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# Draft Trinity River Large Wood Management Strategy

# Disclaimers

- Authors
- Status of content
- Recommendations

# Background

- The TRFEFR was largely silent on large wood management
- No specific recommended actions included in channel rehabilitation approach (but did not exclude it)
- We now know much better the importance of large wood as part of an overall restoration portfolio for the Trinity River
  - Physical processes
  - Cover
  - Biological productivity

# Overall Goals of LWMS

- Guide short-term and long-term large wood management to support achievement of overall ROD restoration objectives
- Framework for monitoring and assessment that will allow for both active and passive Adaptive Management
- Framework for regulatory compliance

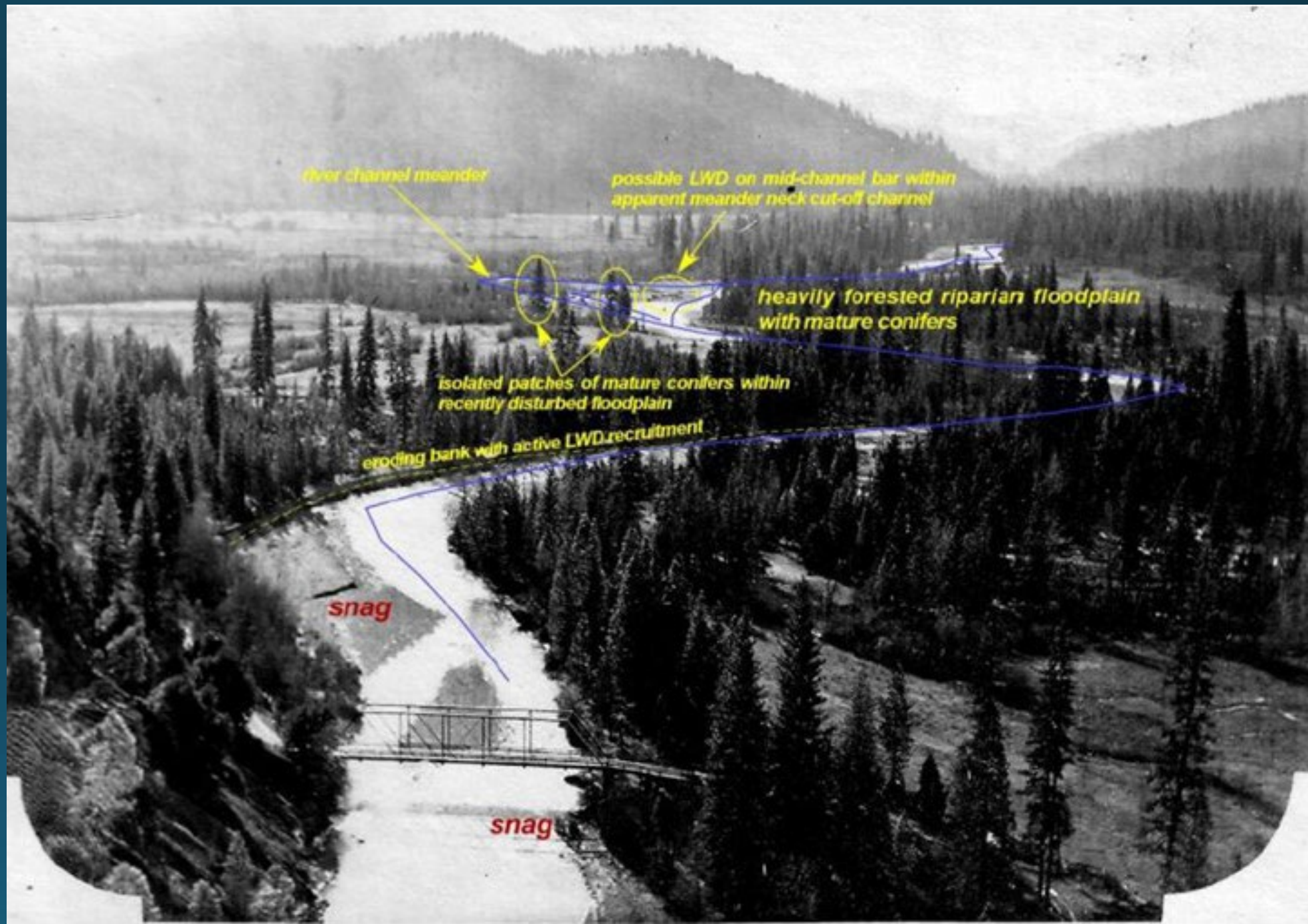
# Objectives of LWMS

- Provide background of the role of large wood in similar/analog river ecosystems
- Summarize anticipated benefits of large wood management on the Trinity River
- Provide the technical basis and documentation for including large wood management in the overall Trinity River restoration strategy
- Provide the technical basis and documentation for the TMC to consider adopting a large wood management strategy
- Provide a descriptive, conceptual model of large wood's role in creating and maintaining important geomorphic and habitat functions
- Develop large wood augmentation recommendations
- Identify future large wood source and storage areas to enable implementation
- Include as an appendix to the Channel Design Guide, and provide guidelines for large wood use and placement that can be utilized in rehabilitation designs and implementation
- Provide a monitoring, assessment, and adaptive management framework that is consistent with the AEAM process as directed by the ROD
- Provide guidelines for managing risks and/or impacts to infrastructure, private property, and public safety

