

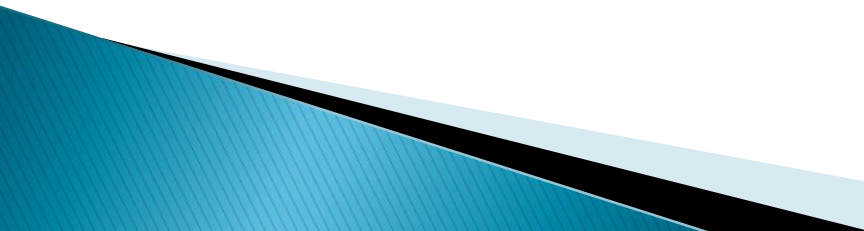
Bioengineered Erosion Control at Michigan DNR Boating Access Sites

Education, implementation and
recommendations for the future.

MICHIGAN STATE
UNIVERSITY
EXTENSION

Jane Herbert
District Water Quality Educator
Kellogg Biological Station
www.shoreline.msu.edu
2010 Wisconsin Lakes Convention

This session:

- ▶ Michigan Department of Natural Resources Boating Access Sites (BAS) program goals
 - ▶ 2009 two-day inservice training
 - Bioengineered shoreline erosion control
 - At Michigan State University Kellogg Biological Station (KBS)
 - Provided by MSU Extension
 - Planning, development, delivery and outcomes
 - ▶ DNR 2009 implementation of bioengineered erosion control at a BAS
 - ▶ Policy and management challenges
 - ▶ Recommendations
- 

Why natural shorelines at DNR Boating Access Sites?

Parks & Recreation (PR) Bureau goals:

- » Improve fish and wildlife habitat
- » Reduce mowing
- » Reduce foot traffic and access for swimming, picnicking, fishing
- » Reduce pollutant runoff from parking lots and foot traffic areas
- » Reduce goose activity
- » *Set the example for neighboring lakefront property owners*



MDNR Green Initiative

“Goals of this initiative include fuel and staff cost savings, pollution prevention, nuisance goose reduction, and habitat enhancement.”

MDNR P&R *Growing not Mowing* web page



Planning process

- ▶ Four member committee
 - DNR PR Stewardship Specialist
 - DNR BAS Program Manager
 - DNR PR Regional Supervisor
 - MSU Extension Water Quality Educator
- ▶ January – April 2009
 - Agenda development
 - Field site selection (BAS near KBS)
 - Bioengineering design
 - Permit application
 - Plant materials harvest (March 2009)
 - Michigan Conservation Corps crew

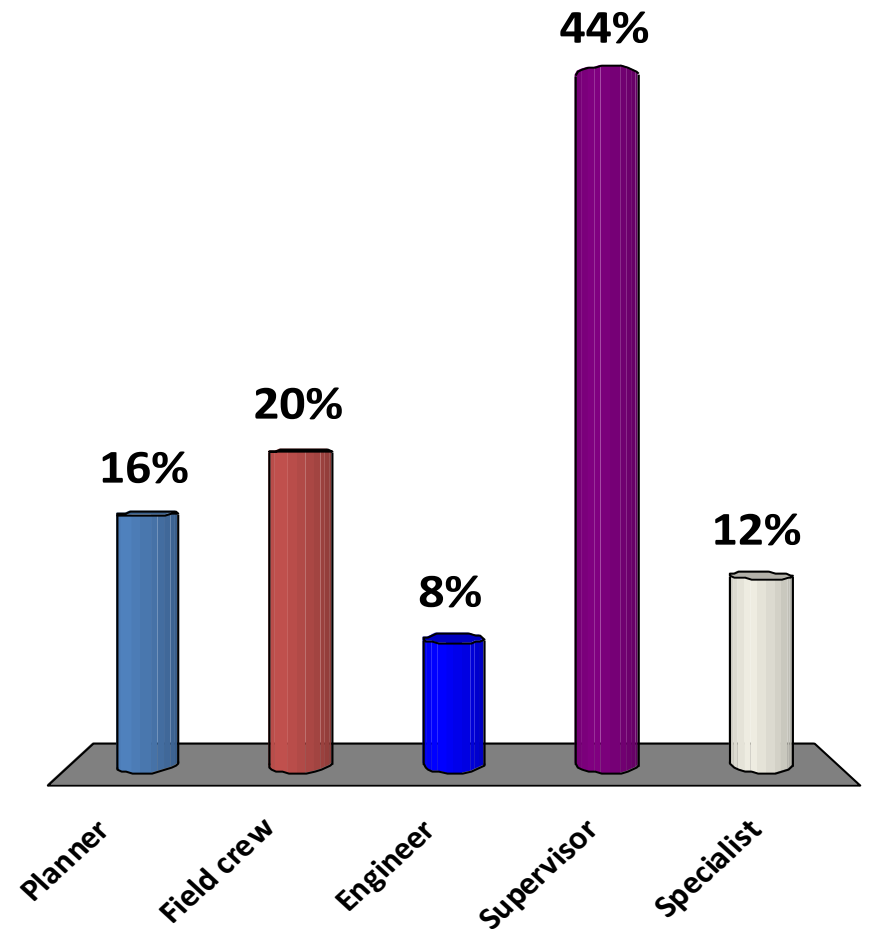
Opportunities for utilization of woody shrub material from public lands:

- Dormant plant ID
- Harvesting techniques
 - live stakes
 - whips
- Transport and storage techniques



Which one describes your position with MDNR Parks & Recreation:

1. Planner
2. Field crew
3. Engineer
4. Supervisor
5. Specialist





Day 1:

Classroom component

- lecture and small group exercises
- tour of bioengineered shorelines

DNR staff apply WI Erosion Intensity Score Sheet to shoreline stabilization scenarios.



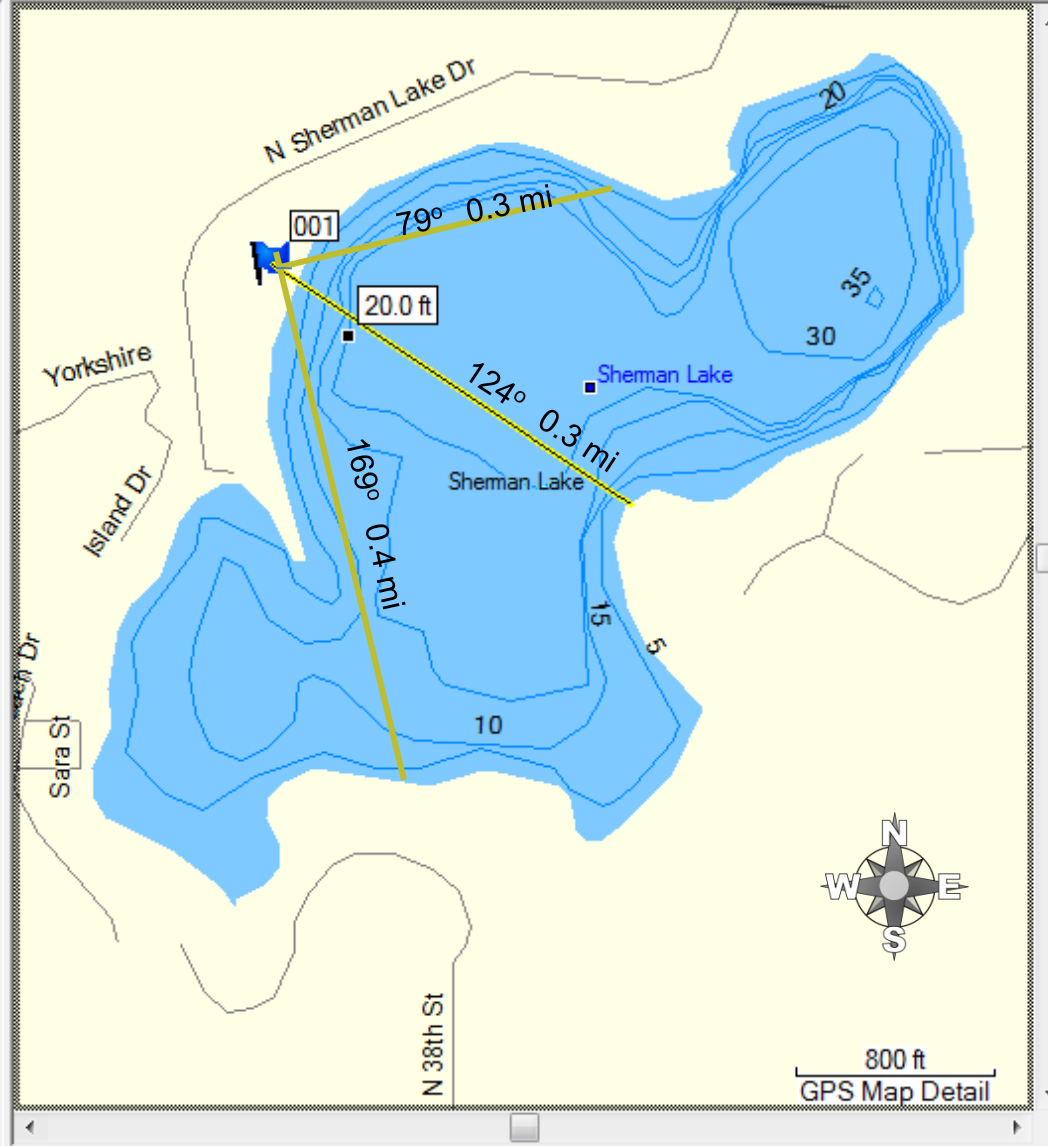
Maps Waypoints(1) Routes Tracks

Show waypoints in category:

All Categories

Name /	Symbol	Comment	Position
001		25-MAR-09 1...	N42 21.097 W85 23.636

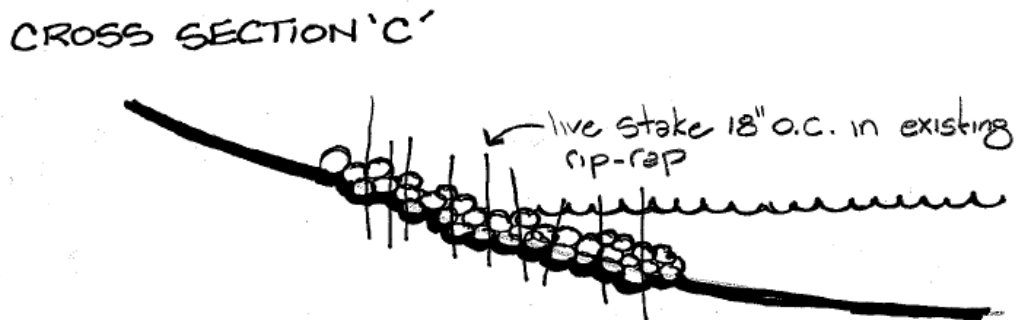
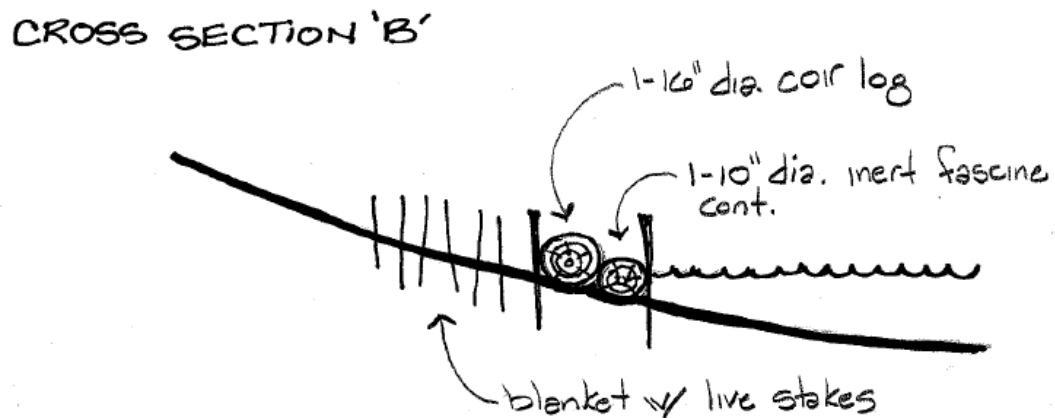
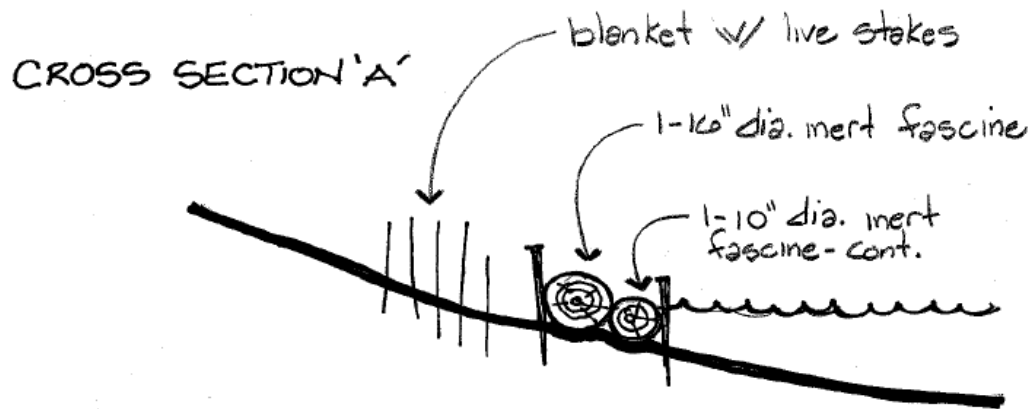
WI EI average fetch calculation





