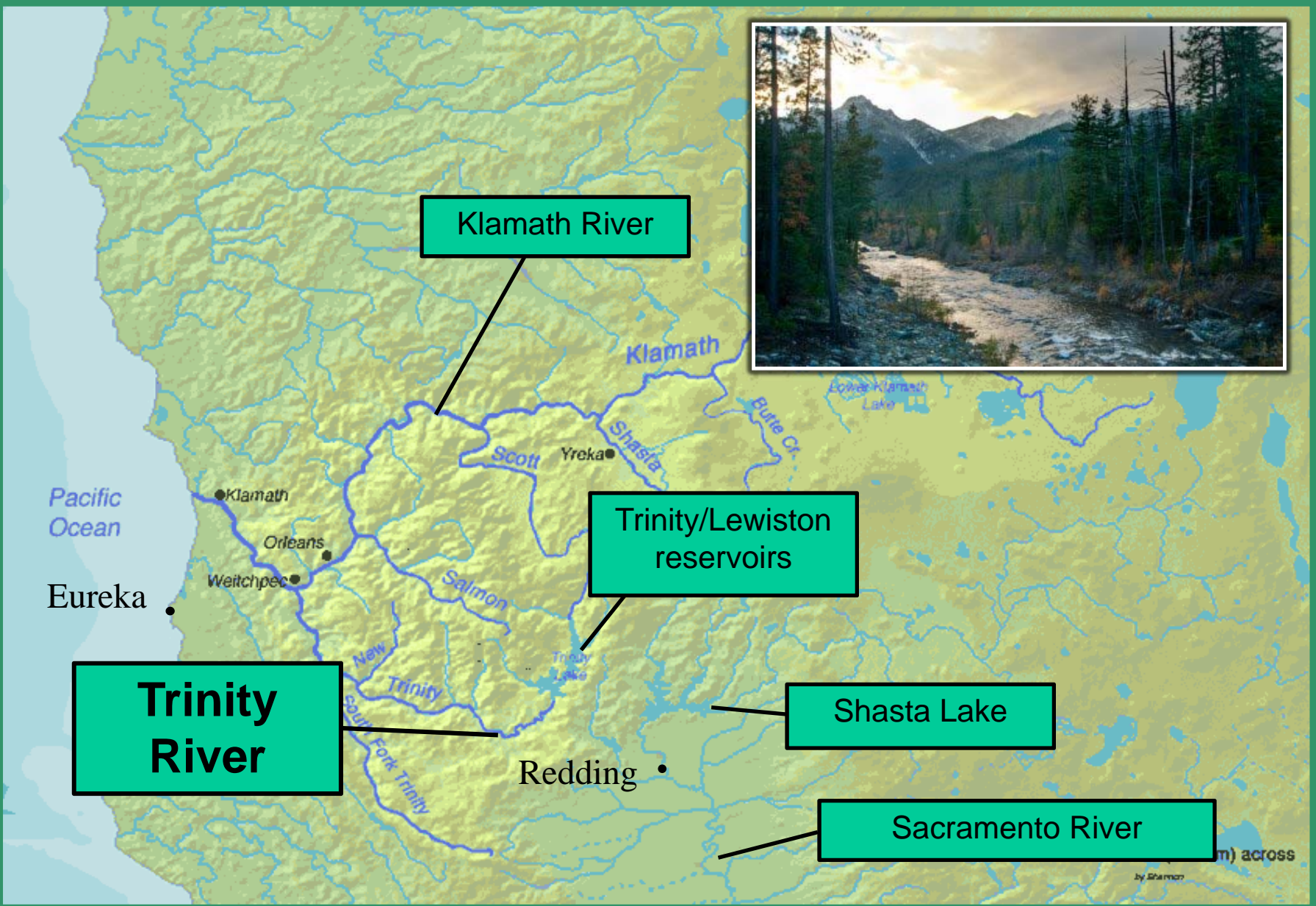




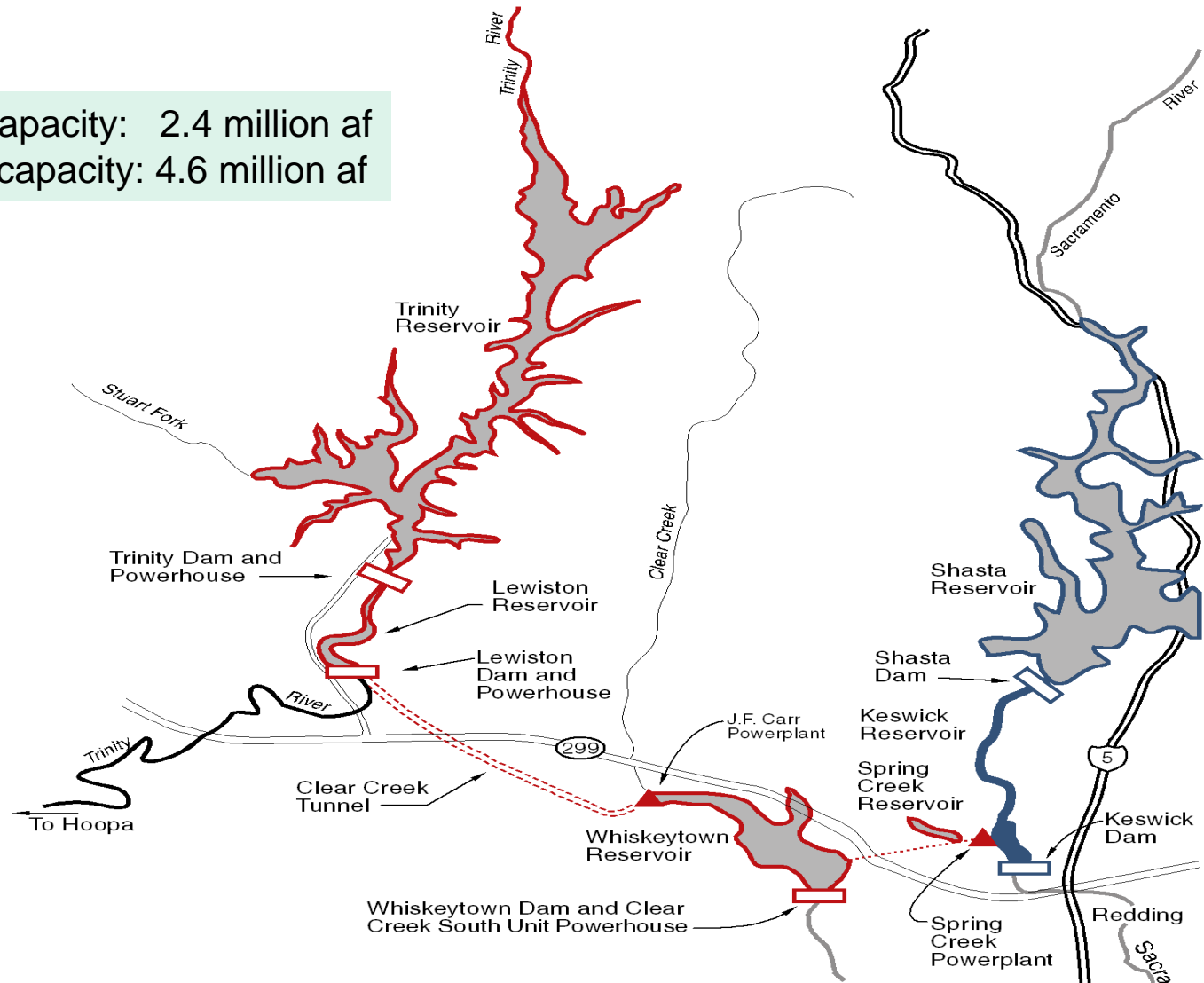
# Trinity River Project and Restoration Program

