



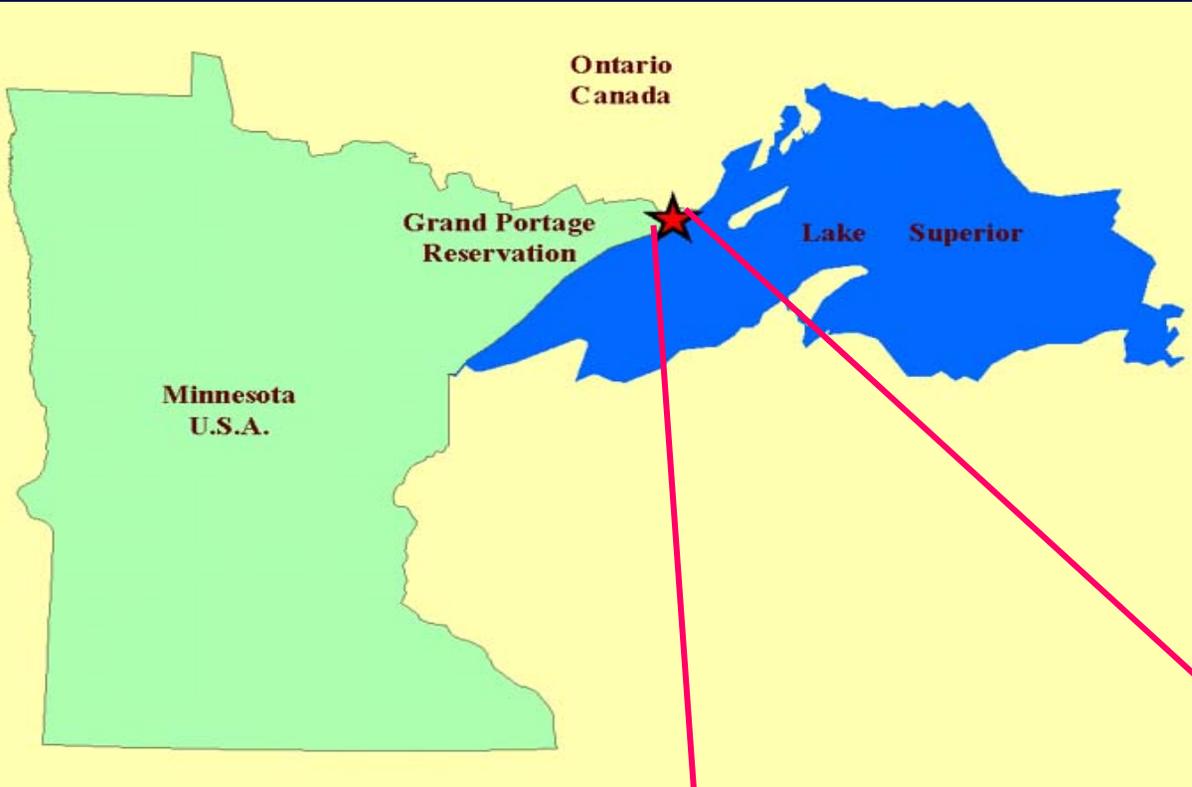
Grand Portage Reservation

**Activities of the Grand Portage Reservation
(Minnesota) to Protect and Restore the
Aquatic Habitat in Lake Superior**

Brad Frazier, Director of Environmental Programs
Margaret Watkins, Water Quality Specialist
**Ryan Nelson, Nonpoint Source and Solid Waste
Coordinator**