Day 2:
Field component
-install bioengineered erosion
control at DNR BAS on Sherman Lake



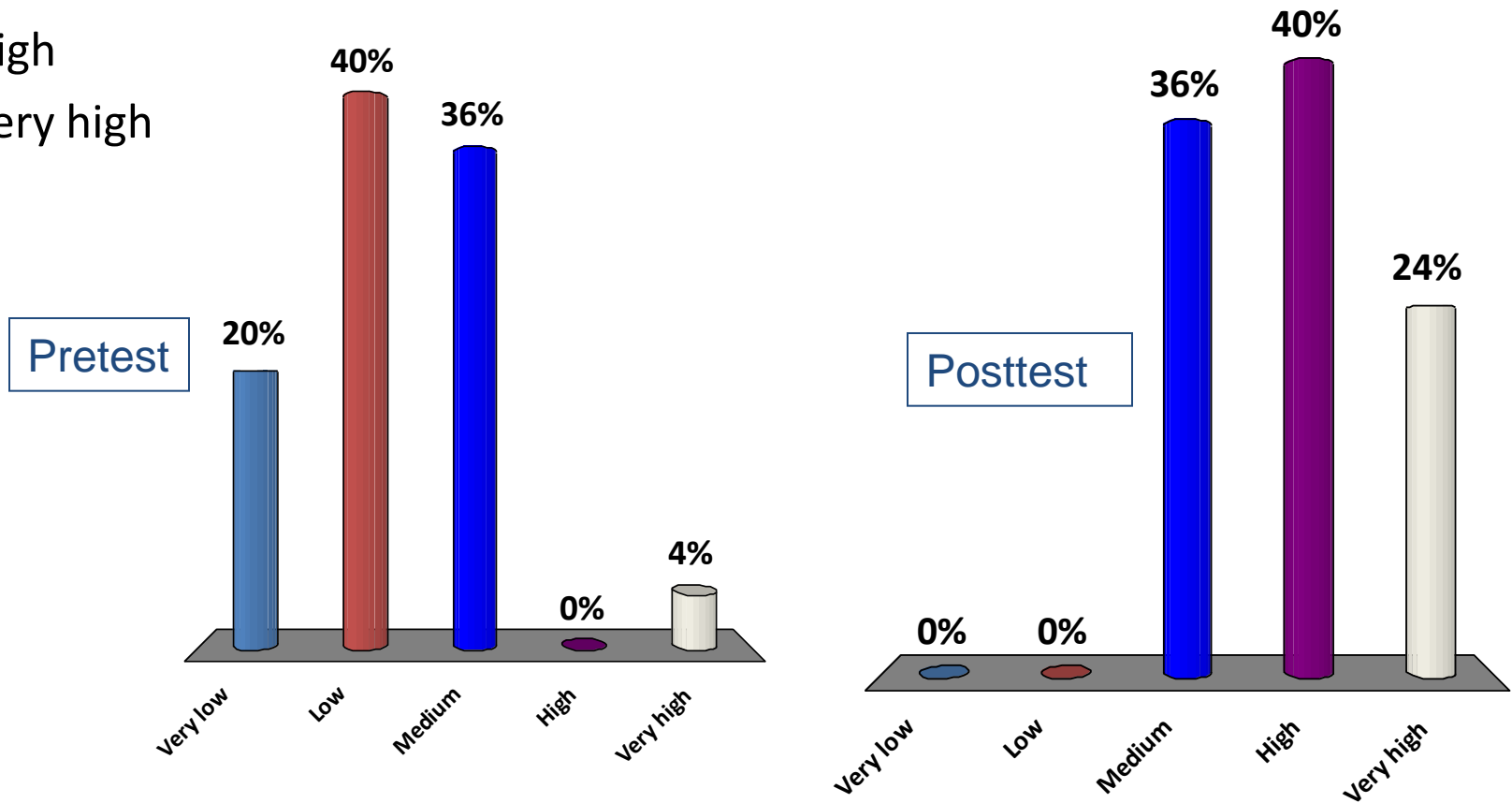


Sherman Lake BAS
April 2009



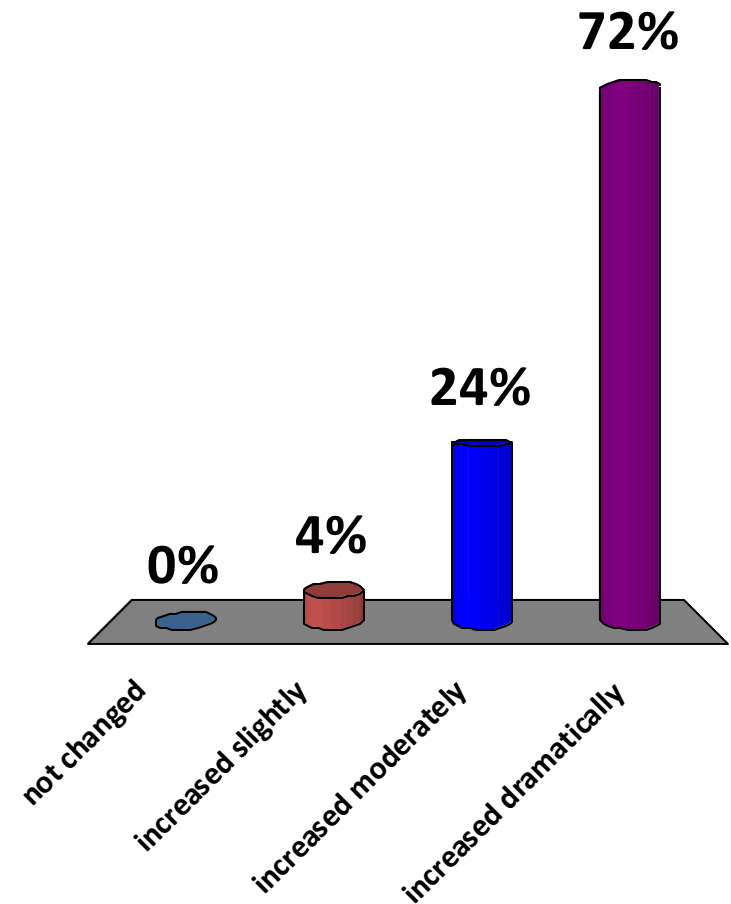
I would describe my knowledge level of bioengineered shoreline erosion control as:

1. Very low
2. Low
3. Medium
4. High
5. Very high



As a result of participation in this workshop, my understanding of bioengineered shoreline erosion control has...