Northern California  
Water Education Foundation Tour  
October 3, 2019



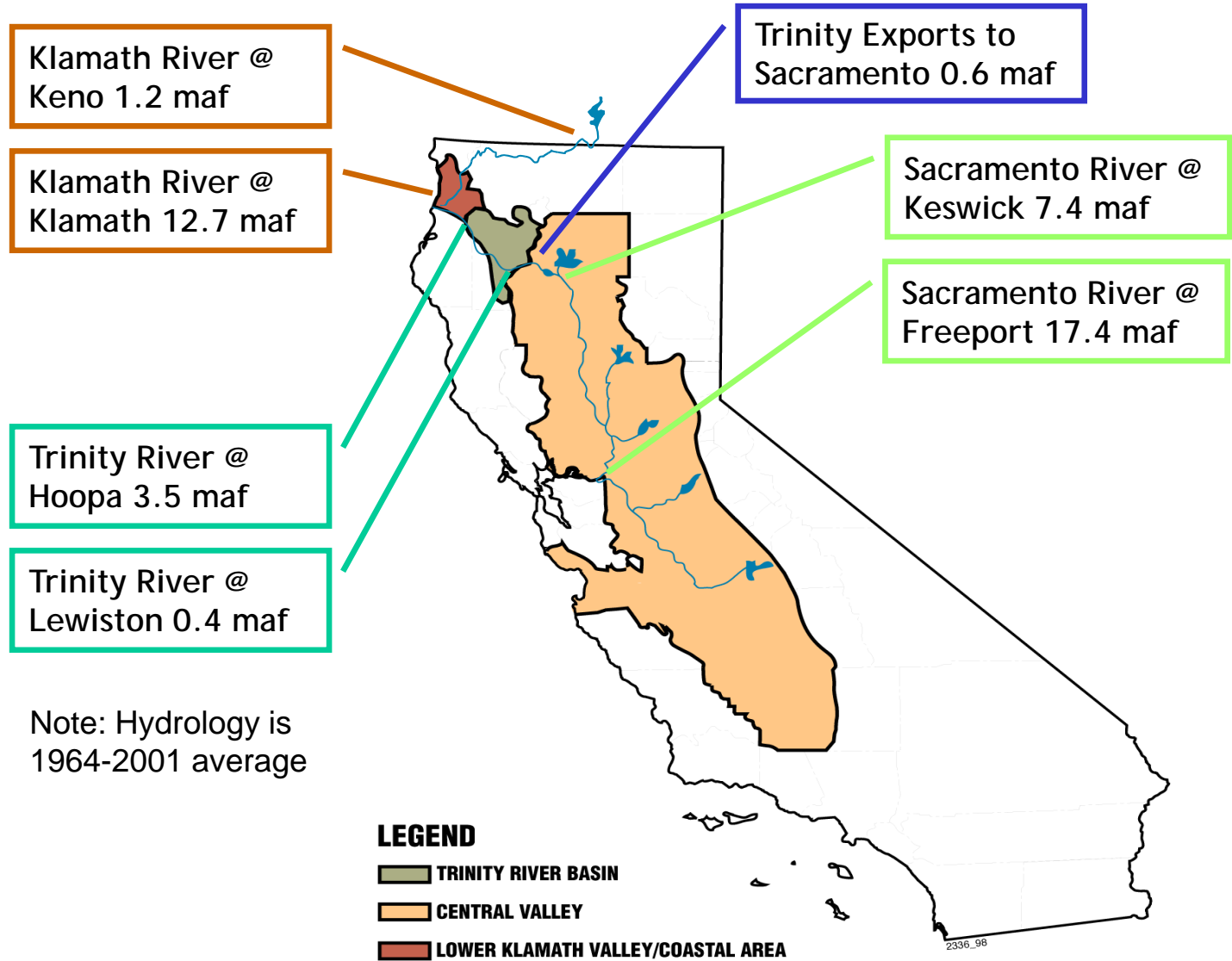
# Trinity River Division/Project

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



