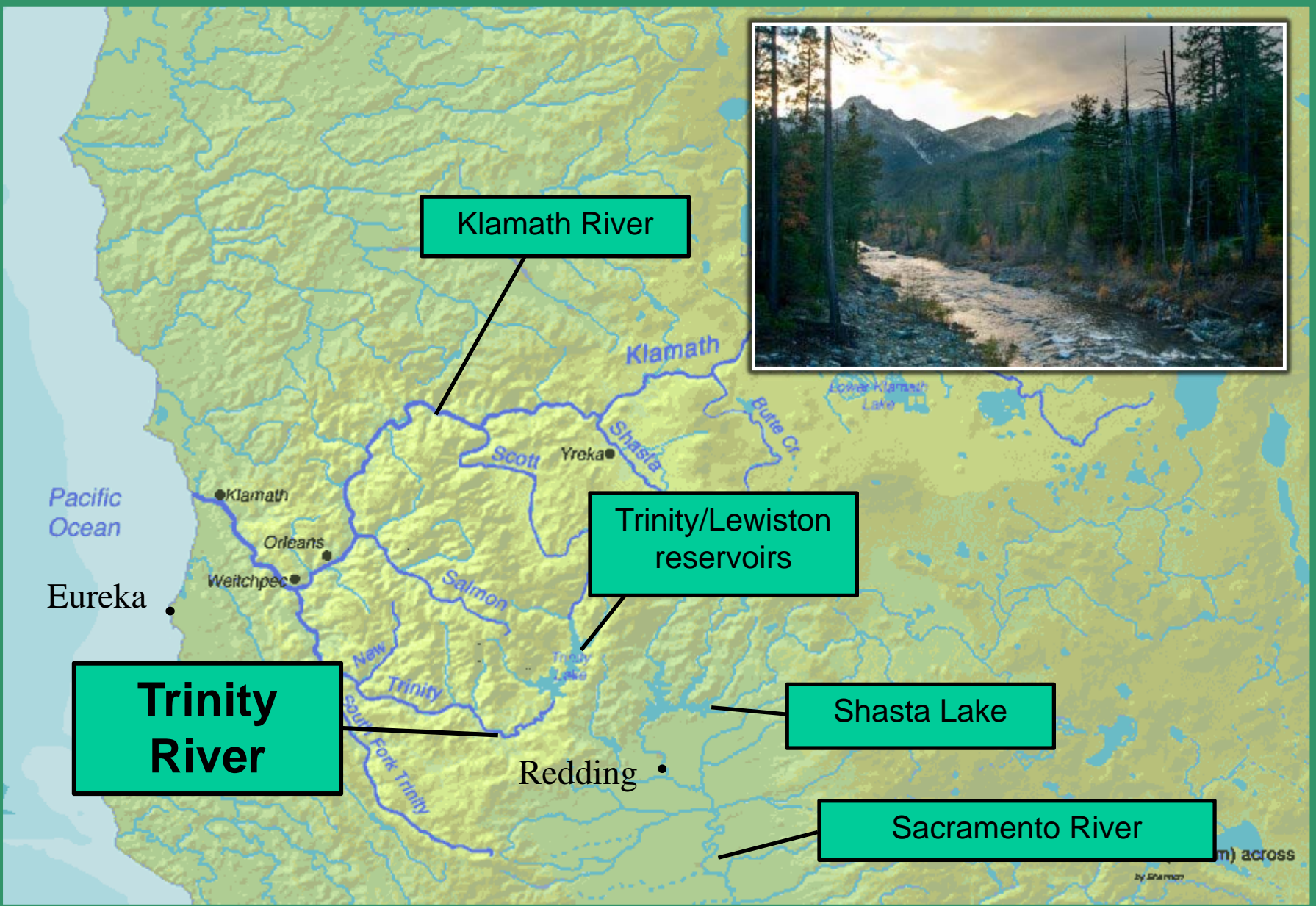




Trinity River Project and Restoration Program

Northern California
Water Education Foundation Tour
October 11, 2018



Klamath River

Trinity/Lewiston reservoirs

Trinity River

Shasta Lake

Sacramento River

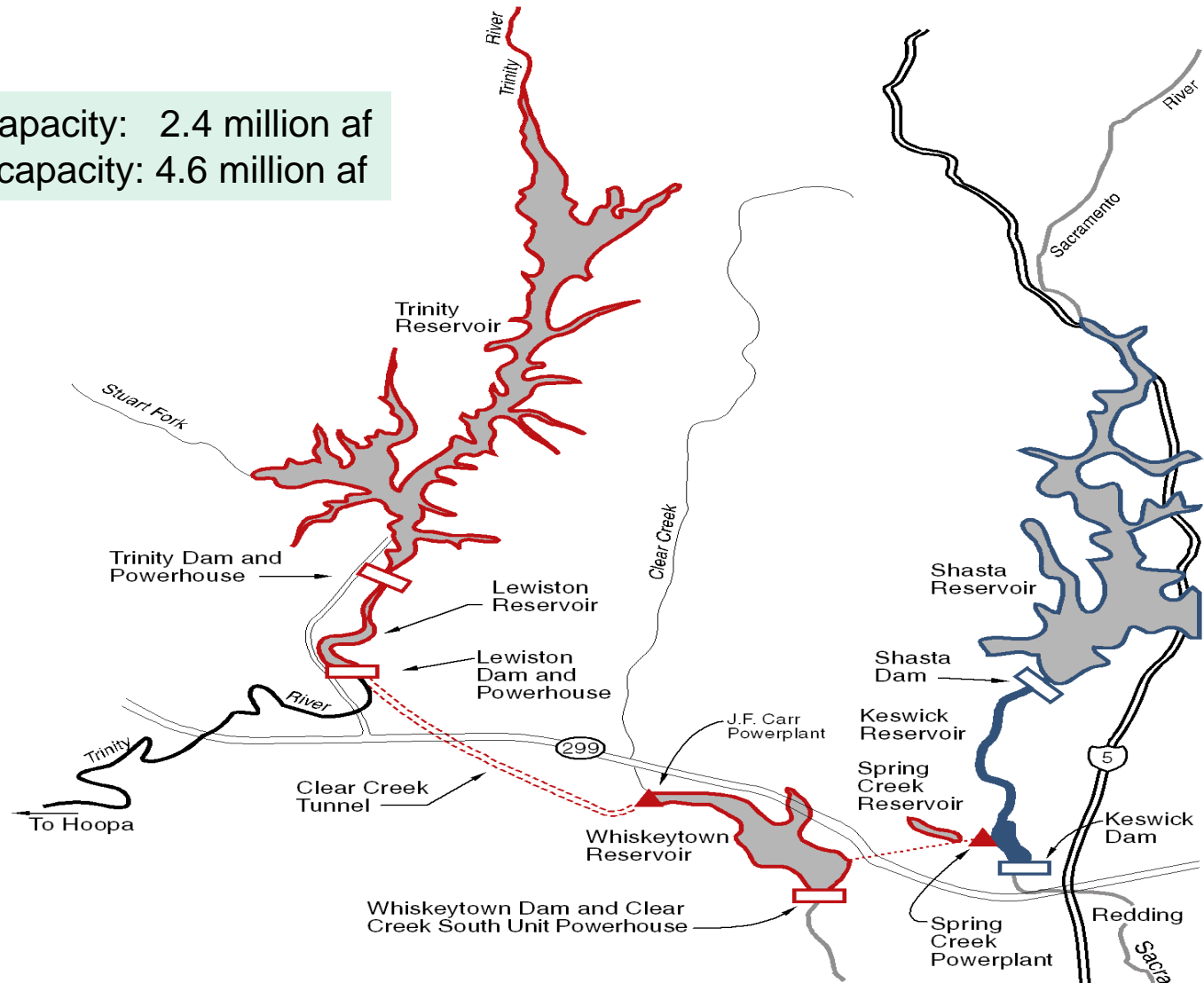
by Sherman

(m) across



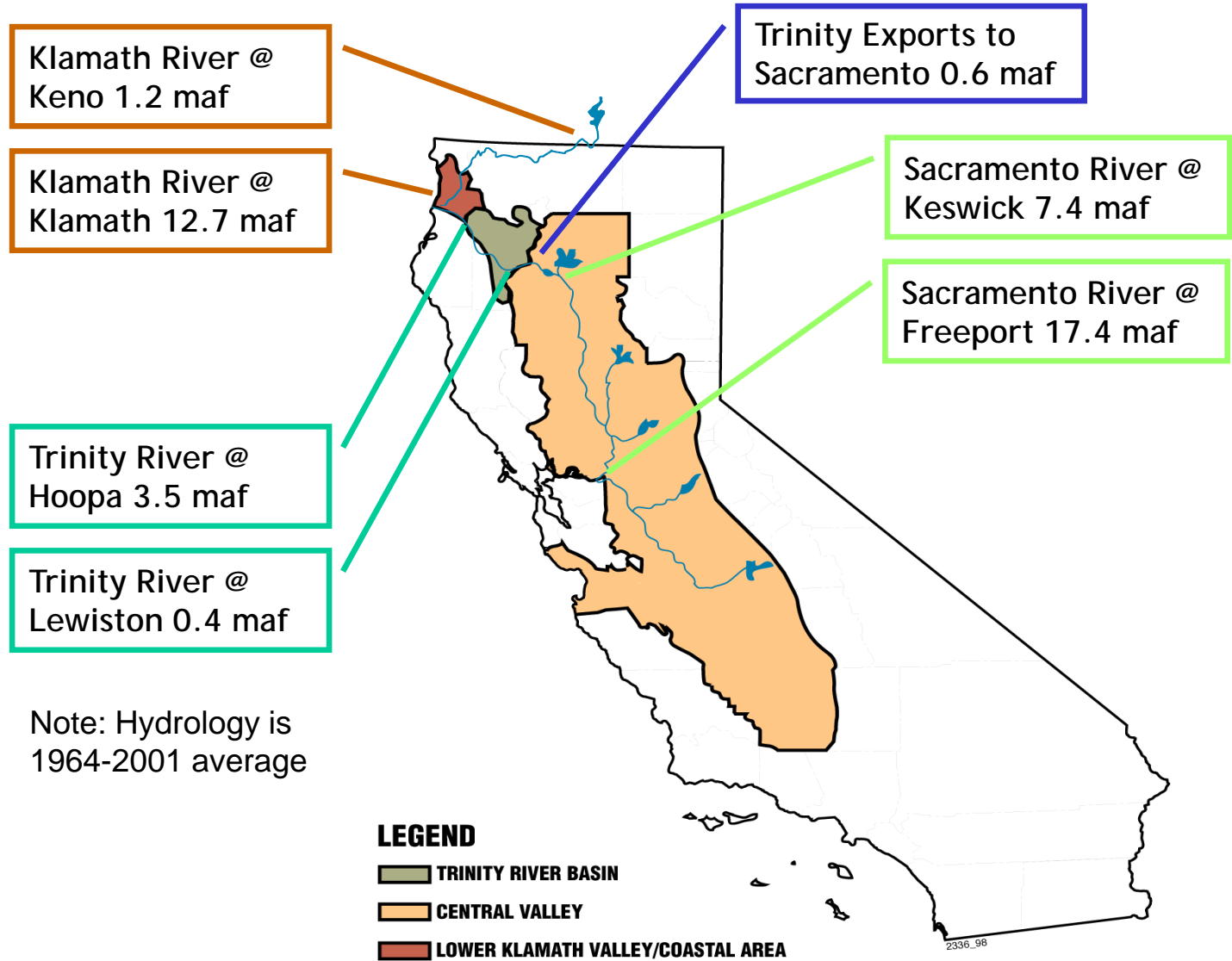
Trinity River Division/Project

- Trinity Reservoir capacity: 2.4 million af
- Shasta Reservoir capacity: 4.6 million af



