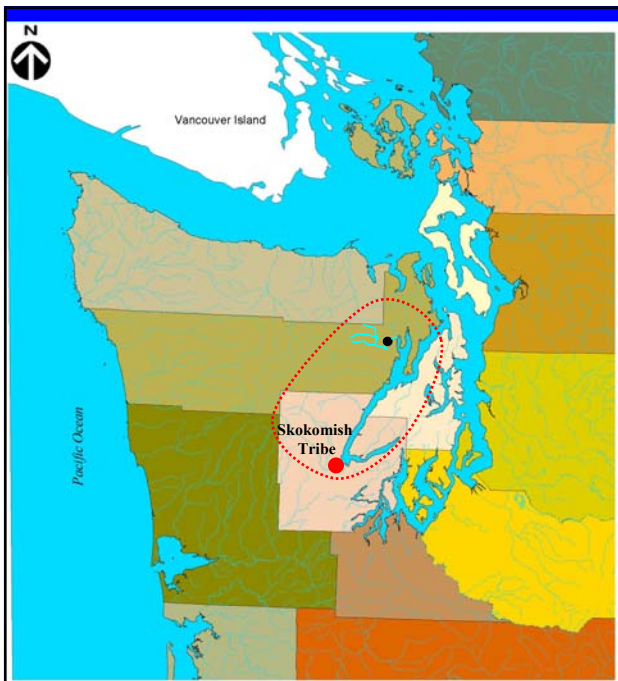


Reach Analysis and Feasibility Study for Floodplain Restoration of the Big Quilcene River, Washington

Maeve McBride *Herrera Environmental Consultants*
Tim Abbe

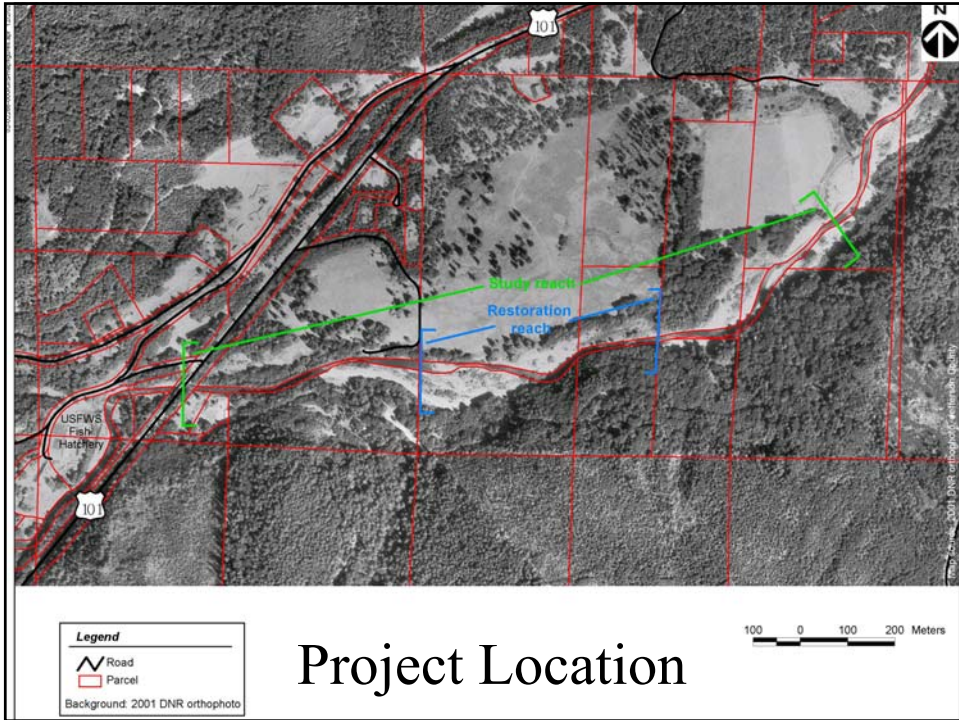
Keith Dublanica *Skokomish Indian Tribe*



Big Quilcene River

- 70 sq mi basin
- Steep topography
- Heavily logged
- Water diversions
- USFWS Hatchery
- Coho, chum, steelhead, coastal cutthroat

