

**Environment and Natural Resources Trust Fund
2014 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 152-F

Northeast Minnesota White Cedar Restoration, Phase 2

Category: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Total Project Budget: \$ 335,800

Proposed Project Time Period for the Funding Requested: 3 Years, July 2014 - June 2017

Summary:

White cedar swamps provide valuable ecological and economic functions in Minnesota. This project continues an effort to reverse the decline of white cedar by demonstrating restoration techniques in the state.

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Sponsoring Organization: BWSR

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Location

Region: Northeast

County Name: Aitkin, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Kanabec, Koochiching, Lake, Lake of the Woods, Mille Lacs, Pine, St. Louis, Wadena

City / Township:

| | | | |
|---------------------------------------------|--------------------------------------------|------------------------------------------------|-----------------------------------------------------------|
| <input type="checkbox"/> Funding Priorities | <input type="checkbox"/> Multiple Benefits | <input type="checkbox"/> Outcomes | <input type="checkbox"/> Knowledge Base |
| <input type="checkbox"/> Extent of Impact | <input type="checkbox"/> Innovation | <input type="checkbox"/> Scientific/Tech Basis | <input type="checkbox"/> Urgency |
| <input type="checkbox"/> Capacity Readiness | <input type="checkbox"/> Leverage | <input type="checkbox"/> Employment | <input type="checkbox"/> TOTAL <input type="checkbox"/> % |



PROJECT TITLE: Northeast Minnesota White Cedar Restoration – PHASE 2

I. PROJECT STATEMENT

White cedar swamps provide unique wetland functions including high value timber, long-term carbon storage, providing thermal cover for white tailed deer and other wildlife during winter, critical habitat for pine marten, fisher, and songbirds and providing thermal buffering for cold water fisheries (brook trout streams). Northern White (*Thuja occidentalis*) wetlands have been declining in Minnesota for decades. This project is a continuation of the Northeast Minnesota White Cedar Plant Community Restoration Project that received ENRTF funding in 2011. This project has established seven demonstration sites and has already identified significant impacts from modification of hydrology by roads, trails and ditches on the health and regeneration of white cedar plant communities. This initiative has ignited interest in reversing the decline of this important resource, but needs continued funding to ensure that additional progress can be achieved by demonstrating hydrologic restoration.

The goals of the project are:

1. To reverse the decline of northern white cedar wetland plant communities in Minnesota. The project will achieve its goals by evaluating and prioritizing additional white cedar stands for restoration and establishment of demonstration projects.
2. The second goal of the project is implementation of practical application of the research findings to improve the quantity and quality of white cedar plant communities in northeast and north central Minnesota. The project will accomplish this by continued development of a training program for local government resource managers regarding restoration techniques for white cedar plant communities regarding site preparation and revegetation techniques and protecting white cedar from damage by poorly designed wetland crossings for roads and trails.

II. DESCRIPTION OF PROJECT ACTIVITIES

The Phase 1 funding was used to establish seven demonstration sites for testing restoration techniques and determining the effects of hydrologic manipulation on white cedar plant community diversity. Phase 2 of the project will complete the following 3 activities:

Activity 1: Implement two hydrologic restorations of white cedar plant communities Budget: \$185,000

- a) Design and implement two white cedar plant community hydrologic restoration projects where the sites have been degraded by roads, trails and ditches where hydrology needs to be restored to the natural hydrologic regime. A minimum of 40 potential sites will be evaluated. The restoration actions may include improving groundwater flows by installing culverts , trail and road modifications, etc. The project goal will be to restore 500 acres of white cedar plant communities.

| Outcome | Completion Date |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <i>1. Evaluate and select white cedar plant communities where hydrologic modifications such as roads, trails, ditches have degraded white cedar stands. A minimum of 40 sites will be evaluated.</i> | <i>9/2014</i> |
| <i>2. Design 2 white cedar plant community hydrologic restoration projects</i> | <i>3/2014</i> |
| <i>3. Implement 2 white cedar plant community hydrologic restorations</i> | <i>10/2014</i> |

Activity 2: Monitor Seven Phase 1 white cedar demonstration projects Budget:\$97,800