# Map and Hydrology

## Average Annual Outflows



Note: Hydrology is 1964-2001 average



# Trinity Basin

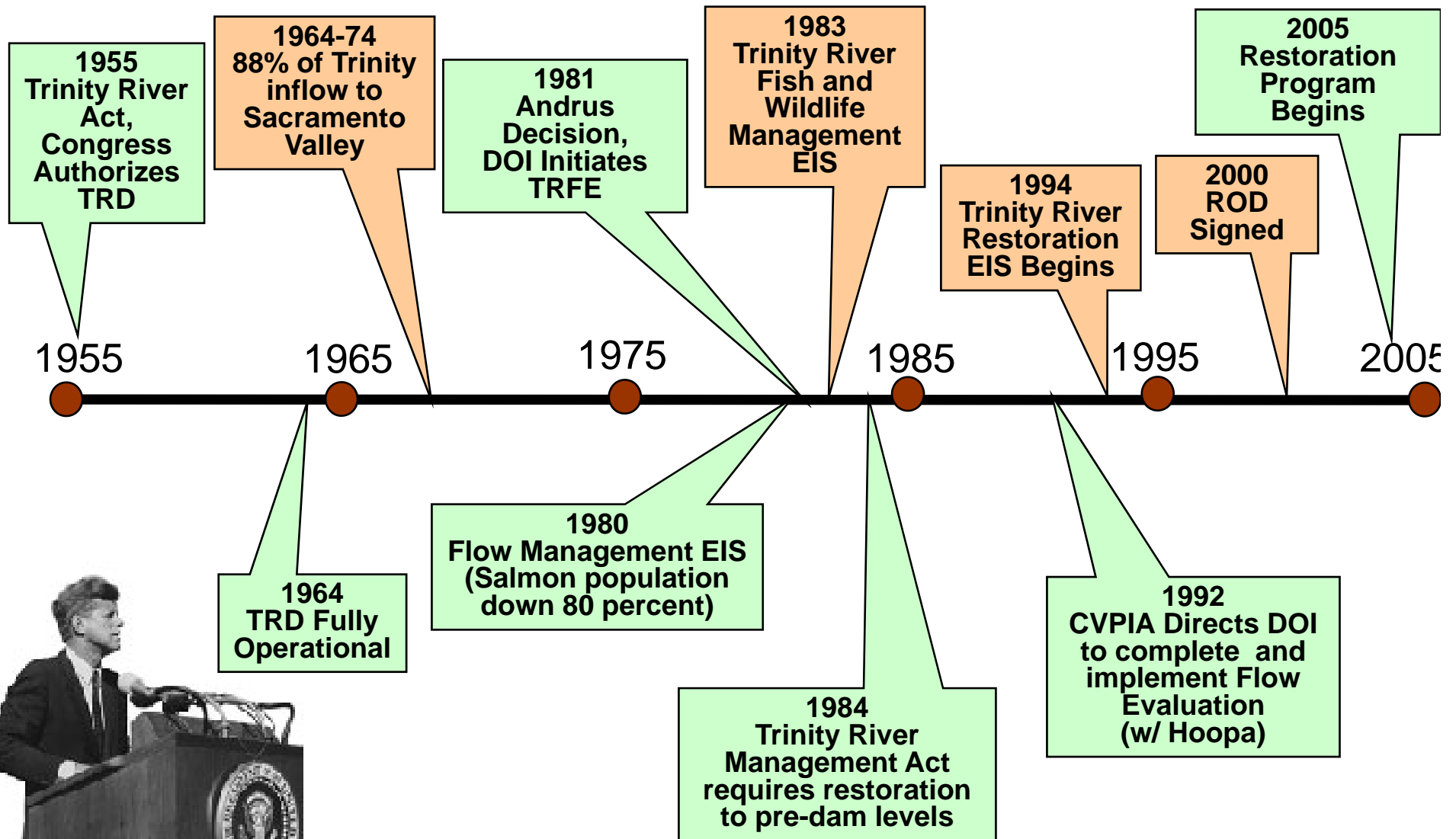


# Hoopa Valley, Yurok, and Karuk