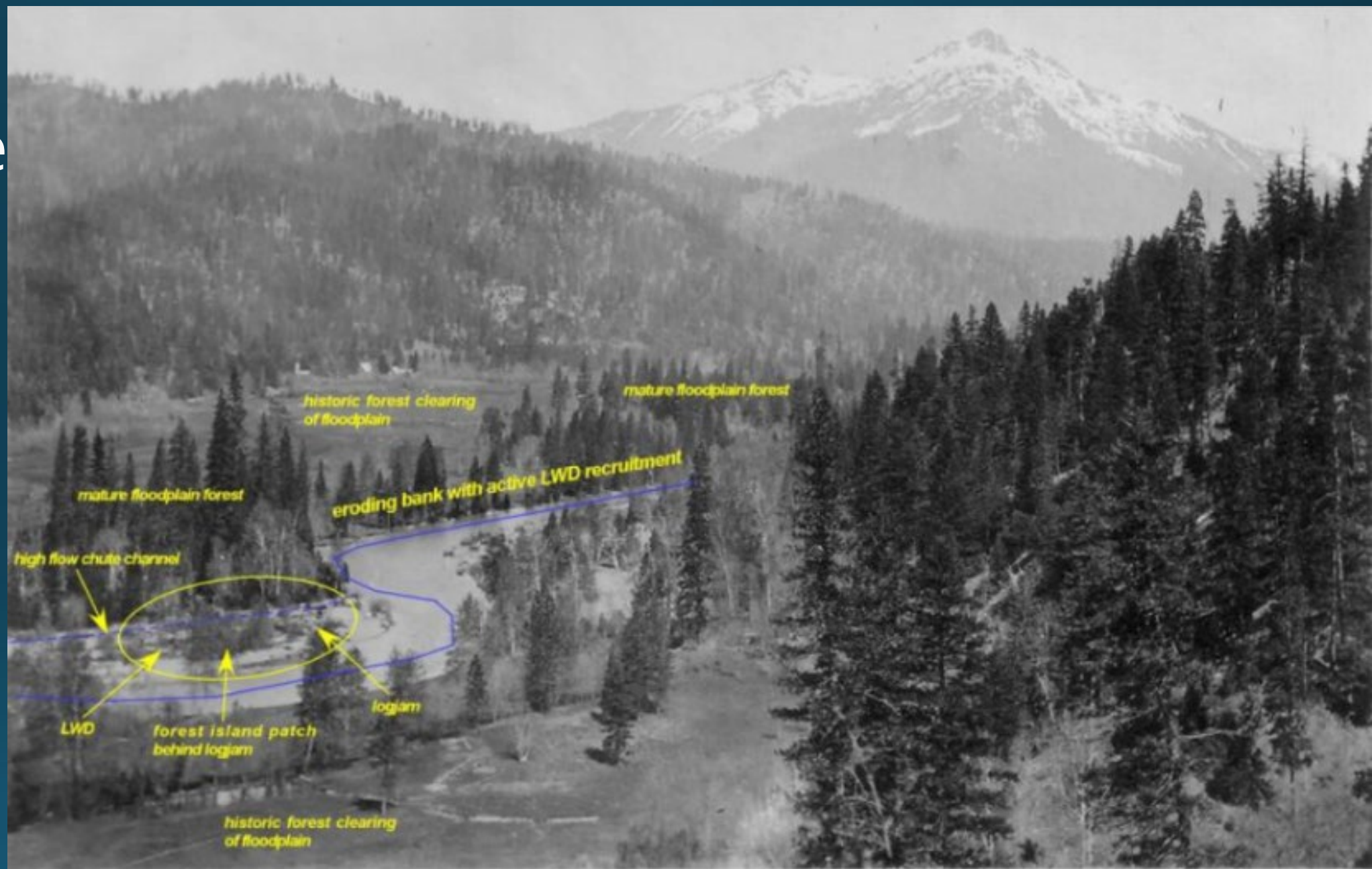
# DRAFT Strategy

- Consistent with ROD Restoration Strategy
- Develop a future vision
- Treat large wood as a budget with routing, similar to coarse sediment
- Develop implementation strategies to achieve vision
- Develop guidelines for short-term and long-term augmentation