Map and Hydrology

Average Annual Outflows



Trinity Basin

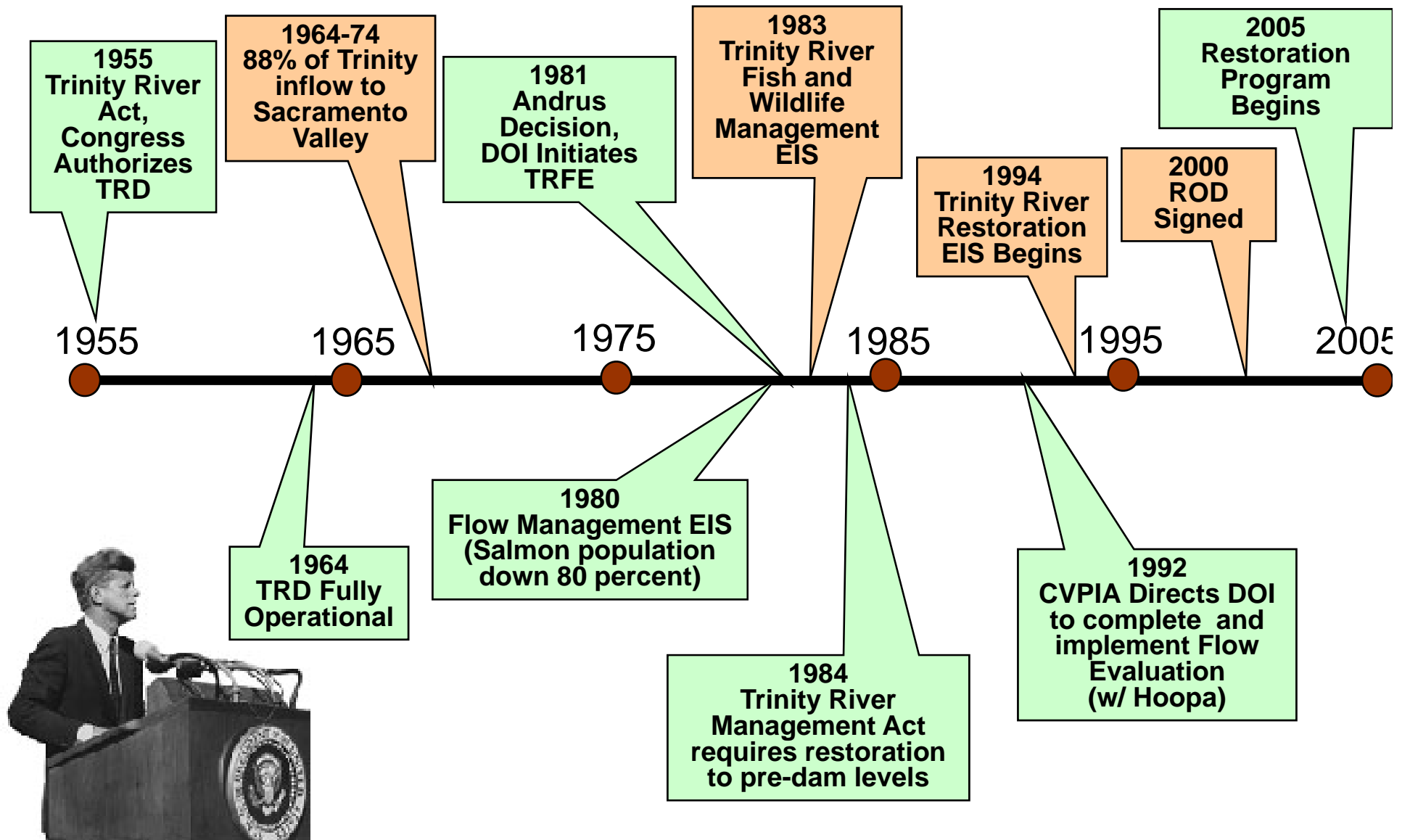


Hoopa Valley, Yurok, and Karuk Tribes

“The fishery and other resources of the Trinity River and the lower Klamath River Basins defined the life and culture of area Indians since time immemorial. Salmon and other fish historically provided the primary dietary staple for tribes in the area.”