Tribes

“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*

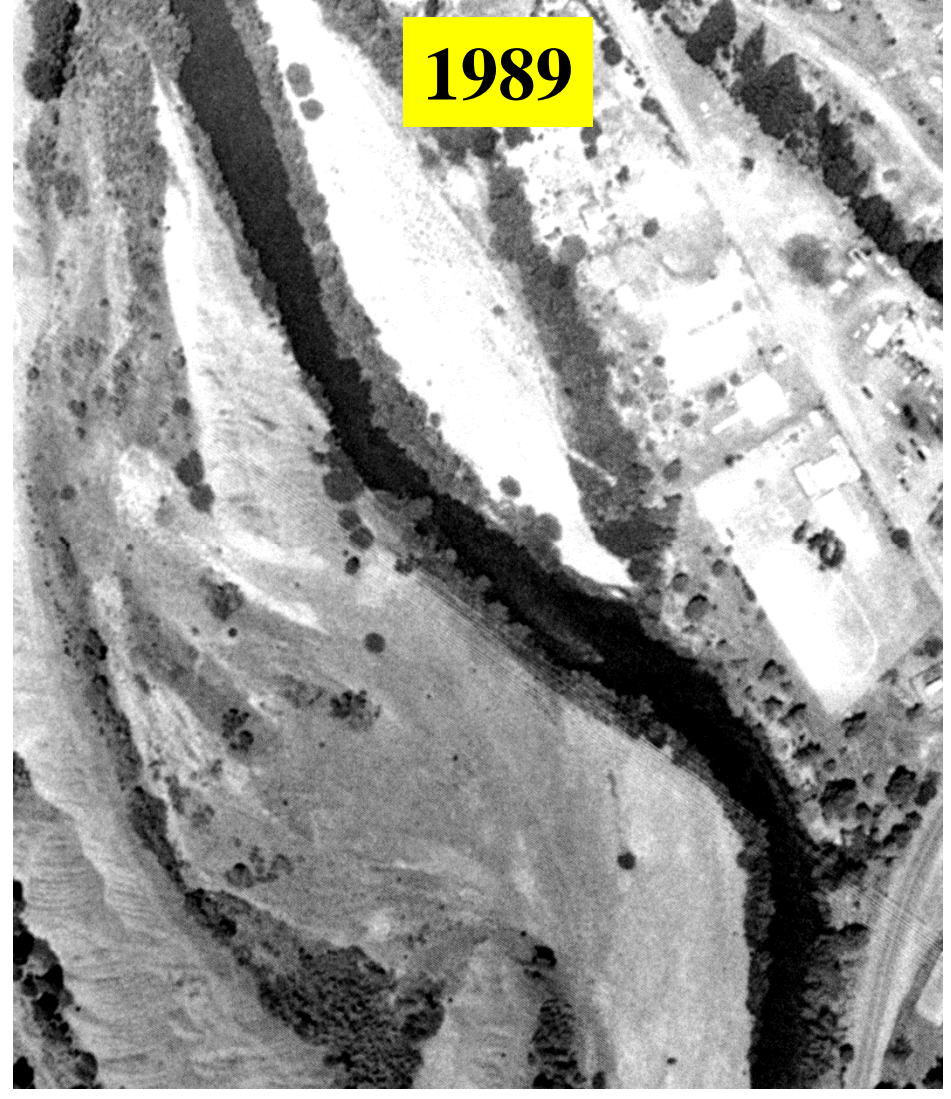
EIS/EIR & ROD  
challenged in 2001 -  
District Court decision  
overturned in 2004