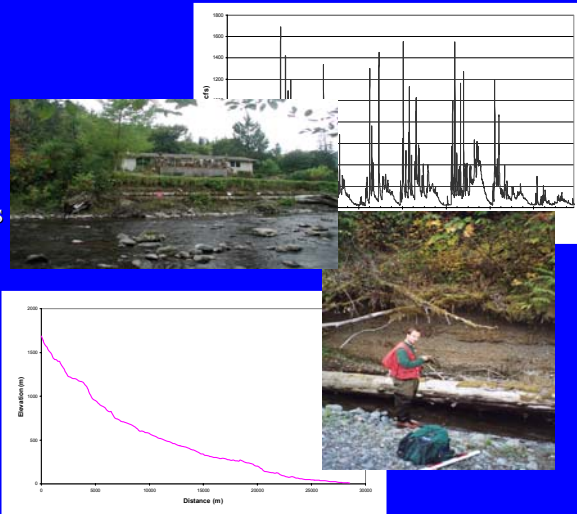


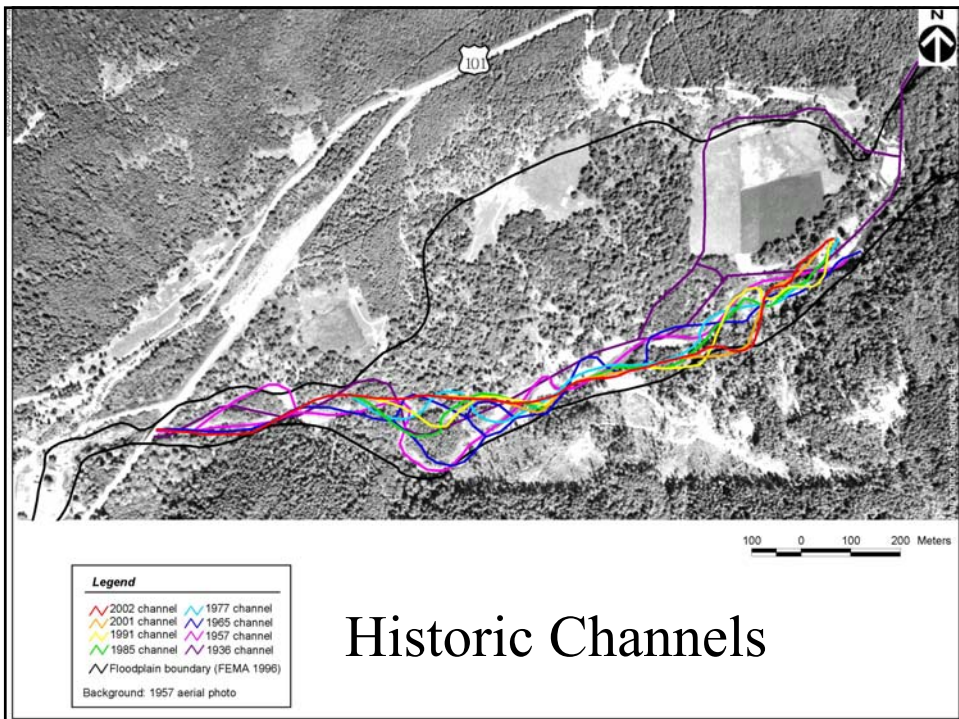
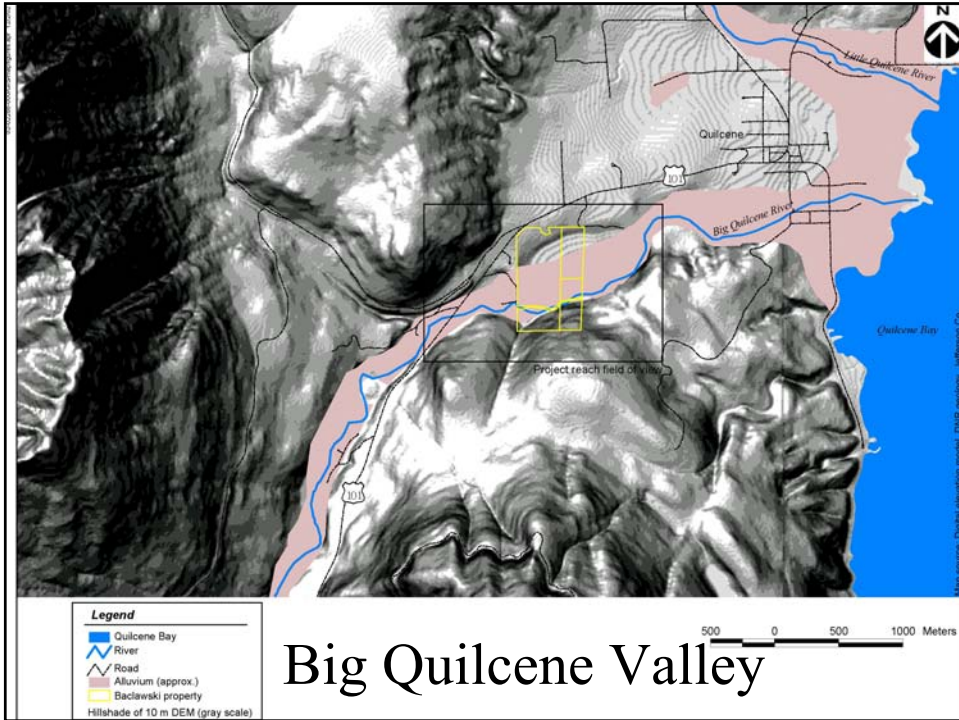


