

# Role of the Superior National Forest in Lake Superior Watershed Management



***Brenda Halter***  
***Forest Supervisor***  
***Superior National Forest***

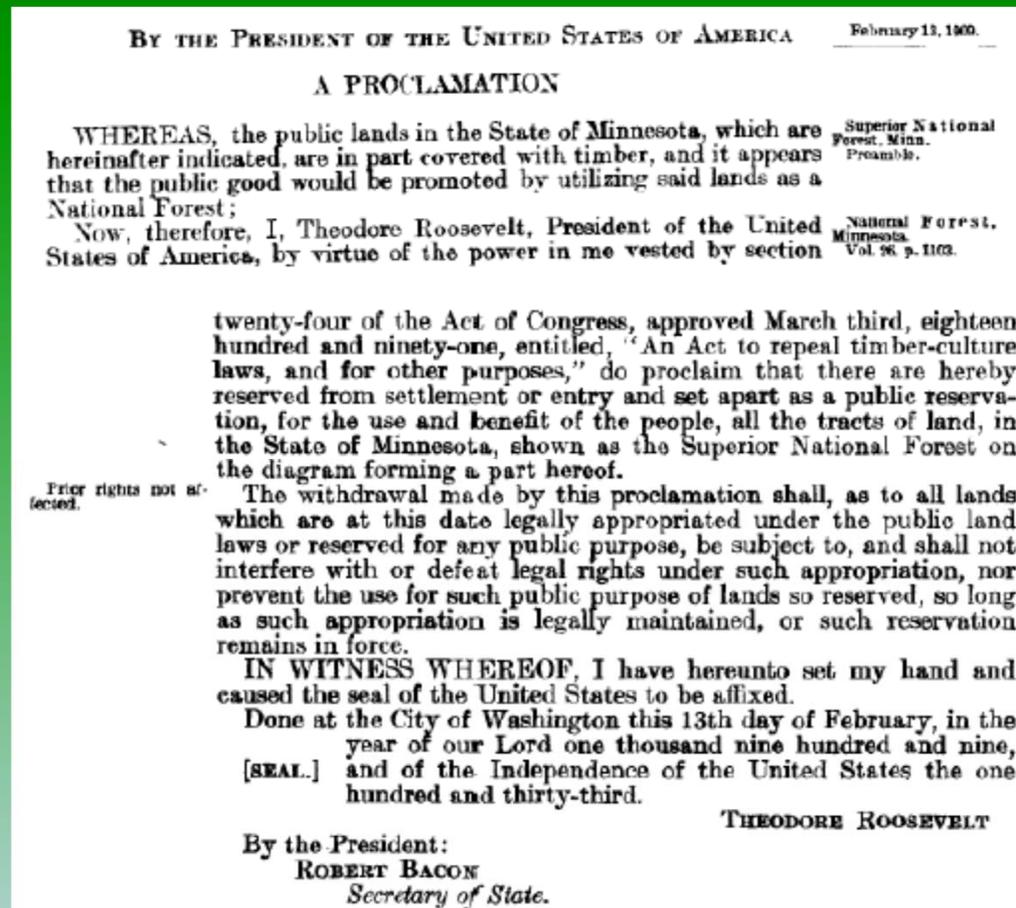


***Superior Stream Symposium January 7, 2014 - UMD***

# Water Resources Management is a Primary Objective of the U.S. Forest Service

In his 1905, “A Primer of Forestry,” Gifford Pinchot wrote, “A forest, large or small, may render its service in many ways. *It may reach its highest usefulness by standing as a safeguard against floods, winds, snow slides, or especially against the dearth of water in the streams.* A forest used in this way is called a protection forest.”

# Superior National Forest Has a Long History of Watershed Management



Forest was established in a proclamation by Theodore Roosevelt in 1909

**Forest Service Mission**  
To sustain the health, diversity,  
and productivity of  
the nation's forests and  
grasslands to meet the  
needs of present and future  
generations.