**Presented at the National Forum on Tribal Environmental
Science, September 27, 2006**

Grand Portage Reservation location

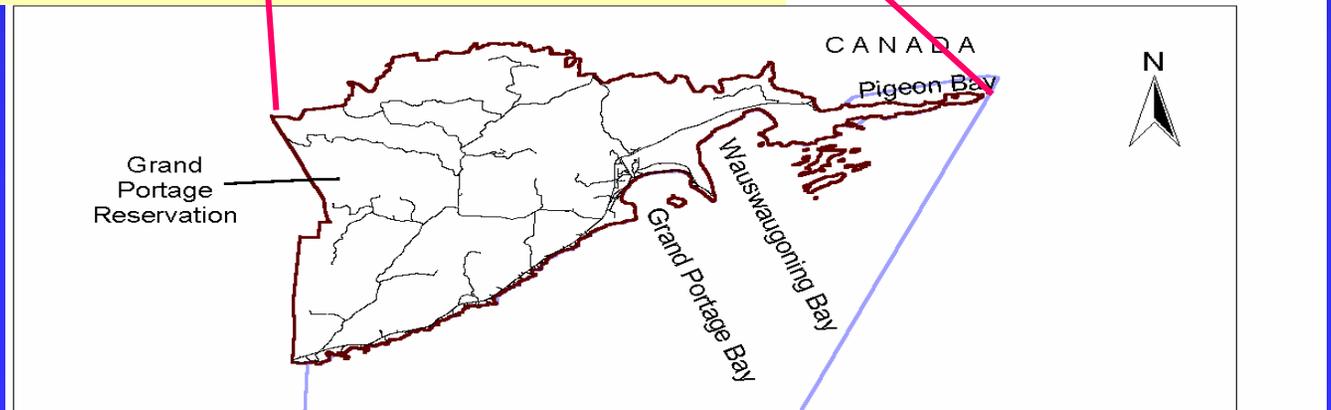


Size: 56,000 acres

Population: 550

Lake Superior
Shoreline: 24 miles

Several Bays and
Islands



Reservation Departments

Grand Portage Reservation Tribal Council (RTC),
Governing Body

Trust Lands and Natural Resources Division

Land Use

Natural Resources

Environmental Department

Conservation

**Emergency Management (Includes many
Departments and other Agencies)**



Trust Lands and Natural Resources

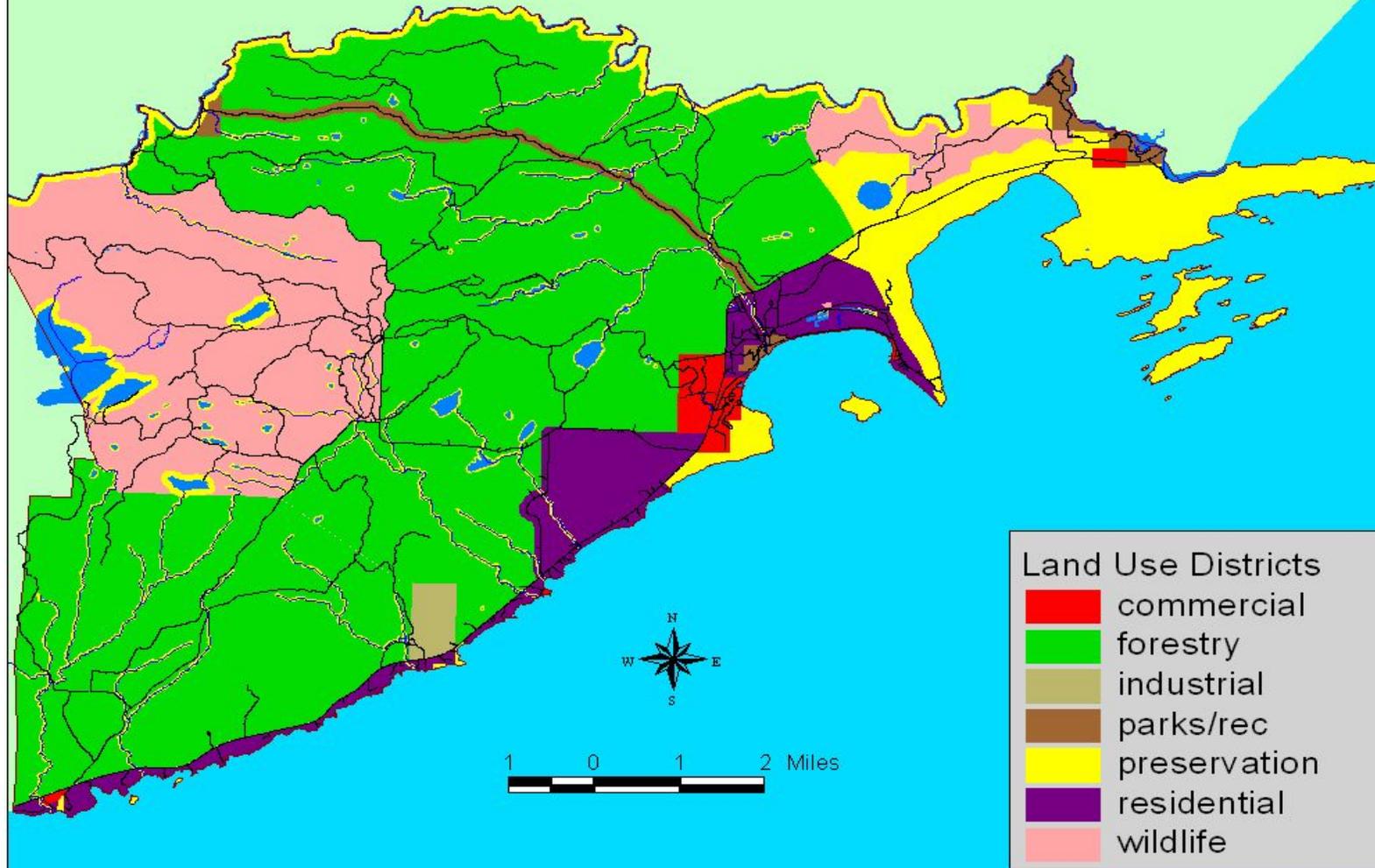
Land Use, **Various ordinances and permits**
Natural Resources, **Forestry, Biology, GIS**
Environmental Dept., **Water, Air, Wetlands, Solid Waste,**
Nonpoint Source
Emergency Mgmt, **Protection of people and resources**

