

# Forestry BMP Use and Effectiveness in Maine

## Non-Point Source Pollution Conference

Keith Kanoti

Portland ME

May 18, 2009

# A BMP History

Principles of water resource protection

- Documented by forestry research 1940

Clean Water Act

- Sites BMP's as means of NPS control
- Requires state BMP manuals
- Provides "Silvicultural Exemption" to permit requirement if BMP's are used

Prior State BMP monitoring Efforst were

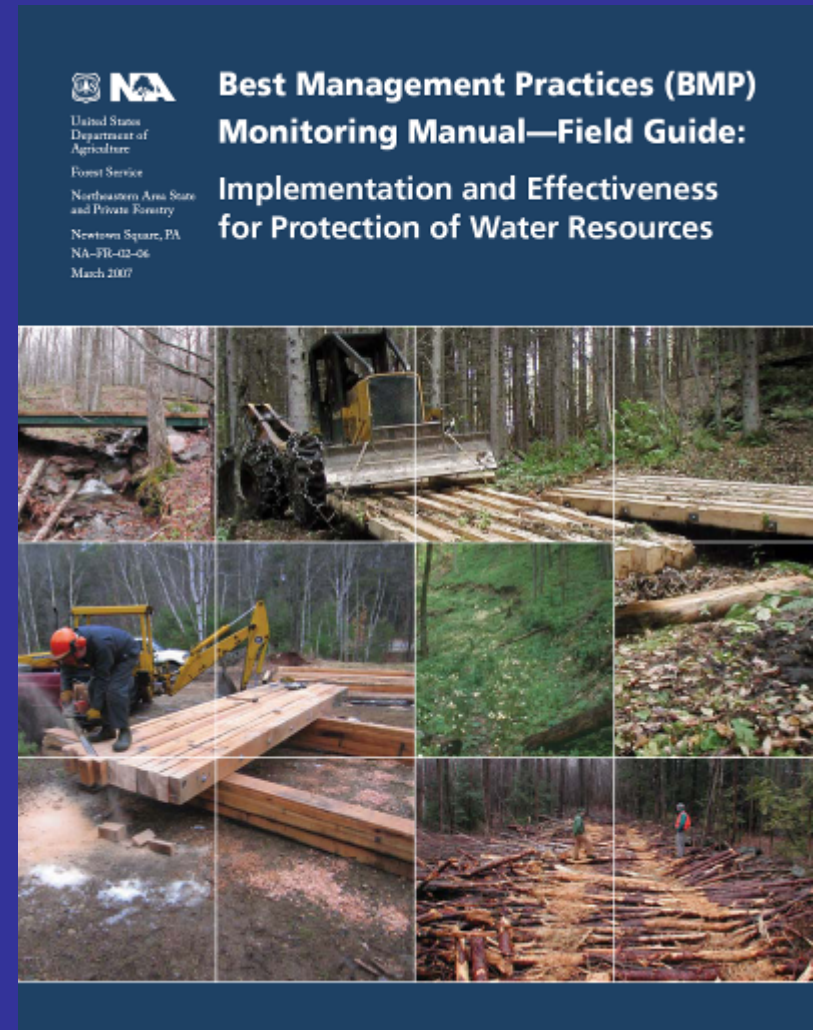
- Sporadic, anecdotal, practice focused

# BMP History

- EPA, responding to litigation attacking the silvicultural exemption, sites a need for:
  - Measured evidence vs anecdotal reports
  - Consistent baseline information
  - Comparability among states

# Northeast Regional Protocol

- Based on principles of water resource protection
- Standardizes monitoring method for comparability among states
- Relies on measurable evidence as opposed to anecdotal assessment
- Assess effectiveness not the installation of individual practices



# Benefits

- Documents CWA compliance with standard report to EPA
- Records measurable evidence to respond to criticism
- Identifies potential improvements facilitating focused training
- Permits State Forester control of BMP specs, monitoring team, sample design and quality control
- Permits logger selection of efficient, economical practices based on effectiveness not rules