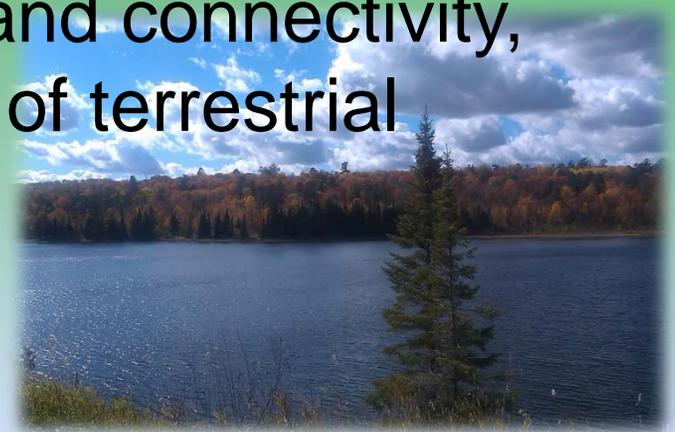


# 2012 National Land Management Planning Rule

(Planning Rule)

Provide for Ecological Sustainability and  
Contribute to Social and Economic Sustainability

Direction to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems structure, function, composition, and connectivity, recognizing the interdependence of terrestrial and aquatic ecosystems



# Planning Rule (Cont.)

Plans must consider:



**System drivers**, including dominant ecological processes, disturbance regimes, wildland fire, invasive species, and climate change; and the ability of terrestrial and aquatic ecosystems to **adapt to change**.

# Planning Rule (cont.)

Plans must include direction to maintain or restore the ecological integrity of riparian areas in the plan area, including direction to maintain or restore structure, function, composition, and connectivity



# Superior N.F Land Management Plan



# SNF Plan Direction

- Promote ecosystem health and conservation using a collaborative approach to sustain forests and watersheds.
- Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.
- Provide management direction that enhances social and economic benefits for individuals and communities

# SNF Plan Direction (Cont.)

## Watersheds and their components:

- Are part of healthy ecosystems that meet the needs of current and future generations
- Provide for State, tribal, and local beneficial uses
- Are protected or enhanced to provide for unique plant and animal communities, special habitat features, habitat linkages, wildlife corridors, aquatic ecosystems and riparian ecosystems.

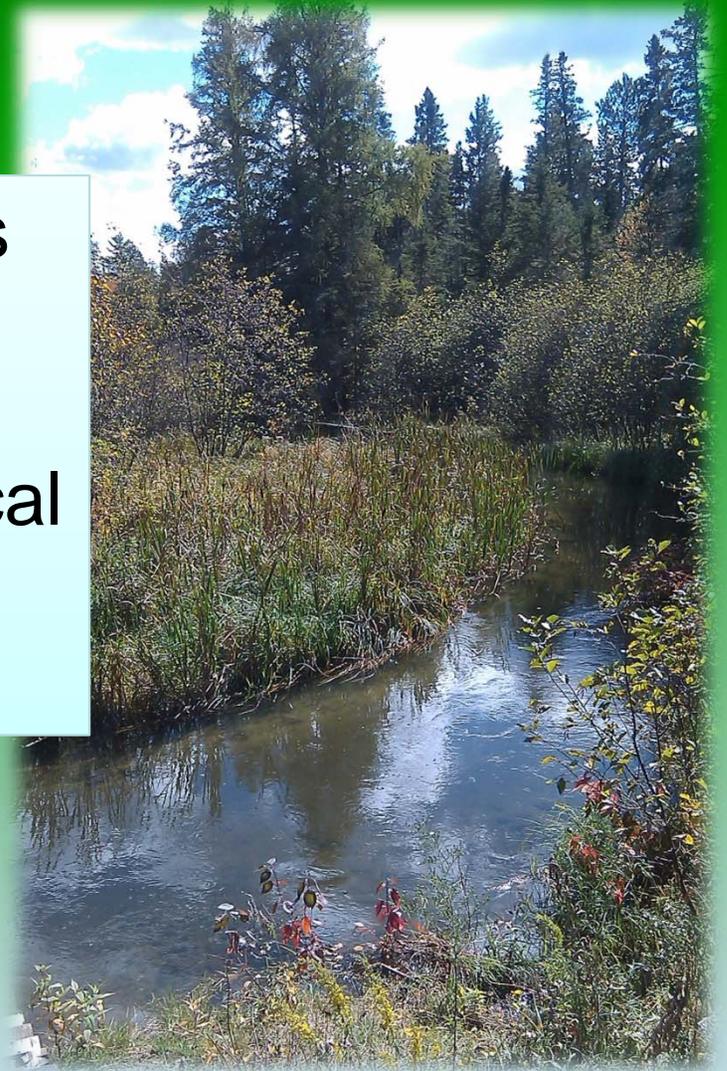
# SNF Plan Direction (Cont.)