- Develop guidelines for types of large wood (species, sizes, density)
- Develop guidelines for minimizing risk (bridges, property, boating)
- Robust monitoring and assessment strategy

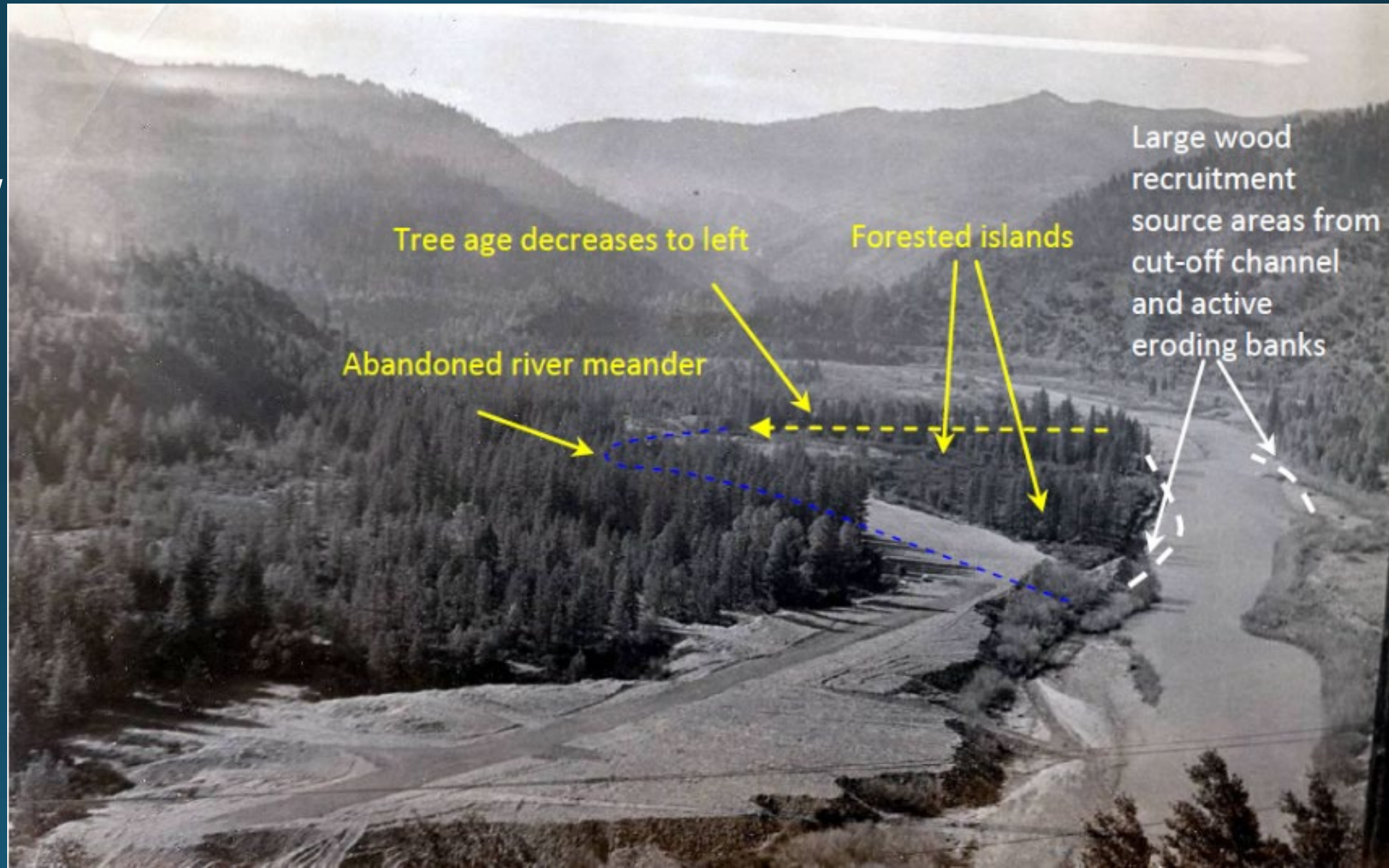
# Historical perspective (near Swift Creek)