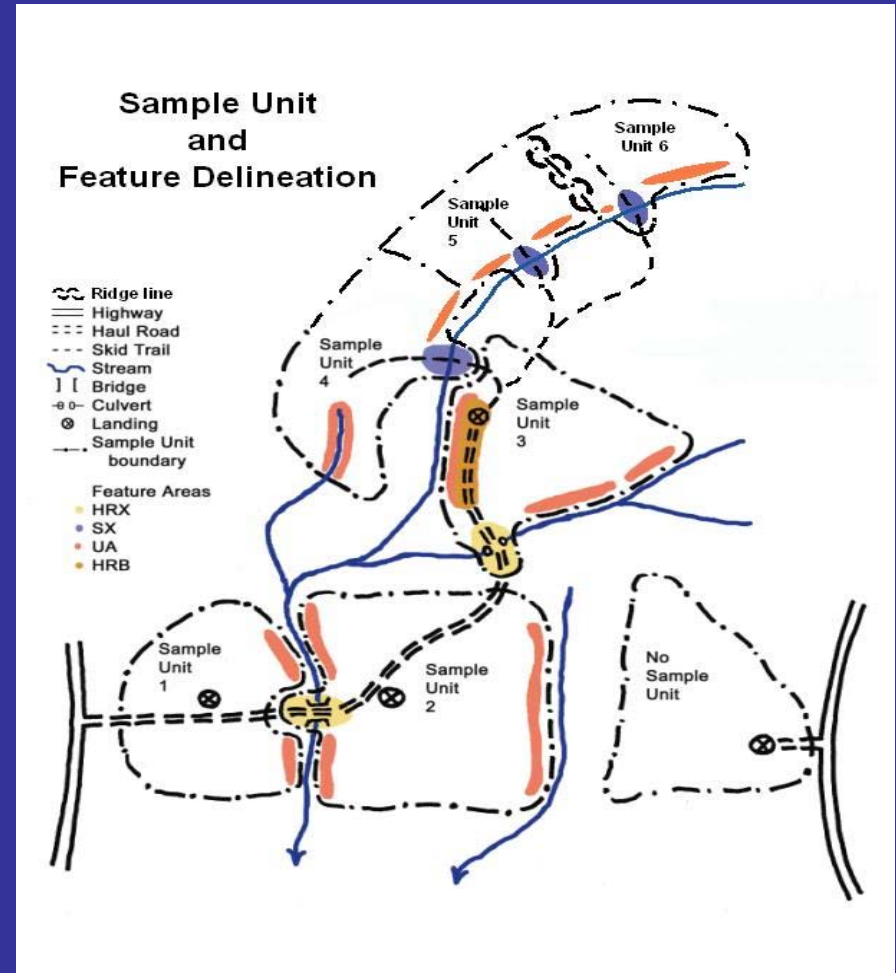
# Accuracy & Efficiency

Identify discrete  
Sample Units

Eliminate averaging  
of conditions

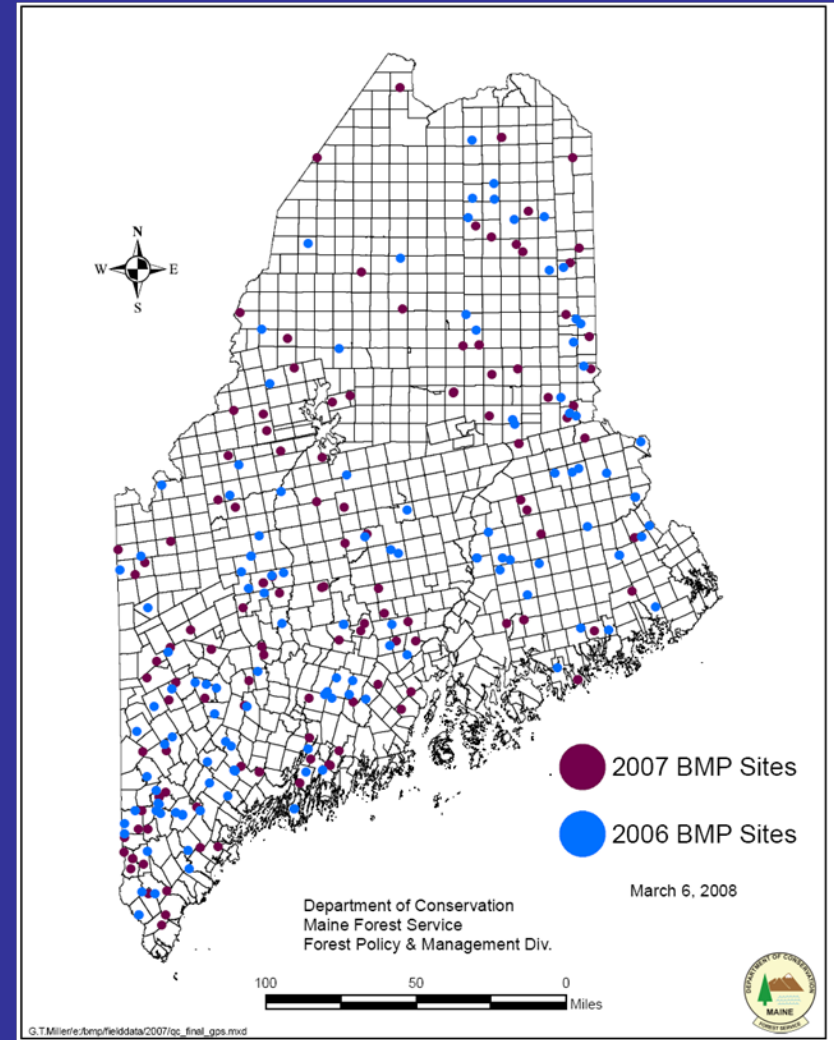
Measure evidence

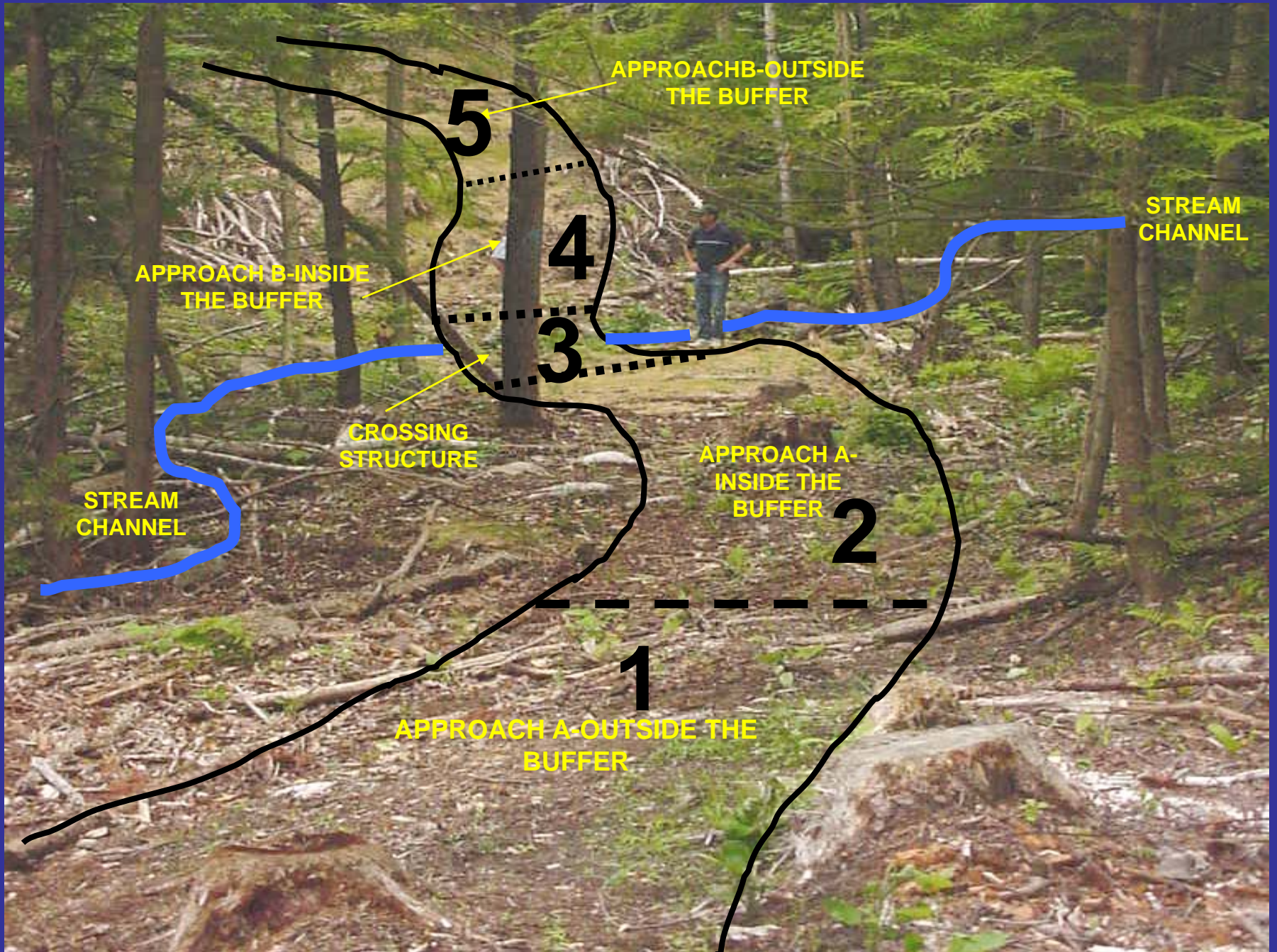
Focus on areas of  
greatest potential  
impact water quality.