Riparian areas serve as landscape connectors. Riparian areas, habitats, and associated vegetative communities are diverse in composition and structure and support native and desired non-native species

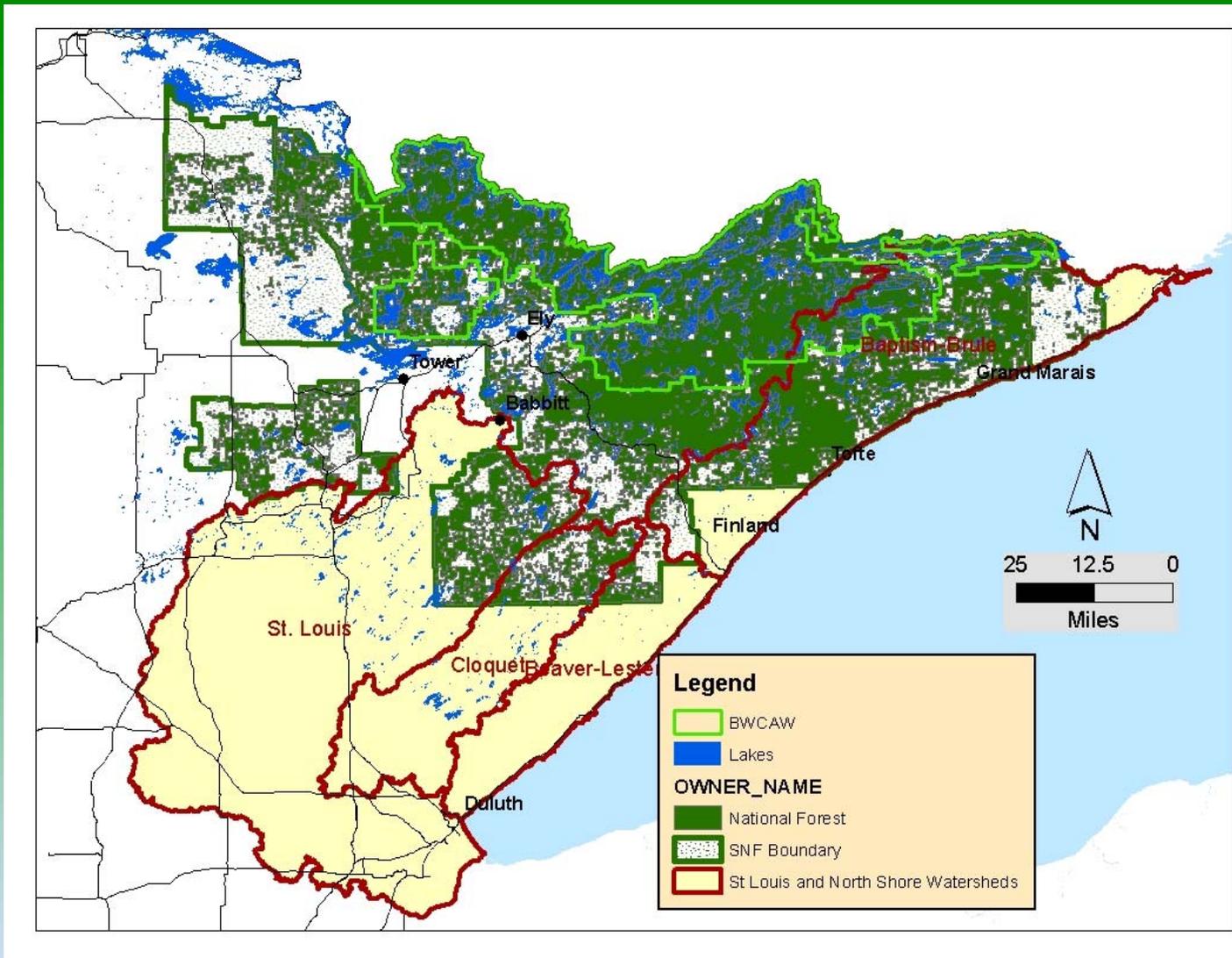


