

## **M.L. 2011 Project Abstract**

For the Period Ending June 30, 2014

**PROJECT TITLE:** St. Croix Basin Conservation Planning and Protection

**PROJECT MANAGER:** Deb Ryn

**AFFILIATION:** St. Croix River Association

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**FUNDING SOURCE:** Environment and Natural Resources Trust Fund

**LEGAL CITATION:** M.L. 2011

**APPROPRIATION AMOUNT: \$120,000**

### **Overall Project Outcome and Results**

Portions of the St. Croix River Basin are now on the impaired waters list and rare landscapes, plant, and animal communities are threatened by development pressures. Multi-jurisdictional conservation efforts are complex and often lack focus and coordination in the St. Croix Basin. This project was a means to streamline and focus conservation efforts on areas with the most critical need within the Basin.

By linking local, state and federal governmental units, citizen-led non-profits, and design & technical expertise in an effective, well-coordinated partnership, this project set water quality, habitat, and recreational priorities; identified specific management practices in priority locations; and implemented on-the-ground projects to promote land and water stewardship to enhance and protect the very special place the St. Croix River Basin is to live, recreate, and work.

The St. Croix Action Team, consisting of multiple partnerships throughout the Minnesota side of the St. Croix River Basin, worked diligently throughout the life of the project to produce a strategic prioritization of resources based on water quality, habitat, and recreation. The final products include:

- Identification of priority subwatersheds for resource management objectives in the St. Croix Basin (MN side) based on multiple benefits through an integrative modeling application
- A protocol to assist in identifying Best Management Practices (BMPs) within priority subwatersheds
- An expansive list of 188 BMP prescriptions for Chisago, Kanabec and Washington counties for water quality protection and habitat restoration
- A cost benefit analysis of each practice to help determine the most cost effective management options for the benefit received from the practice
- Six BMPs on the ground located in priority areas that demonstrate the use of an effective protocol and cost benefit analysis for resource protection and management

This project was vital to create a well-coordinated procedure that identified areas of greatest resource concern and strategic, most cost-effective measures of protecting those resources.

### **Project Results Use and Dissemination**

As a part of this project, Chisago, Kanabec, and Washington counties each constructed a master list of priority conservation activities to use in their work plans, build future funding strategies, and perform outreach activities to landowners for implementation. Project information has been shared with additional Basin partners, including those across the river on the Wisconsin side, through the annual St. Croix Basin Conference, Basin Team meetings, and SCRA newsletters and website.



## Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan Final Report

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**Date of Status Update:** 8/20/2014  
**Date of Next Status Update:** Final Report  
**Date of Work Plan Approval:**  
**Project Completion Date:** 6/30/2014 **Is this an amendment request?** \_Yes\_

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**Project Title:** St. Croix Basin Conservation Planning and Protection  
**Project Manager:** Deb Ryun

**Affiliation:** St. Croix River Association

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### Location:

**Counties Impacted:** Carlton, Chisago, Kanabec, Pine, Washington

**Ecological Section Impacted:** Lake Agassiz Aspen Parklands (223N), Minnesota and Northeast Iowa Morainal (222M), North Central Glaciated Plains (251B), Northern Minnesota and Ontario Peatlands (212M), Northern Minnesota Drift and lake Plains (212N), Northern Superior Uplands (212L), Paleozoic Plateau (222L), Red River Valley (251A), Southern Superior Uplands (212J), Western Superior Uplands (212K)

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<b>Total ENRTF Project Budget:</b>	<b>ENRTF Appropriation \$:</b>	\$120,000
	<b>Amount Spent \$:</b>	\$118,300.45
	<b>Balance \$:</b>	\$1,699.55

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**Legal Citation:** M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 03o

### Appropriation Language:

Appropriation Language for "Saint Croix Basin Conservation Planning and Protection", \$120,000; \$60,000 the first year and \$60,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with the St. Croix River Association to develop an interagency plan to identify and prioritize critical areas for project implementation to improve watershed health. This appropriation must be matched by \$120,000 of nonstate cash or qualifying in-kind funds. Up to \$10,000 may be retained by the Department of Natural Resources at the request of the St. Croix River Association to provide technical and mapping assistance. This appropriation is available until June 30, 2014, by which time the project must be completed and final products delivered. NOTE: No funds will be provided to the DNR.

## I. PROJECT TITLE: Saint Croix Basin Conservation Planning and Protection

### II. FINAL PROJECT STATEMENT:

**Legal Citation:** Appropriation Language for “Saint Croix Basin Conservation Planning and Protection”, \$120,000; \$60,000 the first year and \$60,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with the St. Croix River Association to develop an interagency plan to identify and prioritize critical areas for project implementation to improve watershed health. This appropriation must be matched by \$120,000 of nonstate cash or qualifying in-kind funds.