Reach Analysis

Develop an understanding of

- Geomorphic processes and conditions
- Hydrology and hydraulics
- Ecologic/biologic opportunities
- Infrastructure constraints and safety
- Predictable responses to changes in boundary conditions



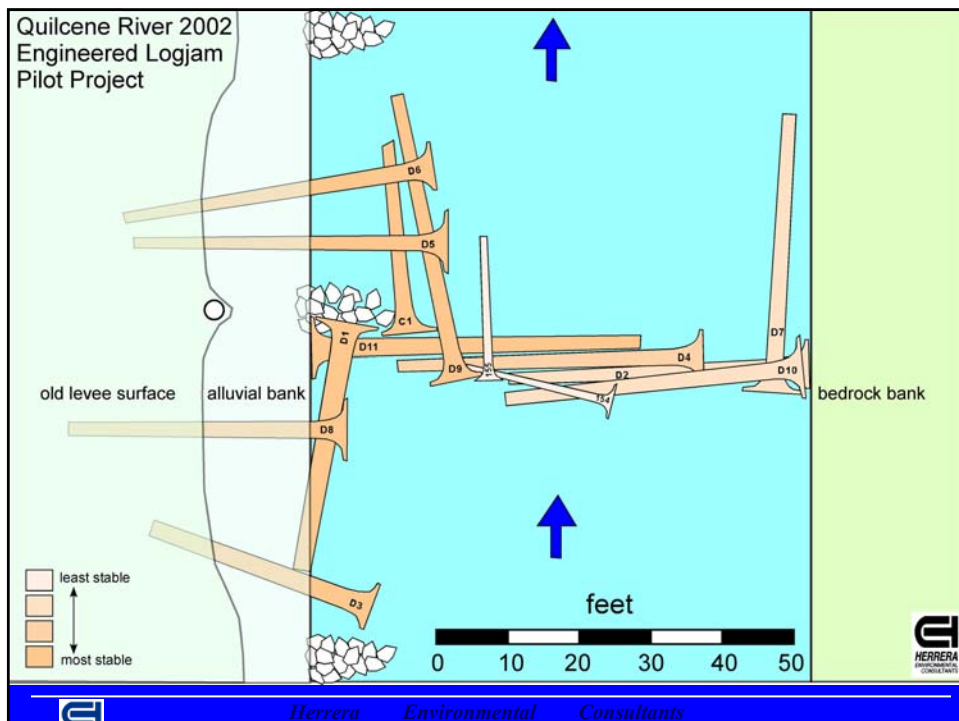


Pilot LWD Structure

- Goal: To create a grade-control structure that could be monitored for sediment deposition and LWD transport
- Permit and time constraints
- Design
- Installed in August 2002
- Monitoring