# SNF Plan Direction (Cont.)

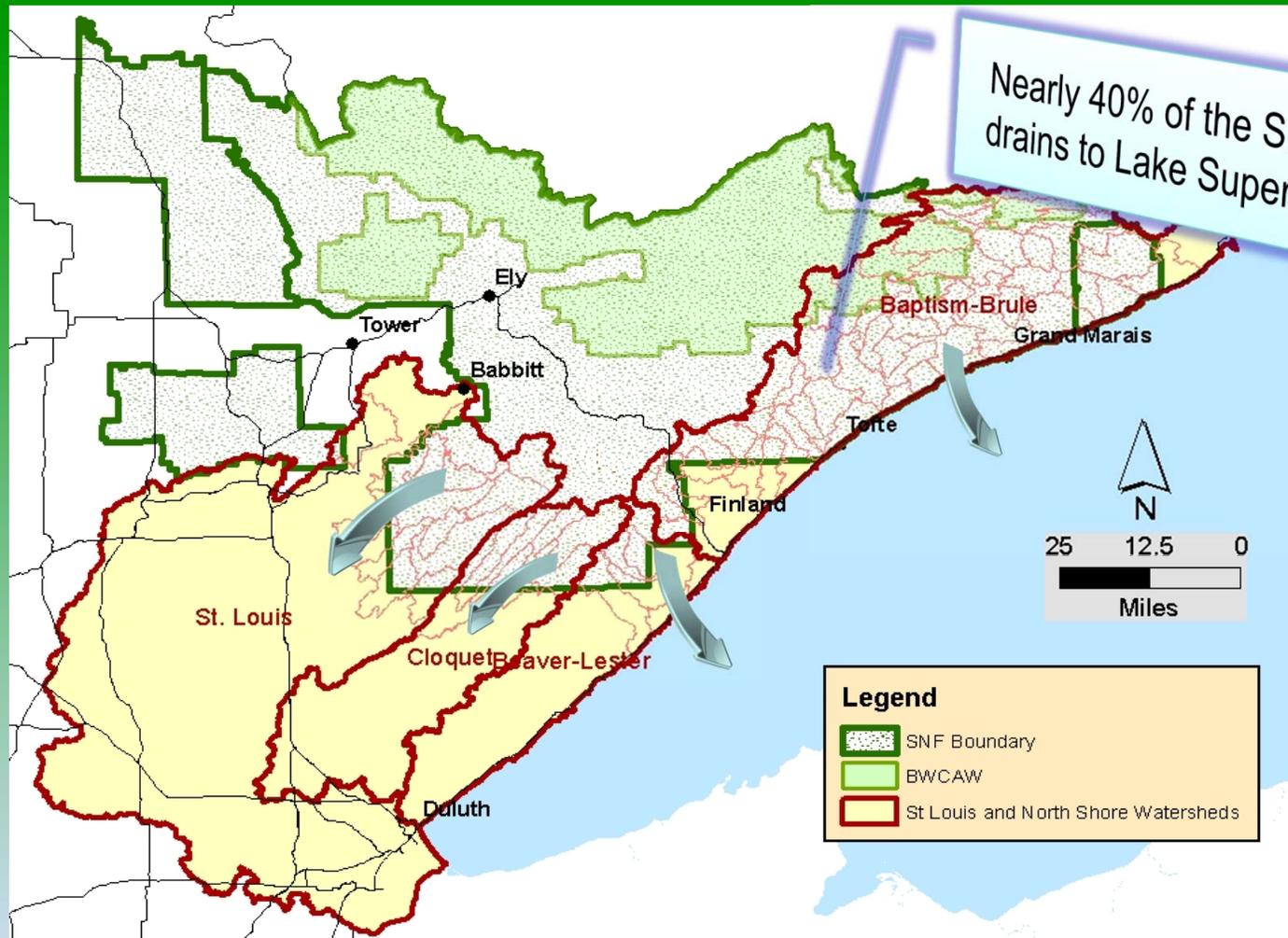
Direction in the Forest Plan is based on the desire to protect and enhance riparian area ecological functions and aquatic/terrestrial linkages



