area on Pilot Knob Hill on January 31, 2008. This project helped to implement the *Pilot Knob Hill Phase II Natural Resource Management Plan* dated November 2007, compiled by Great River Greening.

Distance: 10 miles from the Wood Recycling Center in St. Paul.

Press/Media: 1) Pioneer Press article, Nick Ferraro, March 6, 2008; 2) KMSP-TV, Channel 5 aired a 2:19-minute segment on this project titled “Pilot Knob Energy Project in Mendota Heights” on March 7, 2008 at 6:00 p.m.

Operations: Great River Greening managed the project on behalf of the City of Mendota Heights and contracted with Tree Top Service. Upon completion of the grinding of biomass material, volunteers planted acorns collected from trees in the immediate vicinity.

Biomass Type: Mixed hardwoods.

Biomass Volume: 16 loads, 1,280 cy, 320 tons

Hastings Sand Coulee SNA, Hastings, MN DNR

Status: Cutting completed March 2008, grinding completed June 2008.

Description: 6.8 acres. Sand-gravel prairie restoration. Hastings Sand Coulee SNA is situated in a sandy ravine, or coulee, formed by a tributary stream to the Vermillion River. It contains 13 rare species of plants and animals. This project implemented the management goal of removing a planted conifer stand and invading red cedar as outlined in the *Prairie Stewardship Plan* dated June 2006 prepared by Friends of the Mississippi River for the Maher Family who previously owned the property.

Distance: 24 miles from the Wood Recycling Center in St. Paul.

Press/Media: None.

Operations: Friends of the Mississippi River managed the project on behalf of the MN DNR SNA Program and contracted with Tree Technology & Recycling, Inc.

Biomass Type: Planted red pine, white pine, mixed spruce and invading red cedar.

Biomass Volume: 27 loads, 2,160 cy, 540 tons

Result 4: Analyze results of pilot projects and develop criteria, process, and metrics for Phase 2.

Description: Phase 2 of this project will be informed by lessons learned in implementing Phase 1 and will further develop the criteria and process for future projects to be implemented.

Status as of April 14, 2008:

- Criteria being evaluated and revised include: distance, volume of biomass, habitat restoration goals, site and access considerations, verified land ownership and management responsibility, a management plan in place that describes the habitat restoration objectives, short-term management prescriptions, long-term maintenance and monitoring strategies, invasive species considerations, benefits to threatened and endangered species, a harvest plan that describes site harvest boundaries, site characteristics, road access, staging areas, ecological concerns, appropriate harvest methods, community relations considerations.
- The overall process of initiating and facilitating a project through to completion is being evaluated and written guidelines developed.
- Lack of resources for follow-up maintenance including prescribed burning/chemical treatment costs is in some cases preventing projects from being implemented; options that would provide additional resources for grantees are being researched.
- Grant Agreement language is being evaluated for efficacy.
- Costs for pilot projects are being evaluated for future project cost projections – see second table in Section IV below.
- Considerations for local public relations are being addressed related to concerns over cutting trees and shrubs, heavy equipment and associated loud noise during operations, semi-trucks moving material, and end use of material.

Status as of May 31, 2009:

- Grantees have utilized alternative funding and other resources to implement the post-woody biomass harvest restoration activities such as through the Minnesota Board of Soil and Water Resources, MN DNR internal funding opportunities (State Park gift store sales, terrestrial invasive species grant), watershed districts, non-profit sources, National Park Service, and volunteers. While this has been effective for a few of the pilot projects, adequate restoration funds remain a barrier for future projects, particularly in light of current economics for local government units and private entities.
- Grant Agreement language has been modified as appropriate for each project based on current and emerging policies and procedures.
- Costs for the first 10 pilot projects have been evaluated and will inform Phase 4 projects. This project is providing valuable cost data that vary based on specific project site characteristics, project size and location, harvest prescriptions, size and volume of species removed, availability of service providers, and unique circumstances. For example, hand-cutting of dense buckthorn and other shrubs on steep slopes is more costly than mechanized tree removal on level ground. The baseline per acre estimate for future projects has been adjusted accordingly .
- A public relations strategy, in particular involving affected adjacent properties or the locally impacted community, is required in the Harvest Plan and copies of communications are requested as a component of the final report.