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

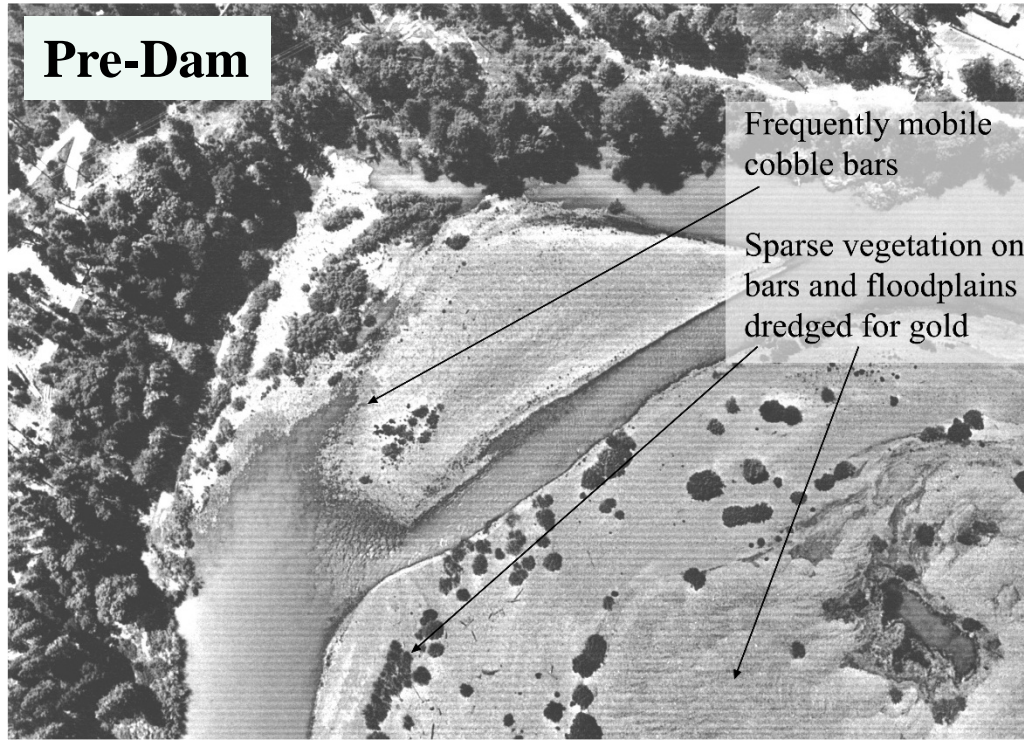


# Pre- and Post-Dam Channel Impacts