Legislative and Project History





Bruce Babbitt and Hoopa Tribal Chairman signing Trinity ROD



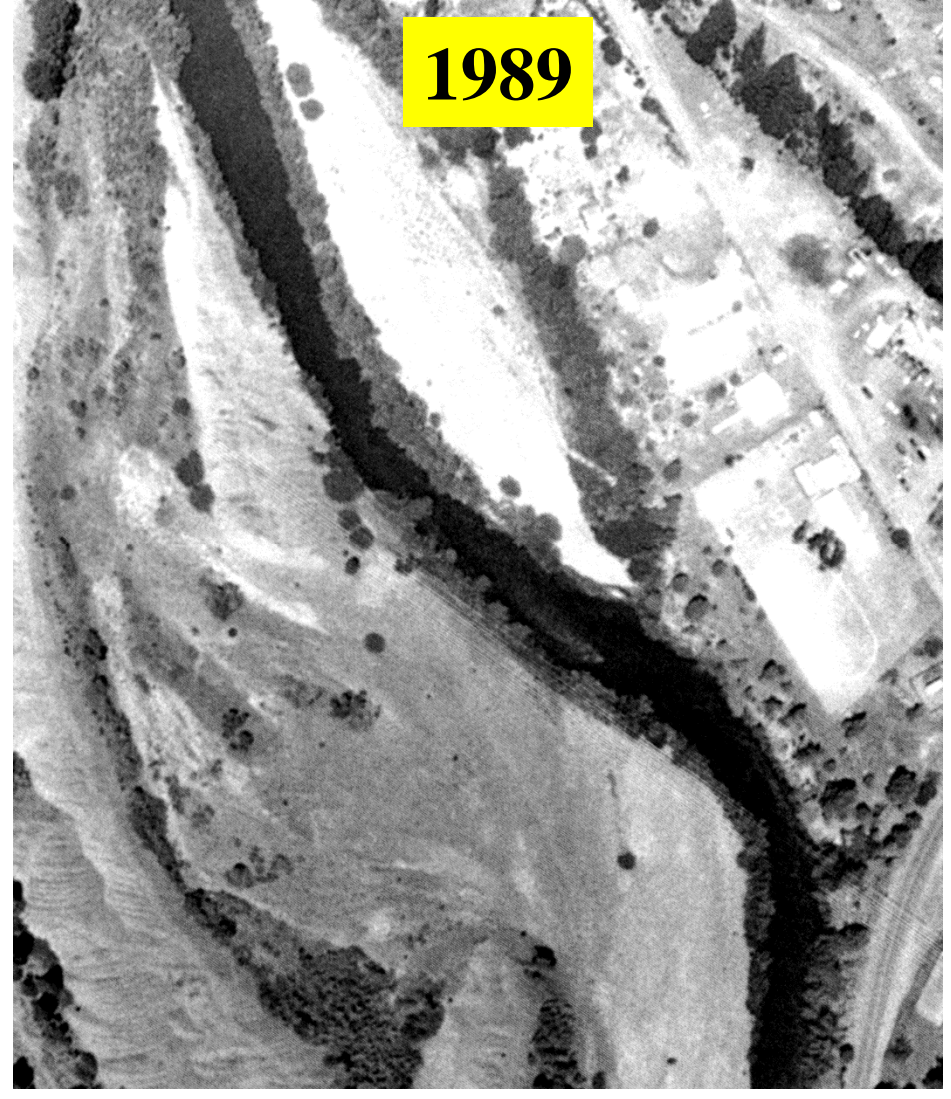
Record of Decision

EIS/EIR & ROD
challenged in 2001 -
District Court decision
overturned in 2004



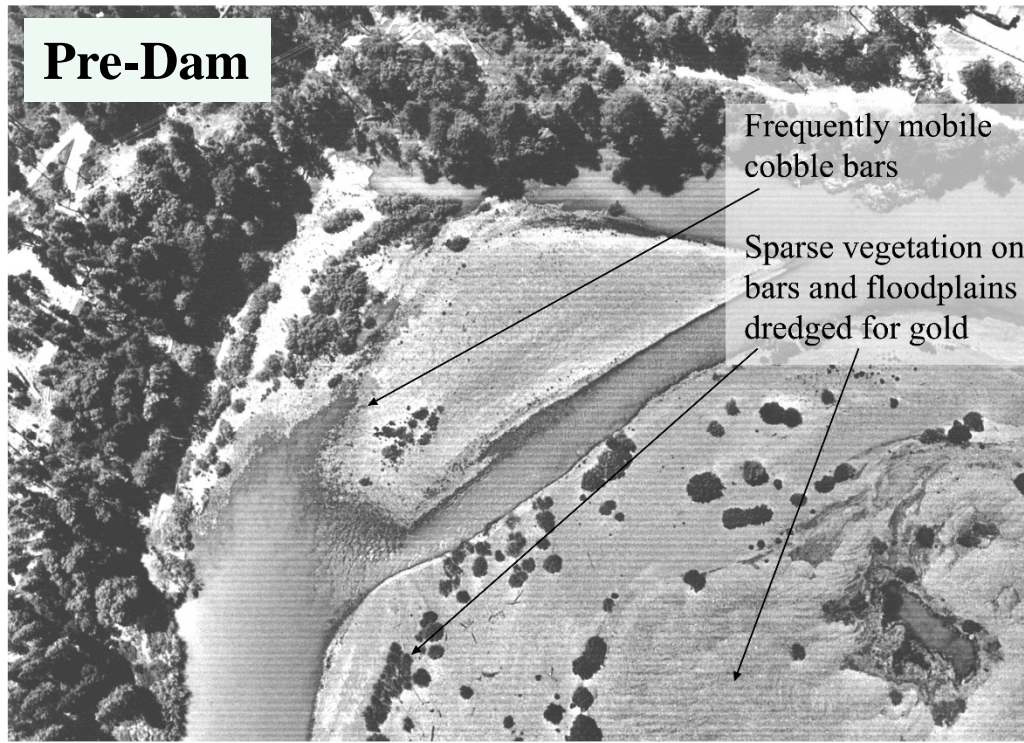
Interior Secretary, Bruce Babbitt, floating in a traditional Hupa Canoe 12/19/2000

