



MINNESOTA DEPARTMENT OF NATURAL RESOURCES



## The Science(s) behind Managing Stream Fishery Resources

Lake Superior Area Office, Section of Fisheries

## Historical Disturbances



Big timber was found along the headwaters of the Sucker River near the end of the Minnesota & North Wisconsin. — FRANK KING COLLECTION

**Thaddeus Surber, 1923:**

*"Because of changed conditions brought about by the deforestation of great areas of this region some of the once-famous Brook Trout streams are no longer tenable as such..."*

*"fires destroyed immense areas of swampland along with second growth in the slashings, giving the powerful rays of the sun access to the cold sphagnum swamps..."*

*"warm waters prohibit the presence of Brook Trout in certain parts of the streams...the colder upper water have been destroyed...trout in their search for cold waters have been compelled to descend many of the streams to Lake Superior."*

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## Early Habitat Improvement



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## Lessons Learned



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## A New Approach



- Root wads and woody material
- Bankfull bench – moves stream away from eroding bank, dissipates energy
- Woody transplants – slows high flow velocities, allochthonous energy inputs, shading
- Good for fish



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## Protecting an Investment



- MNDNR Easements: Proposed natural channel design techniques be utilized for habitat improvement or restoration projects
- Develop criteria for post-project assessments if feasible
- Assess biological response to habitat improvement projects







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## North Shore Angling Opportunities



**Kamloops**



**Steelhead**






**Brook Trout**

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## Rainbow Trout Regulations





**RAINBOW TROUT REGULATIONS**  
FOR LAKE SUPERIOR AND  
STREAMS BELOW POSTED BOUNDARIES

- **Unclipped rainbow trout:**  
Catch and Release only.
- **Clipped rainbow trout:**  
Possession limit 3;  
Minimum Size 16 inches.
- **Tackle and Angling Restrictions:**  
Single hooks only in streams.  
Only one line is allowed within 100 yards of a tributary stream.  
Foul-hooked fish in tributaries below the posted boundaries must be released.
- **Season and General:**  
Season is continuous.  
Hours: In streams, one hour before sunrise to one hour after sunset.  
Minnesota Trout Stamp is required.