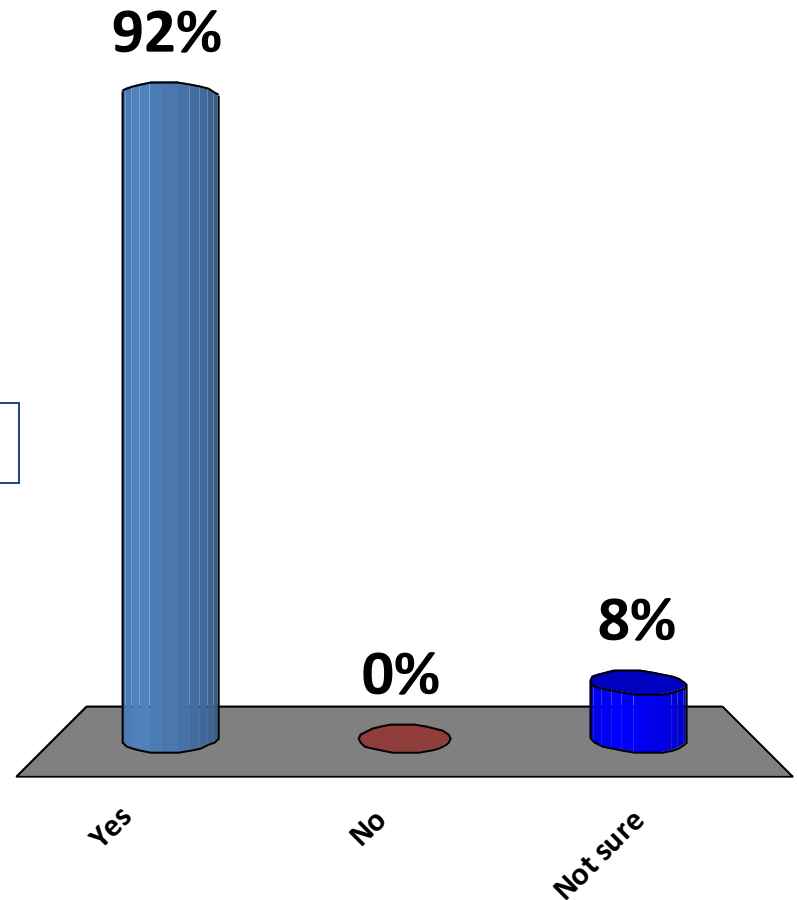
1. not changed
2. increased slightly
3. increased moderately
4. increased dramatically



I feel confident in my ability to develop a bioengineered shoreline erosion control plan.