Portions of the St. Croix River Basin are now on the impaired waters list; rare landscapes, plant and animal communities are threatened by development pressures. Multi-jurisdictional conservation efforts are complex, lack focus and coordination in the St. Croix Basin. If current Basin trends continue, the quality of our own wild and scenic St. Croix River will continue to decline.

**Need:** A means to stream-line and focus conservation efforts on areas with the most critical need in the Basin is vital for governmental units and citizens to change this course. This includes addressing existing problem areas, preventing new ones, and creating a culture of stewardship in the entire Basin.

**Short Project Description:** This project links local, state, and federal governmental units, citizen-led non-profits, and design & technical expertise in an effective, well-coordinated partnership to set priorities, implement targeted on-the-ground projects, protect wildlife habitat, and promote land and water stewardship to enhance and protect the very special place the Saint Croix River Basin is to live, recreate, and work. This project will enhance efficiencies and improve environmental outcomes. The project will synchronize with the “Linking Sustainable Forestry with Water Quality in the Upper St. Croix Basin” project to ensure all major land cover types and land uses (e.g. forestry, agriculture, and urban) in the Basin are effectively integrated into prioritized management, protection, and restoration efforts.

#### **Outcomes Activity 1:**

- **Master list** of basin conservation strategies that reflects an effective and practical approach to protecting the St. Croix
- **A team committed to implementation** of conservation priorities
- **Prioritization criteria** to guide Activity 2
- **Task and assignments** for efficient and coordinated implementation by all players

#### **Outcomes Activity 2:**

- A basin to site **Prioritization Protocol** identifying the best returns for investment
- **8 to 10 Priority Minor Watershed Conservation Areas** identified
- **3 to 5 Subwatershed Assessments** that identify the most cost-effective projects with the highest conservation value
- **30 to 50 Priority Actions**
- Installation of **7 practices on the ground** using ENRTF and matching funds

## **Overall Project Outcome and Results**

Portions of the St. Croix River Basin are now on the impaired waters list and rare landscapes, plant, and animal communities are threatened by development pressures. Multi-jurisdictional conservation efforts are complex and often lack focus and coordination in the St. Croix Basin. This project was a means to streamline and focus conservation efforts on areas with the most critical need within the Basin.

By linking local, state and federal governmental units, citizen-led non-profits, and design & technical expertise in an effective, well-coordinated partnership, this project set water quality, habitat, and recreational priorities; identified specific management practices in priority locations; and implemented on-the-ground projects to promote land and water stewardship to enhance and protect the very special place the St. Croix River Basin is to live, recreate, and work.

The St. Croix Action Team, consisting of multiple partnerships throughout the Minnesota side of the St. Croix River Basin, worked diligently throughout the life of the project to produce a strategic prioritization of resources based on water quality, habitat, and recreation. The final products include:

- Identification of priority subwatersheds for resource management objectives in the St. Croix Basin (MN side) based on multiple benefits through an integrative modeling application
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This project was vital to create a well-coordinated procedure that identified areas of greatest resource concern and strategic, most cost-effective measures of protecting those resources.

## **Project Results Use and Dissemination**

As a part of this project, Chisago, Kanabec, and Washington counties each constructed a master list of priority conservation activities to use in their work plans, build future funding strategies, and perform outreach activities to landowners for implementation. Project information has been shared with additional Basin partners, including those across the river on the Wisconsin side, through the annual St. Croix Basin Conference, Basin Team meetings, and SCRA newsletters and website.

### **III. PROJECT STATUS UPDATES:**

Project Status updates will be provided in accordance with the schedule below:

#### **Project Status as of: July 1, 2012**

To date, most of the project work has been focused on the identification and the organization of the St. Croix Action Team (SCAT) and the beginning of prioritization protocol criteria. Existing prioritization protocols have been researched and compiled. The SCAT has been actively engaged in prioritization criteria discussions.

#### **Project Status as of: January 1, 2013**

The St. Croix Action Team has met several times to provide input to the prioritization protocol process. The team has been broken down into three sub groups: water, habitat and recreation. Each subgroup has met independently to discuss priorities in each area. Updates and feedback occur on a monthly basis during St. Croix Basin Team meetings. Coordination with additional project partners continues.

Existing prioritization models have been compiled, combined and processed in GIS to use in identifying priority areas. A cost benefit analysis template has begun to be constructed.

**Amendment request (02/18/2013):**

Activity 1:

Activity 1 work was able to be performed with fewer resources than originally requested. We are requesting to move the remaining balance from Activity 1 Chisago County Soil and Water Conservation District Manager/Technician Salary (\$2,000) to Activity 2.

Activity 2:

During the course of the SCAT meetings, it was discovered that The Nature Conservancy (TNC) has been working on an aquatic and terrestrial habitat model for the Snake River Watershed. As an active supporter of the St. Croix Basin Conservation Planning and Protection project, the TNC expanded their habitat model beyond the Snake River Watershed to help meet the needs of this project. All their work has been performed in-kind, allowing for a significant shift in the budget for Activity 2.