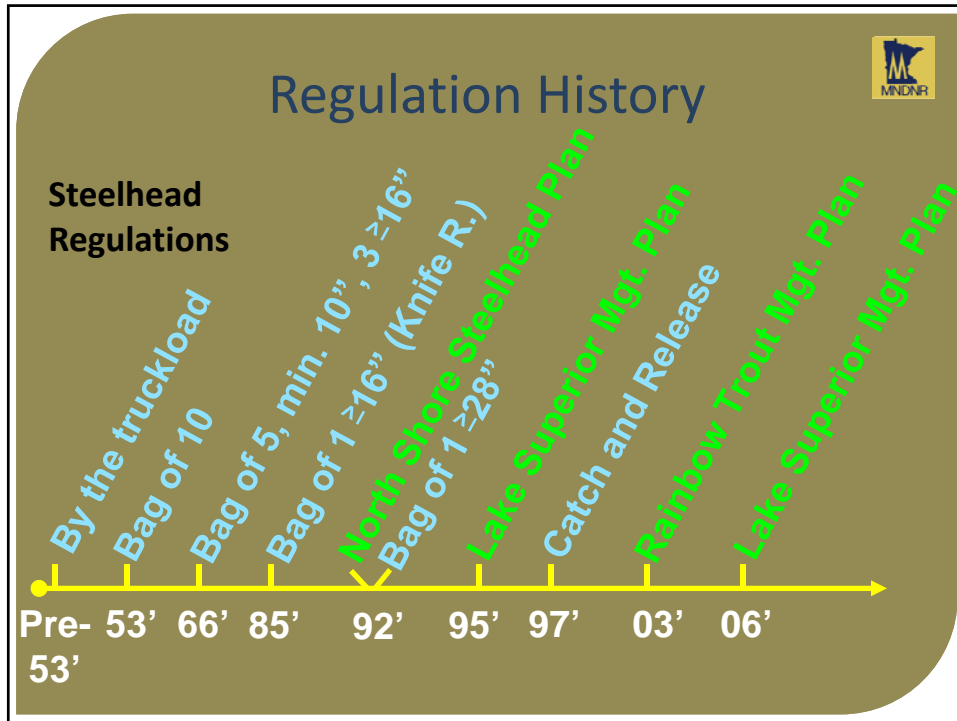
Adipose fin (no rays)      Healed scar

Clipped rainbow trout have the Adipose fin removed and must show healed scar.

See current regulations for more details.

