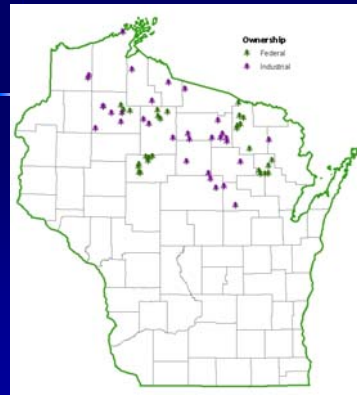


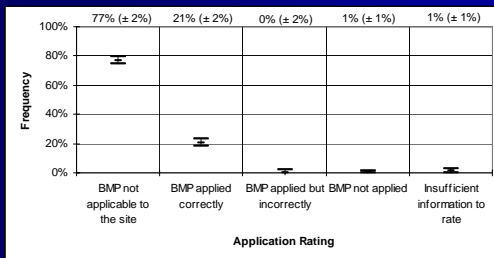
# 2006 BMP Monitoring Results

BMP Advisory Committee Meeting  
February 14, 2007

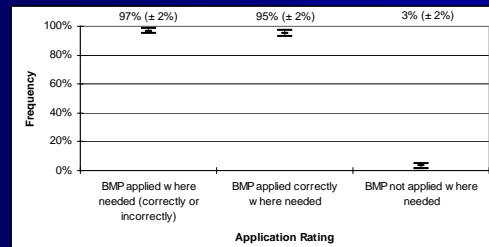


28 federal and 33 industrial timber sales were monitored

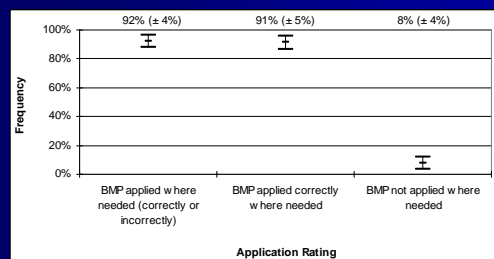
## BMP Application – Federal Timber Sales



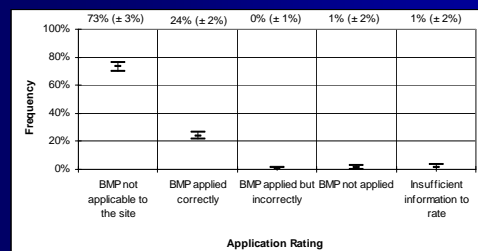
## BMP Application – Federal Timber Sales



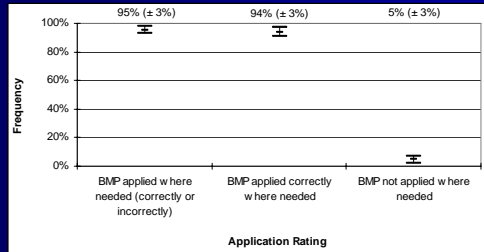
## BMP Application – Federal Timber Sales 1995-1997



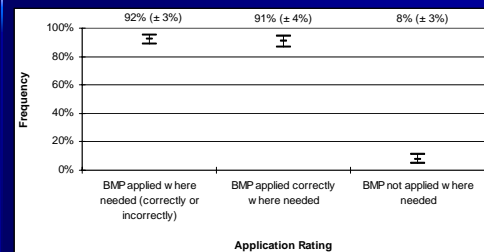
## BMP Application – Industrial Timber Sales



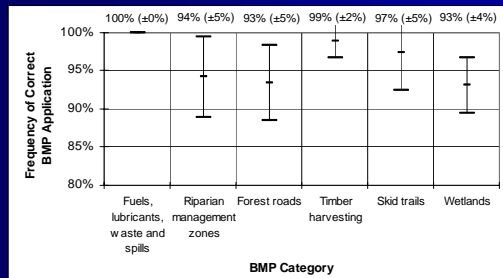
## BMP Application – Industrial Timber Sales