# Data collection 2006-2007

- Used Best Management Practices Implementation Monitoring Protocol
- 252 Sites Evaluated
  - 1260 opportunities to observe soil movement





APPROACH B-OUTSIDE THE BUFFER

5

STREAM CHANNEL

APPROACH B-INSIDE THE BUFFER

4

STREAM CHANNEL

CROSSING STRUCTURE

3

APPROACH A-INSIDE THE BUFFER

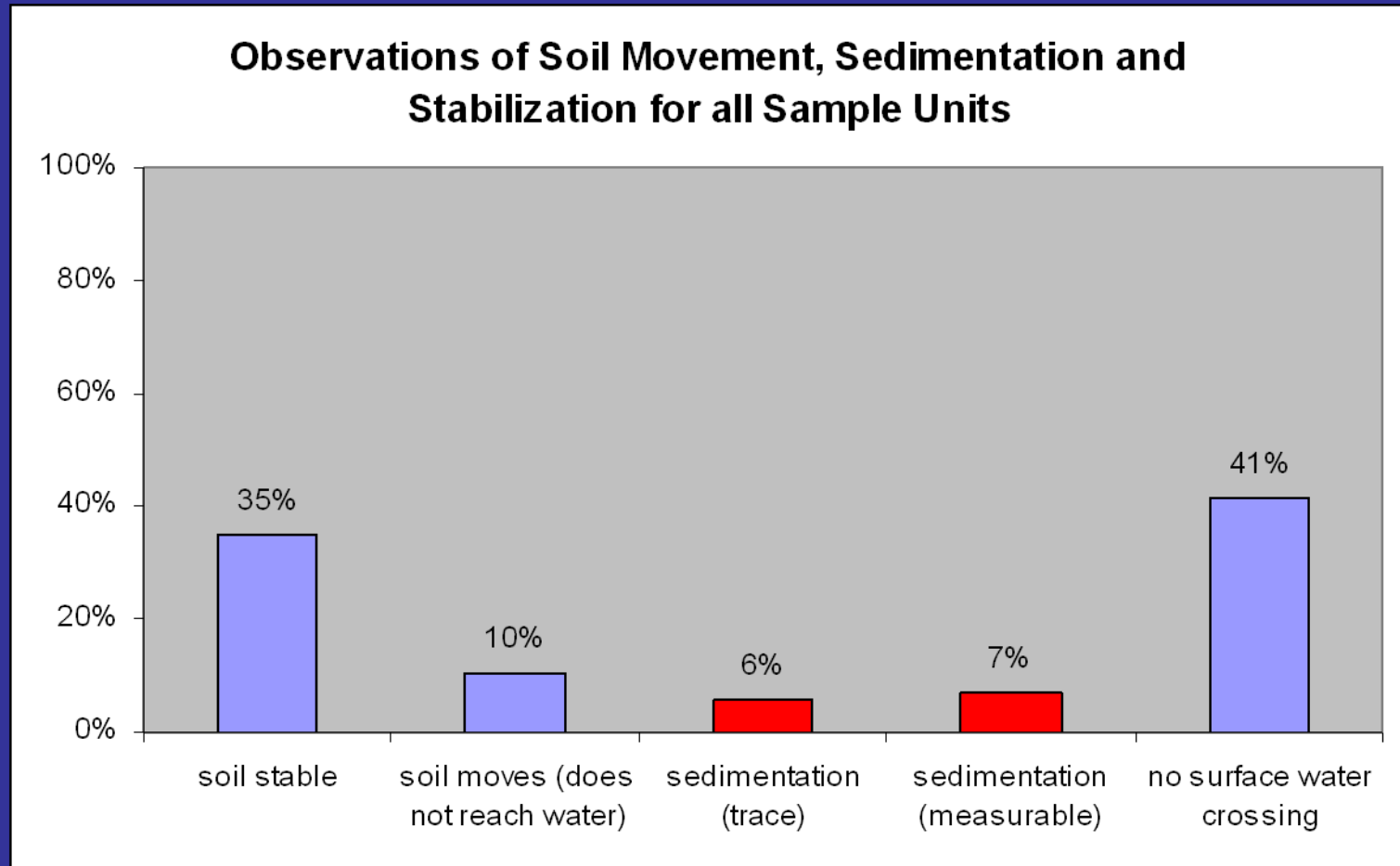
2

1

APPROACH A-OUTSIDE THE BUFFER