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### Assessment Techniques

**French River**

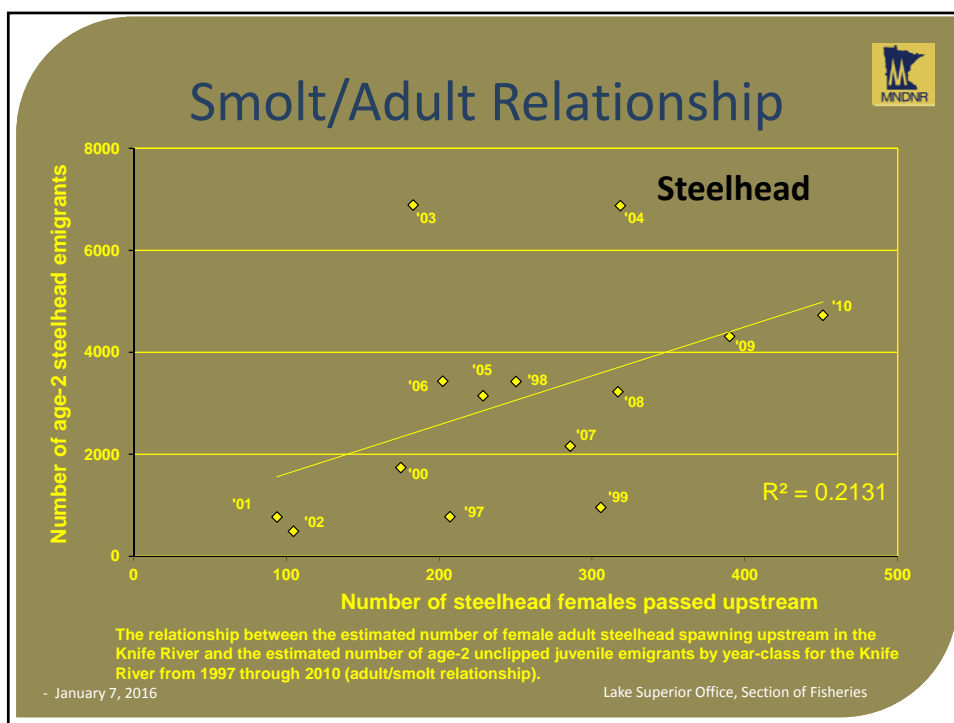
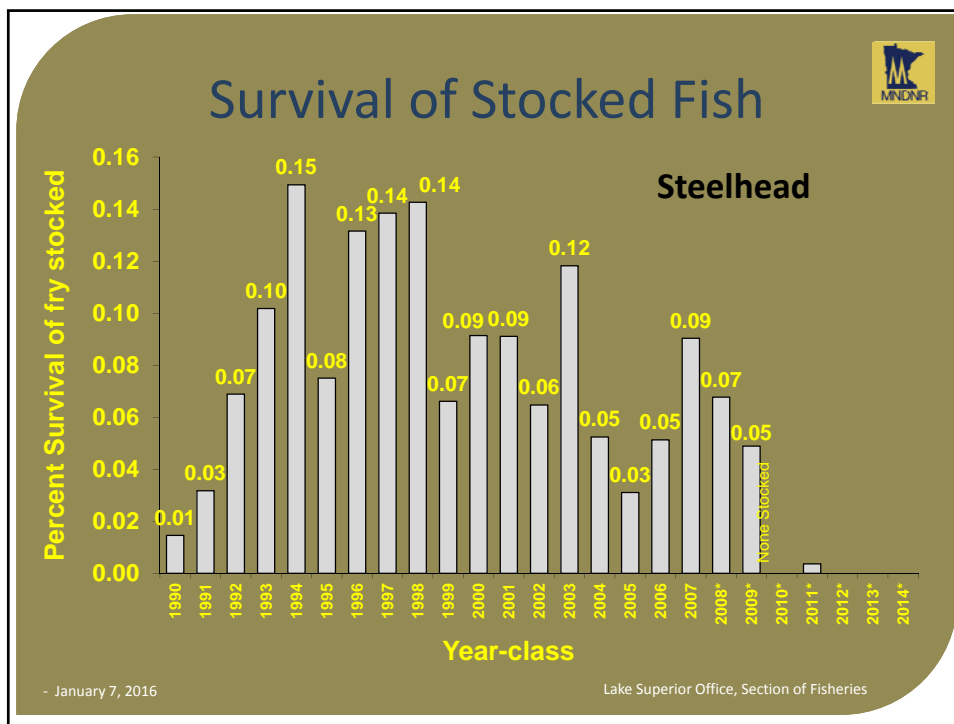
**Knife River**