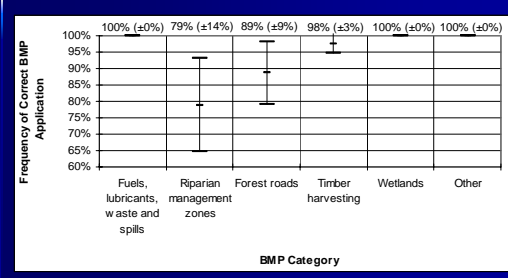
## BMP Application – Industrial Timber Sales 1995-1997



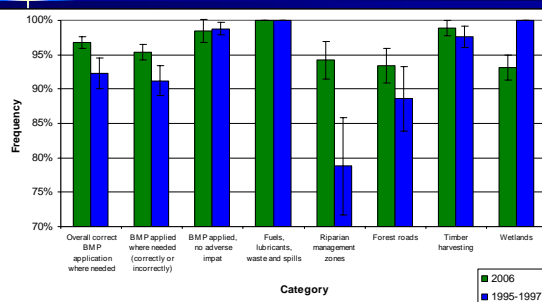
## BMP Application by BMP Category Federal Timber Sales



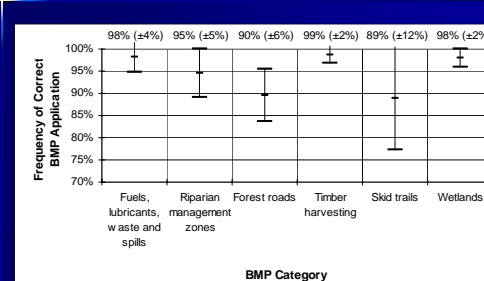
## BMP Application by BMP Category Federal Timber Sales 1995-1997



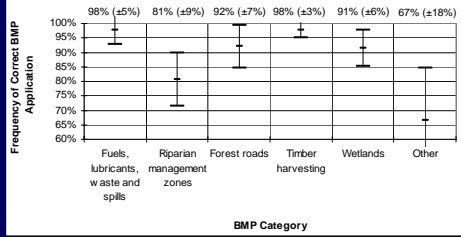
## 1995-1997 vs 2006 BMP Application Federal Timber Sales



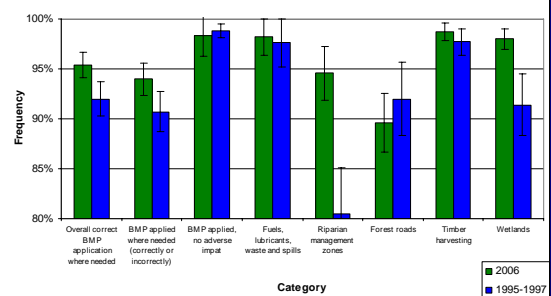
## BMP Application by BMP Category Industrial Timber Sales



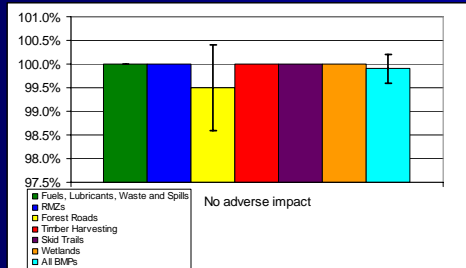
## BMP Application by BMP Category Industrial Timber Sales – 1995-1997



## 1995-1997 vs 2006 BMP Application Industrial Timber Sales

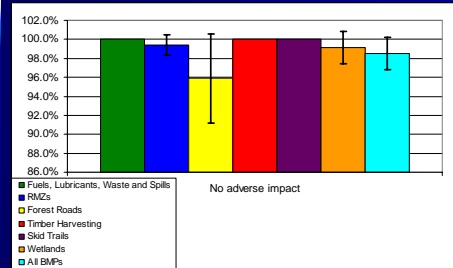


## Effectiveness Ratings Federal Timber Sales



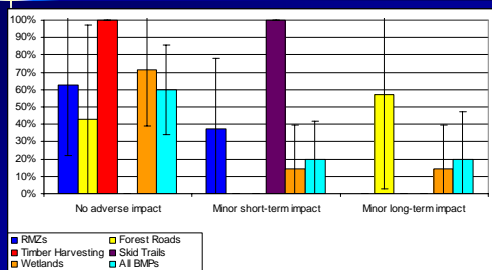
When BMPs were applied correctly where needed