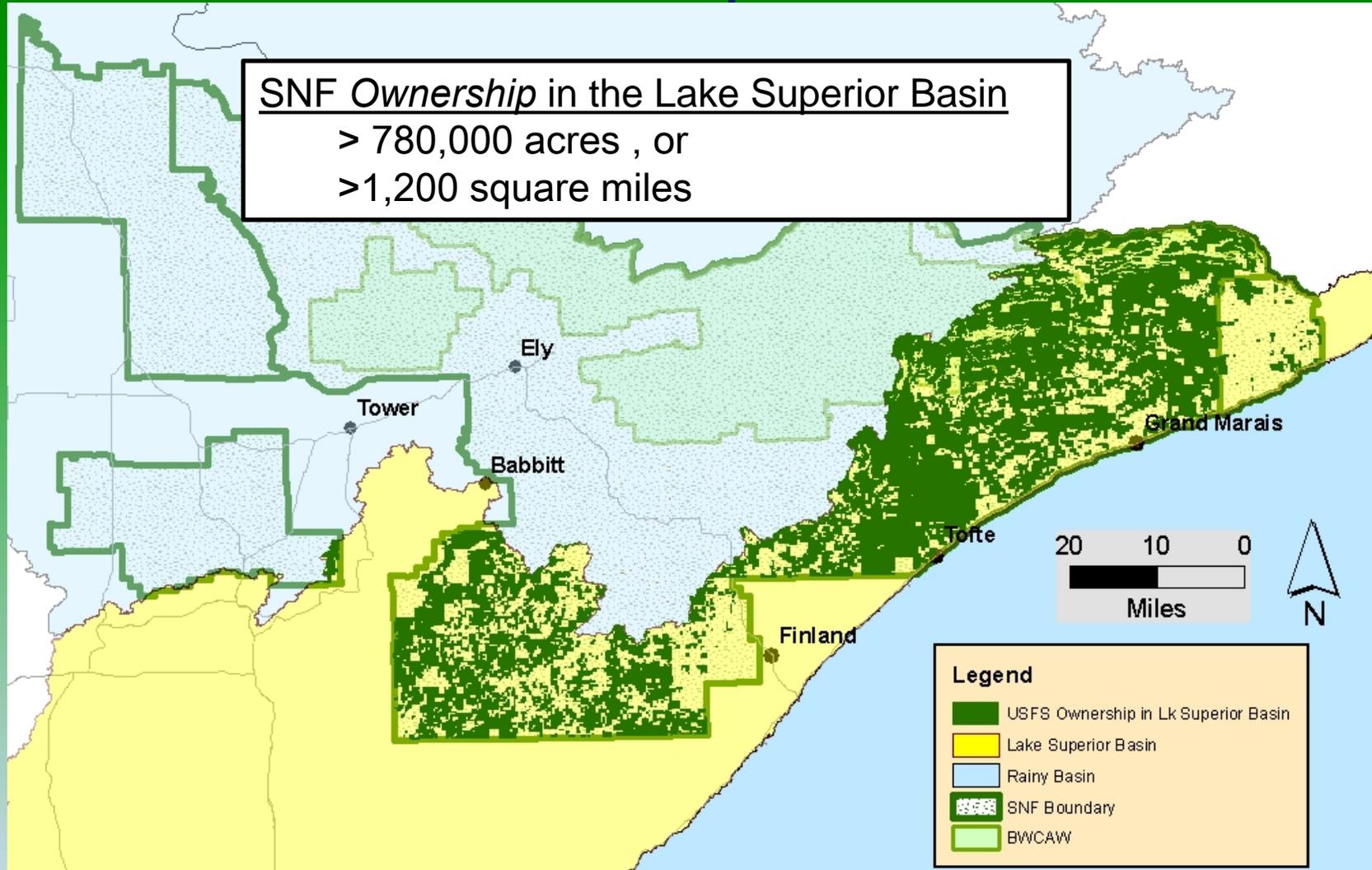
# We Manage Activity within the SNF Boundary *Most Specifically on NFS Land*



