Rural Roads Webinar – May 21, 2012

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MENDOCINO REDWOOD COMPANY ROADS

MRC Roads

- Background
- Roads
- Restoration (Hollow Tree and Trout Unlimited)
- Softree, surveying
- Fish passage and bridges
- Road surface erosion monitoring

Background

- Mendocino Redwood Company formed in 1998
- Former Louisiana-Pacific lands
- Employ roughly 45 full and part-time staff
- Navarro Road Department
- Spend over $$$ annually on roads
- Since 1998, MRC has decommissioned over 112 miles of roads

Background

- Issues include:
  - Fish passage barriers on coho/steelhead streams
  - Sediment-impaired watersheds
  - Legacy Roads
  - Improving/maintaining road network
  - Regulatory requirements
- Draft Habitat Conservation Plan (HCP) – Natural Communities Conservation Plan

Background

- MRC owns and manages approximately 2,300 miles of truck roads with an estimated truck-road density of 6.9 mi./sq. mi
- 4,884 culverts and counting
- From watershed analyses completed to date, MRC estimates 73% of the total sediment inputs over the last 3-4 decades of the 20th century are associated with roads and skid trails

Roads

- Road maintenance is major issue
- Increase road brushing (brush head on excavator or Bobcat)
- Road rocking (not enough rock, rock supply is limited, sourcing crushed rock)
- Exploring use of geotextiles and other technologies
- Follow HCP guidelines (Appendix E)

Roads

- Appendix E examples
  - Flood-prone zones in Class I Aquatic Management Zones (AMZ)
    - Exclude all equipment, unless on existing roads or for use in road decommissioning
  - New road construction within an AMZ
    - The road does not parallel a watercourse.
    - Each approach on either side of a watercourse does not exceed 200 ft.

Roads

- Road inventory monitoring
  - Field GPS surveys of entire road network
  - Detailed data collection at sites:
    - Culverts, crossings, landings, erosion sites, spoil piles, water holes, road slides and gates
  - Resurvey entire network every 10 years

Roads

- Monitoring of sensitive resources related to / affected by roads:
  - Rocky outcrops (63 acres)
  - Uncommon natural communities (3,274 acres)
    - Pygmy forest, bishop pine, salt marsh, oak woodlands, grasslands
  - Invasive species control
    - Jubata grass, broom and eucalyptus
  - Rare plants – classified into management categories (1-4)

Roads

- Potential red-legged frog habitat
- Conservation measures for wetlands, wet areas, and wet meadows include:
  - Maintaining equipment exclusion zones (EEZs) around wetlands
  - Avoidance of artificial wetlands

Roads

- Conservation measures for seeps and springs include
  - Protection of springs or seeps within Aquatic Management Zone (AMZ) boundaries.
  - Extension of AMZ boundaries to encompass seeps and springs.
  - Maintenance of Equipment Exclusion Zones (EEZ)

Roads

- Spotted owls
- Noise disturbance can occur from timber management, construction of roads and landings, and rock pit activities. Noise-related impacts can be especially detrimental during the breeding season
- Monitor extensively territories and potential habitat; create buffers

Roads

- Allow only limited road-use in the vicinity of **marbled murrelet** habitat with high and moderate protection during breeding season.
- Restrict road building near **Point Arena Mountain Beaver** burrow systems; apply noise and disturbance buffers, and daily and seasonal restrictions on activities near occupied burrow systems

Roads

- Road enzyme (http://www.pacificenzymes.com/)
- Supposedly improves dust abatement and road surface strength
- Works well in clay-rich and/or fine soils with a small percentage of large rocks
- Steep and/or outsloped roads with lots of clay need rock added for traction, though