The original goal of the project was to reach further out into the basin to identify field scale practices and for implementation, but due to budget constraints this activity was limited to Chisago and Washington Counties. With a shift in the Activity 2 budget, the project can spread further north into Kanabec County for the practice identification and implementation component.

Good working relationships were already in place with Kanabec County Soil and Water District and given time constraints of the project it was most feasible to expand the field work into Kanabec County. Expansion into Pine County remains possible, but project budget and staff resources for Pine County may be a limiting factor. Initial model results show that Kanabec County may have more priority areas than Pine County for implementation due to more areas with agricultural pressures.

We are requesting to decrease Washington County Conservation District and Chisago County Soil and Water Conservation District budgets for Activity 2 and to add Kanabec County Soil and Water Conservation District as a St. Croix River Association Subcontractor for Activity 2. Kanabec County SWCD's budget for Activity 2 will not exceed \$20,000. Budget changes are further detailed in Attachment A.

Amendment approved by LCCMR on March 8, 2013

**Project Status as of: July 1, 2013 general overview update**

In early March the SCAT team met to review parameters and priorities for prioritization protocol. A survey of the group was given to help collect and distill priorities amongst the various water quality, habitat and recreational groups. Results were used to help weight the model for the protocol.

Habitat, water quality and recreational models have all been completed. The MN DNR used Zonation software to combine all models into a single prioritization model. Priority subwatersheds within Washington, Chisago and Kanabec counties have been identified and a protocol has been written to identify best management practices (BMPs) within each priority area. Maps have been provided for each county and field training has been conducted for staff to begin BMP identification in the field.

Cost benefit tables for BMPs continue to be constructed.

**Project Status as of: January 1, 2014**

In early September members of the St. Croix Action Team met to discuss the priority model results and to determine additional uses of the model, specifically how to incorporate it into resource management work being conducted by other partners within the basin.

Chisago Soil and Water Conservation District and Washington Conservation District have both completed field work within identified priority subwatersheds in their counties. Kanabec County Soil and Water Conservation District has begun field work, to be completed in early spring 2014. Field work consists of prescribing Best Management Practices (BMPs) within each priority subwatershed.

Washington Conservation District has completed the water quality component of the cost-benefit analysis tables. The habitat and recreation components continue to be researched and developed.

#### **Final Report Summary: July 1, 2014**

The St. Croix Action Team, consisting of multiple partnerships throughout the Minnesota side of the St. Croix River basin, worked diligently throughout the life of the project to produce a strategic prioritization of resources based on water quality, habitat and recreation. The final products include

- Maps of priority locations for resource management objectives in the St. Croix Basin (MN side) based on multiple benefits
- A protocol to assist in identifying BMPs within priority areas
- An expansive list of 188 BMP prescriptions for Chisago, Kanabec and Washington counties
- A cost benefit analysis of each practice to help determine the most cost effective management options for the benefit received from the practice
- Six BMPs on the ground located in priority areas that demonstrate the use of an effective protocol and cost benefit analysis for resource protection and management

#### **IV. PROJECT ACTIVITIES AND OUTCOMES:**

##### ***ACTIVITY 1: Craft a collective, far-reaching conservation strategy for the Basin in the project area.***

Much work has already been completed in the St. Croix Basin. The St. Croix River Association will collect and distill county water plans, Soil and Water Conservation District comprehensive plans, county water plans, municipal capitol improvement plans, National Park Service plans, DNR regional plan, nonprofit priorities, and others. These players will form the St. Croix Action Team. From all of these plans, **one master list** of priorities will be created.

Building on what we know, the Team will identify strategies needed to prevent and mitigate changes that are likely to degrade land and water resources. Based on these strategies, the Team will develop prioritization matrix to be used in Activity 2 to identify priority actions. The prioritization matrix will develop criteria for multiple landscape types (rural, urban, developing land, forested, agriculture) based on factors such as:

- Environmental Quality: Habitat, Species Diversity, Water Quality
- Economic Impacts: Scenic Value, Tourism/Recreation, Development, Transportation
- Recreational Opportunities
- Implementation Funding from Existing Funding
- Local Support

These criteria will be used to assign task and roles to Team members.