Result 5: Conduct Phase 2 projects beginning spring 2008.

Description: Phase 2 projects will be selected from the list of potential sites and newly identified sites. Projects will be implemented as site-specific conditions warrant.

Status as of April 14, 2008:

- A contact form has been created to assist in capturing information during initial discussions to identify potential project sites.
- Initial contacts have been made with landowners and managers of potential Phase 2 project sites.
- The initial list of potential sites has been incorporated into a database that is being updated as new potential project sites are identified and includes the current status of each project.

Status as of May 31, 2009:

- Two Phase 2 projects (Janet and Carl T. Schuneman Wildlife Preserve and Indian Mounds Regional Park) were implemented spring/summer 2008 and were selected from the initial contact list of potential project sites.
- A formal RFP process has been established using the criteria identified in Phase 1 and Phase 2 and refined for Phase 3 and Phase 4.
- The RFP for Phase 3 was posted August 26, 2008 to the MN DNR website and linked through the Office of Grants Management. Possible project proposers were also solicited through a direct e-mail notice sent to names from the database. Proposal deadline was September 19, 2008 with project completion requested by February 15, 2009. Extensions were granted.
- Six Phase 3 projects (Bridgeview Park Reserve, Zumbro Falls Woods SNA, Fort Snelling WPA, Lake Edith Prairie and Savanna, Kelleher Park, and Uncas Dunes SNA) were implemented fall 2008/winter 2009.
- The RFP for Phase 4 projects was posted May 26, 2009 to the MN DNR website and linked through the Office of Grants Management. Possible project proposers were also solicited through a direct e-mail notice sent to names from the database as updated with contacts acquired since Phase 3. Proposal deadline is June 26, 2009 with project completion requested by April 30, 2010.

Phase 2 Pilot Projects – Spring/Summer 2008:

Janet and Carl T. Schuneman Wildlife Preserve, White Bear Lake, Jaques Chapter, Izaak Walton League.

Status: Completed August 2008.

Description: 3 acres. Oak savanna restoration. This project implemented an important component of the *Schuneman Marsh Restoration Project Plan* dated February 2006 to restore the site to pre-European settlement conditions and increase public accessibility to the Preserve.

Distance: 21 miles from the Wood Recycling Center in St. Paul.

Press/Media: None.

Operations: The Washington Conservation District and Izaak Walton League managed the project and contracted with Tree Technology & Recycling, Inc.

Biomass Type: Planted red pine, jack pine, spruce and invading mixed hardwoods.

Biomass Volume: 16 loads, 1,280 cy, 320 tons.

Indian Mounds Regional Park, St. Paul, City of St. Paul.

Status: Phase 1 completed June 2008; Phase 2 completed December 2008.

Description: 11.7 acres DNR funded, additional 2.4 City of St. Paul funded. Oak savanna and oak forest restoration. This project implemented an important management recommendation as outlined in the *Natural Resource Inventory and Management Plan of Indian Mounds Park* dated December 2007, compiled by Great River Greening. A population of kittentails (*Besseya bullii*), a State Threatened rare plant species, was documented in the park in the 1990s. This project was implemented in two phases; the second phase occurring upon receipt of funding for erosion mitigation following biomass removal from areas with steep slopes:

- **Phase 1 – June 2008-September 2008:** Funding through the MN DNR Woody Biomass Project was granted for the cutting, moving, and staging of material from approximately 6.7 acres through June 30, 2008.
- **Phase 2 – October-December 2008:** The City of St. Paul secured a \$13,850 grant from the Ramsey-Washington Metro Watershed District to restore highly erodible slopes following the buckthorn removal. Additional funding through the MN DNR Woody Biomass Project was granted to complete the project as originally proposed.

Distance: Less than 1 mile from the Wood Recycling Center in St. Paul.

Press/Media: None.

Operations:

- **Phase 1:** The City of St. Paul managed the project and contracted with Natural Resources Restoration, Inc. that utilized Sentencing to Service (STS) crews for hand-cutting and stump treatment of buckthorn through June. The City of St. Paul cut the large trees and additional buckthorn July-September. Many community volunteers were utilized to move and stage the material for transport to the Wood Recycling Center, as well as plant native replacement tree and shrub species. Partner organizations assisting with additional funding and coordinating volunteer activities included: Hands On Twin Cities; National Park Service; Great River Greening, Corporate Volunteerism Council; Church of Latter Day Saints; REI; Minnesota Conservation Corps; and Minnesota Teen Challenge.
- **Phase 2:** The City of St. Paul managed the project and contracted with Natural Resources Restoration, Inc. that utilized Sentencing to Service (STS) crews to cut, move and stage the buckthorn from approximately 5 additional acres.