## Effectiveness Ratings Federal Timber Sales



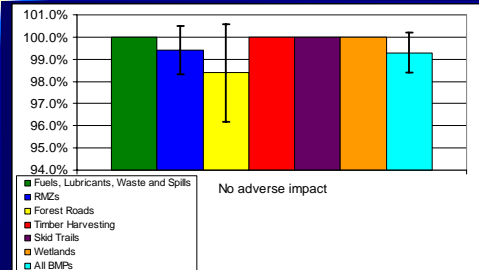
When BMPs were applied where needed (correctly or incorrectly)

## Effectiveness Ratings Federal Timber Sales



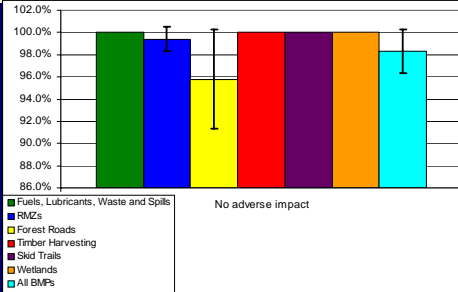
When BMPs were not applied where needed

## Effectiveness Ratings Industrial Timber Sales



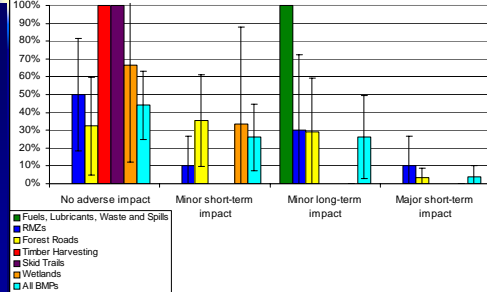
When BMPs were applied correctly where needed

## Effectiveness Ratings Industrial Timber Sales



When BMPs were applied where needed (correctly or incorrectly)

## Effectiveness Ratings Industrial Timber Sales



When BMPs were not applied where needed

Monitoring Report  
to be Completed  
Mid March!!!



## Forestry BMP Monitoring Protocol Options

February 14, 2007



## December Meeting Results

- Continue to gather data that can be compared to past results
- Investigate options with FS Regional Protocol
- Transition from a paper-based monitoring system to an e-based system



## Progress Since December

- FS will not allow us to “hybridize” Regional Protocol – must use “as is”
- Written proposal for transitioning paper-based WI BMP monitoring protocol
- Proposal priorities determined in March 2007 in FLT



## WI BMP Proposal

- Shift from paper-based to electronic-based
- Use data recorders and standardized databases and analysis programs
- Initial investment in time, equipment and program design
- Savings in staff time
- Consistent data storage and analysis



## Options for FS Regional Protocol

- Integrate into one system with WI protocol
- Have BMP teams monitor with both systems
- Have BMP teams designated for each system
- Have BMP staff monitor when field checking sales for BMP teams



## FS Regional Monitoring Pluses

- E-based
- Can be used with smaller teams
- Requires less subjective decision-making
- “Automatically” generates reports/charts
- Allows regional comparisons



## FS Regional Monitoring Minuses

- Doesn't report on a statically valid scale
- Doesn't provide feedback to individual foresters
- Is not "approved" software at DNR