Lead Organization: St. Croix River Association (SCRA)

Partners: Washington Conservation District, Chisago County Soil and Water Conservation District

**Summary Budget Information for Activity 1:**

**ENRTF Budget: \$24,000**

**Amount Spent: \$22,991.25**  
**Balance: \$1,008.75**

**Activity 1 Completion Date:**

<b>Outcome</b>	<b>Completion</b>	<b>ENRTF Budget</b>
1. <b>Formation of St. Croix Action Team</b>	January 2012	1,000
2. <b>Master list</b> of basin conservation strategies that reflects an integrated, effective and practical approach to protecting the St. Croix	July 2012	5,000
3. <b>Prioritization criteria</b> based on existing plans and team input	July 2012	9,000
4. <b>Task and role assignments</b> for efficient and coordinated implementation by all players	September 2012	9,000
		<b>24,000</b>

**Project Status as of: July 1, 2012**

Members of the St. Croix Advisory Team (SCAT) have been identified and invited to participate in prioritization criteria discussions and development. An initial kickoff meeting for the group was held on May 17<sup>th</sup>, 2012. An introduction to the project and different methods of prioritizing resources were presented and discussed.

Members of the SCAT are from a variety of back grounds and the collective group has broken into three main focus areas and subgroups for further discussion- water (WatSCAT), habitat (HabSCAT) and recreation (RecSCAT). The subgroups will meet individually and then will meet collectively again in the fall of 2012 to finalize the prioritization criteria. The WatSCAT met on June 28<sup>th</sup>, 2012. The other subgroups will meet in July, 2012.

There are many prioritization efforts and models based on habitat and water quality for the St. Croix River Basin. E.g. The Nature Conservancy's Conservation Action Plan, The Lake St. Croix TMDL, BWSR's Ecological Ranking Tools and many county water plans. Recreation and economic models are very limited and present a gap in the prioritization process.

**Project Status as of: January 1, 2013**

On July 31<sup>st</sup> the HabSCAT and RecSCAT group met to discuss priorities in each emphasis area. The Nature Conservancy has been the main driver in regards to habitat priorities. They have been working to construct the habitat model for the prioritization protocol. The MN DNR and the National Off-Highway Vehicle Conservation Council represented a large component of the RecSCAT group. During the September and October Basin Team Implementation Subcommittee meetings, updates were made on the progress of the protocol development. Project input was solicited at those meetings.

**Project Status as of: July 1, 2013**

The St. Croix River Association continues to perform overall project coordination including organizing SCAT meetings, trainings and overall project administration. A list of plans and priorities from organizations in the St. Croix Basin was put together. This information was used along with a survey developed by Washington Conservation District to gather information from stakeholders on different priorities to help develop the prioritization models.

On March 6<sup>th</sup>, a collective SCAT meeting was held to update partners on project progress and to give out the survey. The survey was also emailed out to SCAT members who were not present at the meeting. Information from the survey was used to help guide the prioritization model inputs.

## **Project Status as of: January 1, 2014**

The SCRA continues to coordinate overall project organization and reporting. A meeting of the St. Croix Action Team occurred on September 10<sup>th</sup> to discuss prioritization model results and the protocol for the field component of the project. Representatives from the MPCA and TNC specifically discussed the integration of the prioritization model results into the Snake River Watershed Restoration and Protection (WRAP) report that is being written by multiple partners within the Snake River Watershed. It appears that model results from this project fit well with the goals and purpose of the Snake River WRAP report. Plans are currently being made how exactly to use the data in the report.

## **Final Report Summary: July 1, 2014**

### **Formation of St. Croix Action Team:**

The St. Croix Action Team (SCAT) met regularly throughout the project to assist in developing strategies and identifying priorities for the overall project. Subgroups of the SCAT, divided by water quality, habitat and recreation management, convened early on in the project to help set project direction and identify priorities in each benefit area. As priorities were identified the subgroups naturally dissipated, as field work commenced; however the larger SCAT met semi-annually to quarterly to gather updated information and collaborate efforts.

### **Master List of Basin Strategies:**

Planning documents from over 25 different organizations on the Minnesota side of the basin were compiled into a spreadsheet to assist in identifying watershed priorities. (Attachment A) The spreadsheet includes the title of each plan, the organization that is affiliated with the plan, the date it was written and the priorities outlined in the plan for resource protection and management.

### **Prioritization Criteria:**

A pairwise test was designed to distribute to watershed partners through SCAT to further define Basin priorities. (Attachment B) The test is based on seven different variables ranging from recreation to sediment yield and is designed to assign a value to each variable. Test results were used to develop a master prioritization model and can be found on page 6 in Attachment C.

### **Task and Role Assignments:**

As the lead project coordinator, the SCRA coordinated each meeting and collected information to disperse to the SCAT. As project activities progressed, roles were more clearly defined. Significant partner roles included: (Specific roles and activities are further detailed in Activity 2)

- a. The Nature Conservancy in developing the terrestrial and aquatic habitat model components.
- b. The MN Department of Natural Resources in compiling multiple benefits into a single model, using Zonation software.
- c. Chisago County Soil and Water Conservation District in using priority models and protocols to determine BMPs in priority areas in Chisago County. Chisago SWCD integrated protocols into implementing cost-share practices for demonstration purposes.
- d. Kanabec County Soil and Water Conservation District in using priority models and protocols to determine BMPs in priority areas in Kanabec County.
- e. Washington County Conservation District in developing prioritization model components, developing the BMP identification protocol and developing a cost benefit analysis procedure.