Restoration: Hollow Tree

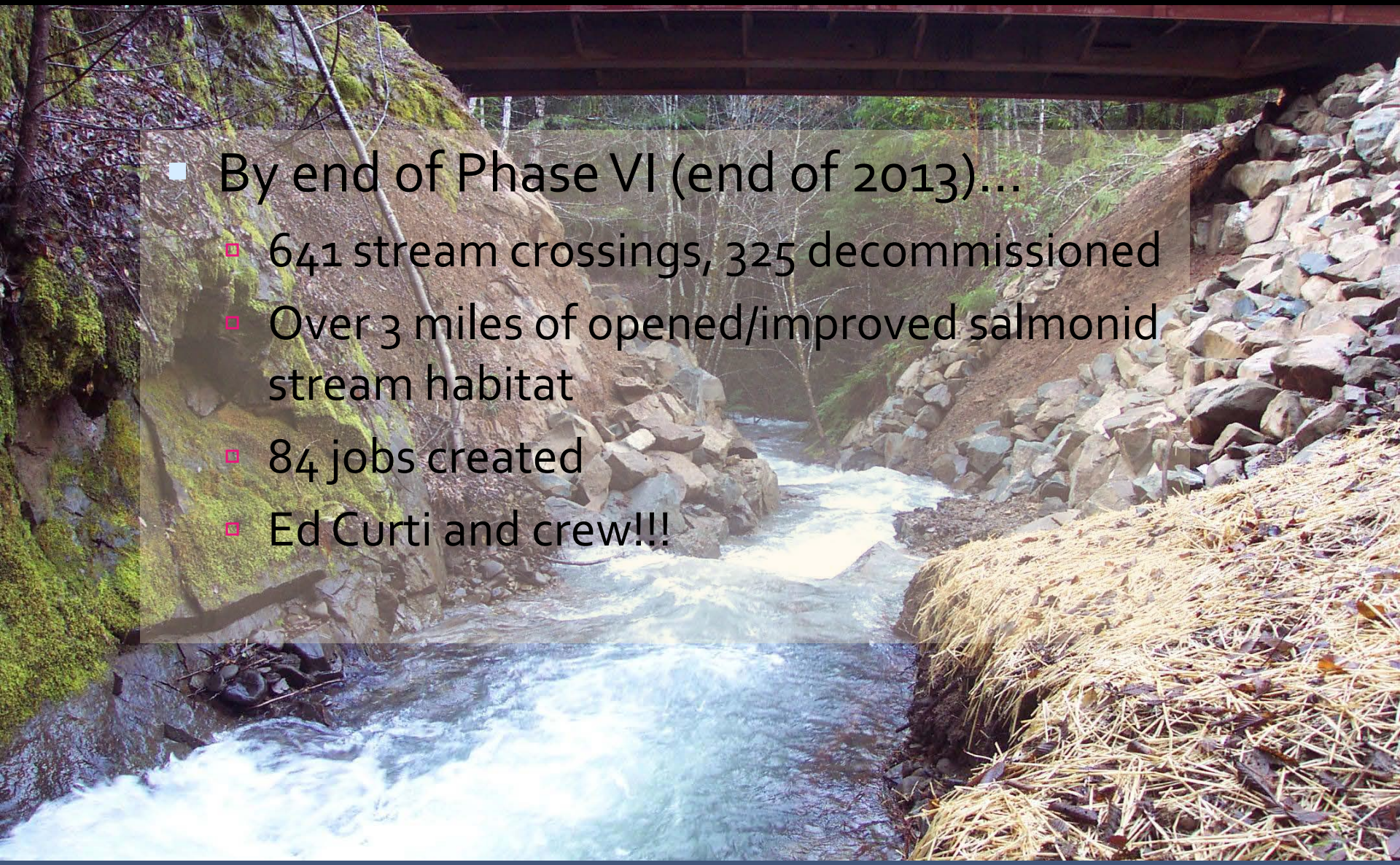
- Tributary to South Fork Eel near Legget, CA
- Supports coho, steelhead and Chinook
- 303(d) list for sediment and temperature
- Appx. 44,000 acres; MRC owns 48%
- Partnership with **Trout Unlimited** and **Pacific Watershed Associates** originated with work in Garcia
- Phased approach to restore road network

Restoration: Hollow Tree

- Six phases starting with Phase I in 2003
- By end of Phase VI (end of 2013)…
  - Over $4.2 million total project cost
  - DF&G: $2.9 million
  - NOAA, USFWS, CCC: $300,000
  - $1 million from MRC
  - 187 miles assessed, 126 miles treated
  - 58 miles decommissioned, 68 miles upgraded
  - 827 sites treated, 200,000 cubic yards sediment controlled