1854 Treaty Authority

Conducts scientific research and management activities for the Ceded Territory for Grand Portage and Bois Forte Reservations

In 1996 the Grand Portage Land Use Ordinance was enacted

Grand Portage Reservation Land Use



Grand Portage Natural Resources Program

Forestry Department

- Forestry Resources Management Plan (IRMP, established in 1986)
- Follows established BMPs to protect resources
- Prescribed fire for species restoration
- Wildfire protection and wildfire management plan

GIS Department

- GIS used as a management tool to protect resources



Grand Portage Natural Resources Program

Biology Department

Coaster Brook Trout Restoration Project

- Working with U.S. FWS since 1991
- Stocking Isle Royale & Lake Nipigon strains

Lake Sturgeon Reintroduction Project

- Working with OMNR, U.S. FWS, 1854 Treaty Authority
- Tagging fish to determine suitable habitat

Grand Portage Environmental Department

Water Quality Program

Bioassessment Program

- Water quality monitoring
- Macroinvertebrate, macrophyte,
and plankton monitoring



Grand Portage Environmental Department

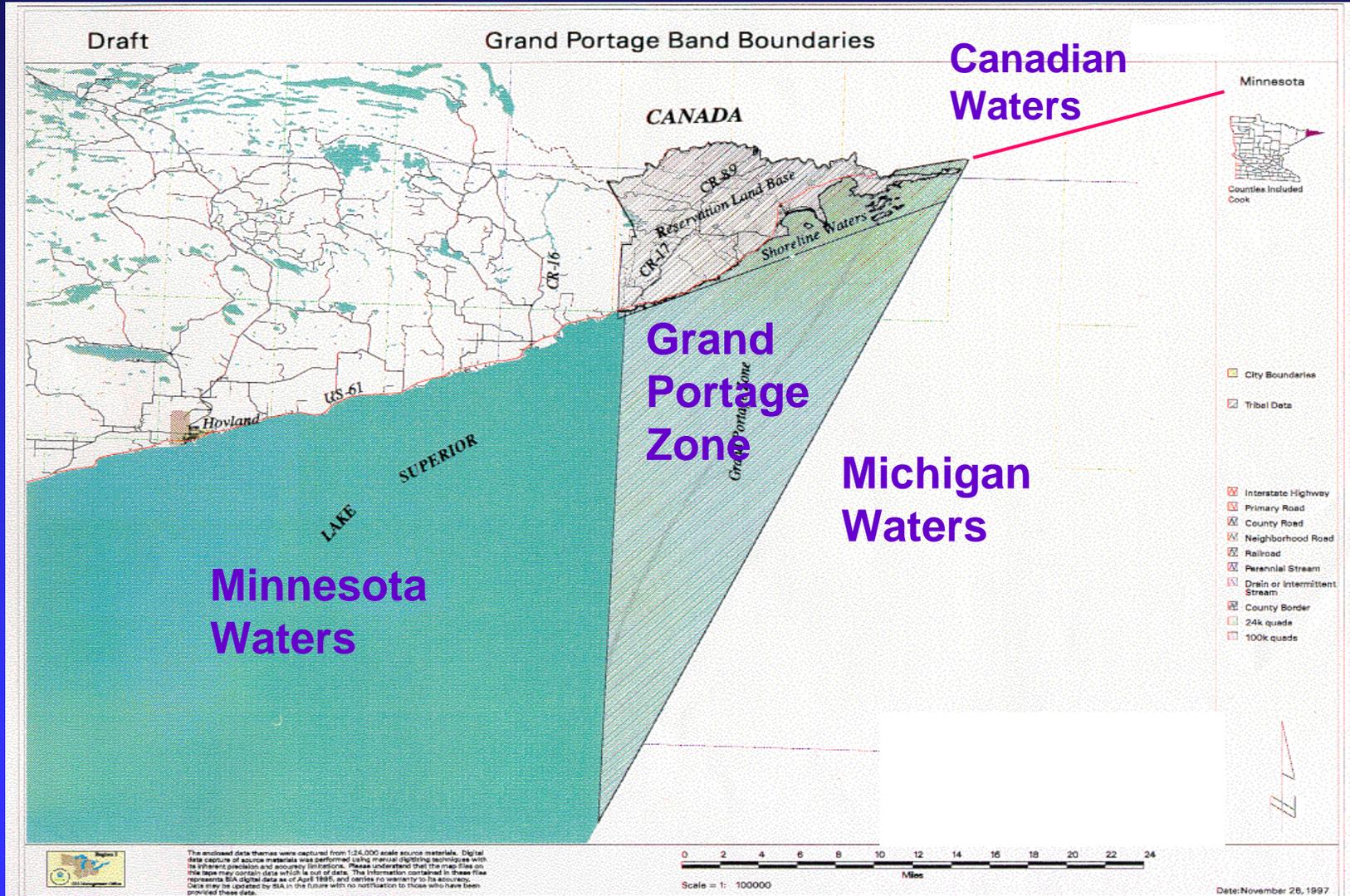
Water Quality Program

- Low-level Hg monitoring of surface waters
- Groundwater monitoring for contaminants
- Established WQSSs November 2005
- Developing nutrient criteria for surface waters
- Establishing baseline conditions before potential mining occurs

High Falls
State Park



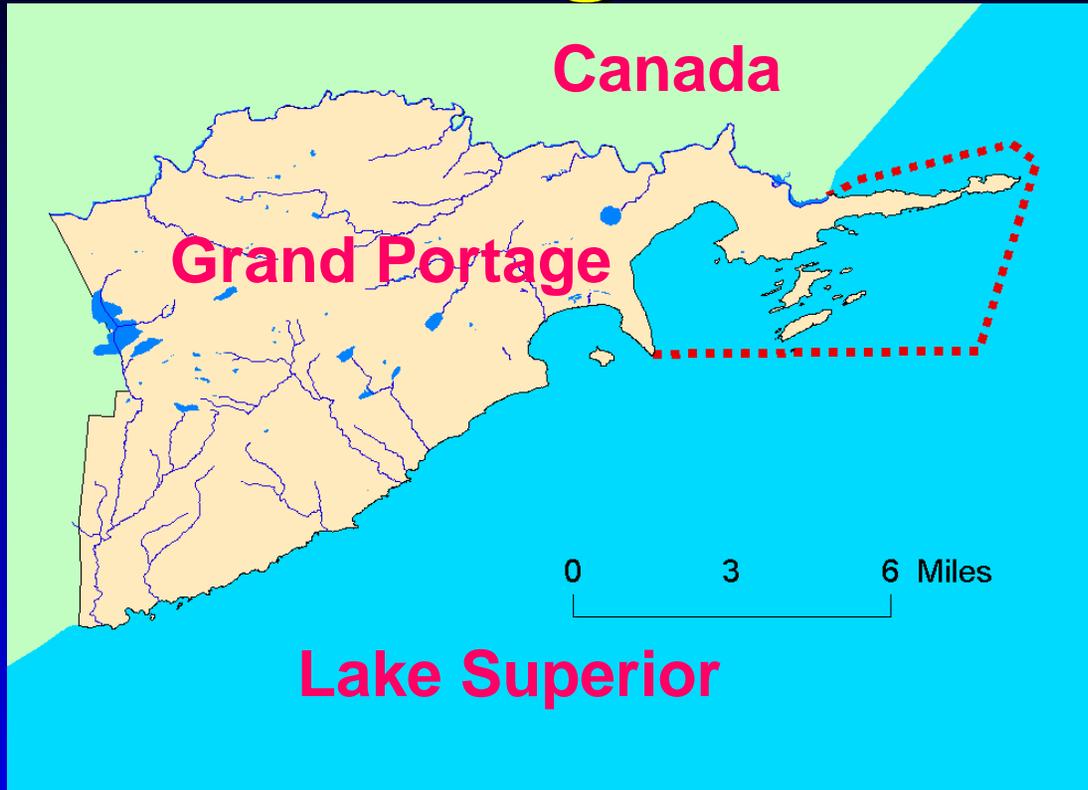
In July 1996, the Cooperative Agreement between Grand Portage Band of Chippewa and Minnesota Pollution Control Agency was signed and approved by US EPA Region 5