# Historical perspective (under Trinity Reservoir)



Historical perspective, near Valdor Gulch (from Martin and Fiori, 2011)



# Contemporary perspective, at Coffee Creek confluence

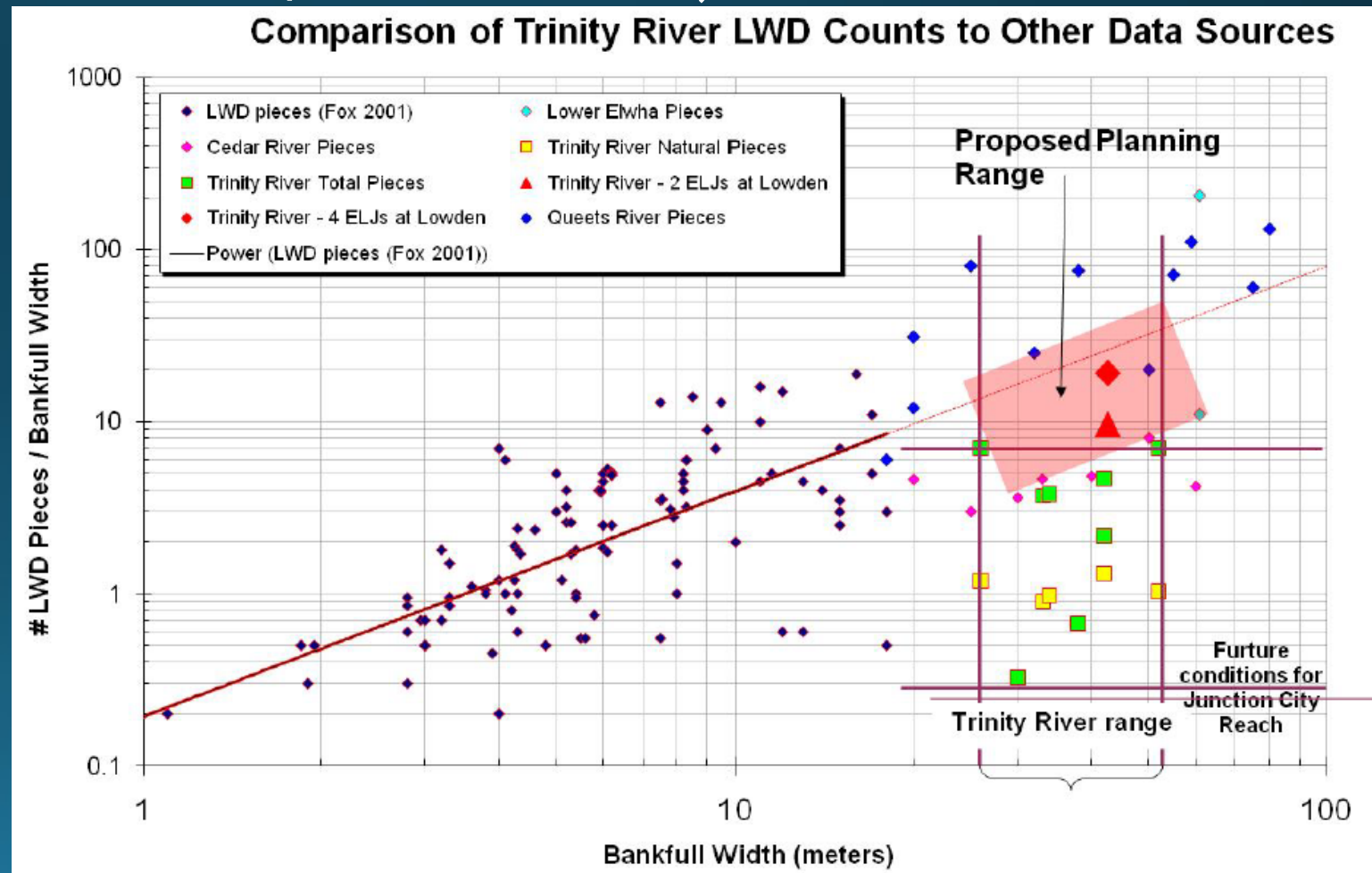


# Large Wood Budget

- $\text{Input} - \text{Output} = \text{change in Storage}$
- If we have a Storage target, then we need to manage Input as a function of how much is lost (Output) due to fluvial transport, decay, and chain saws