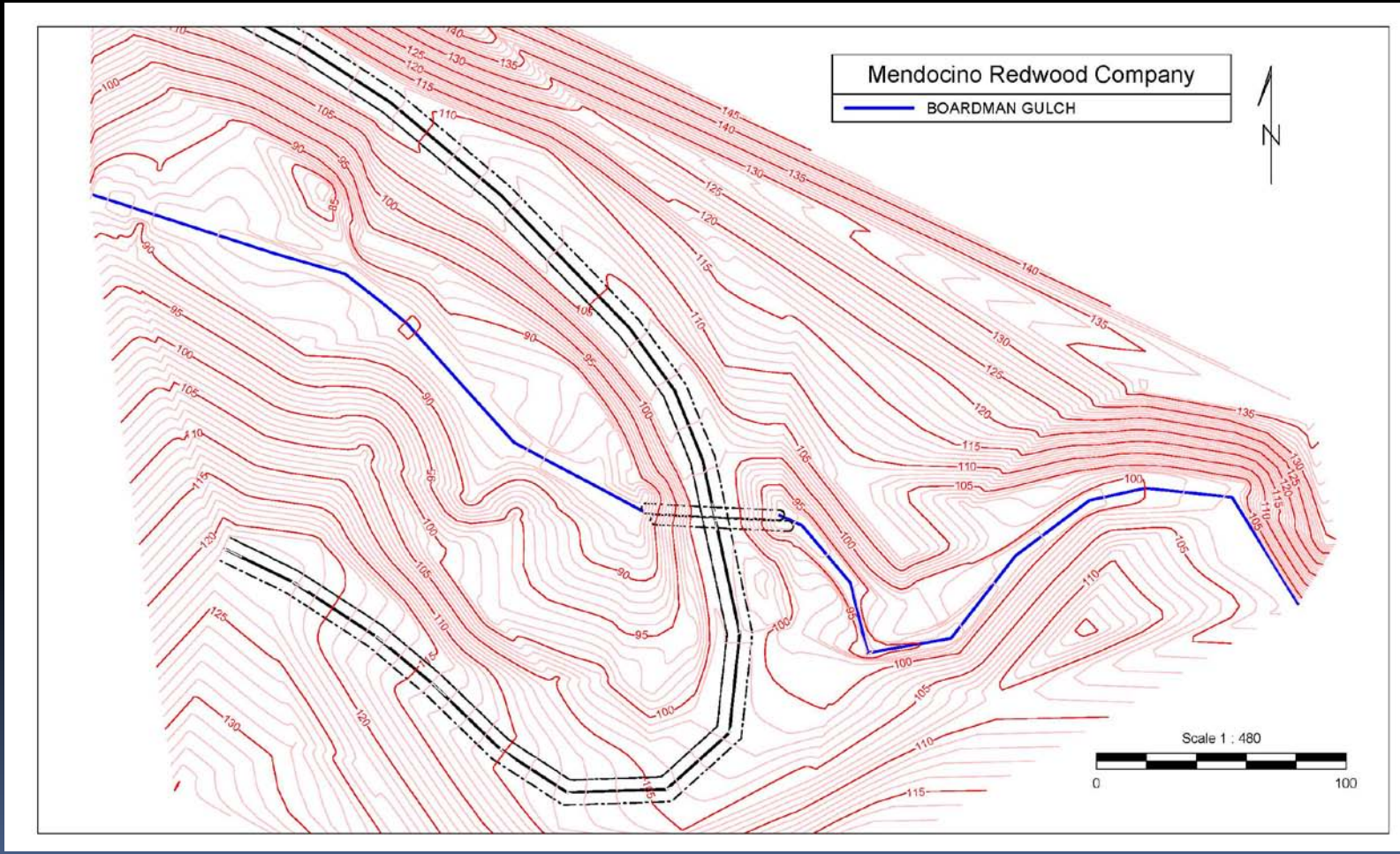
Restoration: Hollow Tree

Restoration: Hollow Tree



- By end of Phase VI (end of 2013)…
  - 641 stream crossings, 325 decommissioned
  - Over 3 miles of opened/improved salmonid stream habitat
  - 84 jobs created
  - Ed Curti and crew!!!