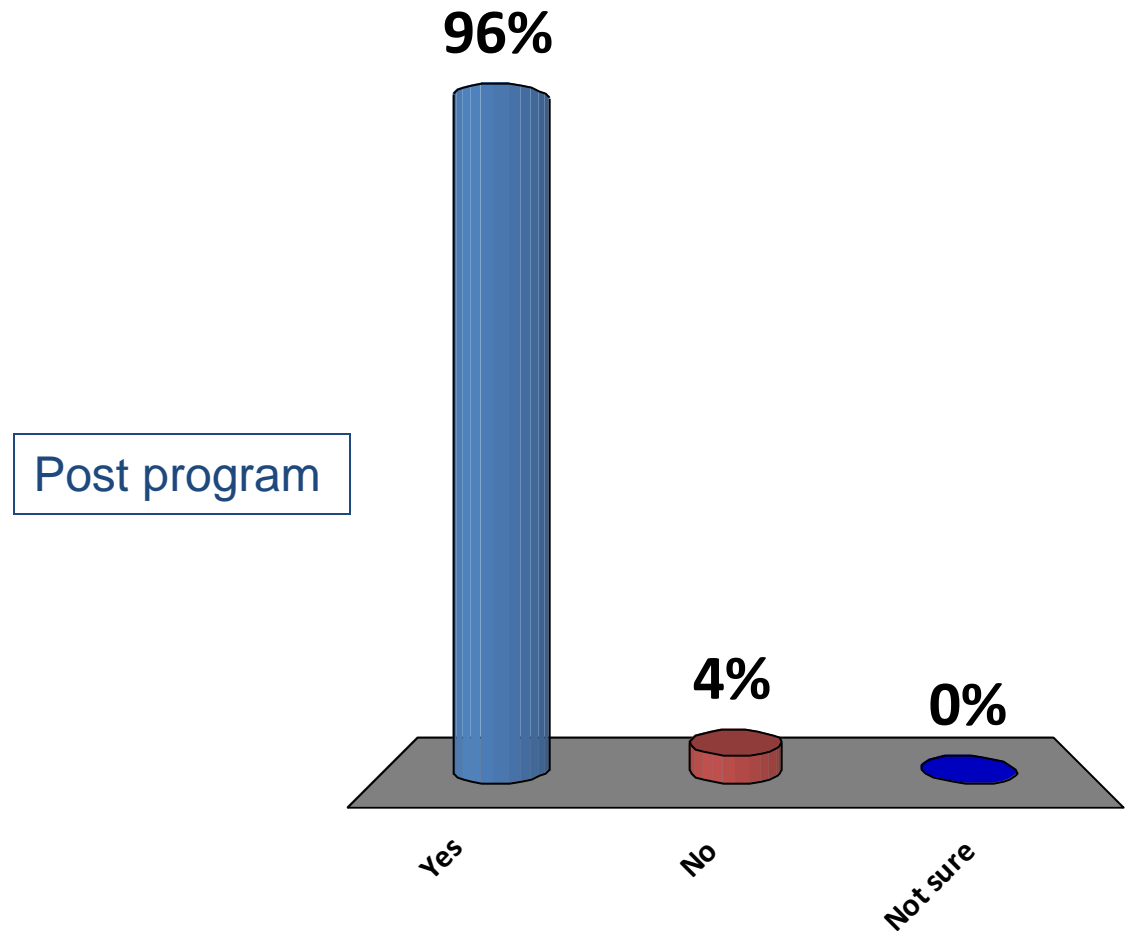
1. Yes
2. No
3. Not sure

Post program



I feel confident in my ability to implement a bioengineered shoreline erosion control plan.

1. Yes
2. No
3. Not sure





Implementation:

Fall 2009

- Austin Lake BAS redevelopment
- Planted coir log
- No-mow zone



Before

After



Before



Minocqua WI July 2000

After

DNR BAS Program cost analysis

February 23, 2010

- Rip Rap
-
- Material (12" rip rap depth, geotextile fabric) \$9.67
- Labor (grading, installation, equipment) \$22.80
- **Total \$32.47/lineal foot**
-
- Bioengineering
-
- Material (vegetated coir log, stakes, other) \$22
- Labor (installation, equipment) \$12
- **Total \$34/lineal foot**



May 2009

Summer 2009





Later summer 2009





Reed Canary Grass
in no-mow zone

Later summer 2009

Recommended monitoring and maintenance of bioengineered erosion control and no-mow zones:

- ropes and stakes
- live stake/plant replacement
- invasive species control
- upkeep of temporary fencing

March 2010



Recommendations for the future

- ▶ Revise and update Standard Operating Procedure (SOP)
 - Mowers > Monitors
 - Bioengineering
 - Invasive species control
 - Upkeep of temporary fencing
- ▶ Interpretive signage
 - Educate public
 - Educate neighbors



Questions?

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