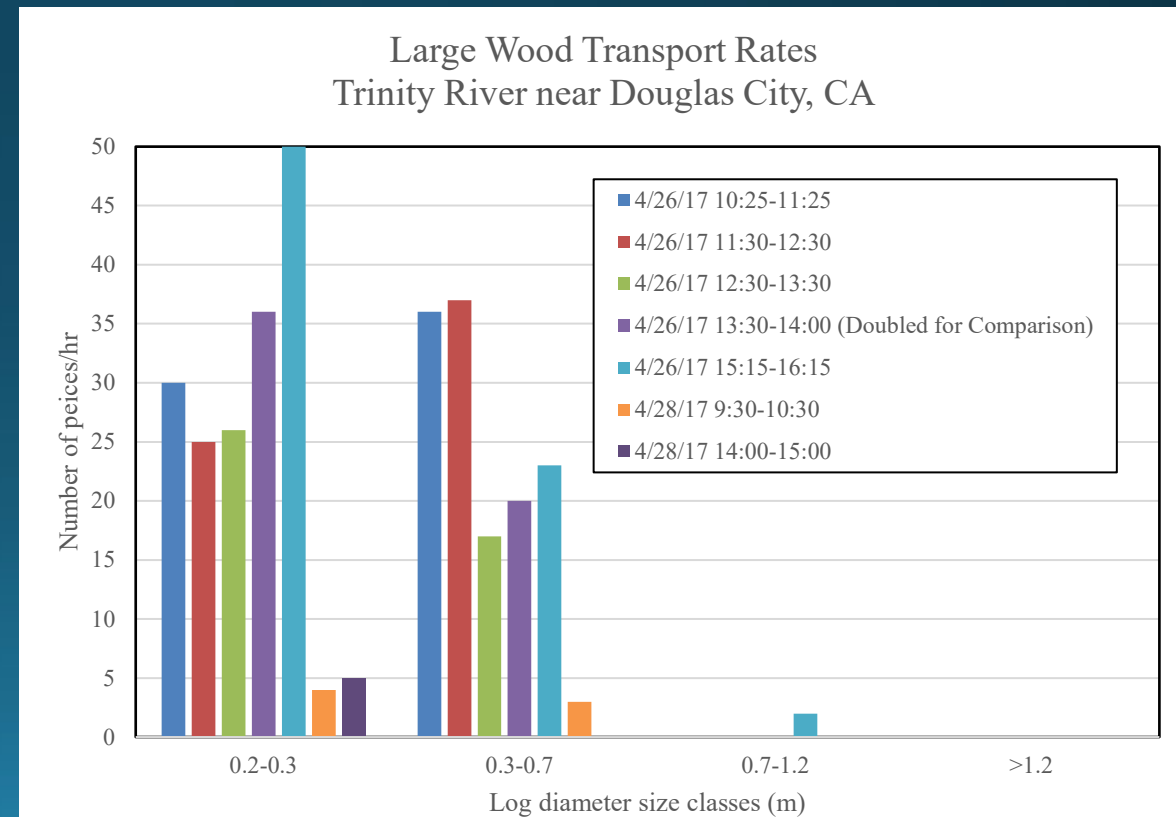
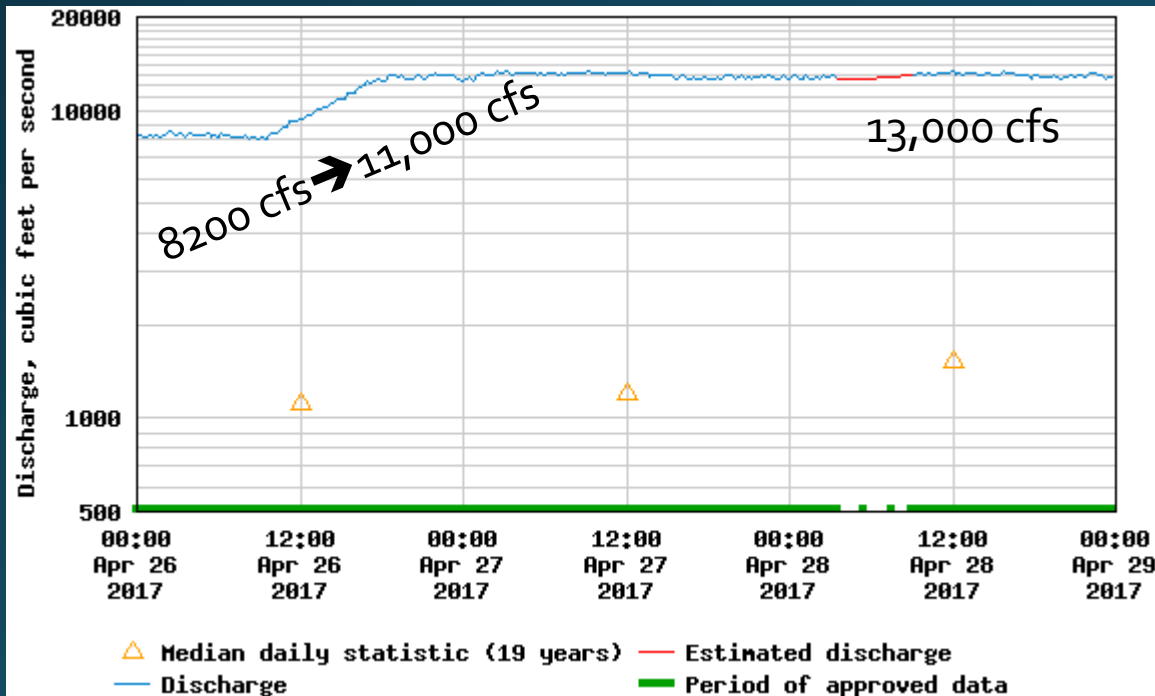
# How do we develop future large wood storage targets?