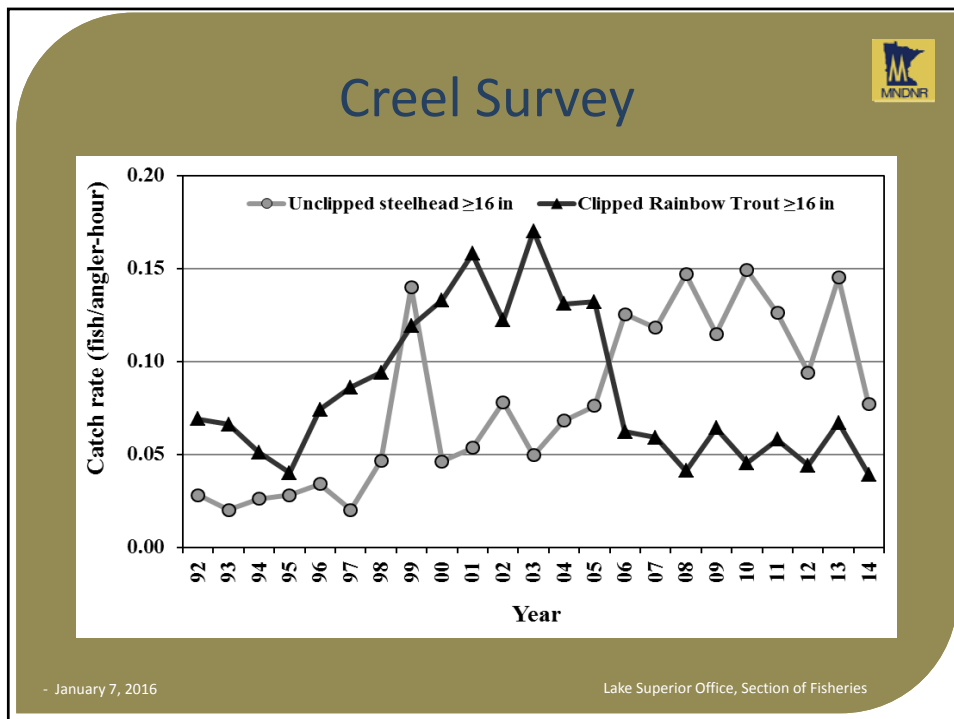
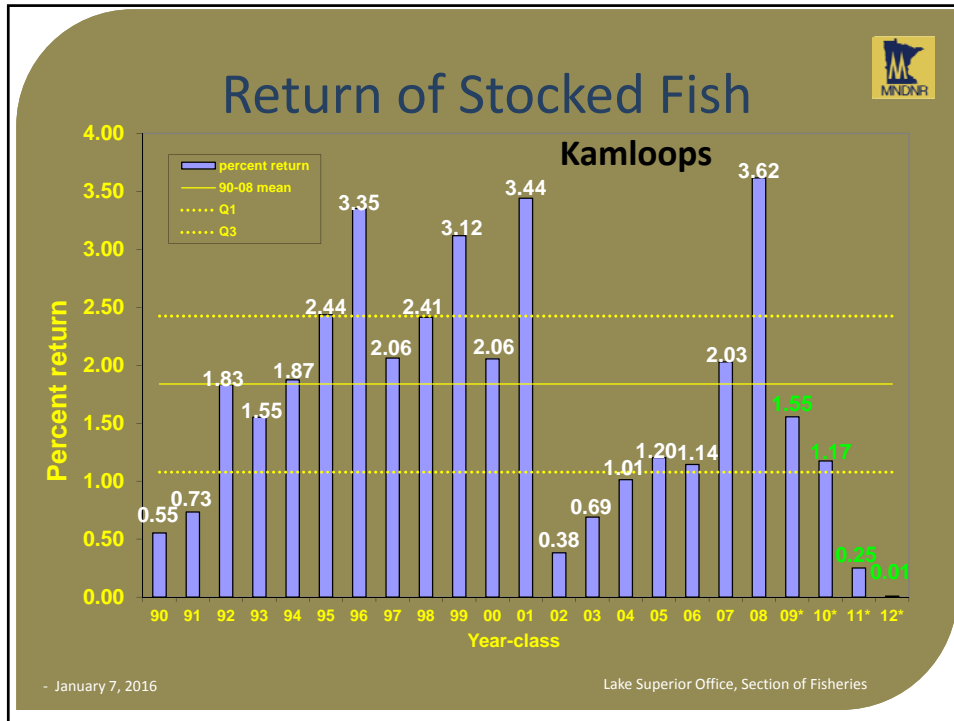
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MNDNR logo