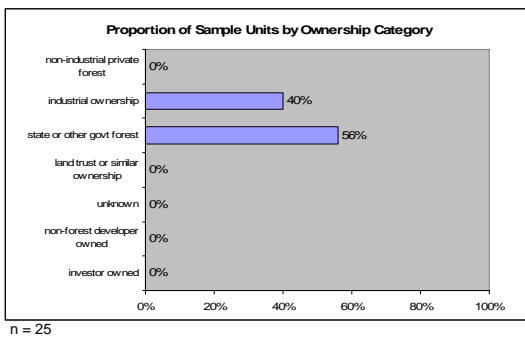


## Results from Regional Exercise

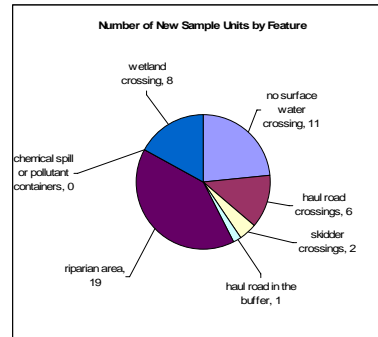
- Sampled 21 different sales with 25 sample units
- Have analysis results from regional protocol
- Waiting on results from WI protocol
- Working on report to discuss 2 methods and compare results



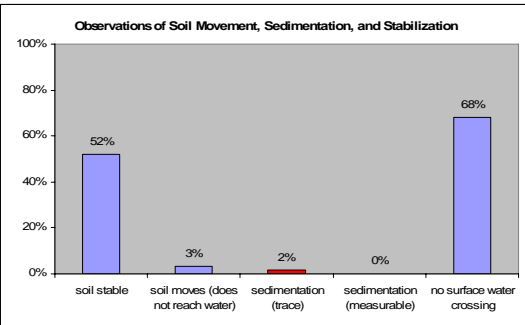
## Ownership Category



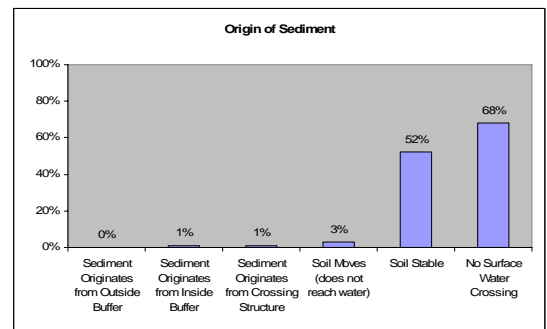
## Overview of Sample Units



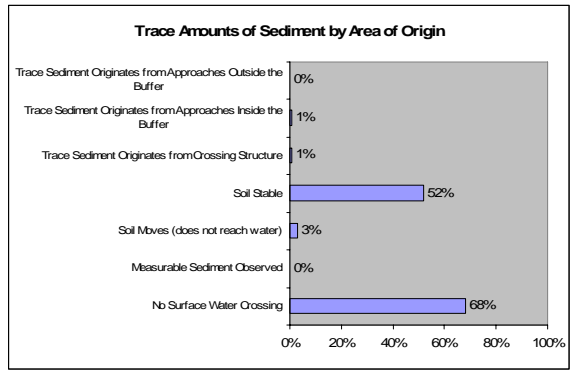
## Soil Movement, Sedimentation & Stabilization