Conduct continued monitoring of demonstration sites to a) determine regeneration success, b) evaluate effects of canopy shading on white cedar regeneration and evaluate the need for thinning to improve regeneration, c) identify previous white regeneration efforts and evaluate success, and d) maintain protective cages and evaluate timing of removal to ensure cedar is beyond critical stage for deer browsing damage.

| Outcome | Completion Date |
|--------------------------------------------------------------------------------------------|------------------------|
| <i>1. Monitor seven demonstration sites from phase 1 to determine regeneration success</i> | <i>6/2016</i> |



Environment and Natural Resources Trust Fund (ENRTF)

2014 Main Proposal

Project Title: Northeast Minnesota White Cedar Restoration PHASE 2

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| 2. Evaluate effects of canopy shading on white cedar regeneration and evaluate need for thinning to improve regeneration. | 5/2016 |
| 3. Review previous white cedar regeneration efforts and perform site assessments. | 5/2016 |
| 4. Maintenance of protective cages and evaluate safe timing for removal when white cedar is beyond critical stage for deer browsing damage. | 5/2016 |

Activity 3: Develop recommendations for white cedar plant community restoration plan for Minnesota and evaluate and prioritize additional white cedar restoration projects including: **Budget: \$55,000**

Develop recommendations for white cedar plant community restoration recommendations and prioritize additional white cedar restoration projects. This will include:

- A) Identify and evaluate degraded black ash (from emerald ash borer) and tamarack sites to determine whether white cedar has potential to fill that niche for restoration
- B) Identify mineral soil wetland sites that historically were white cedar as potential wetland restoration opportunities,
- C) Review historic timber sale and management records and interview current and retired forest managers to identify additional degraded or former white cedar stands to identify additional restoration opportunities,
- D) Utilize interagency team including BWSR, DNR, MPCA, Corps of Engineers, University of Minnesota, Michigan Tech and federal agencies to develop white cedar plant community restoration recommendations.

| Outcome | Completion Date |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1. Evaluate black ash sites to determine whether white cedar has potential to fill that niche | 10/2015 |
| 2. Identify mineral soil wetland sites that historically were white cedar as potential wetland restoration opportunities | |
| 3. Convene interagency team including BWSR, DNR, MPCA, Corps of Engineers, University of Minnesota and federal agencies to develop white cedar plant community restoration recommendations and develop white cedar plant community restoration recommendations | 10/2015 |
| 4. Present recommendations to BWSR, DNR Commissioner and Minnesota Legislature | 6/2016 |

III. PROJECT STRATEGY

A. Project Team/Partners: The project team includes the same partners as phase one, includes: Dale Krystosek, BWSR Project Manager; Jerry Stensing BWSR Project Technician; Kurt Johnson, University of Minnesota, Duluth, Natural Resource Research Institute; Dr. Rodney Chimner (Michigan Tech) Technical Advisor; Rick Dahlman (retired DNR Forestry BMP Coordinator), and MPCA staff. Additional advisors from DNR Ecological and Water Resources, U.S. Forest Service and local units of government will participate. Funding would go to NRRI, BWSR and several local units of government.

B. Timeline Requirements: This project is anticipated to be completed within 36 months.

C. Long-Term Strategy and Future Funding Needs: This project is a continuation of the Northeast Minnesota White Cedar Plant Community Restoration project which received \$250,000 of 2011 funding from the ENRT. This initiative has been successful in re-igniting interest in reversing the decline of this important resource, but needs continued funding to ensure that additional progress and momentum can be achieved. One of the products of Phase 2 will be to develop white cedar plant community restoration recommendations and present recommendations to Board of Water and Soil Resources, DNR Commissioner and Minnesota Legislature for consideration of future funding from the general fund.

2014 Detailed Project Budget

Northeast Minnesota White Cedar Plant Community Wetland Restoration Project - Phase 2

Attach budget, in MS-EXCEL format, to your "2014 LCCMR Proposal Submission Form".