The Cooperative Agreement between Grand Portage and MPCA

- The Grand Portage Zone of Lake Superior encompasses about 177,000 acres
- Established a process by which the Band and MPCA would work cooperatively to plan and administer independently adopted water quality standards for the portion of Lake Superior referred to as the Grand Portage Zone.
- Developed procedures for joint implementation of water quality standards including the designation of an area as a no discharge zone in both MN and GP WQS

No Discharge Zone



Unique areas within the No Discharge Zone:

- Grand Portage Community water intake
- Pukaskwa Pits and pictographs
- Rare plants including arctic disjuncts
- Susie Island Preserve (Nature Conservancy)
- The Little Spirit Cedar Tree



- Little Cedar Spirit Tree (Witch Tree) that is listed on the National Registry of Historic sites

Grand Portage Environmental Department Wetlands Program

- Bioassessment studies (water quality, macroinvertebrates and macrophytes)
- Nutrient criteria being developed for WQS and the protection of wetlands
 - Depressional wetlands (~44%)
 - Forested wetlands (~46%)

Scrub-shrub (9%) and emergent wetlands (1%) make up the remaining wetlands (total of 10,000 wetland acres)



Grand Portage Environmental Department

Nonpoint Source Pollution Program

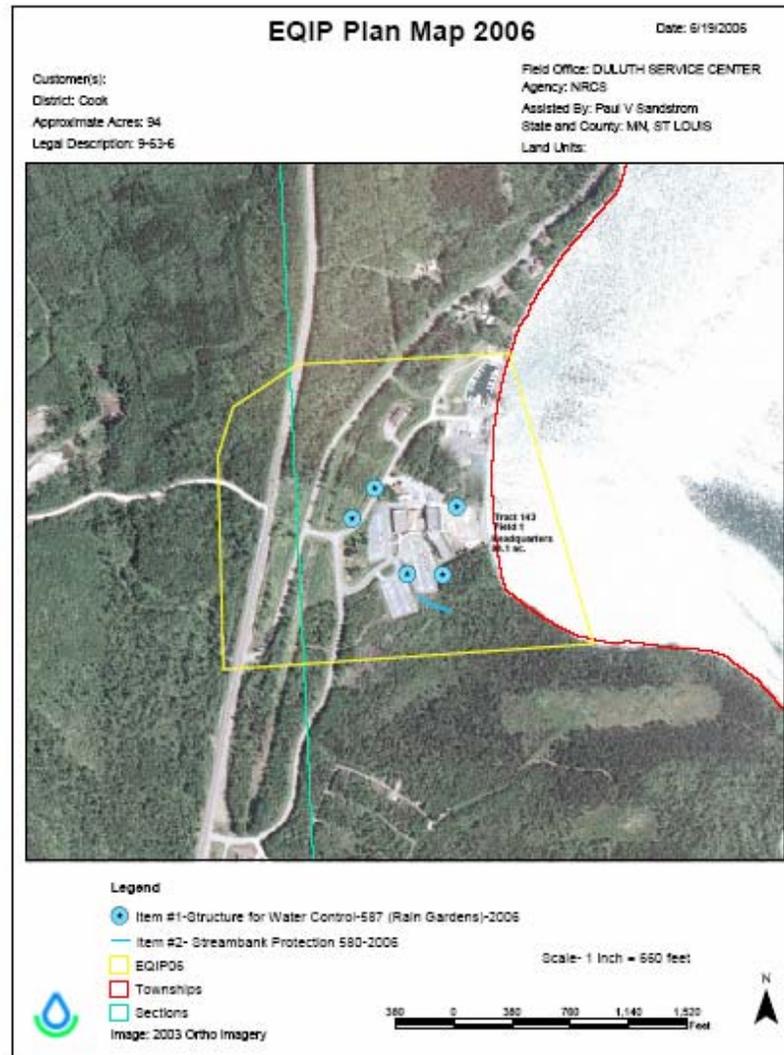
- Established CWA Section 319 NPS program (eligible for EPA funding starting 2005)
- Working on NPS issues affecting Lake Superior
- Rain Gardens project 2006-2007
- Red Rock Creek Restoration project 2007-2008