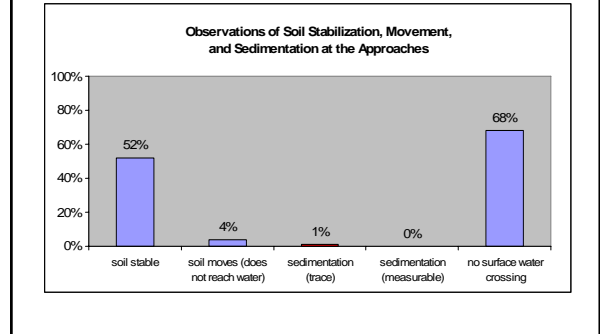
## Sedimentation by Area of Origin



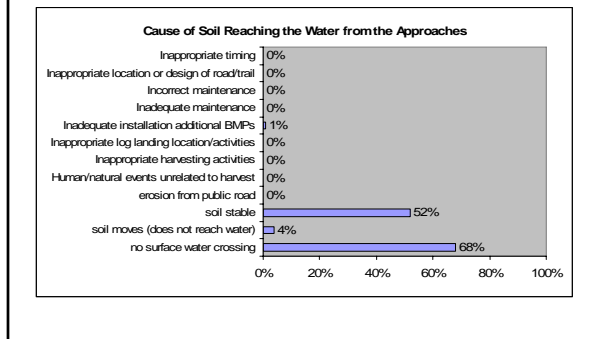
## Trace Sediment Areas of Origin



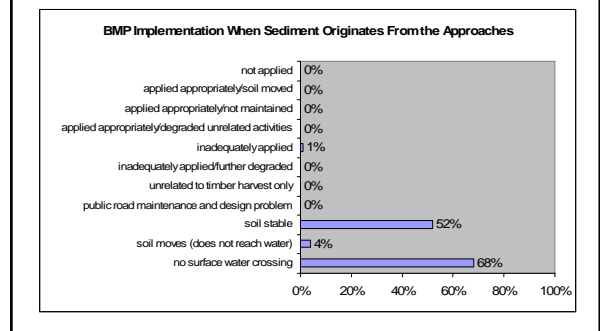
## Approaches



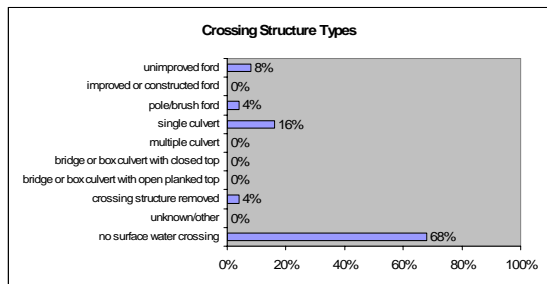
## Cause of Soil from Approaches



## BMP Implementation on Approaches

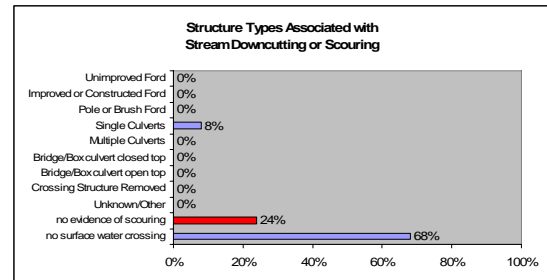


## Crossing Structures



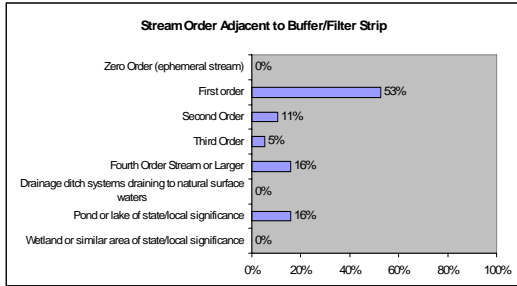
Of 25 sample units, 8 had stream crossings.  
For skid trails, there were 2 crossings and for haul roads, there were 6 crossings.

## Scouring



- There are 2 observations of stream downcutting or scouring within 100 feet of the outlet end of the structure.
- 6 sample units show no evidence of stream downcutting or scouring within 100 feet of the outlet end of the structure.
- n = 25

## Riparian Area Analysis

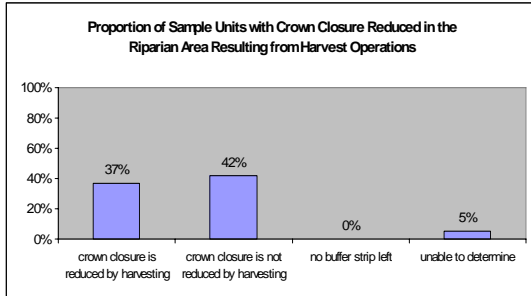


n = 19

## Shade Reduction & Basal Area

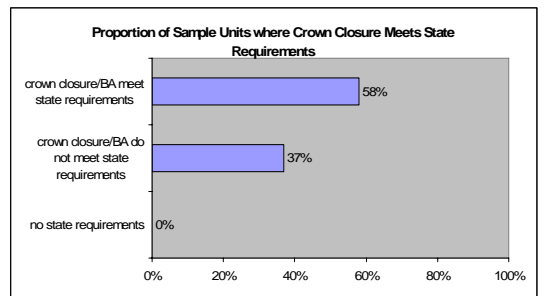
Crown Closure (percent)	
Average	65
Minimum	1
Maximum	98
Basal Area (square feet)	
Average	66
Minimum	2
Maximum	112
Diameter of Largest Riparian Leave Tree	
Average	13
Median	14