The activities outlined in Activity 1 were crucial in setting the framework for Activity 2. Defining partner roles and sharing information among project partners was vital in creating a holistic model. Given the variety of priority areas, it was challenging to gather such a variety of professionals in one room for a discussion. Another challenge was agreeing on how to weigh each variable, since priorities for each organization can be drastically different. The pairwise test was an aggregate of all identified priorities and the best attempt at averaging priorities among those involved in the project.



**ACTIVITY 2: Develop a basin to site prioritization protocol, identify priority conservation areas and the priority actions needed, and implement targeted projects to protect and maintain healthy landscapes and watersheds in the Basin.**

This comprehensive, ecosystem approach will integrate water quality, recreation, wildlife, and economic interests and ultimately better leverage the current federal, state, and local resources available to support action on the ground. Furthermore, the multi-scale prioritization protocol will provide critical information for local implementers about where to target education, technical assistance, and incentive programs.

**Prioritization Protocol** will analyze the landscape at multiple scales: **basin, major watershed, minor watershed, subwatershed and site**. Integrated hydrologic and ecologic analysis will indicate where conservation actions will be targeted to have the greatest cumulative impact to protect, improve or restore systems, including: 1) land and habitat; 2) water quality and hydrology; and 3) recreation and scenic.

**Ecologic Models and Water Quality Models**: Models that can effectively and efficiently prioritize land to focus on-the-ground efforts and identify where more detailed evaluations are needed. A variety of models exist to assist with prioritization. This project will overlay and assess the results of water quality models, such as the Soil and Water Assessment Tool (SWAT), with ecological models such as the statewide Ecological Corridors.

**Priority Minor Watershed Conservation Areas**: Using the results of the prioritization protocol approximately 3 to 7 priority conservation areas will be identified. For each area the project will:

- Evaluate what **threats or stressors** are present,
- **Prioritize** where water quality, ecological quality and recreation **systems are most in need of protection or restoration**,
- Create a **list of actions** most likely have a positive influence on the target systems or negative impacts on a non-target system (i.e., a water quality practice may degrade a native plant population), and
- Evaluate the **most appropriate** implementation **funding sources**.

**Subwatershed Assessments**: Approximately 3 to 5 Subwatershed Assessments will be conducted in priority areas. These assessments will identify sites (within parcels) and the best management practices to implement at those sites to realize water quality, ecological health, economic benefits. The results will be shared with officials and the public as educational outreach. These assessments will include detailed natural resource and water quality modeling, a prioritized list of activities and cost-benefit analysis of priority conservation actions.

**Priority Actions**: The subwatershed assessments will guide the development of 30 to 50 **priority actions** that will function as a to-do list for project partners in the identified priority areas.

**Implement Projects**: Out of the 30-50 priority projects, 7 will be installed in partnership with landowners, federal agencies, and others using matching funds.

Lead Organizations: Washington Conservation District, Chisago County Soil and Water Conservation District, Kanabec County Soil and Water District  
Partners: St. Croix River Association (SCRA)

**Summary Budget Information for Activity 2:**

**ENRTF Budget: \$96,000**  
**Amount Spent: \$95,309.20**

**Activity Completion Date:**

<b>Outcome</b>	<b>Completion</b>	<b>ENRTF Budget</b>
1. A basin to site <b>Prioritization Protocol</b> identifying the best returns for investment	January 2013	10,000
2. <b>3 to 7 Priority Minor Watershed Conservation Areas</b> identified	July 2013	15,000
3. <b>3 to 5 Subwatershed Assessments</b> that identify the most cost-effective projects with the highest conservation value. ID <b>30 to 50 Priority Actions.</b>	May 2014	60,000
4. Installation of <b>7 practices on the ground</b> using ENRTF and matching funds	May 2014	11,000
		<b>96,000</b>

**Project Status as of: July 1, 2012**

As a result of the SCAT meetings the prioritization protocol has begun to be developed. Research of existing protocols has been conducted and research into model components (habitat, water quality and recreation) has begun.

**Project Status as of: January 1, 2013**

Meetings have been held with The Nature Conservancy Staff to develop and implement the Habitat Prioritization protocol. SWAT model results for the basin have been compiled with additional data and processed in GIS. Some areas of the basin have been identified as non-contributing for nutrient loading. Washington County has been working closely with staff from the MN DNR to design a procedure to efficiently address the non-contributing areas using GIS. The Center for Changing Landscapes has also been assisting in coordination and compilation of recreational model input parameters.