Softree and surveying



http://www.softree.com/Products/Forestry_RoadEng.aspx

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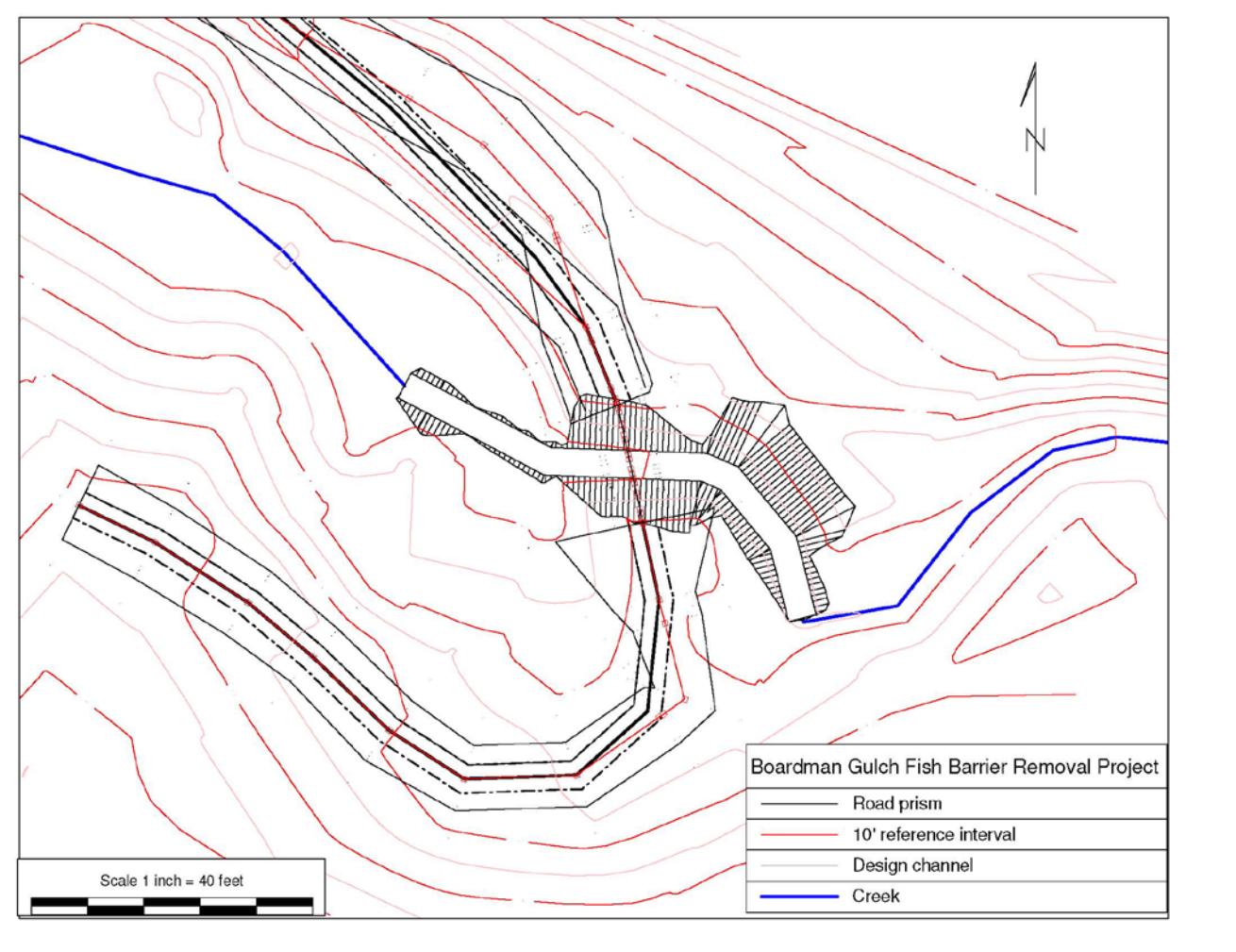