Pre- and Post-Dam Channel Impacts

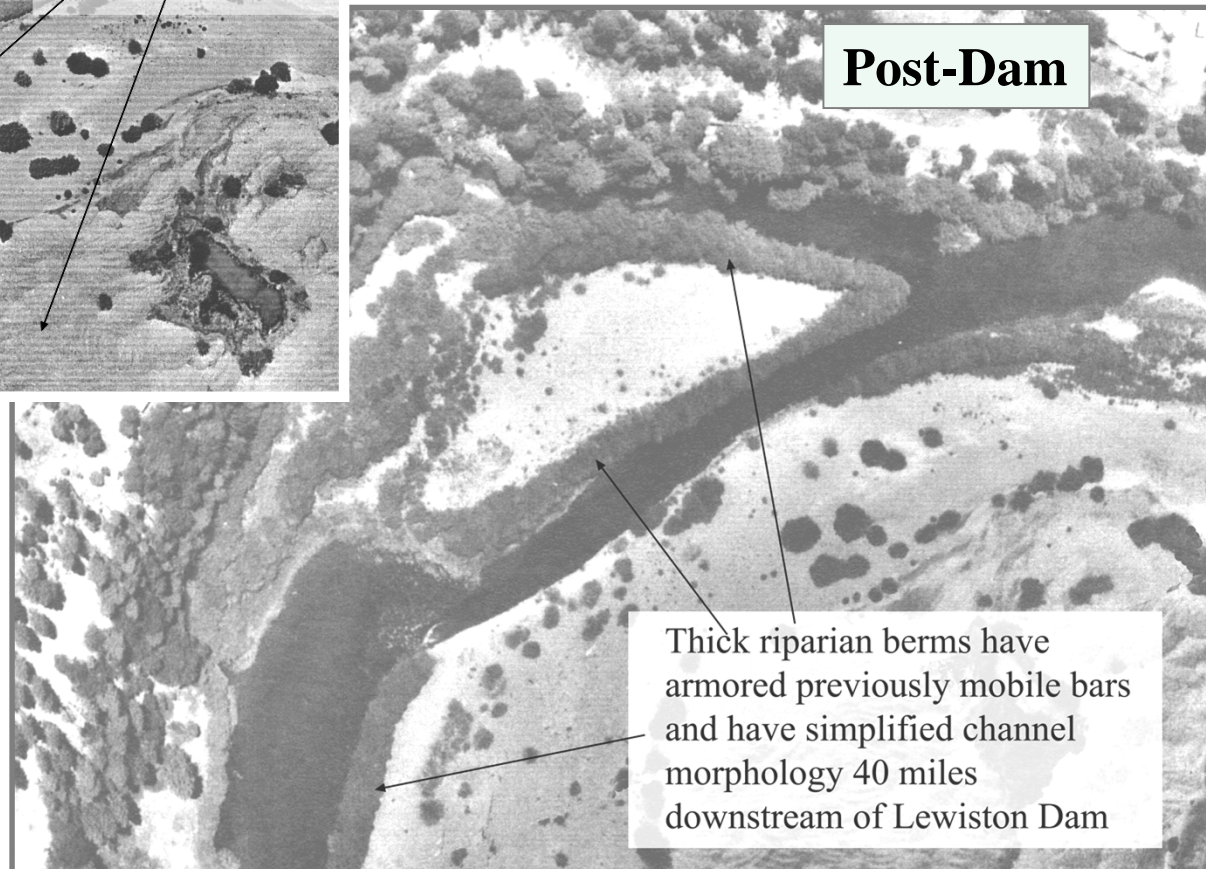


Changes to Trinity River Channel Morphology

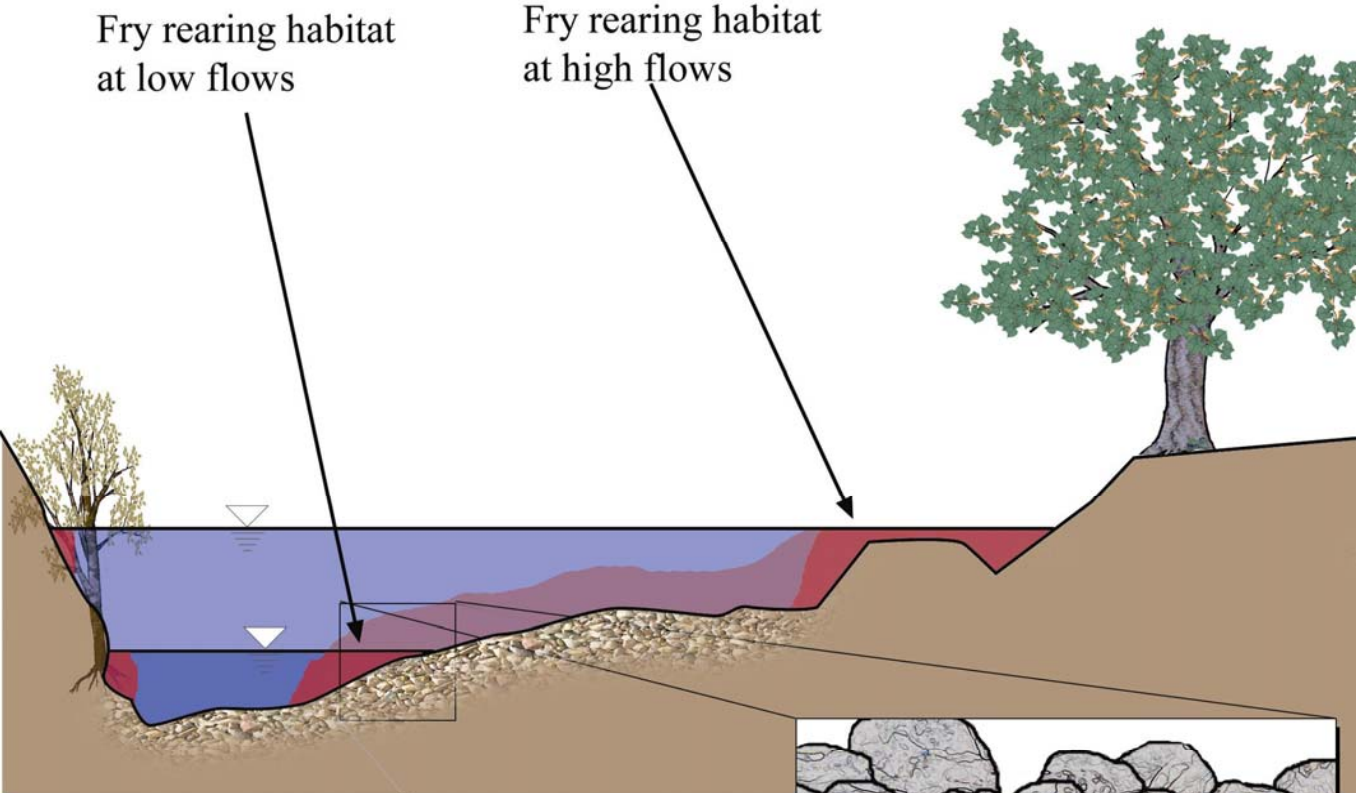
Pre-Dam



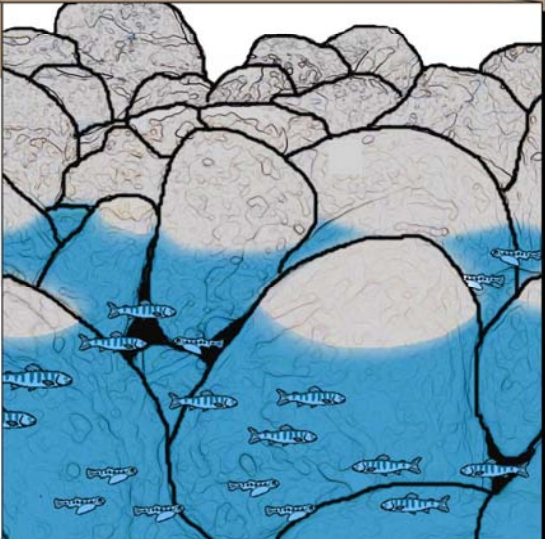
Post-Dam



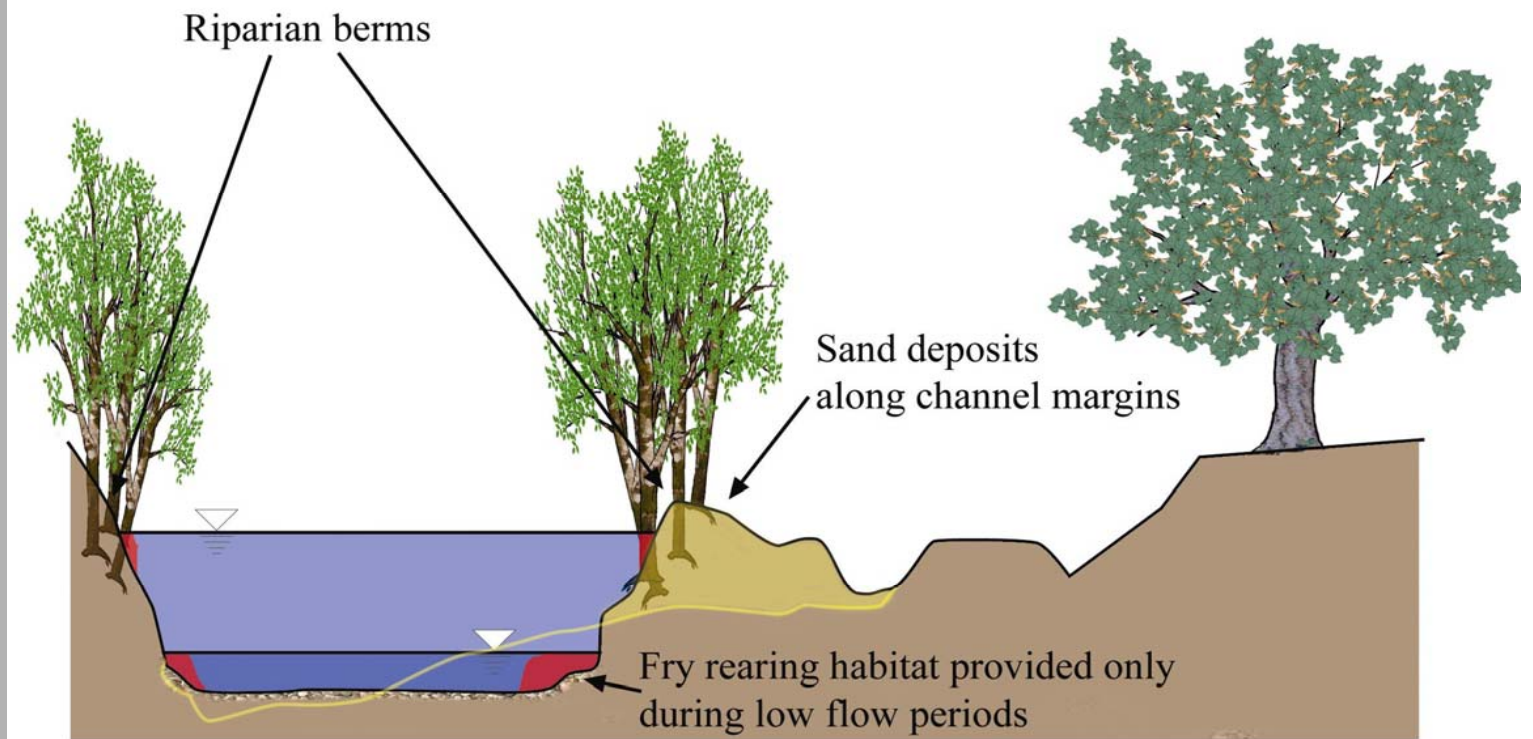
Historical Morphology and Habitat



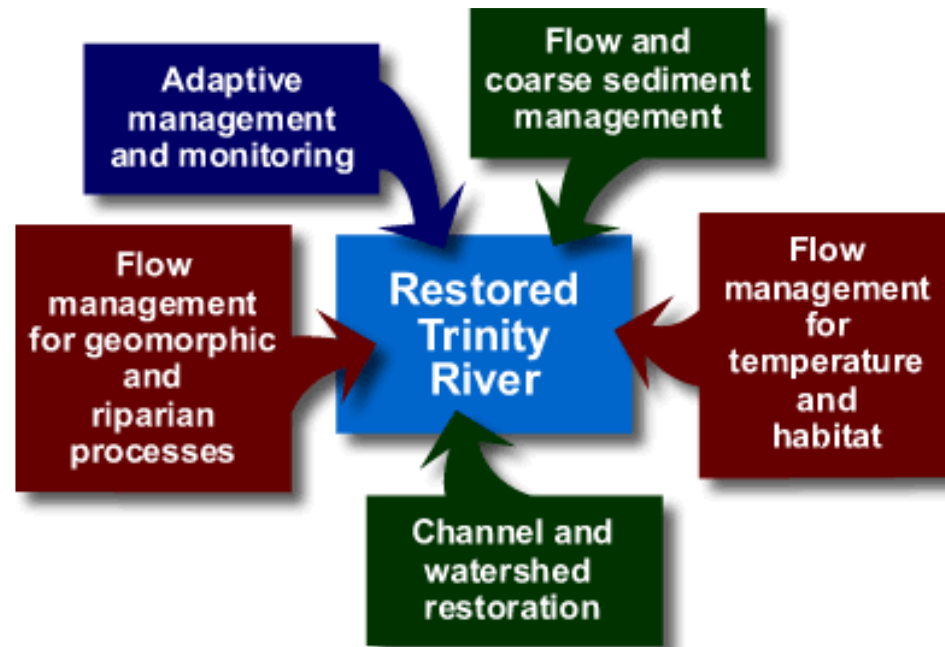