# Headwaters of the St Louis River and Many Others are within the SNF



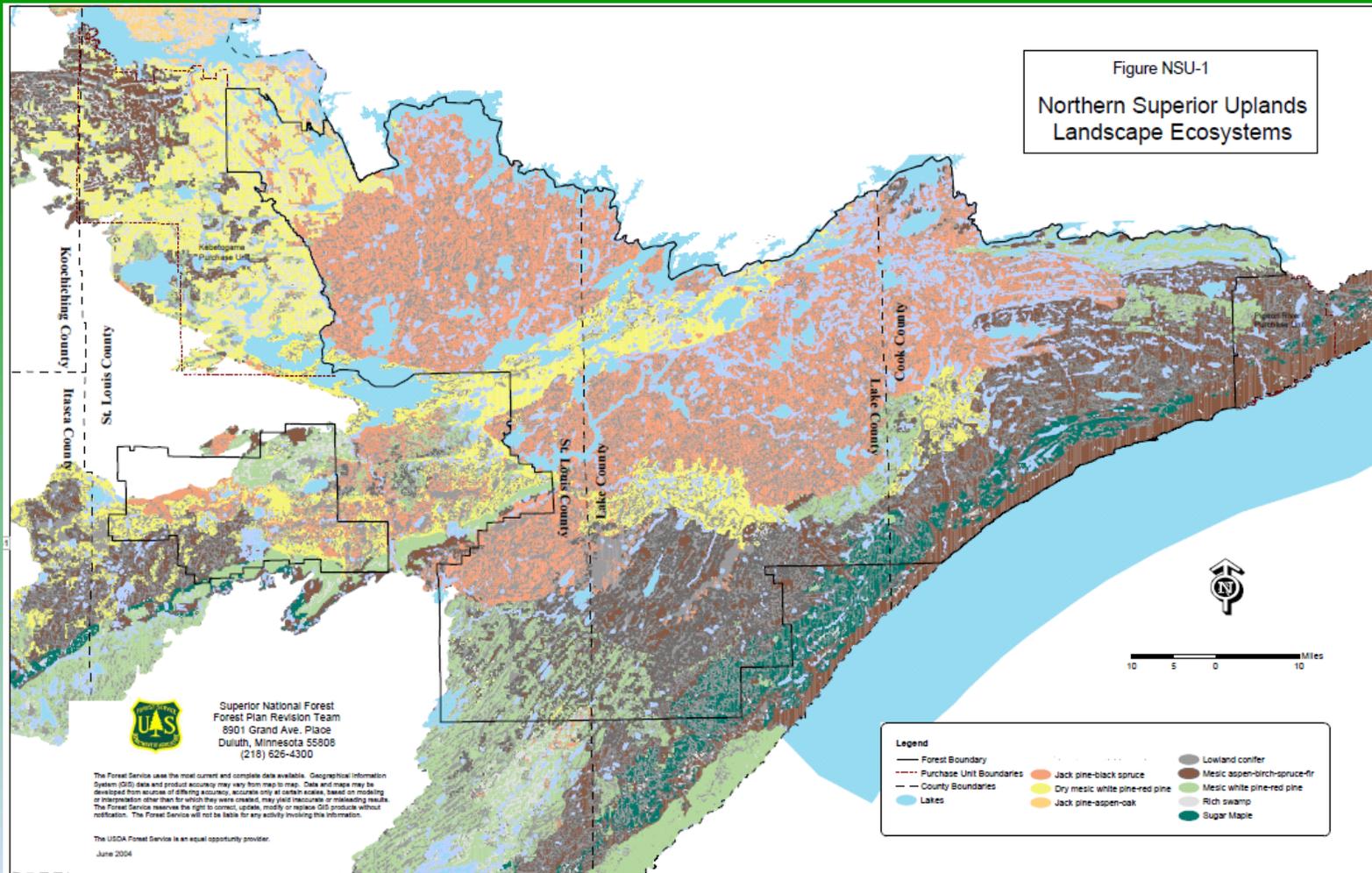
# SNF is a Major Landowner in the Lake Superior Basin



\* By comparison Duluth is approximately 87 sq miles (per Wikipedia)

# Management Goals are Based On Landscape Ecosystems

- Landscapes Scale
- Over a Long Time Span (*sustainable*)

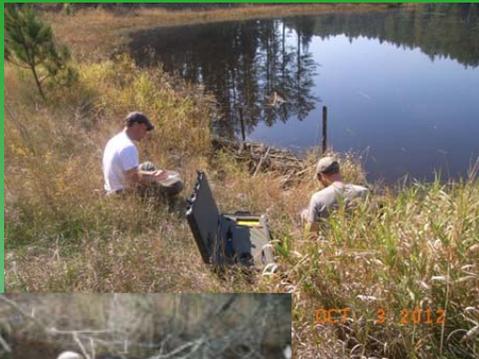


# Superior National Forest has an Abundance of Water Resources

- **About 2,000 lakes that are  $\geq 10$  acres**
- **Over 440,000 lake acres**  
(46% of water Region 9, or 20% of freshwater in USFS)
- **The BWCAW contains 1,418 lakes  $\geq 5$  acres**  
(Surface Area  $\approx 172,00$  acres)
- **Over 3,400 miles of stream**  
(22% of all forests in Region 9)
- **More than 1,200 miles of cold / cool water streams**

