Lower Coeur d’Alene River
Bank Stabilization Pilot

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Post Falls Dam

30 Miles Lower Coeur d’Alene River
Background

- 100 years of mining upstream
- Used river as a conveyor belt for tailings
- 9,000,000 cubic yards of contaminated sediment in lower river
- 50,000,000 cubic yards of contaminated sediment on floodplains
- 30 mile reach with 25% actively eroding

Section 13D

- Top of bank widths – 300 to 400 feet
- Depths – 15 to 50 feet
- $Q_{100} = 90,000$ cfs
No Wake Zone

 Typical Eroding Bank

Boat wakes
- Vegetation on top of bank can not stabilize banks
Metals contamination
- No removal vs. remove to repository
Two Banks

Farm Land

State Owned

Project Goals

• Clean Water Act Funding
• Pilot project to test methods to stabilize stream banks
• Project to focus on reducing sediment load to lake
• Complicated system
Interested Parties and Some of Their Concerns

- IDEQ
- US EPA
- IDL
- WA Ecology
- USFWS
- IDFG
- USFS
- CDA Tribe
- Basin Commission
- Local SWCD
- Private Landowners and neighbors
- Mining Companies
- NRCS
- USACE
- AVISTA

- Within a Superfund Site
- Critical bull trout habitat
- Other endangered species
- Contaminated Soils
- Heavy use recreational site
- Boating hazards
- Very different banks/land uses on two sides of the river
- Dam management for power production and recreation
Project Summary

• Pilot Project to stabilize 2000 river feet, both banks
• Used 5 different treatment methods
  – Combination of hard and soft techniques
• 3-year (minimum) post-construction monitoring

The Treatments

1. Bank sloped, rocked toe, revegetation
2. Toe armor, root wads for habitat
3. Bank sloped, graded rock toe, clean soil behind toe, revegetation
4. Plank wake break
5. Brush box wake break

In various combinations
Project Issues

- No Road Access
- Minimal Construction Management
- Construction Delay

- No Top-of-bank access
- Mud Mats
If we moved it, we had to remove it!

- Set posts with pile driver
- Used existing posts where possible
Design Issues

Brush Boxes
- Live vs. Dead Brush
- Cost was less than expected
- Protects without bank modification
- Sediment deposition
- Live willows sprouting
Plank wake-breaks

- Rock toe with soil and vegetation behind
- Construction management
Construction Management
Techniques that contractor is not familiar with
– Specs + narrative about WHY
  • Brush box
  • Root wads

Monitoring Program

Project reach, above, below, previous projects
– Cross-sections
– Bathymetry
– Top-of-bank profile
– Erosion Pins
– Photo points
– Video
Having learned much, ready for future bank stabilization on remaining banks
About 7 miles!

Thank you

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