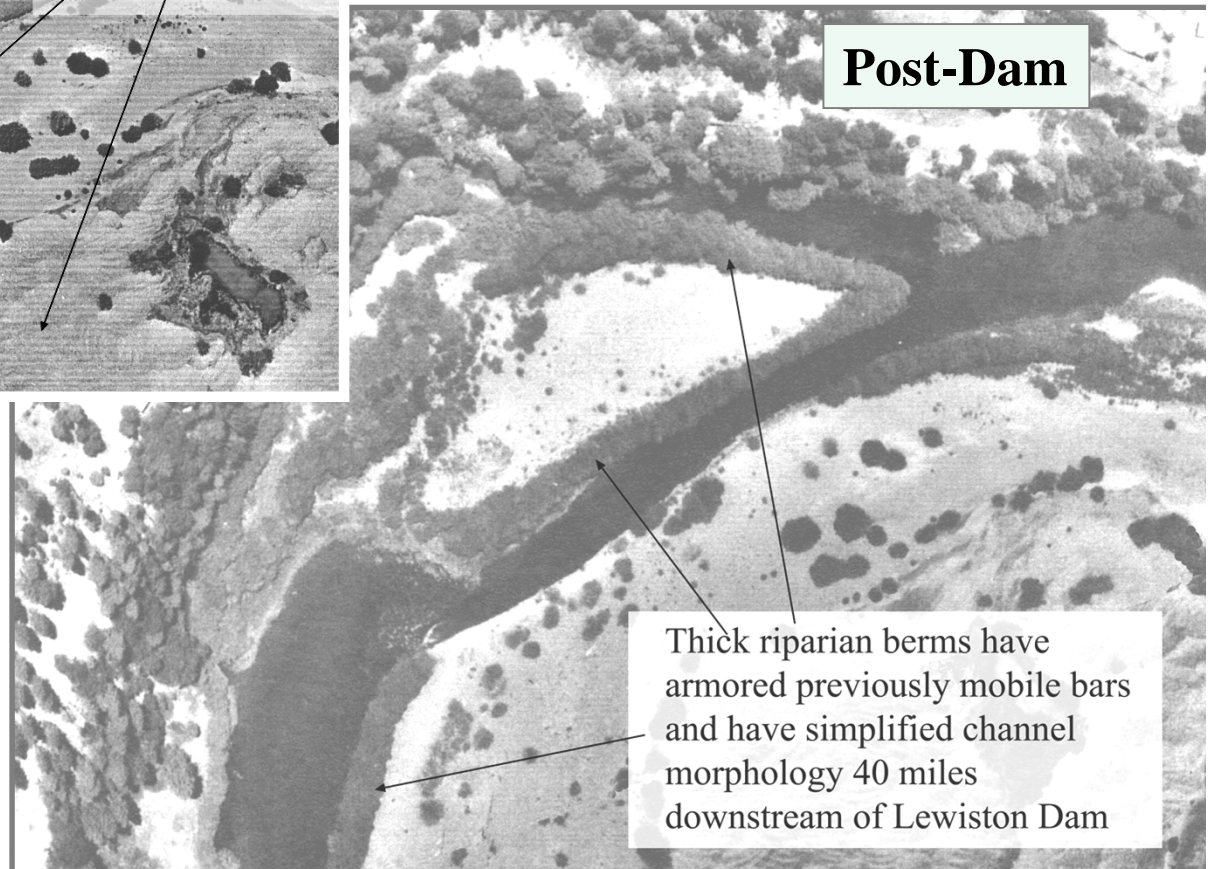


# Changes to Trinity River Channel Morphology

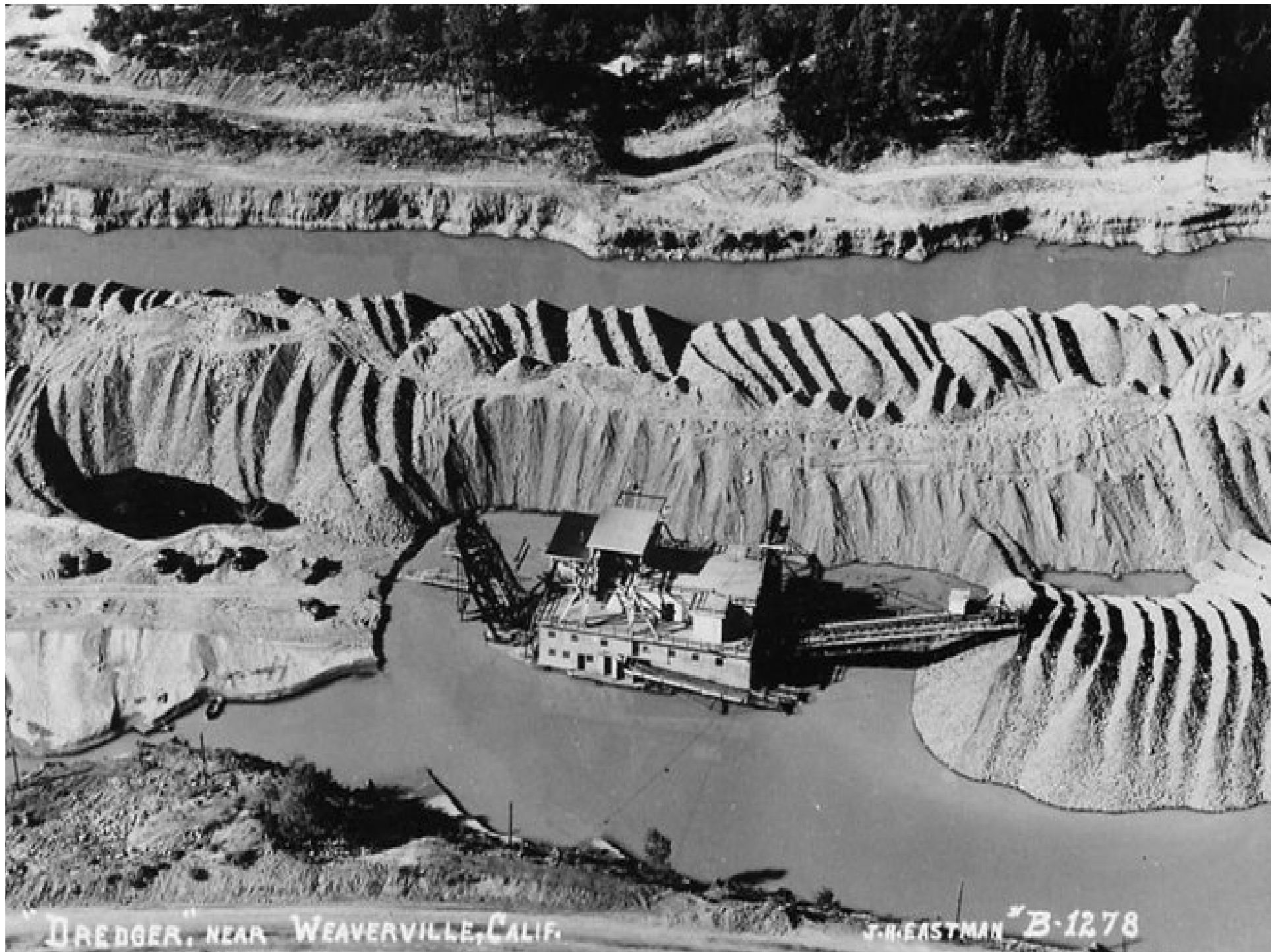
**Pre-Dam**



**Post-Dam**