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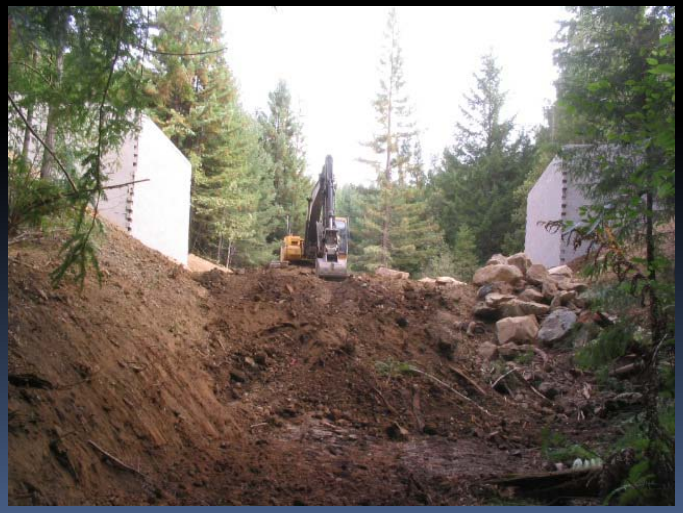
QUESTIONS???

Fish passage

- Fixed 35 barriers since 1998, opening up (or improving access to) over 20 miles of Class I habitat

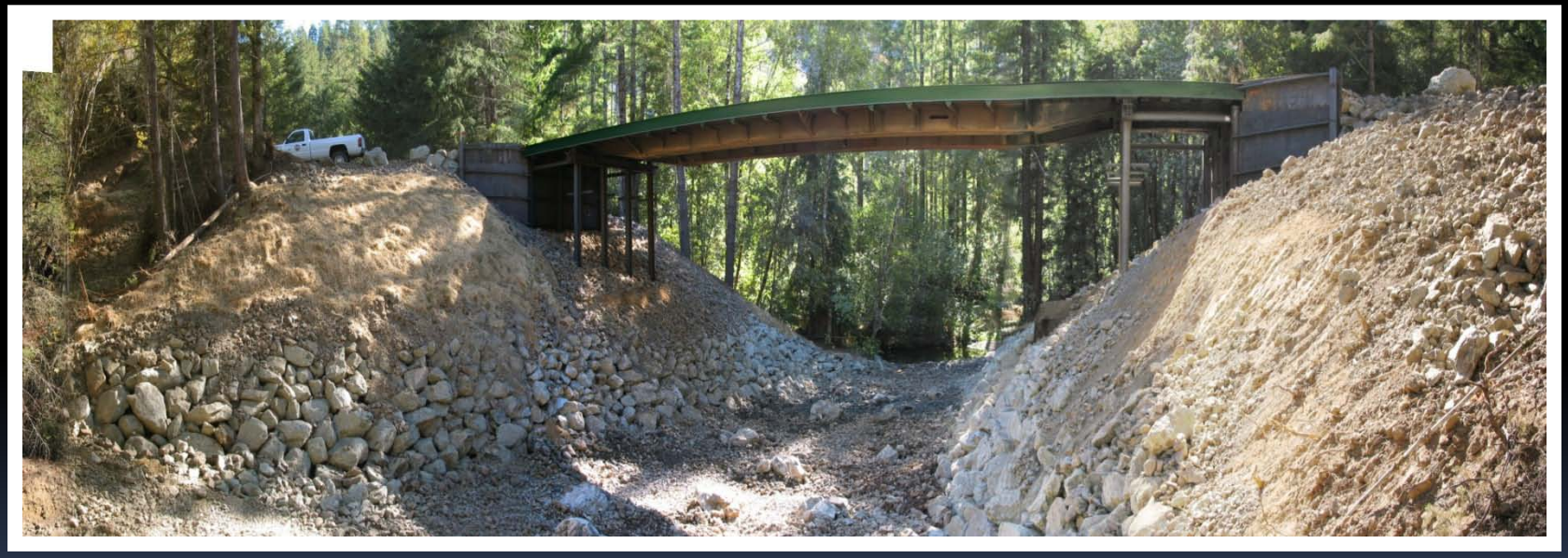


Fish passage and bridges

Fish passage and bridges

- Class I barriers
- Pipes bigger than 6 feet…
- Cheap railcars??
- Large fills with desire to not over-steepen approaches
- Abutment options…
- Can you drive pilings in (dry) coho streams?