IV. TOTAL ENRTF REQUEST BUDGET 3 years

| <u>BUDGET ITEM</u> | <u>AMOUNT</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Personnel: One Unclassified half time (50%) temporary (2 years) Wetland Specialist (Board of Water and Soil Resources) Salary - 74% Benefits - 26% (\$84,000) 400 hours for added hours for Office Administrative Specialist (part-time position) Added Salary (\$8,800) | \$ 92,800 |
| Contracts: <u>Soil and Water Conservation Districts</u> - (\$30,000) Up to 4 contracts with SWCDs for staff and technical assistance to the project to complete site evaluations, field data collection at restoration sites. This work will include site visits and data collection at a minimum of 40 sites. <u>Natural Resource Research Institute</u> - (\$60,000) to provide technical expertise in designing white cedar hydrologic restoration projects. This work will include field data collection and project design. This contract will also include development and delivery of training on white cedar restoration techniques. | \$ 90,000 |
| Equipment/Tools/Supplies: Field supplies and equipment for restoration of fens including plant materials, equipment, hydrologic and vegetative restoration costs (example - hiring contractor to install culverts, cross drainage, trail modification, etc), seed, and plant materials. | \$ 145,000 |
| Acquisition (Fee Title or Permanent Easements) | |
| Travel: This budget item is to cover BWSR staff costs for project coordination meetings, field site visits and training. For example, a) travel for BWSR Wetland Specialist to travel from Bemidji to Duluth or Grand Rapids for project coordination meetings, b) Travel costs for BWSR project specialist to travel from Bemidji office to field sites in St. Louis County. | \$ 8,000 |
| Additional Budget Items: | |
| TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST = | \$ 335,800 |

V. OTHER FUNDS

| <u>SOURCE OF FUNDS</u> | <u>AMOUNT</u> | <u>Status</u> |
|---------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------|
| Other Non-State \$ Being Applied to Project During Project Period: | | |
| Other State \$ Being Applied to Project During Project Period: | | |
| In-kind Services During Project Period: BWSR Wetland Special Project Lead 10% staff time in kind for 3 years | \$ 30,000 | <i>Secured</i> |
| Remaining \$ from Current ENRTF Appropriation (if applicable): | \$ 65,000 | <i>All remaining funds are committed</i> |
| Funding History: 2011 ENRTF appropriation of \$250,000. | \$250,000 | Funding expected to be expended by project end date of 6/30/2014 |

**Environment and Natural Resources Trust Fund
2014 Proposed Acquisition/Restoration List**

INSTRUCTIONS:

1. Fill in "Project Title", "Project Manager Name", and "2014 ENRTF \$ Request" below.
2. For each individual acquisition or restoration parcel that is being considered as possible/proposed under this proposal, please indicate a parcel name, geographic coordinates (latitude/longitude), county, estimated cost, ecological significance, activity description, # of acres, # of shoreline miles (if applicable), type of landowner, and proposed final holder of any fee title or conservation easement. One row per individual land parcel. Add or delete rows as necessary.
3. Use the "Notes" section at the bottom of the page to provide any additional information pertaining to the acquisition list. If there is any requested information you are unable to provide for any of the parcels, please provide an explanation here.
4. Delete this row containing these instructions and any unused rows before submission.
5. Document will be printed on letter size paper - landscape orientation - let rows expand to multiple lines to fit in applicable information.

Columns

#: Number each parcel 1 through the total number of parcels.

Acquisition or Restoration Parcel Name: Provide a working title or name used to identify each parcel/restoration area.

Geographic Coordinates: Provide latitude and longitude coordinates for the location of the parcel - preferably the center of the parcel (centroid). Coordinates should be in the format: [Degrees]° [Minutes]' [Seconds]" [Hemisphere]

County: County in which the parcel is located.

Estimated Cost: Provide an estimated cost pertaining to each parcel.

Ecological Significance: Provide a description of the type of ecosystem that exists on a parcel (e.g., prairie, forest, wetland, savanna) and any ecological significance particular to the parcel.

Activity Description: Provide a description of the activity or activities to occur on the parcel (e.g., fee title acquisition, conservation easement acquisition, site preparation, removal of woody vegetation). For conservation easements indicate whether the easement would be donated or purchased.

of Acres: Indicate the size of the parcel to be acquired or restored in acres.

of Shoreline Miles (if applicable): If applicable, indicate the number of shoreline miles being impacted.

Type of Landowner: Indicate the type of current landowner (e.g., private individual/trust, non-profit organization, for-profit entity)

Proposed Fee Title or Easement Holder (if applicable): For land acquisition, indicate the organization or entity that will hold title of lands once acquired.