Salmonid fry require clean exposed cobble gravel channel margins with low water velocity



Existing Morphology and Habitat



Goals of the Trinity River Restoration Program (TRRP)



“Re-establish the natural physical processes that create and maintain high quality aquatic habitat”

“Create spawning and rearing conditions downstream of the dams that best compensate for lost habitat upstream”

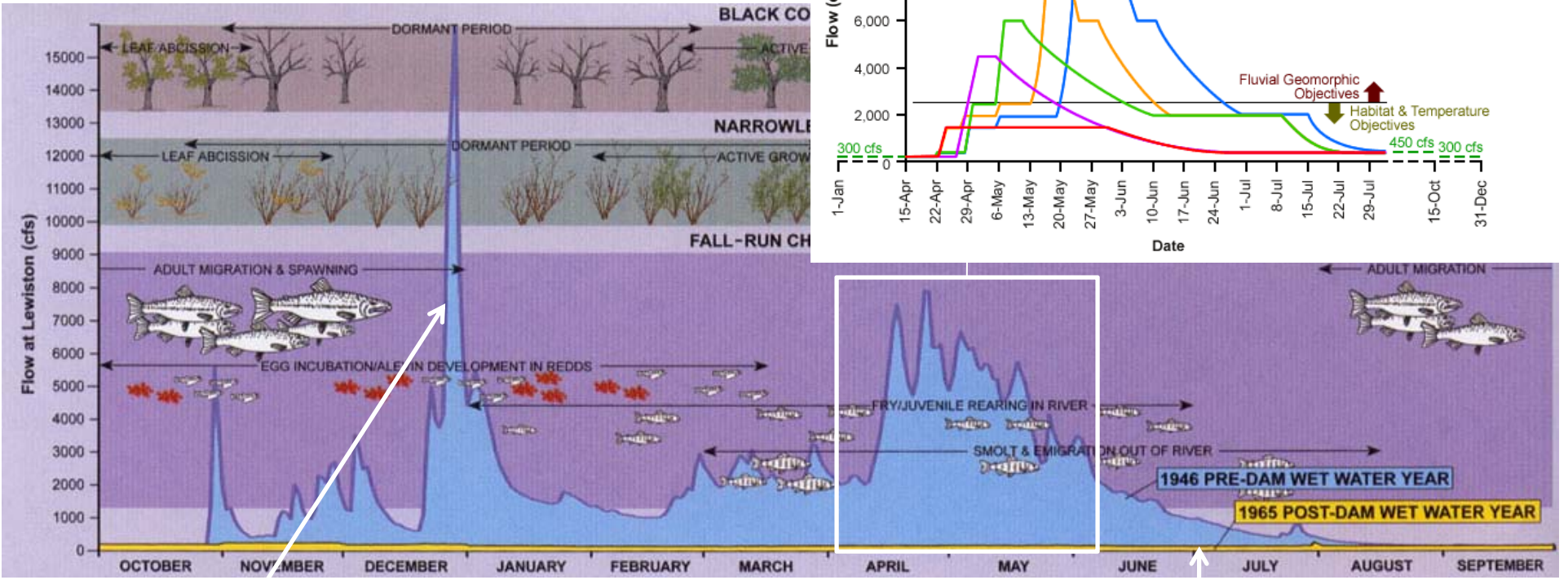