Bridges – John Smith Creek



Geosynthetcially confined soil walls

GCS walls

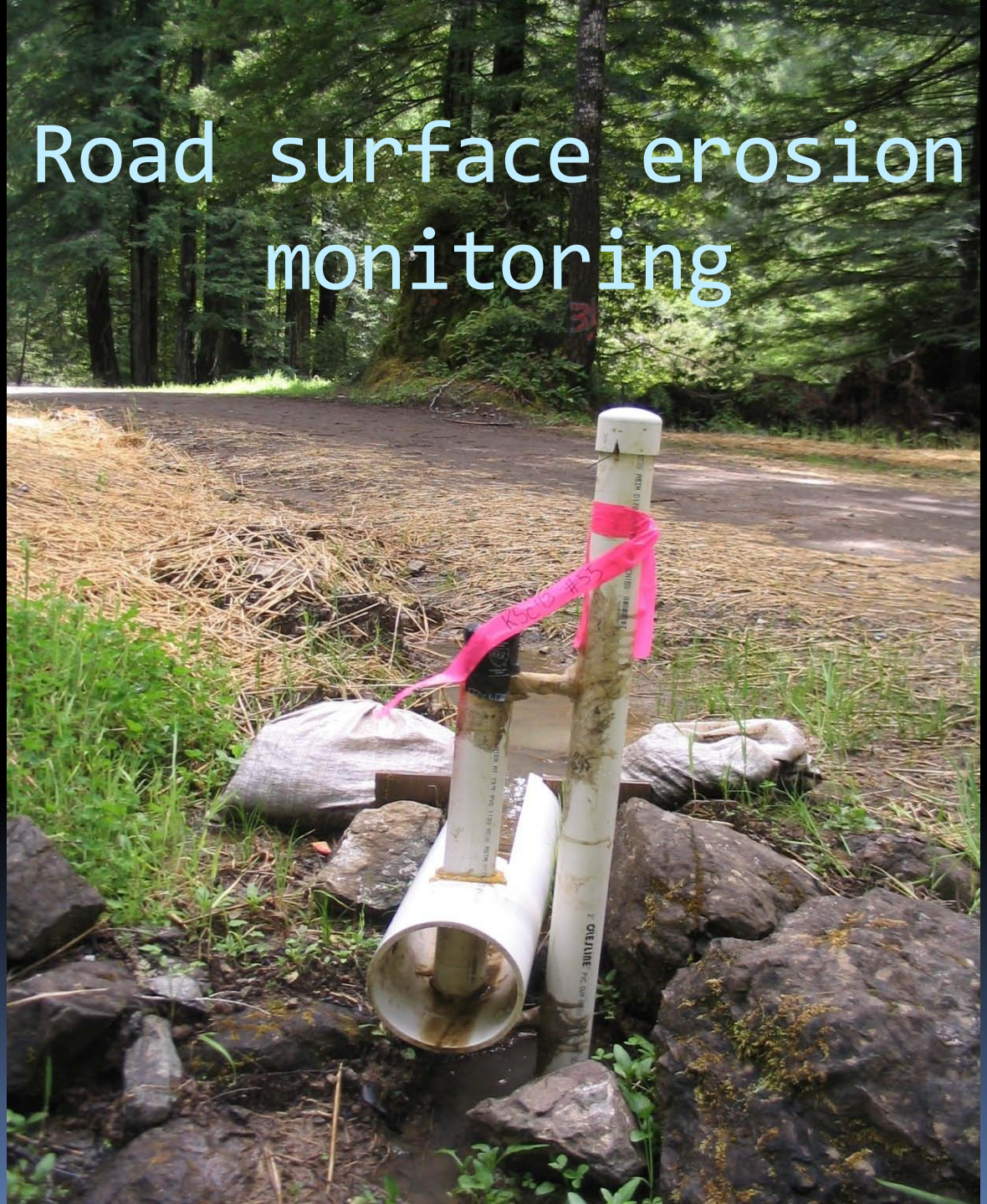
- Bob Barrett (www.gcswalls.com)

Fish passage and bridges

Hydrologic connectivity

- Approximately 370 miles of roads within riparian areas
- Roughly 20% of these roads are no longer in use (decommissioned or historic)
- Road segments that contribute to culverts and crossings
- Diverted watercourses
- Cutbanks expose soil pipes