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Pre-construction



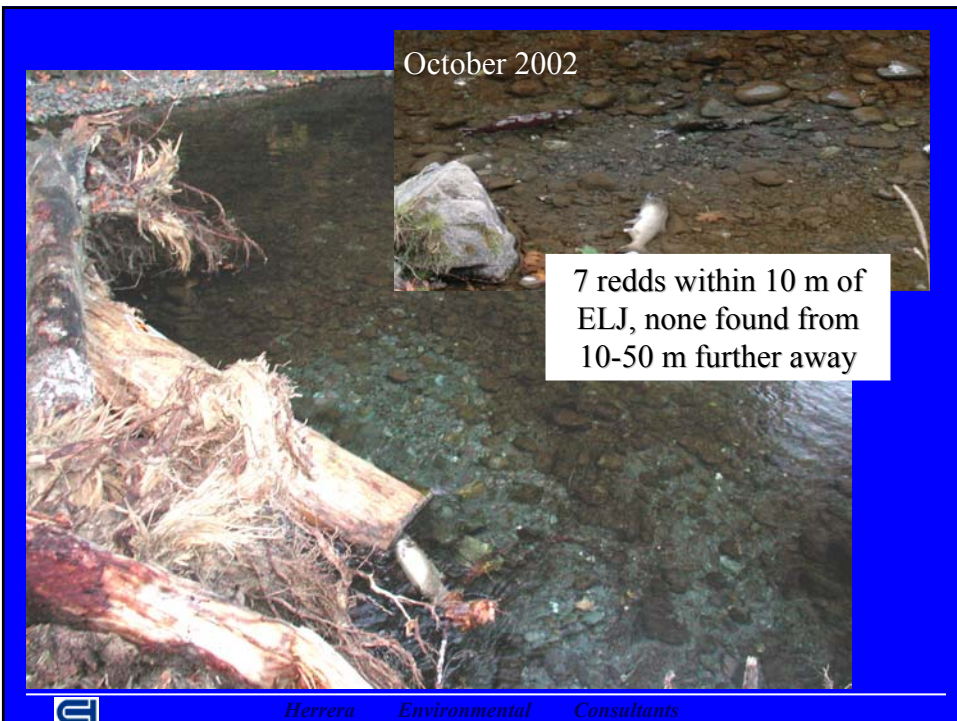
Post-construction



December 2002



January 2003

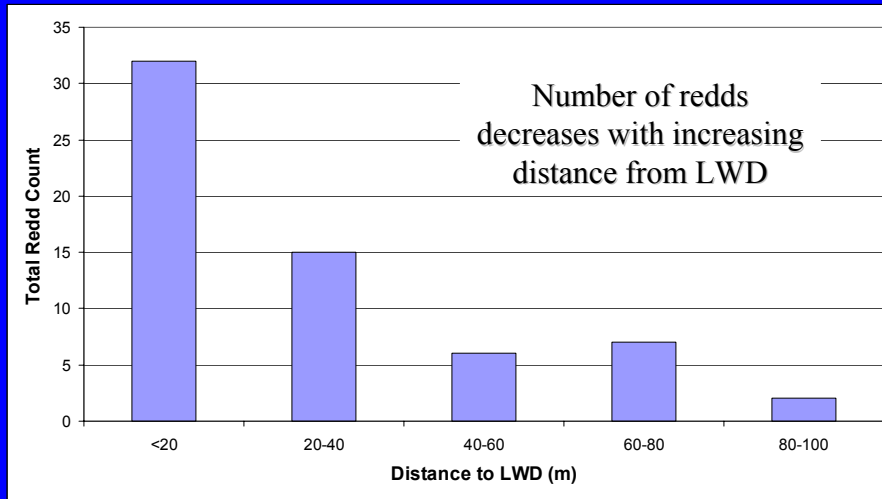


October 2002

7 redds within 10 m of ELJ, none found from 10-50 m further away



Lower Elwha River Monitoring



Herrera Environmental Consultants

December 17, 2002

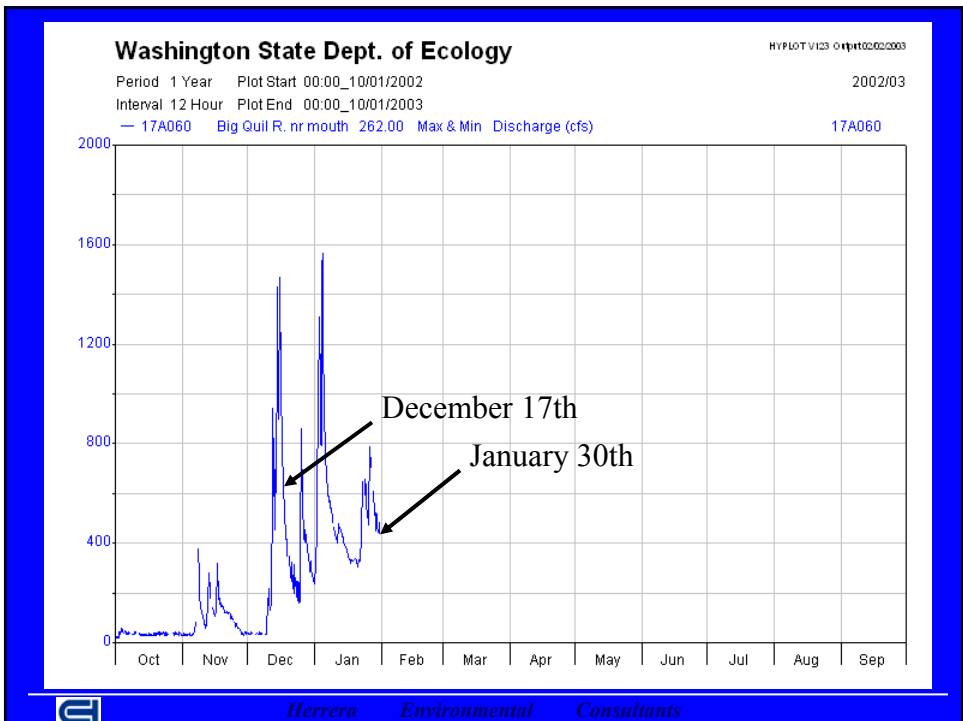
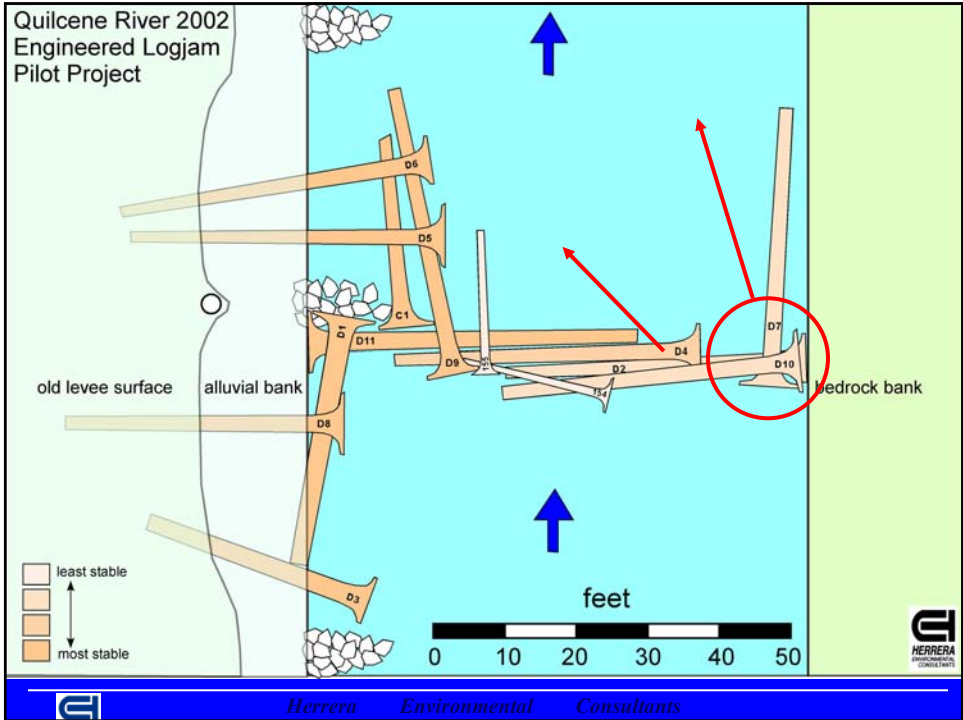


Logs D2, D7, and D10 move approximately 30 ft downstream

Local sediment accumulation will be measured when winter flows recede



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January 30, 2003



- Logs D2, D7, and D10 remain in place
- Local scour and sediment deposition
- Jam collects LWD



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Conceptual Restoration Plan

- Channel-spanning engineered logjams
- Control river incision
- Increase habitat complexity
- Reforest riparian corridor with native veg



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Natural valley-spanning
logjam in Hoko River