Detailed description: A slide titled 'Assessment Techniques' showing two river assessment sites. The left side is labeled 'French River' and shows two photos: one of workers in a stream with equipment, and another of a person using a tool in a stream. The right side is labeled 'Knife River' and shows two photos: one of a rocky stream with a dam-like structure, and another of a concrete-lined stream channel. The MNDNR logo is in the top right corner. Text at the bottom left reads 'Stream Science Symposium II - January 7, 2016' and text at the bottom right reads 'Lake Superior Office, Section of Fisheries'.







# Brook Trout



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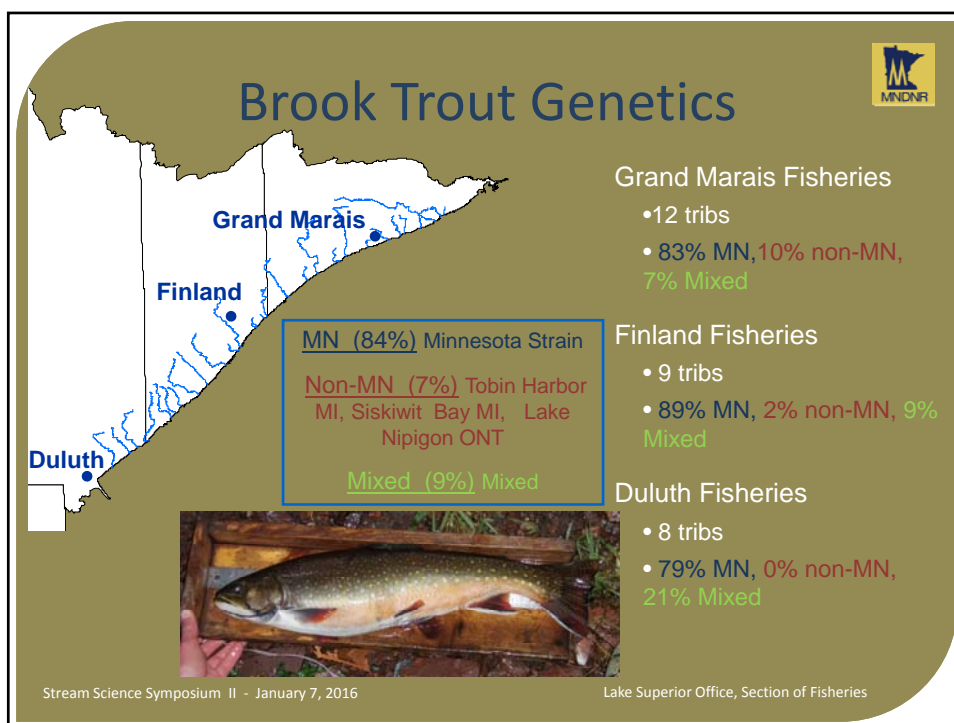
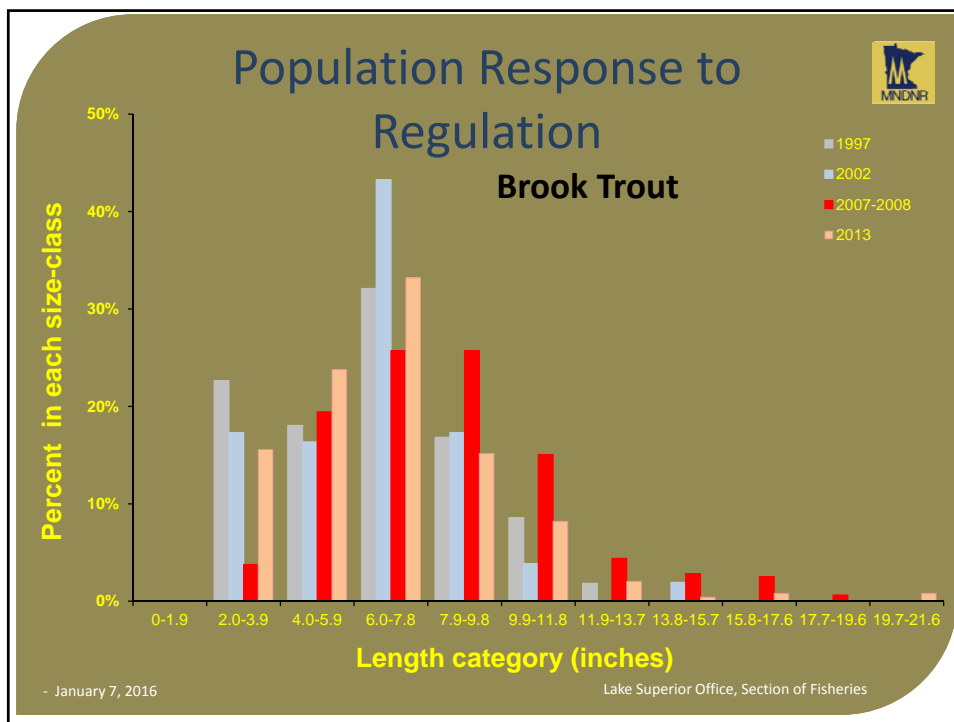
# Increased Effort

## Brook Trout



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## When Fisheries and Social Science Collide



- Wild vs. Stocked
- Native vs. Non-native
- Strain vs. Strain
- Stream Fishing vs. Boat Fishing
- Harvest vs. Catch & Release
- Stocking for rehabilitation vs. stocking for better catch rates
- Other resource users:



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## The Passion for Natural Resources



Photos courtesy of Ross Pearson

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