Tables are being constructed to demonstrate the cost-benefit analysis for the results of the prioritization protocol. Once the identified areas are identified, management practices will be determined and entered into the cost-benefit spreadsheet to be analyzed.

**Project Status as of: July 1, 2013**

After review from multiple stakeholders, including Soil and Water Conservation Districts within the project area, MN Department of Natural Resources, Nation Park Service and others, the Nature Conservancy completed an aquatic and terrestrial habitat model as the habitat component of the larger project.

Washington Conservation District, working closely with the MN DNR, completed a non-contributing area model to locate areas within the watershed that do not contribute runoff directly to a receiving water body. This information, combined with the Board of Soil and Water Resource’s Environmental Benefits Index model and the Soil and Water Assessment Tool model developed by the Science Museum of MN St. Croix Research Station, completed the water quality component of the larger project.

Washington Conservation District, with the assistance of the Center for Changing Landscapes at the University of MN, compiled recreational features to input into the larger project. These areas were buffered and prioritized based on proximity to water quality and habitat priority areas.

The MN DNR used Zonation software, a conservation planning tool that uses multiple datasets to assist in target-based planning developed by the University of Helsinki, to combine the results of the habitat, water quality and recreational models resulting in one overarching multi-parameter prioritization model.

Using the completed multi-parameter model, priority subwatersheds were identified in Washington, Chisago and Kanabec County. In conjunction with priority subwatershed identification, a field level analysis protocol was written to identify BMPs within each subwatershed to determine priority actions for water quality, habitat and recreational benefits.

In early June 2013 training was held with the participating counties to learn how to use the model results, identify their priority areas and diagnose BMPs at the field level. Each county received a protocol document to follow as well as maps of their identified priority subwatersheds within their respective counties. Field work has begun in Washington and Chisago Counties. Kanabec County will begin field work upon the start of a new field position beginning in early July 2013.

Washington Conservation District continues to work on developing a cost benefit table for various BMPs and their associated phosphorus reduction per dollar spent. More research is going into estimating costs and benefits related to habitat restoration and protection activities as well as recreational activities.

#### **Project Status as of: January 1, 2014**

Washington Conservation District, Kanabec County Soil and Water Conservation District and Chisago Soil and Water Conservation District conducted field work during the months of August and September to identify priority actions and Best Management Practices (BMPs) in each priority minor subwatersheds. As many BMPs as possible were identified in each subwatershed. Each county performed this identification within their respective counties, with the exception of Washington Conservation District, who also identified BMPs within Pine County. Due to staff changes, Kanabec County SWCD will finish field work in the early spring of 2014.

Washington Conservation District has been working to construct cost benefit tables to determine the value of each priority action identified during field analysis. The water quality component of the table is completed with phosphorus reduction figures corresponding to each BMP. Research continues into values for the habitat and recreation component of the cost benefit table. There is a lack of definite figures to describe the monetary value of habitat preserved and recreation benefits. These calculations will not be as specific and detailed as values associated with phosphorus reduction.

#### **Final Report Summary: July 1, 2014**

##### **Prioritization Protocol:**

Using Zonation software, seven features were used to build a multi-benefit model and included elements of biology, hydrology, water quality, geomorphology and connectivity. Each element was assigned a weighted value based on survey results from the pairwise tests developed in Activity 1. The Zonation model identified priority areas for targeting protection and restoration implementation within the watershed. High priority areas were scattered across the watershed, and included riparian areas with high potential for surface runoff to streams and areas with considerable existing conservation features. Further description of model inputs and results can be found in Attachment C.

Zonation model results were used to further define minor watershed conservation areas of highest priority. As the project activities progressed, including field truthing and peer-review of model results, a few challenges of the model arose. Although there were occasional overlapping areas, the water quality, habitat and recreational model components most often had different geographical areas. When combined into a single model a degree of significance for each category was lost through averaging. If this model was to be used again as a template for other projects, another approach would be to create a combined map based on either the top priorities in each model or in which various landscape areas took on a value representing the maximum score reflected in any of the contributing models. In the case of this project, the combined model was weighted most heavily on total phosphorus export, followed by aquatic habitat features.

#### **Priority Minor Watershed Conservation Areas:**

Zonation model results were divided into minor watershed conservation areas using GIS software. Maps of priority minor watershed conservation areas were created for each county for further assessment and field work. The top two to three priority watersheds were chosen per county for further assessment.

#### **Subwatershed Assessments:**

Within each county two to three priority subwatersheds were further analyzed at the field level. Combinations of LiDAR and ground truthing methods were used to identify priority actions in each subwatershed. A field protocol was developed and used for this process. (Attachment D)

#### **Priority Actions**

A master list of priority actions detailing BMPs for each subwatershed was compiled into a cost-benefit table. Practices were ranked by how much each practice costs per pound of phosphorus reduced and ranked for habitat and recreation. In total, among the three counties involved in the project, 188 priority actions were identified and assessed for cost and benefit. Attachment E details each county's cost-benefit table and description of each practice.