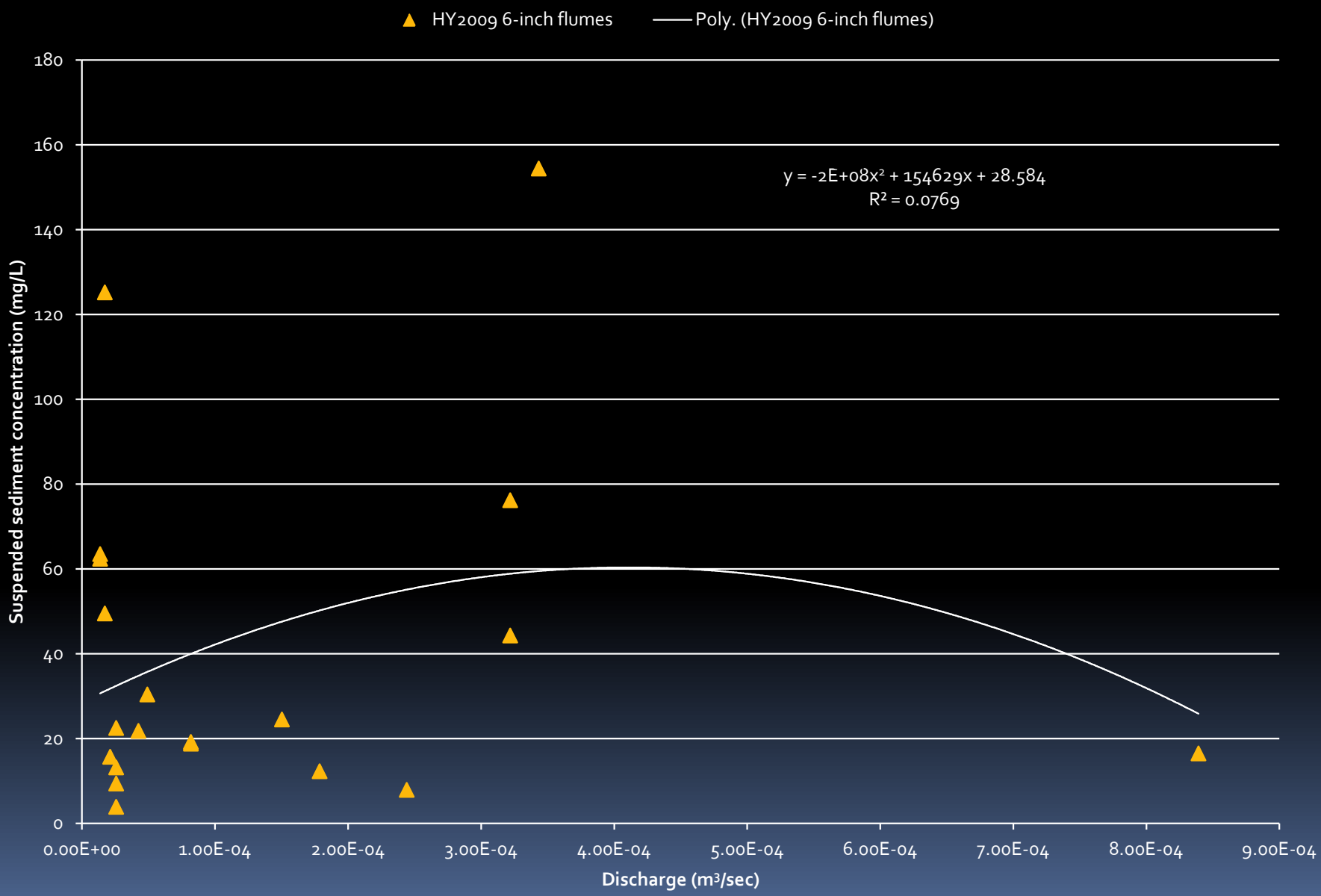
Road surface erosion monitoring



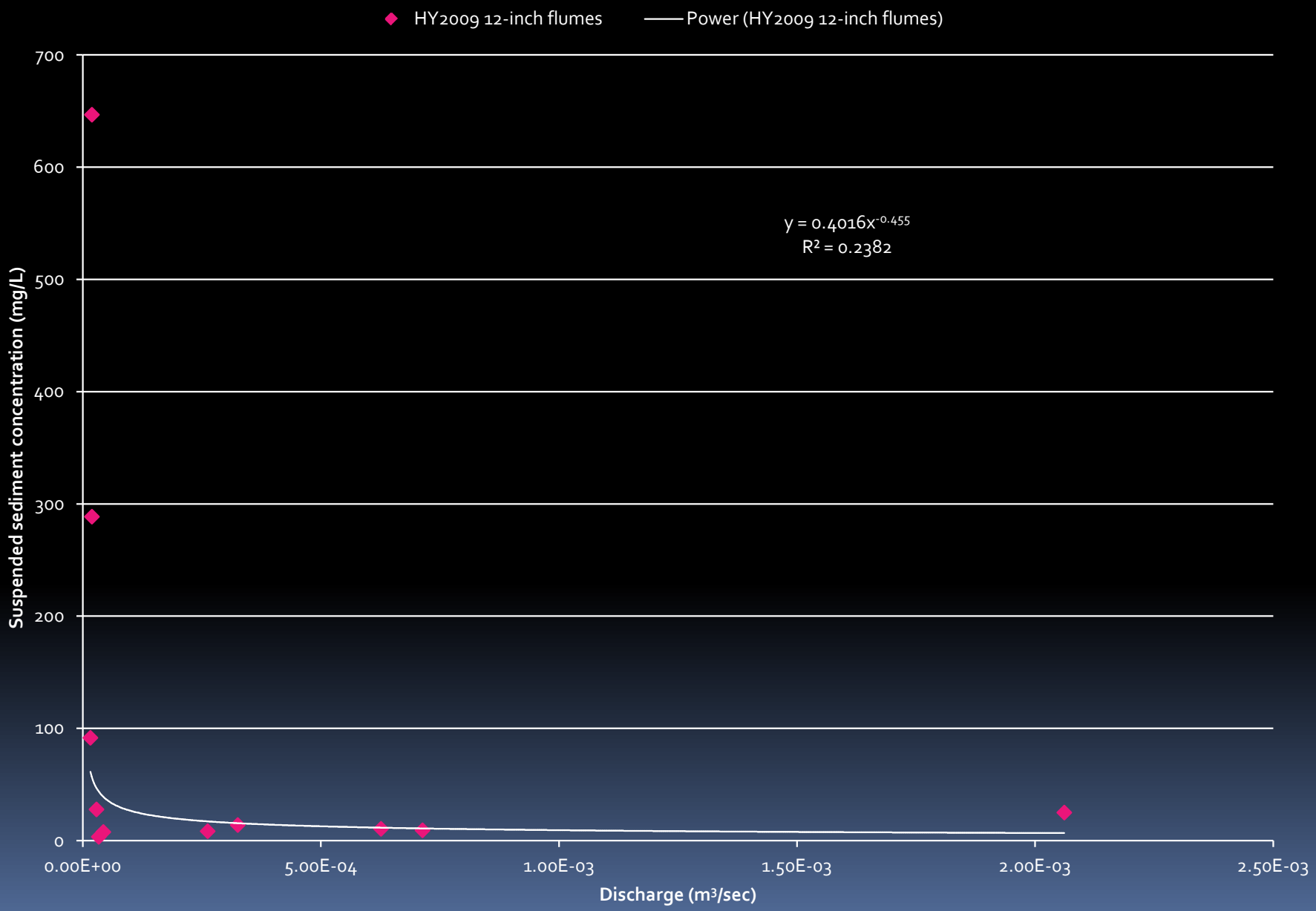
Road surface erosion monitoring

- Based on Chris Surfleets work at Oregon State University
- Currently monitoring about 20 sites in South Fork Albion watershed
- Using Odyssey (New Zealand) capacitance water level loggers
- Collect grab samples and stage measurements at all sites
- Anybody know of tiny turbidimeters?

Discharge vs. suspended sediment for 6-inch flumes



Discharge vs. suspended sediment for 12-inch flumes



Road surface erosion monitoring

- Current goal is to establish a watershed-scale suspended sediment load from roads and compare with results of SEDMODL
- Connectivity varies greatly (some sites connect every storm; some may never)
- Diverted springs/watercourses are a major issue

That’s all…

Questions?