# The Big Picture

**87% of observations showed no sediment reached a waterbody**



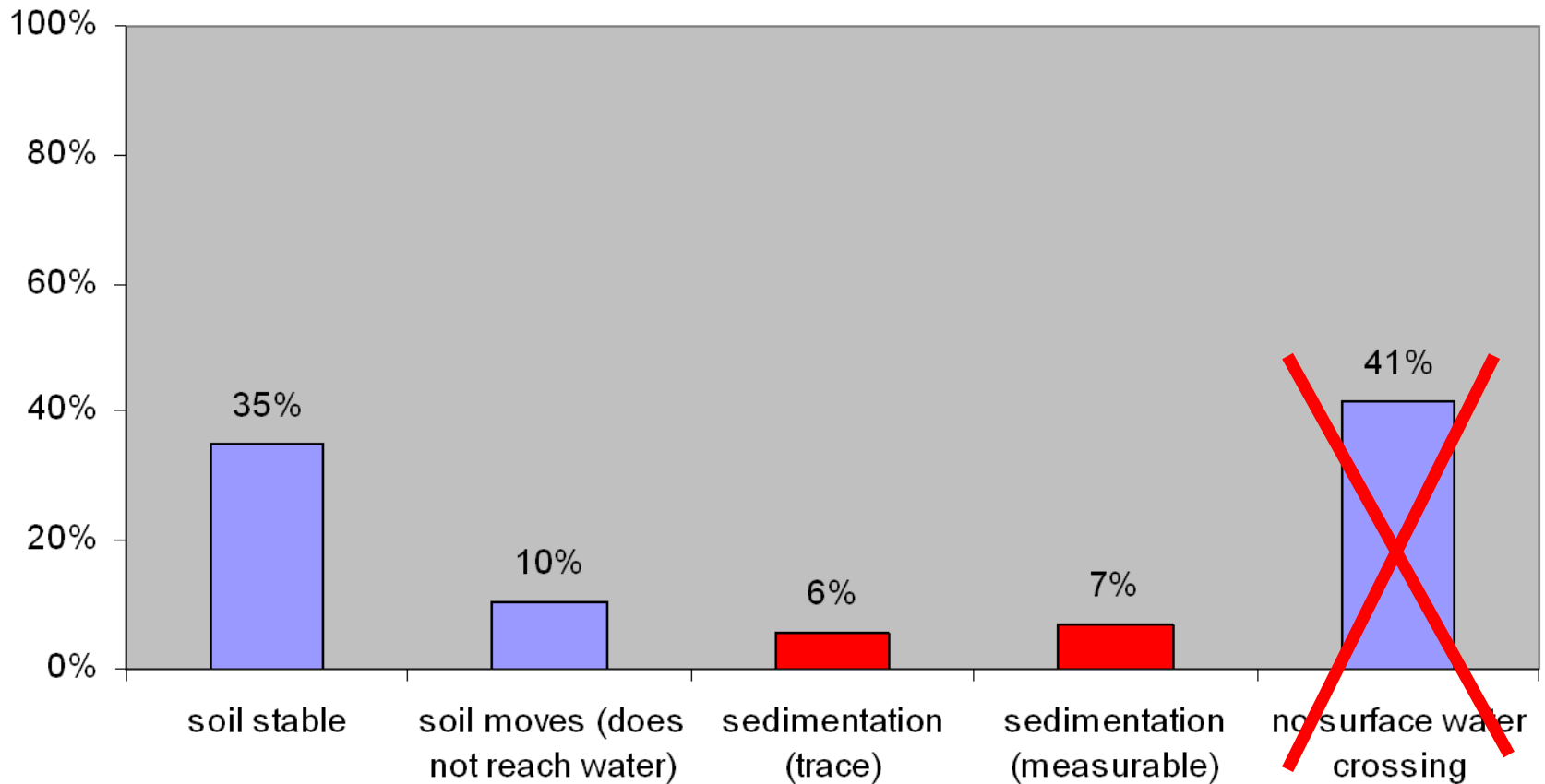
# BMP Implementation

- **77% of observations had properly implemented BMPs**
  - Unchanged from 2005 (79%)
- **BMPs were not applied on 4% of crossings**
- **BMPs were not applied at 2% of approaches**
  - Similar levels to 2005



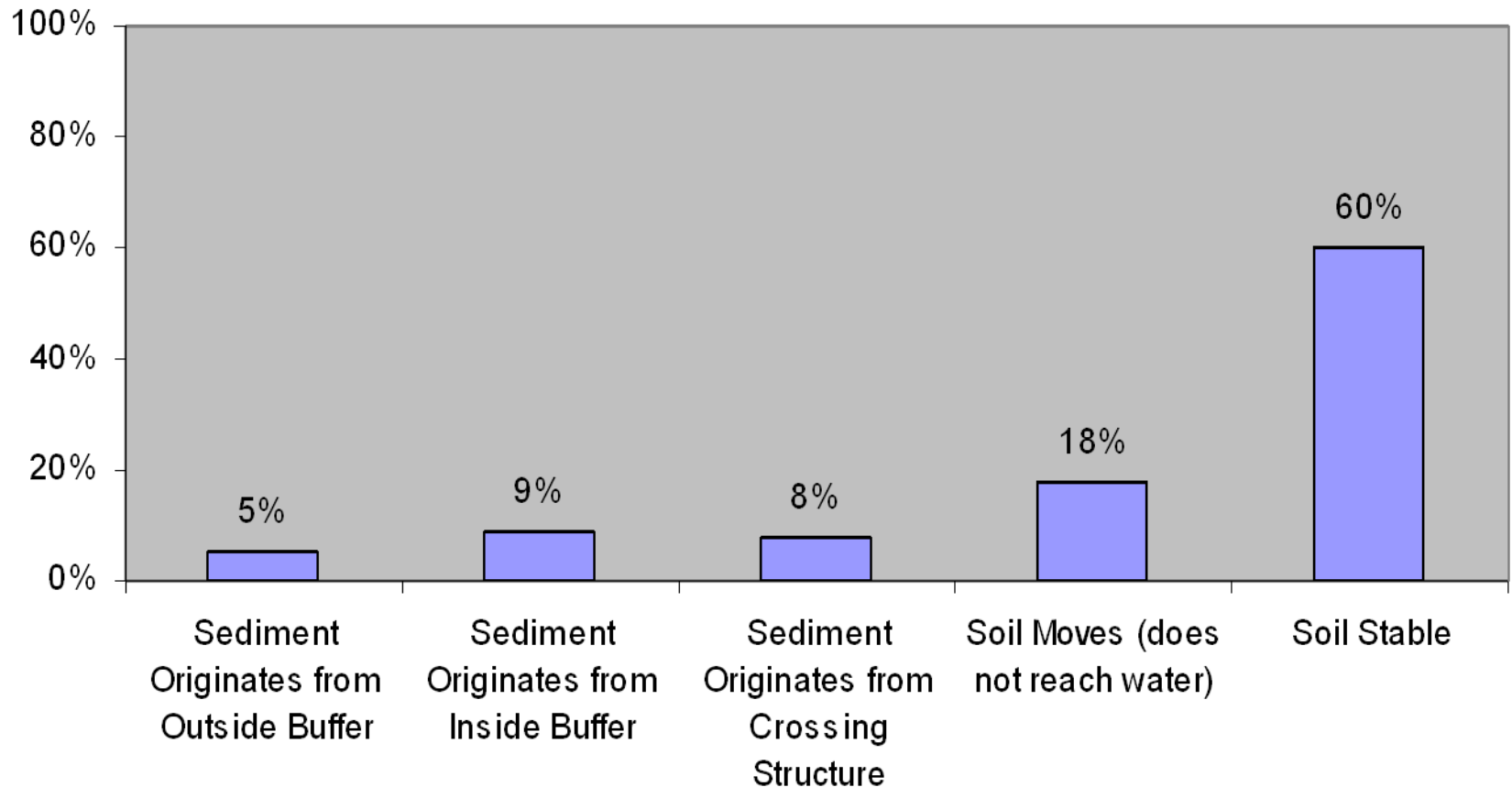
# The Finer Picture

Observations of Soil Movement, Sedimentation and Stabilization for all Sample Units