#### **Implement Actions**

In connection and partnership with this project, Chisago county SWCD installed 6 practices located in priority areas within Chisago County, using local and federal matching funds for a total phosphorus reduction of 134lbs/yr. BMP locations can be found in Attachment F.

### **V. DISSEMINATION:**

**Description:** Information about the project will be shared via multiple delivery mechanisms. The main method will be the SCRA website and quarterly newsletter. Additional outreach efforts will include Facebook updates, articles in local papers, and presentations. Once this project is completed, the collaborative approach will become the new "business as usual" for stakeholders, shape how they make their investments in the basin and establish priorities for funding requests from federal sources and others. Successful completion of the project will stimulate and inform similar efforts in Wisconsin. SCRA will continue to facilitate coordinated work across the basin and leverage additional funding.

#### **Project Status as of: July 1, 2012**

On June 22<sup>nd</sup> the St. Croix River Association shared the project via booth presentation at the Northwest Lakes Conference in Spooner, WI. Project status and updates have also been given at a variety of professional meetings such as the Basin Team and Conservation Collaborative.

#### **Project Status as of: January 1, 2013**

Planning has begun to define what information to put on the SCRA's website. Once project results are clearer, information will be hosted on a webpage linked to the SCRA website.

#### **Project Status as of: July 1, 2013**

Basic project information has been put onto the SCRA's website. As project results progress, that information will be put on the webpage.

The SCRA presented project information at a booth at the NW Lakes Conference in Spooner, WI on June 21, 2013 as well as the Annual Basin Conference in April 2013 and a SCRA member meeting in May of 2013.

**Project Status as of: January 1, 2014**

Project information was been shared at the St. Croix River Association retreat in October. A poster and presentation containing project information will be presented at the Green Lands Blue Waters Conference in November.

**Final Report Summary: July 1, 2014**

Project information was shared at the 2014 St. Croix Basin Conference in April in a "State of the Basin" presentation, detailing this project as an integral part of the working occurring in the St. Croix Basin. A booth was also constructed for the conference, detailing project activities. Finished approved reports and activities will be posted on the SCRA website and included in upcoming SCRA newsletters.

**VI. PROJECT BUDGET SUMMARY:**

**A. ENRTF Budget:**

Budget Category	\$ Amount	Explanation
Personnel:	\$117,800	SCRA and SWCD project implementation
Equipment/Tools/Supplies:	\$500	
Printing:	\$500	
Travel Expenses in MN:	\$1,200	
Other:	\$0	
<b>TOTAL ENRTF BUDGET:</b>	<b>\$120,000.00</b>	

**Explanation of Use of Classified Staff:** N/A

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

**Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation:** 0.75 over duration of project combined among all major partners (SCRA, WCD, and CCSWCD)

**Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation:** N/A

**Amendment Request (08/20/14):**

Due to changes in the allocation of funds by the U.S. Forest Service for SCRA's "Linking Sustainable Forestry with Water Quality" project, we request to decrease the amount of match budgeted from the U.S. Forest Service project. Throughout the life of this project, more staff time from the St. Croix River Association (SCRA) and Washington Conservation District (WCD) was used than what was anticipated to complete the project. We request to use the additional staff time from the SCRA and WCD as match in place of the remaining U.S. Forest Service funding required as match. Proposed changes are outlined in the table below.

**B. Other Funds:**

Source of Funds	\$ Amount	\$ Amount	Use of Other Funds
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	<b>Proposed</b>	<b>Spent</b>	
<b>Federal</b>			
USFS “Linking Sustainable Forestry with Water Quality . . .” Project	\$124,000 <u>\$109,649.42</u>	\$133,484.42 <u>\$109,649.42</u>	Activity 1 and 2
<u>Washington Conservation District</u>	<u>\$6,019.75</u>	<u>\$6,019.75</u>	<u>Activity 2</u>
<u>St. Croix River Association</u>	<u>\$5,837</u>	<u>\$5,837</u>	<u>Activity 1</u>
<b>TOTAL OTHER FUNDS:</b>	<b>\$124,000.00</b> <b>\$121,506.17</b>	<b>\$133,484.42</b> <b>\$121,506.17</b>	

Amendment approved by LCCMR on XXXX.