Problems in Grand Portage Bay

- Shallow Bay / Little Mixing
- Commercial Development
- Water Quality Issues
 - High Coliform Bacteria After Significant Rain Events
 - Fine Sediments
 - Aquatic Plants
 - Changes In Aquatic Insects

Worked with NRCS and obtained EQIP funding and RTC support to begin the “Rain Gardens” project



Technical Expert - Gregg Thompson

Landscape Rehabilitation Specialist



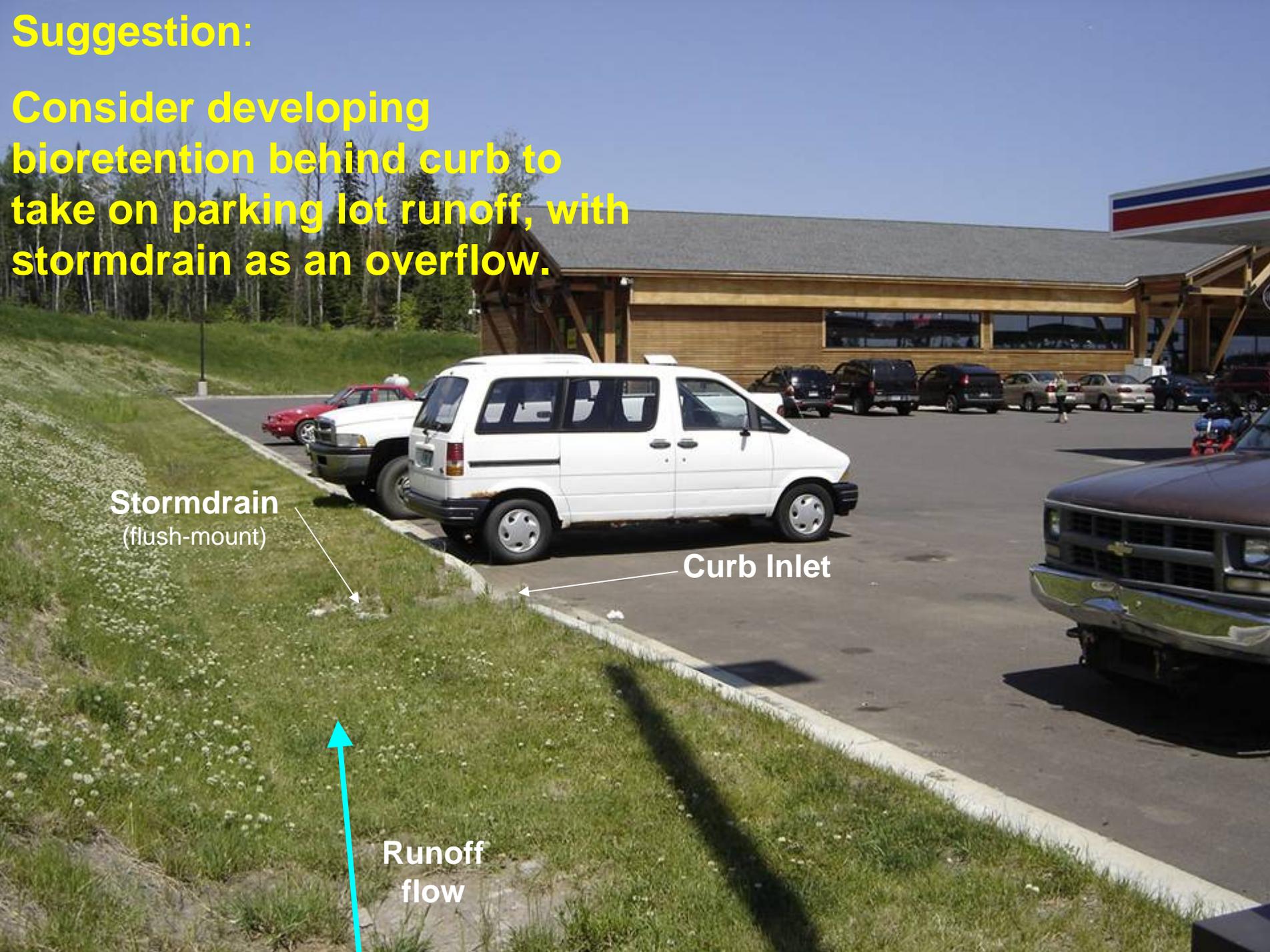
Suggestion:

Consider developing bioretention behind curb to take on parking lot runoff, with stormdrain as an overflow.

Stormdrain
(flush-mount)

Curb Inlet

Runoff
flow



Grand Portage Environmental Department

Air Quality Program

- Conducted emissions inventory
- Began an air-monitoring program for PM 2.5
- Involved in Regional Planning Organizations to protect air quality in the region
- Operating a haze camera overlooking Lake Superior

www.mwhazecam.net



RTC/Air Program/Environmental Program

- Developing a renewable energy program
 - Installed an anemometer for 14 months
 - Grant to study feasibility of renewable energy
 - Worked cooperatively with White Earth and Leech Lake Bands
 - We have commercial-grade wind power potential
 - Funding for a wind turbine?



Grand Portage Environmental Department

Solid Waste Program

-Coordinate solid waste recycling and periodic removals of wastes with hazardous substances:

- Fluorescent lights

- Cars, trucks, appliances, tires, e-wastes

- Household/business hazardous waste collections



Grand Portage Environmental Department

Other Activities

- Created a Pesticide Policy to avoid unnecessary spraying on the Reservation. Now moving toward Integrated Pest Management strategy
- Have conducted numerous well-closures
- Assist with expansion of city sewer lines
- Worked with MN Dept. of Health to create fish Consumption advisories for Grand Portage residents
- Reviewing permits for new mines



Grand Portage Emergency Management (numerous Depts.)

Emergency Management

-Preparation and training for potential disasters to protect people and the environment



Trust Lands and Natural Resources

All Programs

-Develop and conduct education and outreach programs for the community and for the Grand Portage school





- In 1854, the Lake Superior Chippewa signed a treaty ceding northeastern Minnesota to the United States. The right to hunt, fish, and gather on the ceded lands was retained.