Project Title:

Project Manager Name:

ENRTF \$ Request: \$

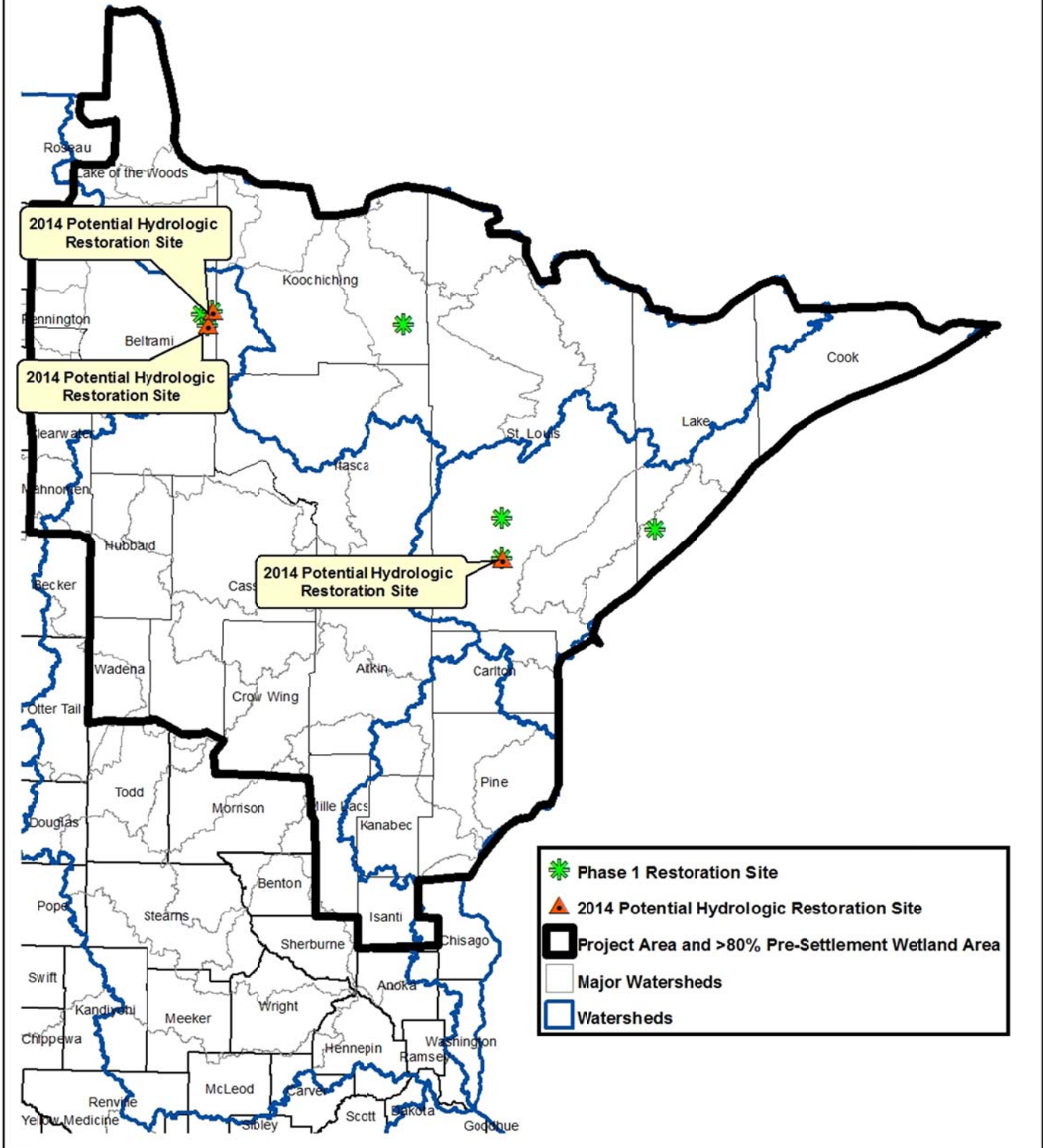
| # | Acquisition or Restoration Parcel Name | Geographic Coordinates Format: [Deg.]° [Min.]' [Sec.]" [Hemis.] | | County | Estimated Cost | Ecological Significance | Activity Description | # of Acres | # of Shoreline Miles | Type of Landowner | Proposed Fee Title or Easement Holder (if applicable) |
|----|----------------------------------------|-----------------------------------------------------------------|------------------------|-----------|----------------|----------------------------------------------------------------------|----------------------|------------|----------------------|--------------------|-------------------------------------------------------|
| | | Latitude | Longitude | | | | | | | | |
| 1 | Stand 28 | 47 degrees 4' 11.659"N | 92 degrees 37' 35.10"W | St. Louis | \$ 45,000 | Northern White Cedar - potential for high function after restoration | Restore hydrology | 57 | | State of Minnesota | N/A |
| 2 | Stand 664 | 48degrees 6' 24.66"N | degrees26'4 0.95"W | Beltrami | \$60,000 | Northern White Cedar - potential for high function after restoration | Restore hydrology | 120 | | State of Minnesota | N/A |
| 3 | Stand 276 | 48 degrees 2' 52.39"N | 94 degrees 28' 30.44"W | Beltrami | \$40,000 | Northern White Cedar - potential for high function after restoration | Restore hydrology | 350 | | State of Minnesota | N/A |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
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| 10 | | | | | | | | | | | |