Biomass Type: Predominantly buckthorn with additional mixed hardwood and conifer tree species.

Biomass Volume: 1,488 cy, 372 tons. The City of St. Paul and Ever-Green Energy (service provider to District Energy St. Paul) transported raw material, no load count.

Phase 3 Pilot Projects – Fall 2008/Winter 2009:

Bridgeview Park Reserve, Big Lake, Sherburne County.

Status: Completed January 2008.

Description: 15 acres. Oak woodland-brushland restoration. The Bridgeview Park Reserve was created in 1999 utilizing grants from the DNR's Natural and Scenic Areas grant program (matched by the adjacent developer) and the Central Minnesota Initiative Fund's Scenic Area Land Preservation Program and is included in a large-scale Mississippi River corridor restoration effort. This project helped to implement the *Sherburne County Management Plan for the Bridgeview Park Reserve* dated May 2001, prepared by a team of experts.

Distance: 55 miles from the Wood Recycling Center in St. Paul.

Press/Media: West Sherburne Tribune article, Ken Francis, November 13, 2008.

Operations: Due to the elimination of the Sherburne County Parks and Forestry Coordinator, management of the project was a coordinated effort of the Sherburne County Planning and Zoning Administrator, the Sherburne County SWCD and MN DNR Forestry. Sherburne County contracted with Prairie Restorations, Inc. that utilized Sentencing to Service crews for the hand-cutting and stump treatment, and Tree Top Services for mechanized cutting and skidding.

Biomass Type: Buckthorn and honeysuckle shrubs, eastern red cedar and mixed hardwoods.

Biomass Volume: 23 loads, 1,840 cy, 460 tons

Zumbro Falls Woods SNA, Zumbro Falls, MN DNR.

Status: Cutting, staging and partial grinding completed February 2009. Final grinding has been postponed to Fall 2009 after the ground has frozen and the project site conditions will allow for heavy grinding and transport equipment.

Description: 29 acres. Oak forest and oak savanna restoration. Located along the Zumbro River. This biomass project was conducted on 7 of 8 originally designated sites comprised of 3 white pine plantations, 2 red pine plantations and 3 mixed hardwood, conifer and shrub sites. One red pine plantation site was not completed due to warm weather conditions halting the project.

Distance: 75 miles from the Wood Recycling Center in St. Paul.

Press/Media: None. DNR SNA staff and a representative from Ever-Green Energy (service provider to District Energy St. Paul) attended a Zumbro Falls Town Hall meeting on December 8, 2008.

Operations: This complex project was managed as a joint effort of MN DNR SNA staff, Forestry staff and the Woody Biomass Coordinator. DNR Foresters coordinated with Society of American Foresters (SAF) and the MN SAF Student Chapter on March 29, 2008 to mark the trees and boundaries of the specific biomass harvest areas and collect additional information necessary to solicit bids for biomass removal contractors. Johnson Logging, Inc. was awarded the contract.

Biomass Type: Planted red pine, white pine, and encroaching mixed hardwoods, conifers and shrubs.

Biomass Volume: As of 2/13/09: 56 loads; 4,480 cy; 1,120 tons; 120 cords of scaled logs bought by Johnson Logging, Inc. to be utilized for higher value products @2.50/cord = \$300 (which was collected as revenue and incorporated into the woody biomass project budget). Total TBD.

Fort Snelling WPA, Mendota Heights, MN DNR.

Status: Completed April 2009.

Description: 16.5 acres. Oak savanna, oak woodland, dry prairie restoration. This is a unique site of historical and ecological importance. In 1935, the National Park Service and the Works Progress Administration (WPA) established a residential work camp at the site. This project implemented management goals as indicated in the *Fort Snelling State Park Management Plan* (1997); *Inventory of Biological Features and Fort Snelling State Park* (1995); and, *WPA Camp Management Plan* (2008) as well as enhance access and educational opportunities at the WPA camp site.