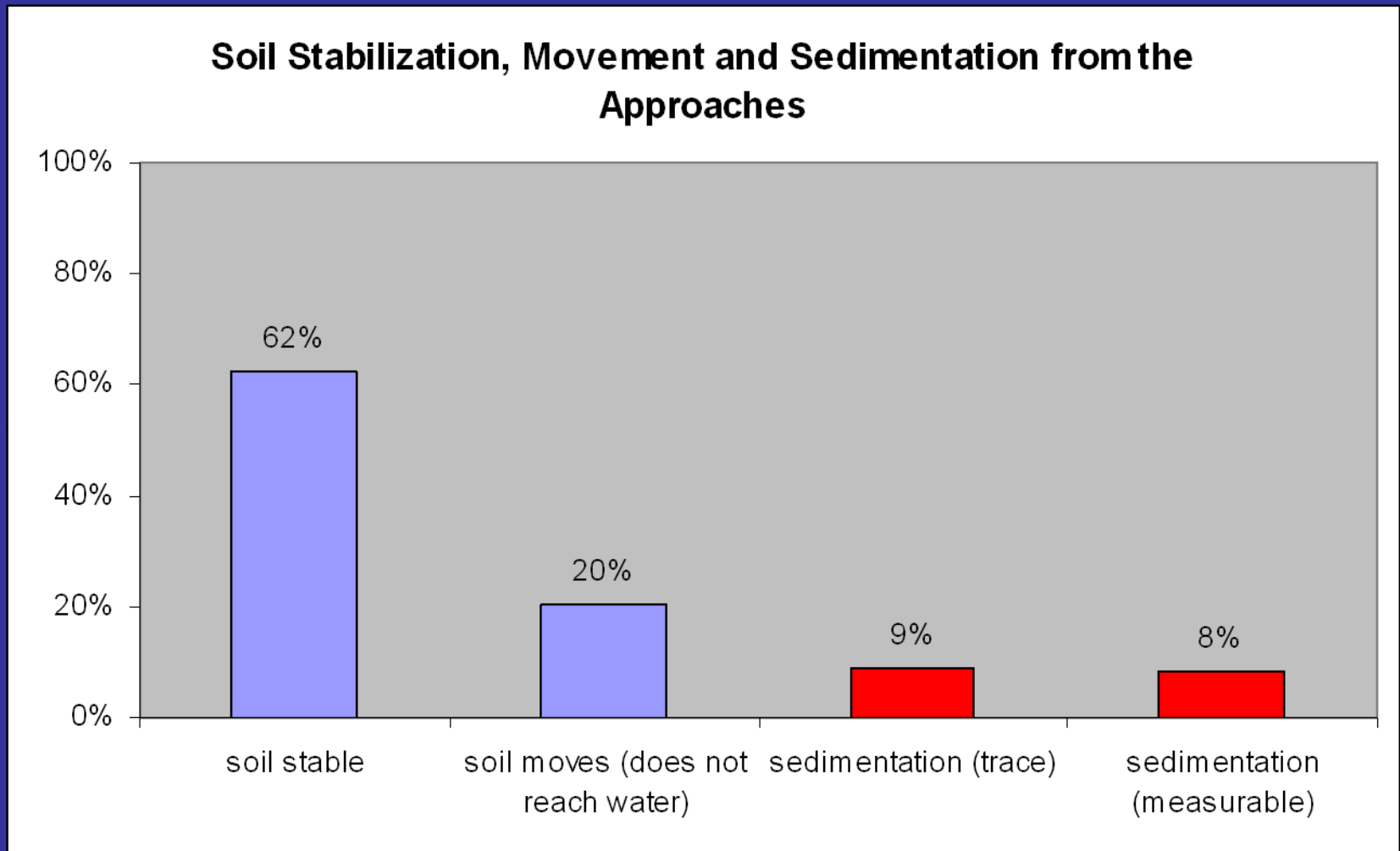


# Where is sediment coming from?

**Soil Stabilization and Origin of Sediment**

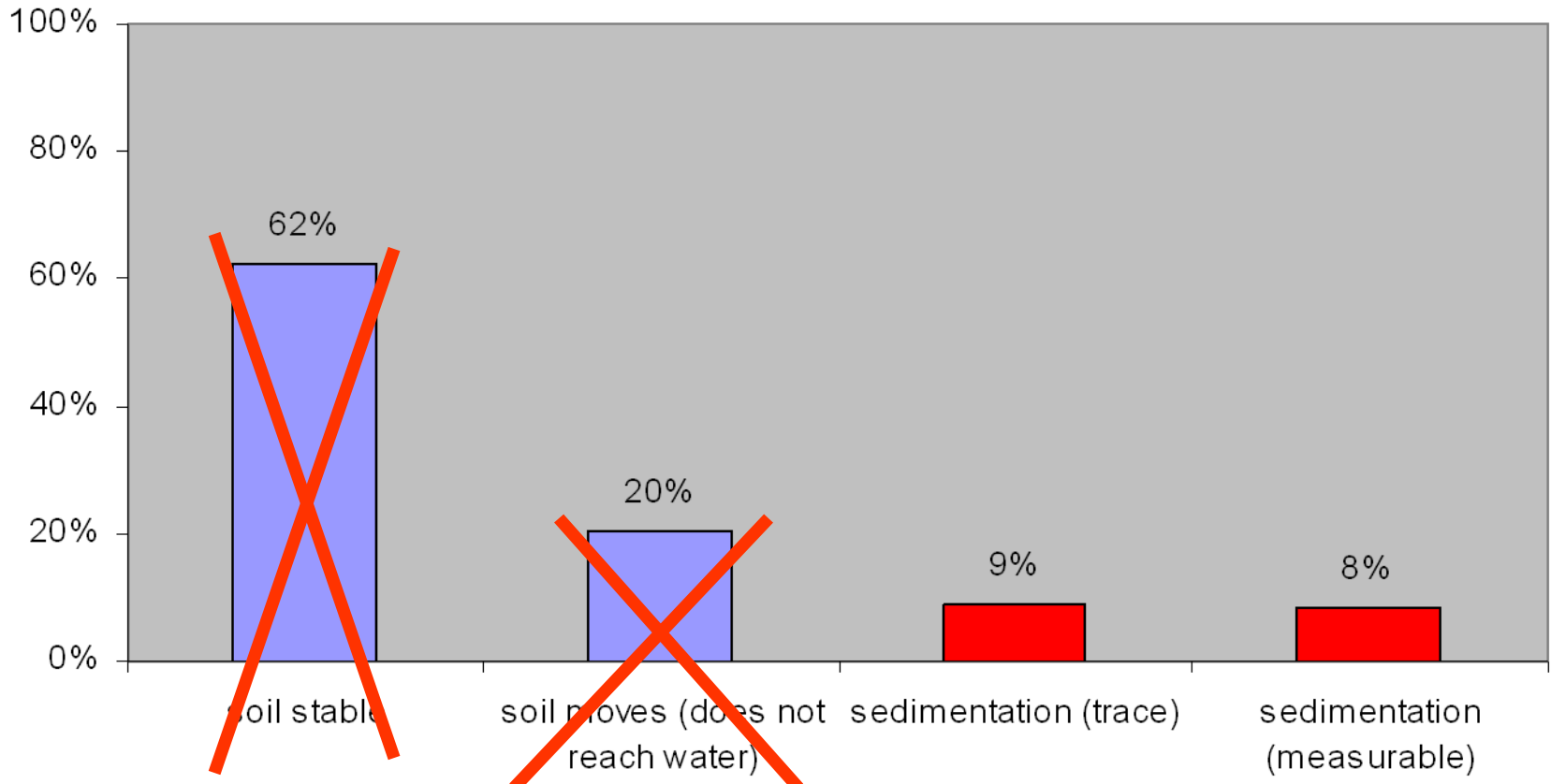


# How much from the approaches?



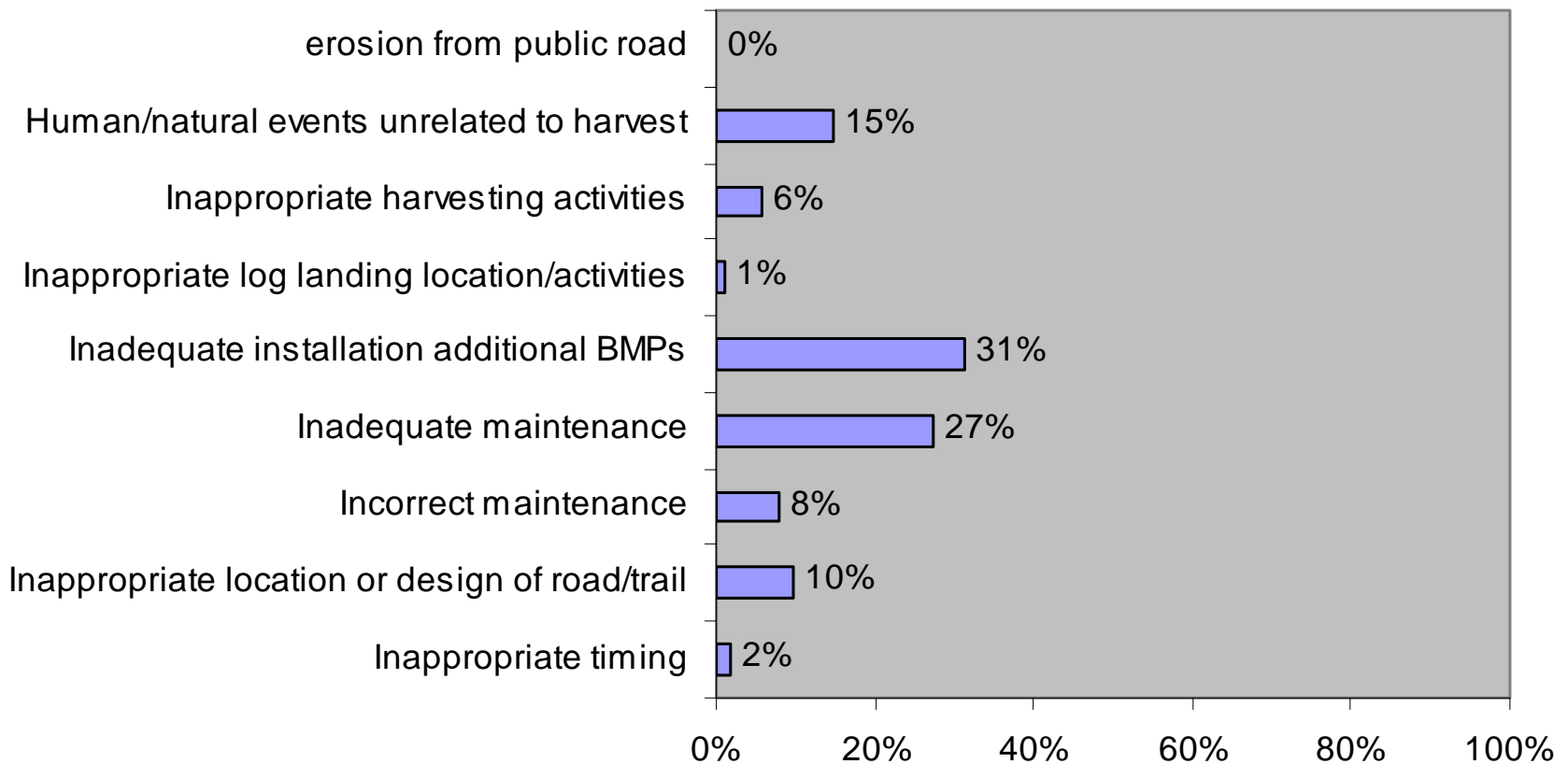