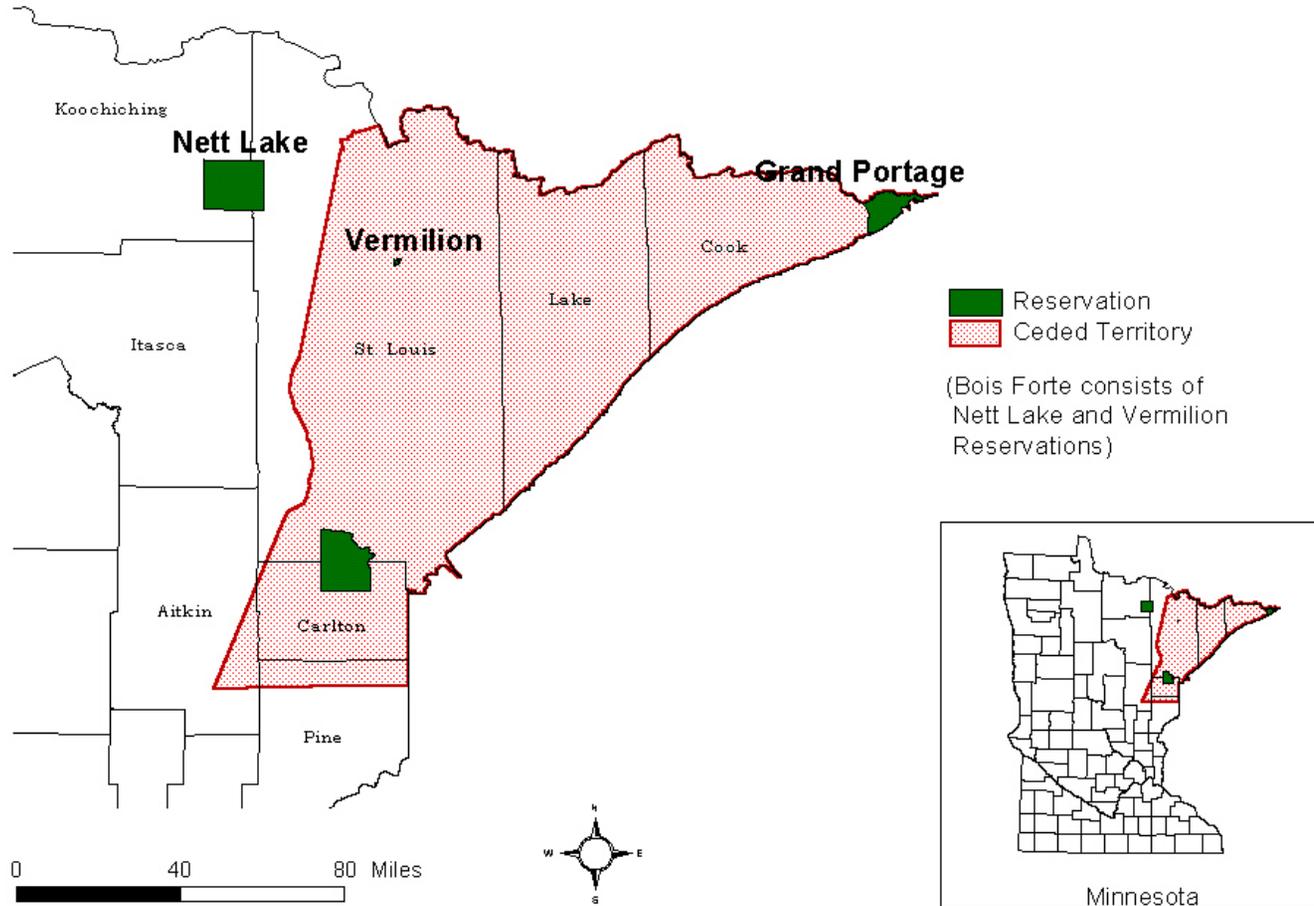
- The 1854 Treaty Authority is an inter-tribal natural resource management agency that manages the off-reservation hunting, fishing, and gathering rights of the Bois Forte and Grand Portage Bands of Lake Superior Chippewa in the territory ceded under the Treaty of 1854.

- The 1854 Treaty Authority works to preserve, protect, and enhance the 1854 Treaty rights and the 1854 Ceded Territory natural resources.



1854 Authority

1854 Ceded Territory





Fisheries:

- walleye surveys – electrofishing
- river surveys – cooperative surveys (fisheries, habitat)
- sturgeon – telemetry in St. Louis River



Wild Rice:

- monitoring and surveying lakes
- enhancement activities
- harvest information and lake postings



Environmental:

- **natural resource damage assessment – address contaminated sites in St. Louis River estuary**
- **participate in Lake Superior Binational Program and other workgroups and committees**
- **subsistence consumption – address concern over contaminants in food sources (fish collection for mercury analysis, survey of band members to determine eating patterns)**
- **cultural resources – preserve and protect sites of importance to the bands**

For more information: www.1854authority.org

Summary

-We appreciate the opportunity to present some of the activities being done at Grand Portage to protect and restore Lake Superior at this excellent Tribal Science meeting.

-Grand Portage and the 1854 Treaty Authority will continue to conduct studies and management activities based on sound science to protect and restore the natural environment of Lake Superior, which protects the health of community members.