## VII. PROJECT STRATEGY:

### A. Project Team/Partners

- St. Croix River Association (SCRA) is the sponsoring organization, will manage the project, and lead Activity 1.
- Washington Conservation District, Chisago County Soil and Water Conservation District and Kanabec County Soil and Water Conservation District will receive funds to lead Activity 2, identify local priorities (Activity 1), implement subwatershed assessments, and install projects on the ground.
- Conservation St. Croix (CSC), a partnership of the nine Soil and Water Conservation Districts in the St. Croix Basin, will provide guidance and local support.
- MN DNR will provide technical assistance to ensure integration of forestry, habitat, wildlife and outdoor recreation into the prioritization protocol.\*
- BWSR will provide planning and long-term implementation support. BWSR manages significant state funding for conservation and this project will help target those resources.
- WI Partners include WDNR, local Land and Water Conservation Departments, and others.
- Landowners will provide in-kind and cash match to support on-the-ground implementation.
- See associated work plan for the USFS-funded “Linking Sustainable Forestry with Water Quality in the upper St. Croix Basin” Project.

\*In 2010 DNR Central Region Management Team selected the St Croix Basin as its priority landscape and is committed to participating in collaborative efforts in the basin. This project is also congruent with the new Division of Ecological and Water Resources (EWR) vision for healthy watersheds by leading and supporting efforts to improve water, biodiversity, and ecosystem services through integrated, collaborative and community-based approaches. No ENRTF funds will be provided to the DNR for these or other activities.

**B. Project Impact and Long Term Strategy:** Once this project is completed, the collaborative approach will become the new “business as usual” for stakeholders, shape how they make their investments in the basin and establish priorities for funding requests from federal sources and others. Successful completion of the project will stimulate and inform similar efforts in Wisconsin. SCRA will continue to facilitate coordinated work across the basin and leverage additional funding.

### C. Spending History:

<b>Funding Source</b>	<b>M.L. 2005 or FY 2006- 07</b>	<b>M.L. 2007 or FY 2008</b>	<b>M.L. 2008 or FY 2009</b>	<b>M.L. 2009 or FY 2010</b>	<b>M.L. 2010 or FY 2011</b>
See below					

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This project is a new effort for the SCRA and intensification of ongoing WCD and CCSWCD efforts.

**VIII. ACQUISITION/RESTORATION LIST:**

No property will be acquired. Restoration projects will be identified by Activity 2.

**IX. MAP(S):**

See Attached

**X. RESEARCH ADDENDUM: N/A**

**XI. REPORTING REQUIREMENTS:**

Periodic work plan status update reports will be submitted on: July 1, 2012; January 1, 2013; July 1, 2013; and January 1, 2014. A final report and associated products will be submitted by August 1, 2014 as requested by the LCCMR.

Attachment A: Budget Detail for M.L. 2011 (FY 2012-13) Environment and Natural Resources Trust Fund Projects								
<b>Project Title:</b> <i>Saint Croix Basin Conservation Planning and Protection</i>								
<b>Legal Citation:</b> <i>Appropriation Language for "Saint Croix</i>								
<b>Project Manager:</b> <i>Deb Ryun, SCRA</i>								
<b>M.L. 2011 (FY 2012-13) ENRTF Appropriation:</b> \$120,000								
<b>Project Length and Completion Date:</b> <i>Three Years; June 30, 2014</i>								
<b>Date of Update:</b> <i>June 30th, 2014</i>								
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Revised Activity 1 Budget 02/18/2013	Amount Spent	Balance	Revised Activity 2 Budget 02/18/2013	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM								
<b>Personnel (Wages and Benefits)</b> <i>SCRA Steward (Salary)</i>	19,000.00	19,000.00	0.00	0.00	0.00	0.00	19,000.00	0.00
<b>SCRA Subcontractors: Personnel</b>								
Washington County Conservation District Manager/Engineer (Salary)	2,975.00	2,975.00	0.00	40,850.00	40,850.00	0.00	43,825.00	0.00
Chisago County Soil and Water Conservation District Manager/Technician (Salary)	975.00	975.00	0.00	27,000.00	27,000.00	0.00	27,975.00	0.00
Kanabec County Soil and Water Conservation District Manager/Technician (Salary)			0.00	20,000.00	20,000.00	0.00	20,000.00	0.00
<b>Service contracts</b> <i>Project Installation Funds</i>		0.00	0.00	7,000.00	7,000.00	0.00	7,000.00	0.00
<b>Equipment/Tools/Supplies</b> <i>Meeting supplies</i>	400.00	0.00	400.00	100.00	0.00	100.00	500.00	500.00
<b>Printing</b>	250.00	0.00	250.00	250.00	0.00	250.00	500.00	500.00
<b>Travel expenses in Minnesota</b> Mileage	400.00	41.25	358.75	800.00	459.20	340.80	1,200.00	699.55
<b>Other</b> <i>(Describe the activity and cost - be specific)</i>		0.00	0.00		0.00	0.00	0.00	0.00
<b>COLUMN TOTAL</b>	<b>24,000.00</b>	<b>22,991.25</b>	<b>1,008.75</b>	<b>96,000.00</b>	<b>95,309.20</b>	<b>690.80</b>	<b>120,000.00</b>	<b>1,699.55</b>