# An even finer picture

**Soil Stabilization, Movement and Sedimentation from the Approaches**



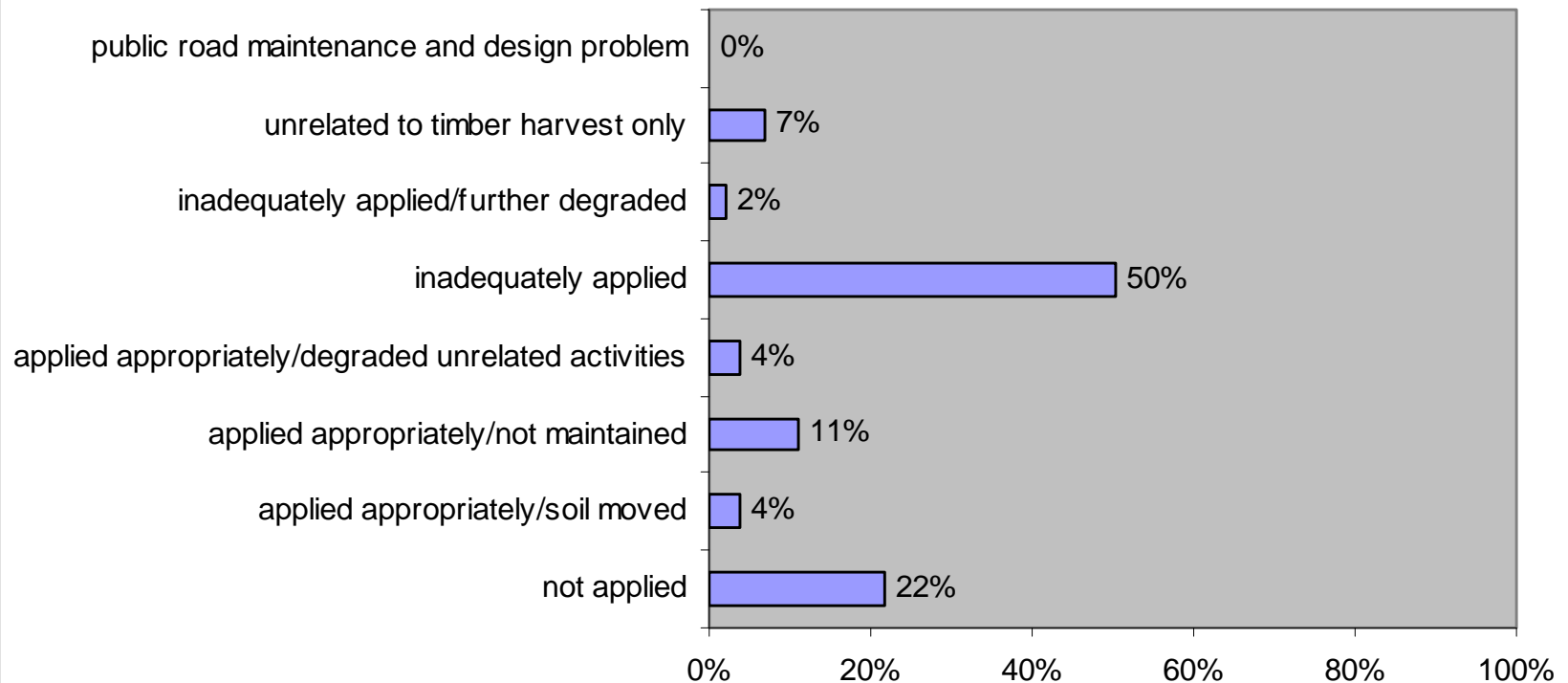
# Cause of Sedimentation from approaches