Distance: 10 miles from the Wood Recycling Center in St. Paul.

Press/Media: KARE-11, Channel 11, Jeffrey DeMars aired 1:57 minute at 6:00p.m. on March 18, 2009.

Operations: MN DNR Parks and Recreation managed the project. Olsen Fencing, LLC was awarded the contract. Minnesota Conservation Corps crews were funded through the MN DNR Terrestrial Invasives grant program to treat the buckthorn stumps immediately after cutting.

Biomass Type: Shrubs (buckthorn, honeysuckle) and mixed hardwoods to be removed.

Biomass Volume: 19 loads; 1,520 cy; 380 tons

Lake Edith Prairie and Savanna, Afton, Belwin Conservancy.

Status: Phase 1 Lake Edith Prairie completed, 24.6 acres. Phase 2 Lake Edith Savanna cutting completed, 29.5 acres. Phase 3 Lake Edith Savanna cutting completed, 15.4 acres. Final grinding will commence in late-Spring 2009 when road weight restrictions are lifted and the project site conditions will allow for heavy grinding and transport equipment.

Description: 69.5 acres. Oak savanna restoration and dry prairie. The Belwin Conservancy purchases adjacent properties as they become available to protect the Valley Creek trout stream. They currently have 1,300 acres under protection. This project helped to implement their management goals for the Lake Edith Unit and was originally proposed to complete 34 acres with the funding provided. Many more acres were accomplished due to extended frozen weather conditions and cost efficiencies in project implementation.

Distance: 16 miles from the Wood Recycling Center in St. Paul.

Press/Media: 1) Minnesota Public Radio, Stephanie Hemphill, December 3, 2008; 2) Pioneer Press article, Dennis Lien, December 8, 2008; 3) Outdoor News article, Joe Albert, December 12, 2008.

Operations: Belwin Conservancy managed the project and contracted with Mike's Tree Service, Inc. to do the majority of the cutting, moving and staging in areas conducive to mechanized equipment. They also worked with Sentencing to Service and Minnesota Conservation Corps crews for hand-cutting, stump treating and moving of material.

Biomass Type: 1) Lake Edith Prairie: Planted pine and spruce, and mixed hardwoods and shrubs; 2) Lake Edith Savanna: Shrubs, primarily buckthorn and amur maple, and mixed hardwoods.

Biomass Volume: Phase 1 Lake Edith Prairie: 44 loads; 3,520 cy; 880 tons for 24.6 acres

Phase 2 Lake Edith Savanna: TBD

Phase 3 Lake Edith Savanna: TBD

Kelleher Park, Burnsville, City of Burnsville.

Status: Completed April 2009. (Note: awaiting final project invoice).

Description: 23 acres. Oak savanna restoration. Kelleher is a Burnsville city park and is known to have a population of kittentails (*Besseyia bullii*), a State Threatened rare plant

species. This project implemented recommendations outlined in the *2007 Natural Resources Master Plan* to restore oak savanna areas.

Distance: 25 miles from the Wood Recycling Center in St. Paul.

Press/Media: 1) Burnsville Bulletin article, Volume 18, No. 3, October 2008; 2) Star Tribune article, Joy Powell, January 22, 2009, plus related video posted to startribune.com; 3) Pioneer Press article, Jessica Fleming, January 23, 2009.

Operations: The City of Burnsville managed this project and contracted with Applied Ecological Services, Inc. The City also involved volunteers from the Minnesota Native Plant Society and students from the University of Minnesota Fisheries, Wildlife, and Conservation Biology club to help mark trees to be saved.

Biomass Type: Mixed hardwoods, conifers and shrubs (primarily buckthorn and honeysuckle).

Biomass Volume: 41 loads; 3,280 cy; 820 tons.

Uncas Dunes SNA-South Unit, Zimmerman, MN DNR.

Status: Cutting and staging completed March 2009. Grinding has been postponed to Fall 2009 after the ground has frozen and the project site conditions will allow for heavy grinding and transport equipment.