# SNF Collects Data to Understand Existing Conditions

## Water Quality Data



# SNF Collects Data to Understand Existing Conditions

## Biological Data



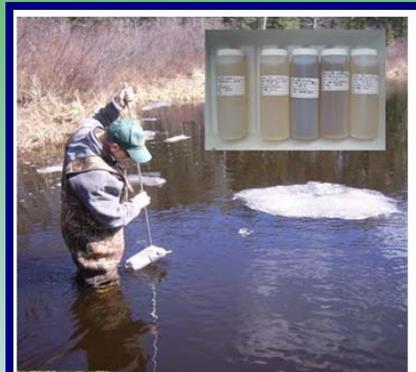
## *Macroinvertebrates*

# SNF is an Active Manager of Water Resources

## Monitor the Effects of Activities



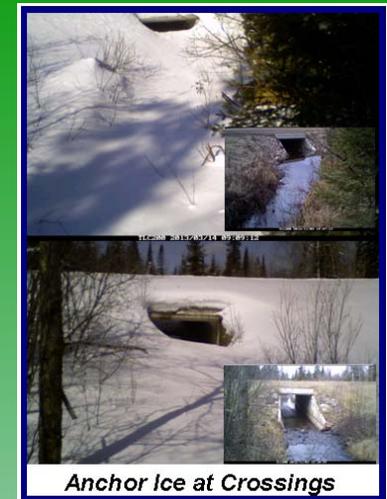
*Impacts of Logging*



*Dam Removals*



*Geomorphic Assessments of Streams*



*Anchor Ice at Crossings*

# SNF Restores Impacted Sites



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***Bioengineered Bank Stabilization***

# SNF Protects and Improves Aquatic Habitat



**STOP AQUATIC HITCHHIKERS!**  
 ✓ Inspect. ✓ Clean. ✓ Drain.

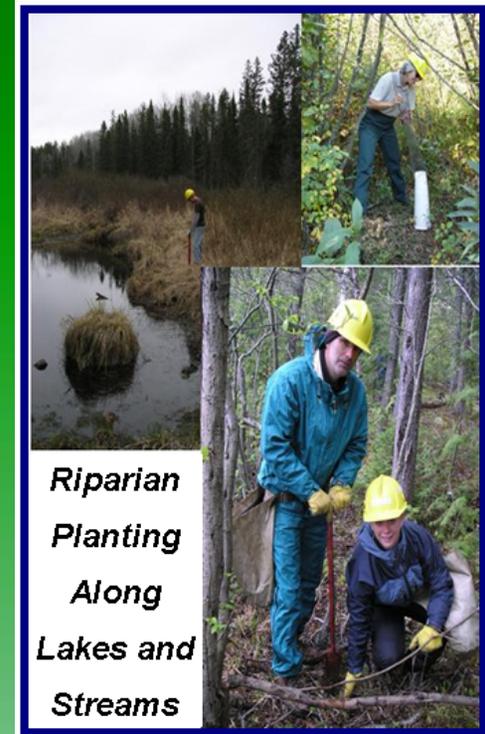
US Sea Grant

**Rusty Crayfish**

**Spiny Waterflea**

**Purple Loosestrife**

**Non-Native Invasive Species Inventory**



# SNF is an Active *Partner* in Water Resource Management



Minnesota Pollution Control Agency



Minnesota Department of Natural Resources



White Iron Chain Of Lakes Association

St Louis County



Cook County



Parks Quetico



# Example of Recent Partnership

## \$400k Conservation Partners Legacy Grant



Goals (to be implemented on nearly 1,000 acres):

1. Restore the conifer component to the forests
2. Improve wildlife habitat
3. Improve riparian habitat
4. Reduce invasive plant species



Cook County Invasive Team

# Role of the Superior National Forest in Lake Superior Watershed

- ✓ **Manage the Land for Multiple Uses in an Ecologically Sustainable manner**
- ✓ **Work Collaboratively at Multiple Scales to Maintain and Restore Aquatic and Terrestrial Ecosystems**
- ✓ **Connect People to Land through Education and Recreational Experiences**

*Americans often assume that our health and well-being are separate from the health of the natural world. But, I return again to the simple act that we Americans take for granted everyday: turning on our water faucets. The clean water that emerges is made possible in large part by stewardship of our rural lands, and of our forests in particular. My hope is that together we can foster a greater appreciation for our forests and that all Americans, regardless of where they live, see the quality of their lives and the quality of our forests as inseparable. Tom Vilsack 2009*



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