## Cause of Soil Reaching the Water from the Approaches



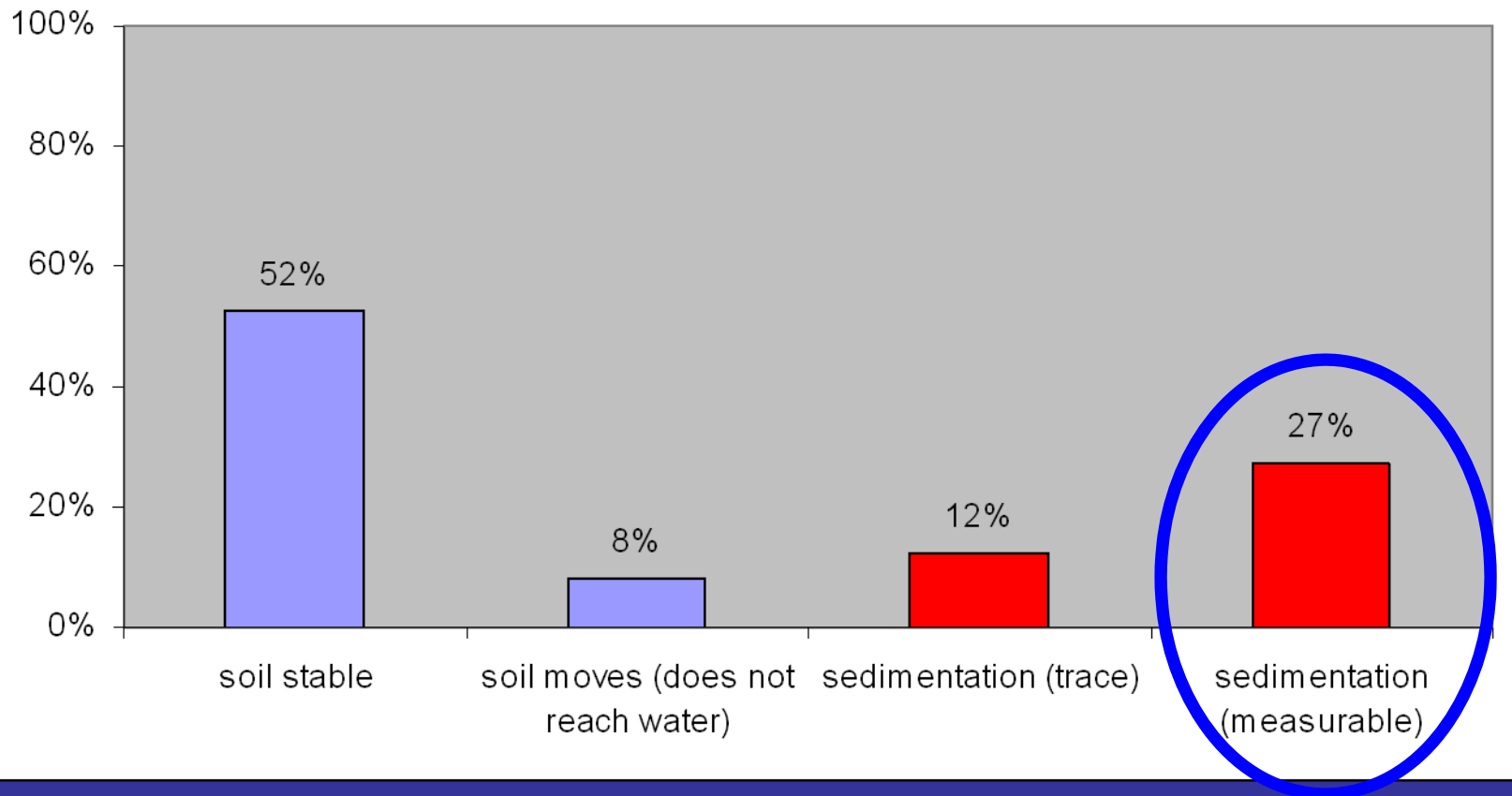
# BMP application when there was sedimentation from the approaches