- Scale storage (# pieces or volume/bankfull width)



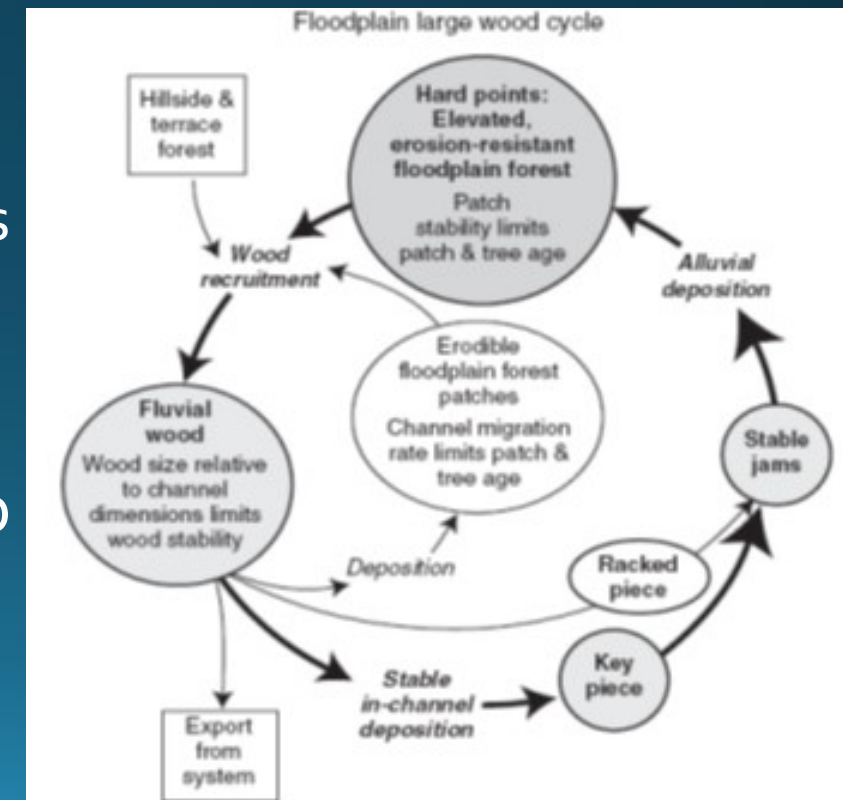
# Describing current large wood Transport in Restoration Reach