NOTES: The sites listed above are potential restoration sites that were identified as part of the phase one project. An additional 40 sites will be evaluated to determine the highest priority for



NE Minnesota White Cedar Plant Community Restoration Project

Phase 2





Project Manager Qualifications and Organization Description

Project Manager: Dale E. Krystosek, Wetland Special Projects Lead, Minnesota Board of Water and Soil Resources. Dale has been employed by BWSR for 21 years and is currently lead staff in implementing the Wetland Conservation Act for the BWSR North Region (*40 counties*). Currently Project Manager **for Northeast Minnesota White Cedar Plant Community Restoration Project, a \$250,000 2011 ENRTF** project, that is on schedule and on budget. He is responsible for providing leadership in coordination and resolution of wetland issues with counties, soil and water conservation districts, cities, DNR and the U.S. Army Corps of Engineers in northern Minnesota.

CAREER ACCOMPLISHMENTS

- **Lead BWSR staff in developing the Northeast Wetland Mitigation Strategy, a \$375,000 project** to inventory wetland mitigation opportunities in 18 county area of northeast and north central Minnesota. Project was completed on time and on budget.
- **Member of MnRAM (Minnesota Routine Assessment Methodology for Evaluating Wetland Functions) Interagency Technical Committee** for 12 years. This interagency committee of BWSR, DNR, MPCA and Corps of Engineers is responsible for development and updating Minnesota's primary wetland functional assessment methodology.
- **Coordinator and chief author of the Lake Bemidji Watershed Diagnostic Study & Watershed Management Plan**, which resulted in nearly \$1,000,000 in federal and state funding for watershed protection projects in the 632 square mile watershed at the headwaters of the Mississippi River.
- **Lead BWSR staff in resolving largest WCA court ordered restitution in Minnesota**, the \$130,000 Ruther penalty in Otter Tail County, resulting in restoration of 28.4 acres of wetlands and the establishment of the Couyer WMA in cooperation with Pheasants Forever, U.S. Fish and Wildlife Service and DNR Wildlife.
- **Local Project Coordinator for the Bemidji-Bagley Groundwater Study, a \$230,000 project** conducted in cooperation with the U.S. Geological Survey, DNR Division of Waters, and Clearwater, Cass, Hubbard and Beltrami SWCD.
- **Lead BWSR staff in developing agency policy** for Exceptional Natural Resource Value Project Guidance, Forestry Exemption Guidance, and Guidance for Management of Forested Wetland Mitigation Sites including interagency coordination, BWSR Board review and approval.
- Assisted Cass County **with the development of the first non-metro Local Wetland Management Plan in Minnesota** in 1996 and development of local wetland plans in Hermantown, Lake of the Woods County and International Falls.
- **Lead staff in developing and completing the Beltrami County Local Water Plan**, which was among the first 3 approved in Minnesota.

EDUCATION:

- **University of Minnesota, St. Paul, B.S. Wildlife Management with Distinction, 1978 (3.45 GPA).**
- **Bemidji State University, - coursework in bio-chemistry (4.0 GPA) and continuing education in communication skills, human relations and botany (1990- 2007).**
- **University of Minnesota - continuing education in vegetation management and Wetland Delineation Certification (1997 – 2012).**