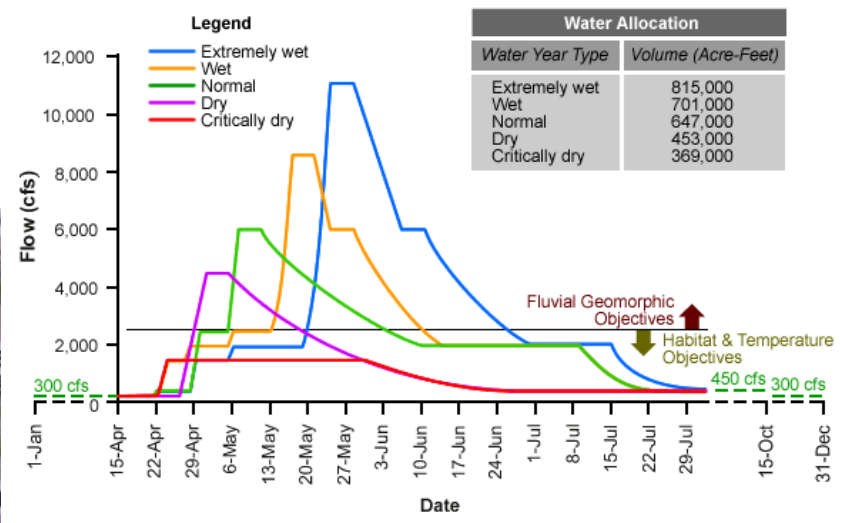
**Key Components: Flows + Channel Restoration
+ Gravel Injection**



Increased Trinity River Flows: Mimicking Historic Hydrologic Patterns/Peaks

ROD instituted spring ecological flows (started in 2004)

Typical Flow Releases from Lewiston Dam to the Trinity River



Pre Dam Flows

Post Dam Flows (yellow line)

Bucktail Bridge at 11,000 (2011)