## Crown Closure Reduction



n = 19

## State BA Requirements

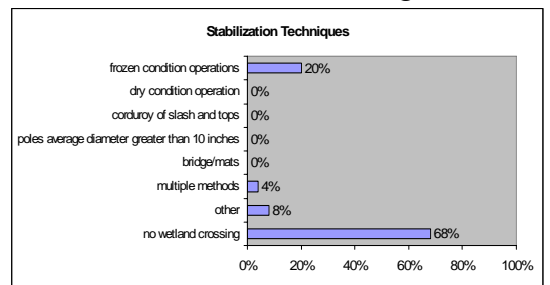


n = 19

## 16,760 Feet of RMZ Monitored in 19 Units

Rills, Gullies, Sediment Trails	
total number of times rills, gullies, or sediment trails resulting from the harvest operation reach more than halfway across the buffer/filter strip	0
Naturally Occurring Large Woody Debris (LWD)	
number of pieces of naturally occurring LWD in the water body	254
number of pieces LWD per 1000 feet of buffer monitored	15.155
Large Woody Debris (LWD) – Harvest Related	
number of pieces of LWD occurring in the water body as a result of the harvest	589
number of pieces of LWD per 1000 feet of buffer monitored	35.143

## Wetland Crossings

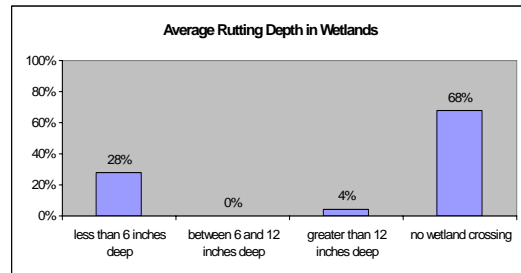


- 8 sample units had a wetland crossing

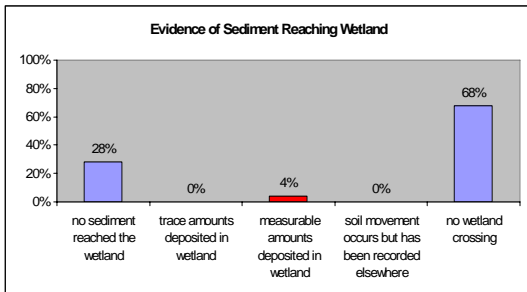
## Wetland Crossing Length from Upland to Upland

	Length (feet)
<b>Average</b>	287
<b>Median</b>	300
<b>Maximum</b>	500

## Wetland Rutting



## Sediment Deposition in Wetland



- 10 cubic yards of sediment reached wetland at 1 crossing

## Options for FS Regional Protocol

- Integrate into one system with WI protocol
- Have BMP teams monitor with both systems
- Have BMP teams designated for each system
- Have BMP staff monitor when field checking sales for BMP teams





## 2007 BMP Monitoring Options

February 14, 2007

## Potential Staff Workload

- Completing WI BMP Monitoring Transition to E-based System
- Completing Report on Comparison of WI & FS Monitoring Protocols
- Completing Analysis & Report of 1995 – 2006 data
- Updating Text of BMP Manual (not BMPs)



## Options for 2007 Monitoring

- Don't Monitor
- Monitor 1 Landowner Category
  - DNR: 2003
  - County: 2003
  - Federal: 2006
  - Industrial: 2006
- Monitor with WI Protocol
- Monitor with WI & FS Protocol



## Future Monitoring Cycles

- 4-Year Proposal
  - Year 1: NIPF (snapshot report)
  - Year 2: State and County (snapshot report)
  - Year 3: Federal and Industrial (snapshot report)
  - Year 4: Summary Report
- Begin in 2008
- Monitor with WI & FS systems