Description: 31 acres. Oak savanna and oak woodland restoration. Uncas Dunes, located within the Anoka Sandplain, contains a relic dunefield associated with Glacial Lake Grantsburg. Named for the rare butterfly, Uncas skipper (*Hesperia uncas*), this is one of only two sites in the state where this species was found. DNR Forestry owns a portion of this site now designated as SNA. Sand Dunes State Forest is immediately adjacent to this site. The Anoka Sand Plains is the focus of much funding and restoration work and this project accelerated the removal of ecologically inappropriate material on a larger area than was originally planned.

Distance: 55 miles from the Wood Recycling Center in St. Paul.

Press/Media: None.

Operations: Great River Greening managed this site on behalf of the MN DNR SNA Program and contracted with Minnesota Native Landscapes, Inc. DNR Forestry staff were actively involved in planning the project. Due to concerns over pine bark beetle and the cut pine, all pine was chipped on-site awaiting collection at the time of final grinding. Great River Greening hosted the Uncas Dunes Restoration Event held May 2, 2009 for volunteers sponsored by the Minnesota Board of Water and Soil Resources, MN DNR, and National Fish and Wildlife Foundation.

Biomass Type: Mixed hardwoods, shrubs, eastern red cedar and planted conifers.

Biomass Volume: TBD

IV. PROJECT BUDGET

Original Appropriation: \$500,000

Amount Expended/Allocated as of May 31, 2009: \$380,546

Amount Remaining: \$119,454

Budget Summary as of 5/31/09

Expense category	Expended/Allocated
Beginning Balance	\$500,000
Grants	\$297,243
Project Salary and support costs (project manager)- excluding report preparation	\$76,100
Cost of preparing report	Project funds: \$1,100 In-kind : \$800
Permanent Unallotted Funds (2009)	\$5,303
Balance a/o 5/31/09	\$119,454

Project Costs by Site (project funds for cutting, moving and staging only)

Site name	Acres harvested	Project funds	Cost per acre	Tons	Cost per ton ¹
Pilot Knob Hill	3	\$6,880	\$2,293	320	\$21.50
Hastings Sand Coulee SNA	6.8	\$8,700	\$1,279	540	\$16.11
Schuneman Preserve	3	\$3,945	\$1,315	320	\$12.33
Indian Mounds Park	11.7	\$27,000	\$2,308	372	\$72.58
Bridgeview Park Reserve	15	\$30,784	\$2,186	460	\$66.92
Belwin	69.5	\$81,391	\$1,171	TBD	TBD
Zumbro Falls SNA	29	\$14,230 ²	\$491	TBD	TBD
Kelleher Park	23	\$46,907	\$2,039	820	\$57.20
Fort Snelling WPA	16.5	\$10,779	\$653	380	\$28.37
Uncas Dunes SNA	31	\$37,000	\$1,194	TBD	TBD
TOTAL	211.5	\$275,709	\$1,493	3,212³	\$40.70⁴

¹Cost per ton is calculated based on the actual costs for on-the-ground cutting, moving, and staging of woody plant material and does not include project management or other project-related costs.

²Zumbro Falls SNA - Actual cost per ton accounts for the value of the round wood sold at \$300 deducted from the cost to cut, move and stage the material.

³Total tons is 3,212 for the seven projects for which we have complete data.

⁴Average cost per ton is \$40.70 for the seven projects for which we have complete information.

Appendix 1.

Laws of 2007, Chapter 57, Article 2, Sec. 3, subd. 6

Of this amount, \$500,000 is transferred to the Department of Natural Resources for the Ecological Services Division to prepare, authorize, and implement habitat restoration plans on public or private properties to fulfill ecological principles of restoration ecology, while providing roadside access to the byproduct of the management actions at no cost to the operator of a biomass-fueled cogeneration facility located in St. Paul. The division may provide grants or otherwise transfer some or all of these funds to other public or private entities to accomplish these purposes. If a higher value nonbiomass market is available for some of the byproduct of this management, the division is authorized to sell the material to that market, provided that all of the proceeds are spent for the further purposes of this appropriation. The nonbiomass market sales of material from this management cannot exceed 20 percent by weight of the total byproducts produced by all approved activities under this appropriation. The restoration activities shall take place on land located within 75 miles by road of the city of St. Paul. The division shall consult with the operator of the biomass facility and other appropriate parties regarding planned projects to be funded with this appropriation. The division shall report annually to the legislative policy and finance committees for natural resources and energy regarding the expenditures and results of the program. This appropriation does not cancel but is available until spent.