Logjam downstream of
reach provides natural analog



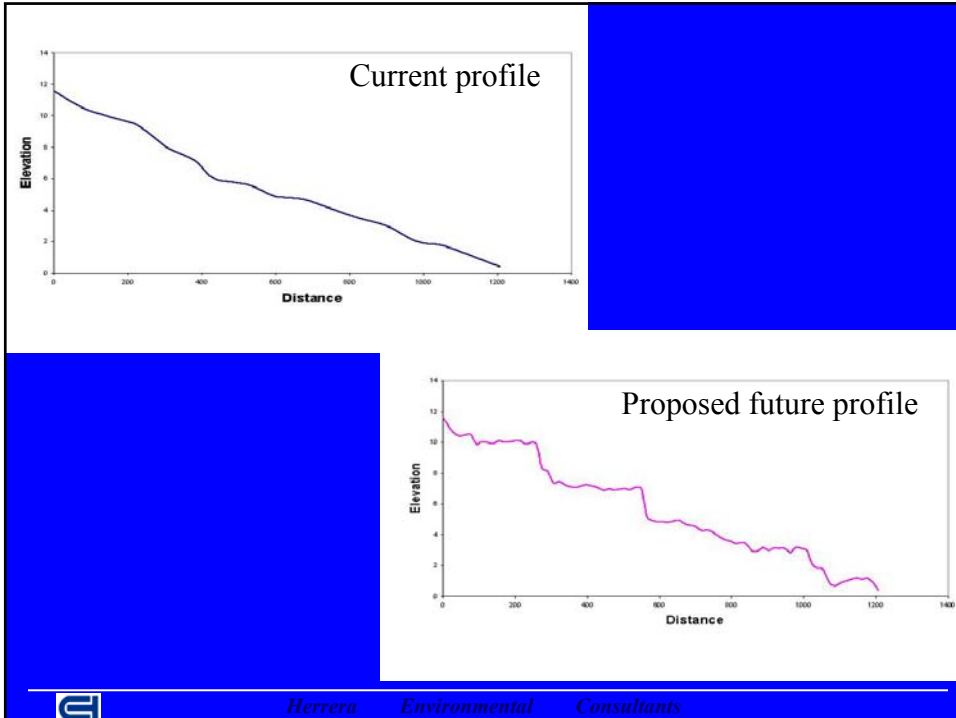
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Conceptual Restoration Plan

- Channel-spanning engineered logjams
- **Control river incision**
- Increase habitat complexity
- Reforest riparian corridor with native veg



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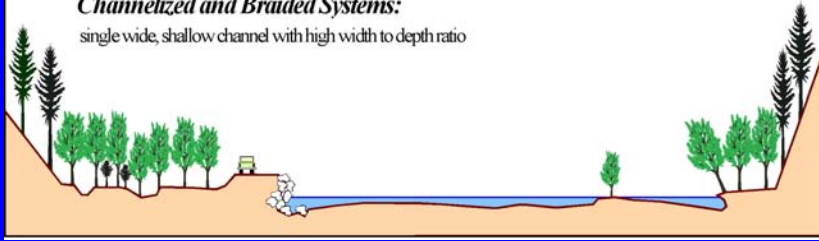
Conceptual Restoration Plan

- Channel-spanning engineered logjams
- Control river incision
- **Increase habitat complexity**
- Reforest riparian corridor with native veg



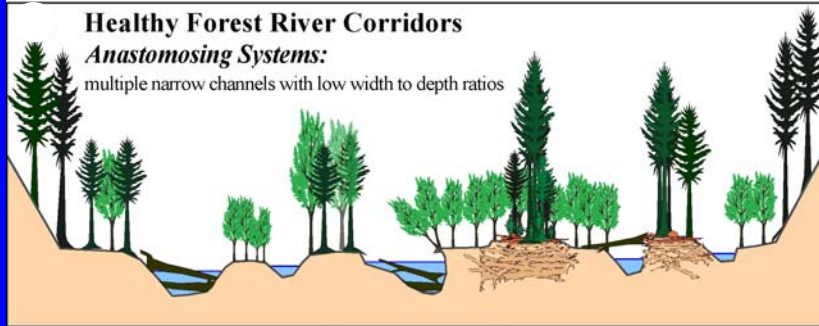
Degraded Forest River Corridors *Channelized and Braided Systems:*

single wide, shallow channel with high width to depth ratio



Healthy Forest River Corridors *Anastomosing Systems:*

multiple narrow channels with low width to depth ratios



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Conceptual Restoration Plan

- Channel-spanning engineered logjams
- Control river incision
- Increase habitat complexity
- **Reforest riparian corridor with native veg**



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