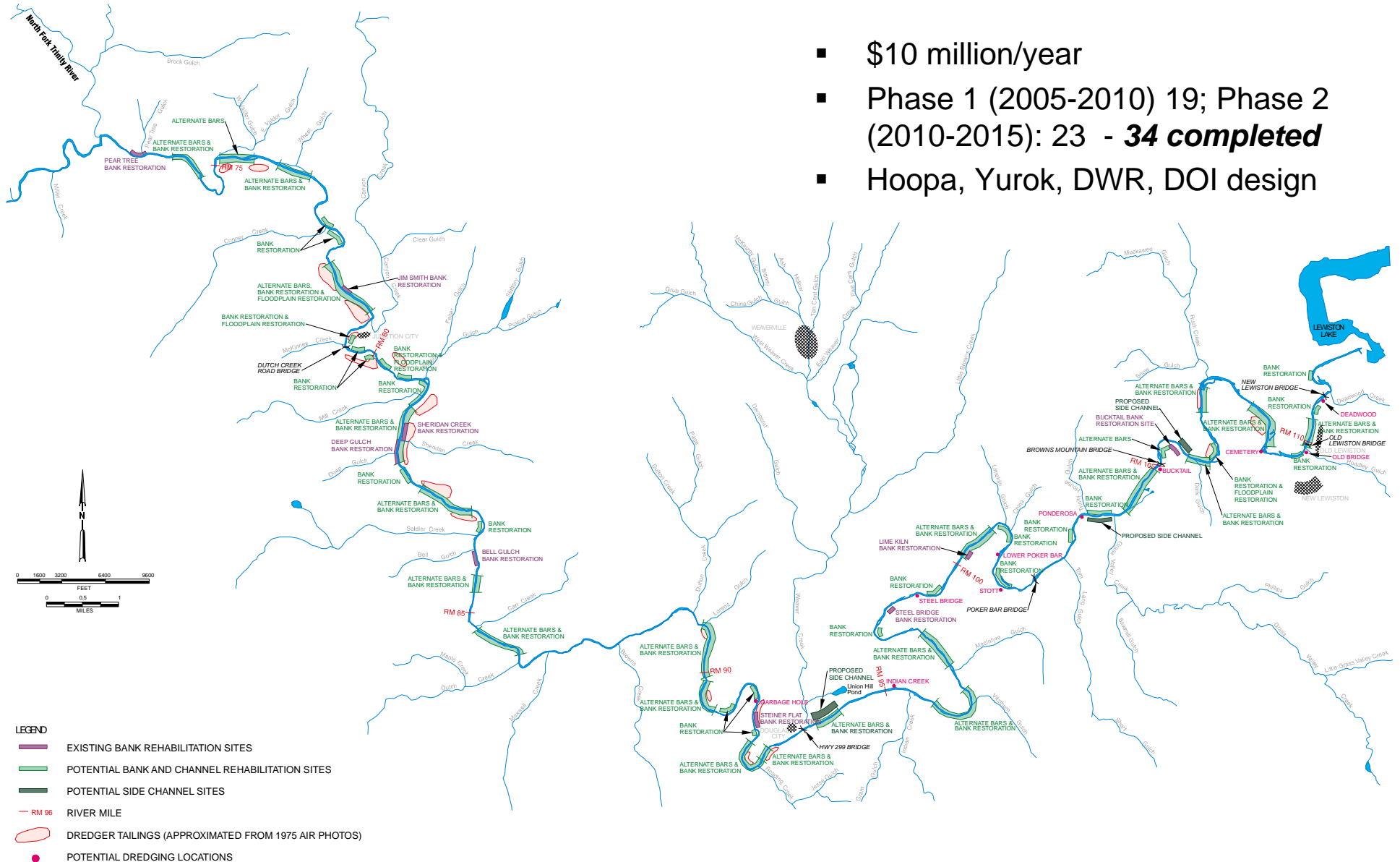


Bucktail Bridge at 11,000 cfs (2011)

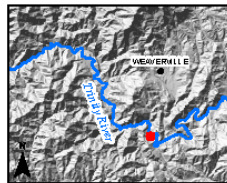
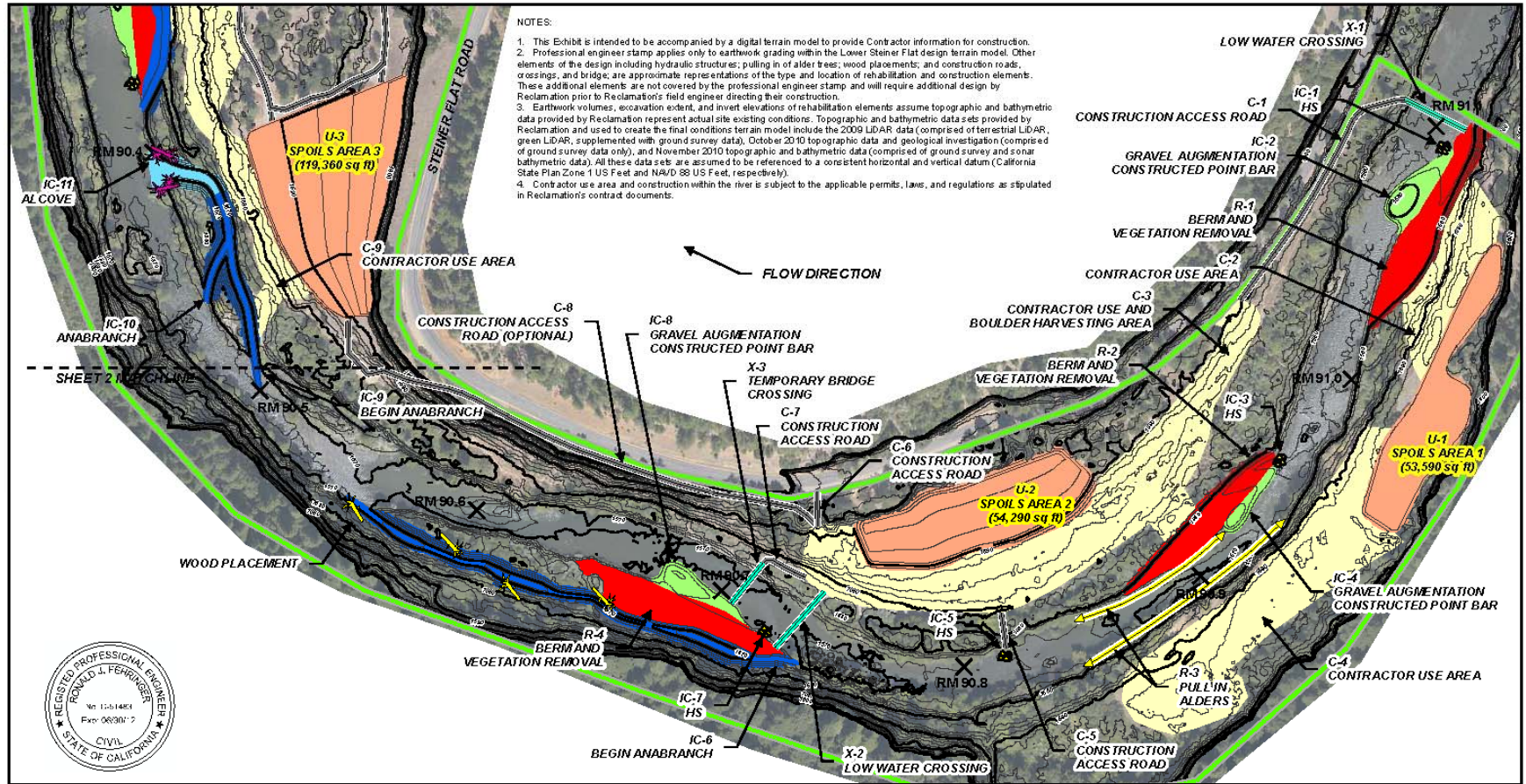