**BMP Implementation When Sediment Originates from the Approaches**



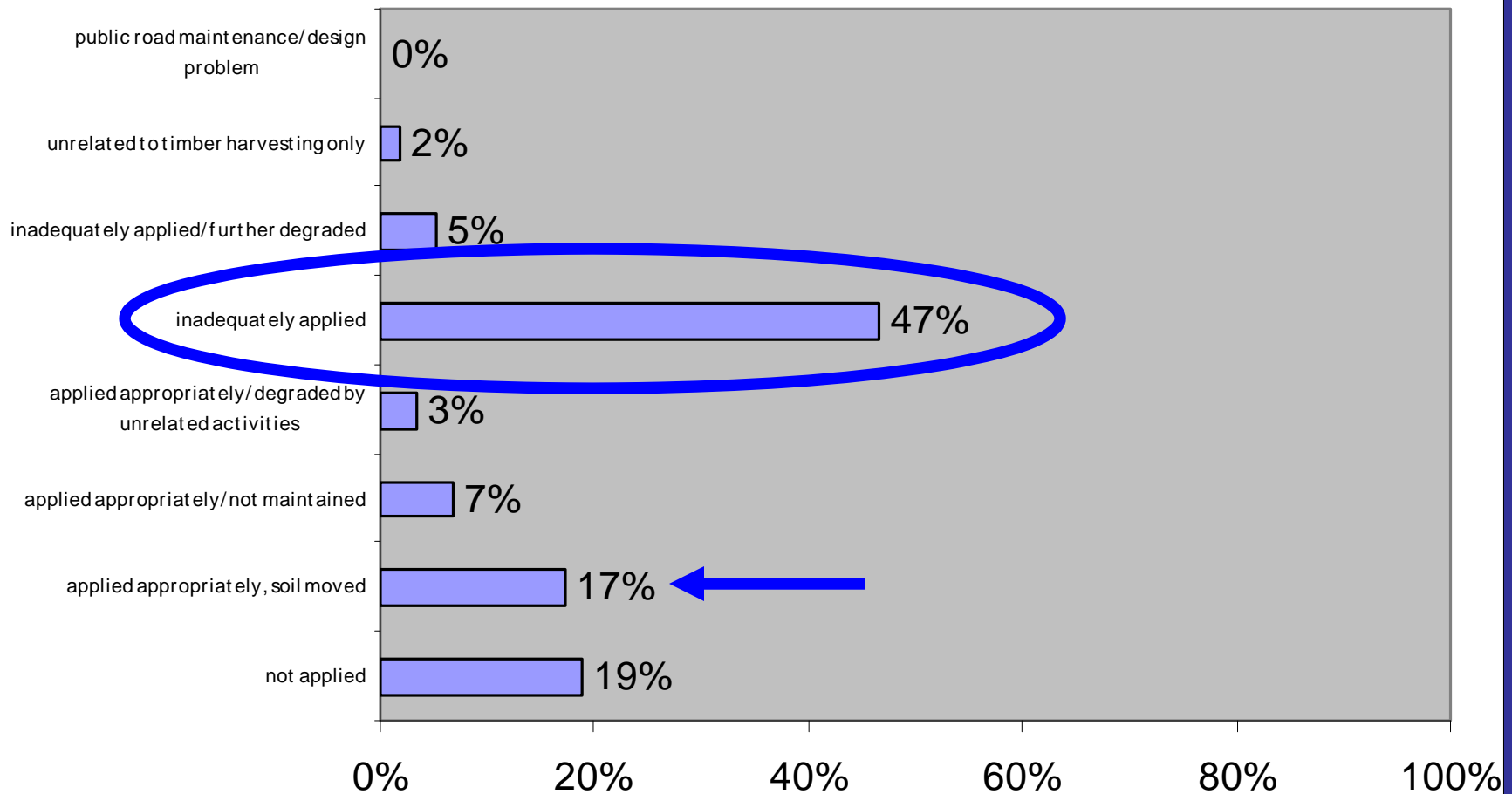
# How much from the crossing?

**Soil Stabilization, Movement and Sedimentation from the Crossing Structure**



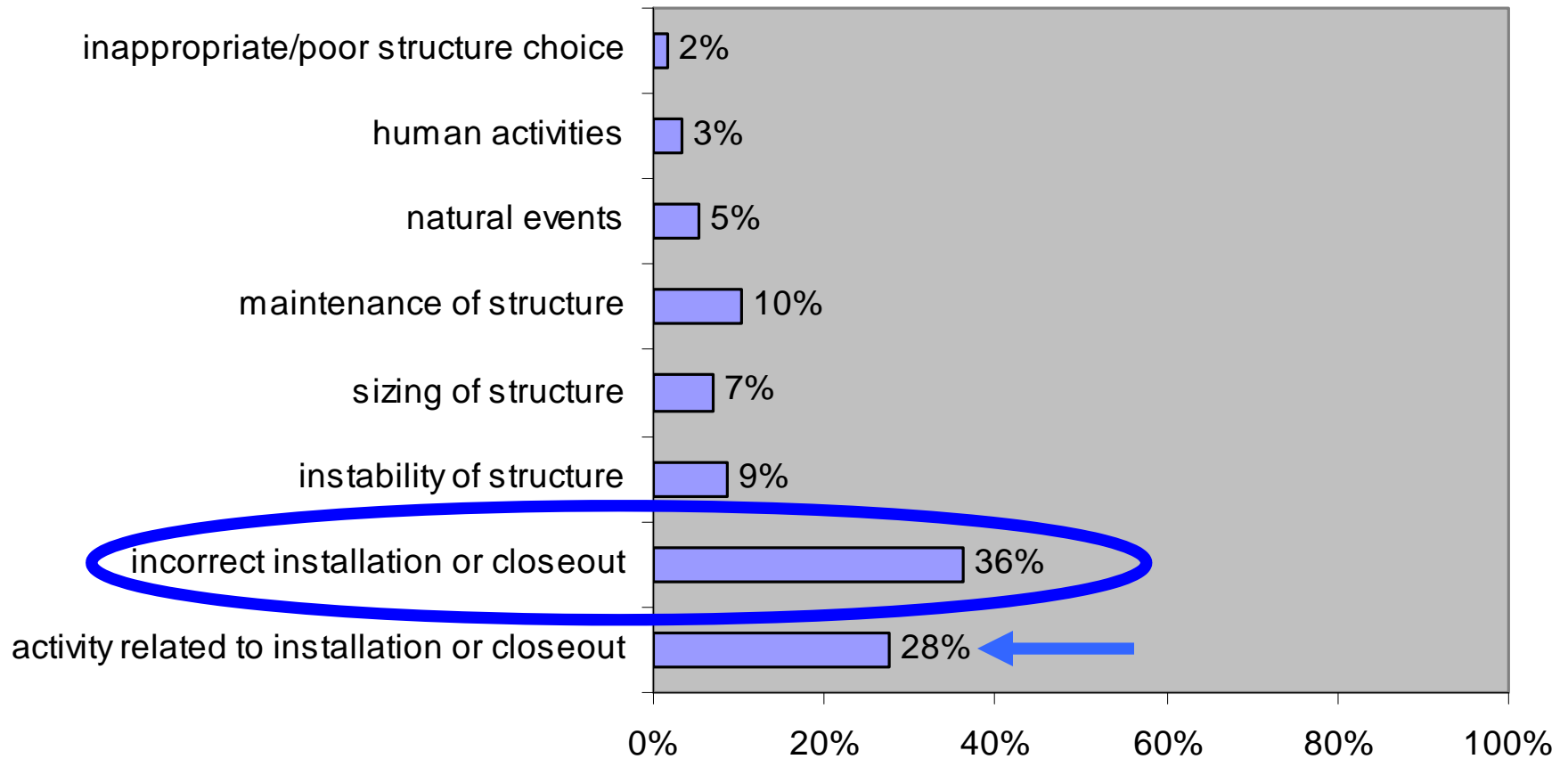
# BMP Application when there was sedimentation

**BMP Implementation: Sedimentation Originates from the Crossing Structure**



# What activities led to sedimentation?

## Activities Related to Sedimentation at Crossings



# Conclusions

- Most harvesting is not negatively affecting water quality
- Most loggers are properly using BMPs
- Sedimentation originating from crossing structures is a particular concern
  - 2009 will add more info on sediment volume to assess the extent of problem

# Training areas

- Stress proper maintenance and reinforcement of BMPs as site conditions change (approaches)
- Proper installation and closeout of crossings to minimize sediment input (crossings)
- Outreach to user groups
  - Sportsmen