- Natural recruitment (bank erosion)
- Tributary inputs
- Transport rates



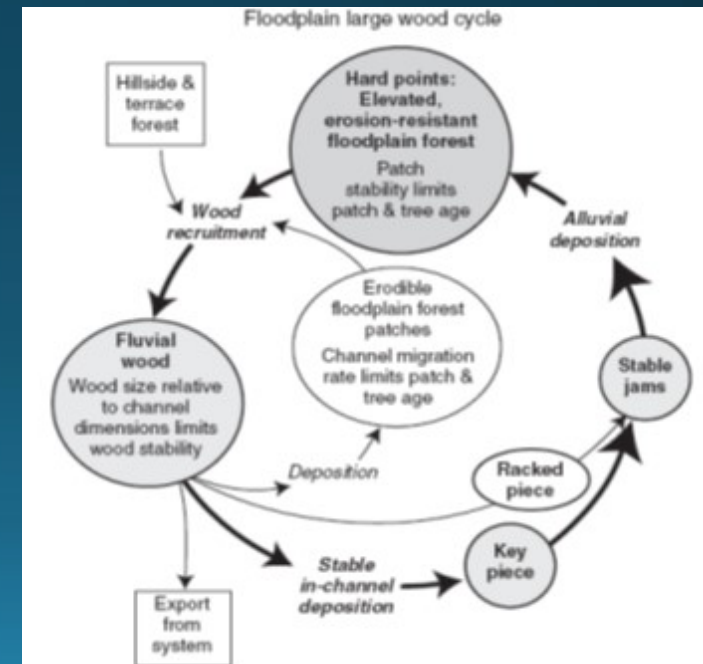
# Draft Vision and Strategy

- Pacific Northwest Conceptual Model, but scaled down for Trinity River
- Different storage targets for different geomorphic reaches
- Encourage natural recruitment via tributaries, channel migration, natural riparian regeneration, and floodplain plantings
- Dynamic wood storage, mixture of residence times
  - Individual wood pieces → large wood structures → ELJ's
- Large wood routes through the system over time
- Treat as a large wood budget, similar to coarse sediment, with periodic augmentation as needed to maintain Storage



# Draft Vision and Strategy, continued

- Add large wood at channel rehabilitation sites and other locations
- Coordinate large wood management with flow management, coarse sediment management, and channel rehabilitation
  - Placement during high flows, using large wood to increase coarse sediment storage, creating features at channel rehab sites where large wood can accumulate
- Diverse species composition that considers climate change for future large wood supply
- Range of size classes (slash → large key pieces)
- Range of placement approaches that maximize benefit and manages risk
- Minimize retaining hardware
- Promote natural regeneration on future erosive surfaces
- Adaptive management!



# Next Steps

- NMFS to develop strategy for leading the effort
- Re-group core team will likely:
  - Review existing draft document
  - Discuss/refine the future Vision
  - Discuss/refine the core strategy
  - Discuss/develop draft Storage targets
  - Discuss/refine the management recommendations
  - Develop a completion plan for the draft report
  - Implement completion plan and prepare a draft report