Existing and Potential Channel Rehabilitation Sites

- \$10 million/year
- Phase 1 (2005-2010) 19; Phase 2 (2010-2015): 23 - **34 completed**
- Hoopa, Yurok, DWR, DOI design



Final Lower Steiner Flat Design (sheet 1 of 2)



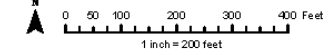
BASE DATA

- █ Phase 2 Environmental Site Limit (ESL)
- X** River Mile (RM)
- Terrain Model Major Contour (ten foot interval)
- Terrain Model Minor Contour (two foot interval)
- Site Design Terrain Model Boundary

REHABILITATION ELEMENTS

- Hydraulic Structure (HS)
- Gravel Augmentation
- Berm and Vegetation Removal
- Available Spoils Area
- Contractor Use Area
- Construction Access Road
- Temporary Bridge or Low Water Crossing

- Low Flow Side Channel (Anabranch) Excavation Extent
- Alcove Excavation Extent
- Pull In Alders
- Alcove Wood Placement (less than ten wood pieces)
- Side Channel Wood Placement (less than five wood pieces)



Source: 2010 Orthophoto, ESL Boundary (Reclamation 2010); River Mile (Reclamation 2009); Rehabilitation Elements, Terrain Model Contours, and Boundary (CH2M HILL 2010).

Exhibit 23. Lower Steiner Flat Rehabilitation
Site Final Design - Terrain Model Contours
RM 91.1 to 90.4
Sheet 1 of 2

January 2011
Final Design Report (Task M5)
Trinity River Restoration Program



Bucktail Channel (2016)



Sawmill Channel (2009)

2015/2016 Flow Augmentation

Ichthyophthirius multifiliis ("Ich")
parasite concerns
related to
potentially crowded
conditions



- Additional 47 taf release in mid-Aug - Sept to maintain water temperatures and flush parasites to avoid outbreak
- Peak flow of 2800 cfs on Lower Klamath River

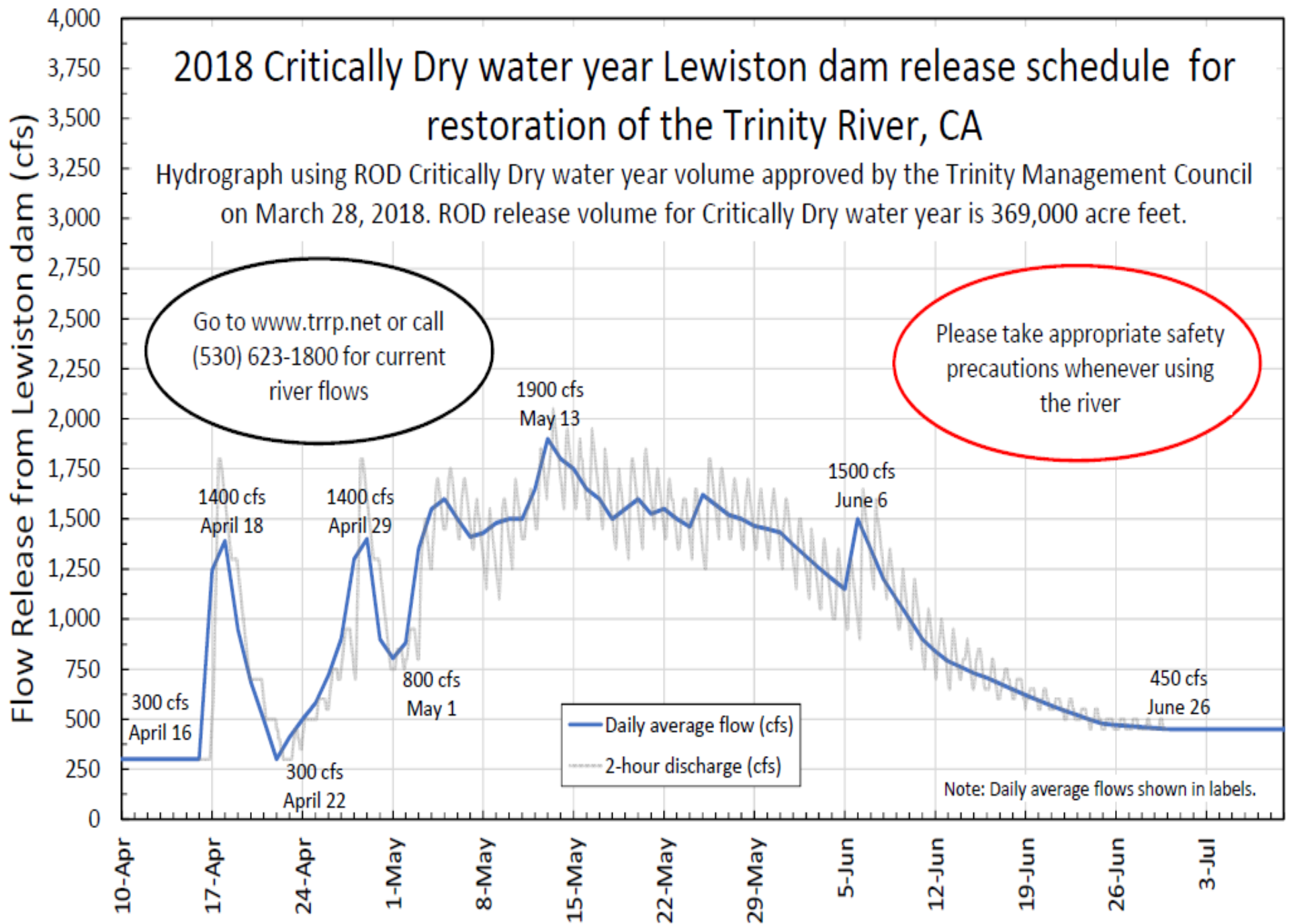
TRRP 2018 Summary

- Flows: Dam releases followed an 'critically dry' year hydrograph (1900 cfs peak in mid-April) - up to 369,000 af allocation
- Rehabilitation: Deep Gulch and Sheridan Creek sites
- Watershed / Gravel Augmentation: (0)?
(based on sediment budget calculations) above Weaver Creek



2018 Critically Dry water year Lewiston dam release schedule for restoration of the Trinity River, CA

Hydrograph using ROD Critically Dry water year volume approved by the Trinity Management Council on March 28, 2018. ROD release volume for Critically Dry water year is 369,000 acre feet.





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