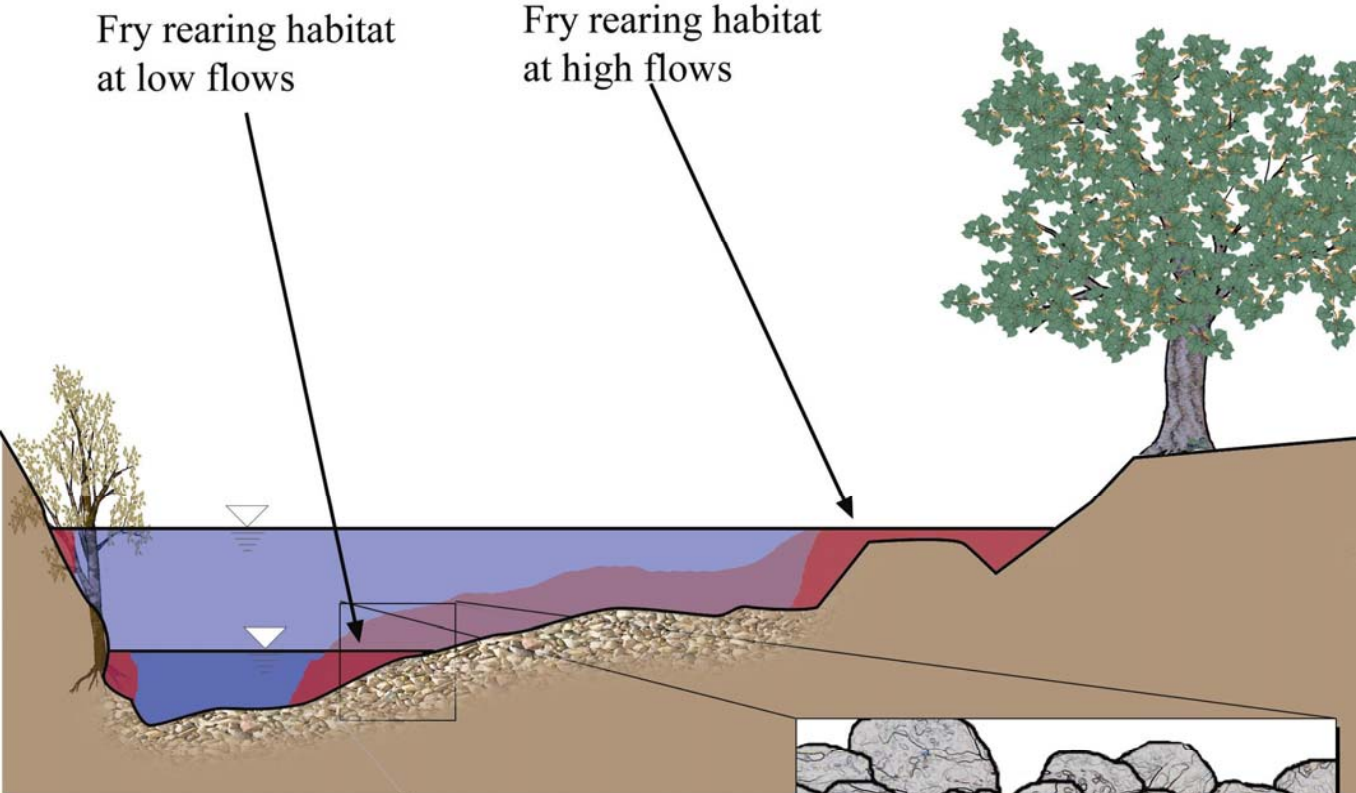




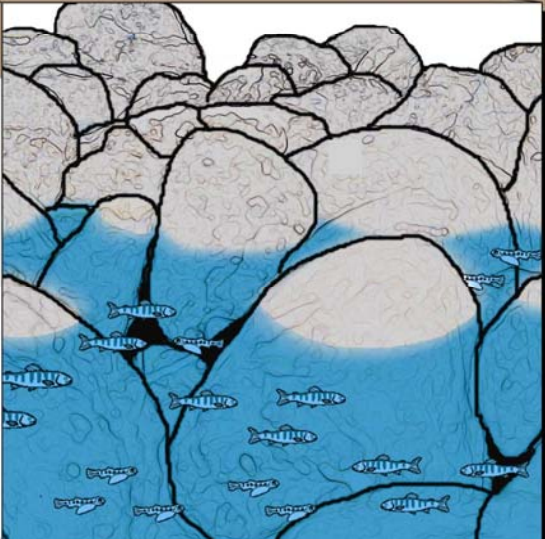
"DREDGER," NEAR WEAVERVILLE, CALIF.

J. HEISTMAN "B-1278"

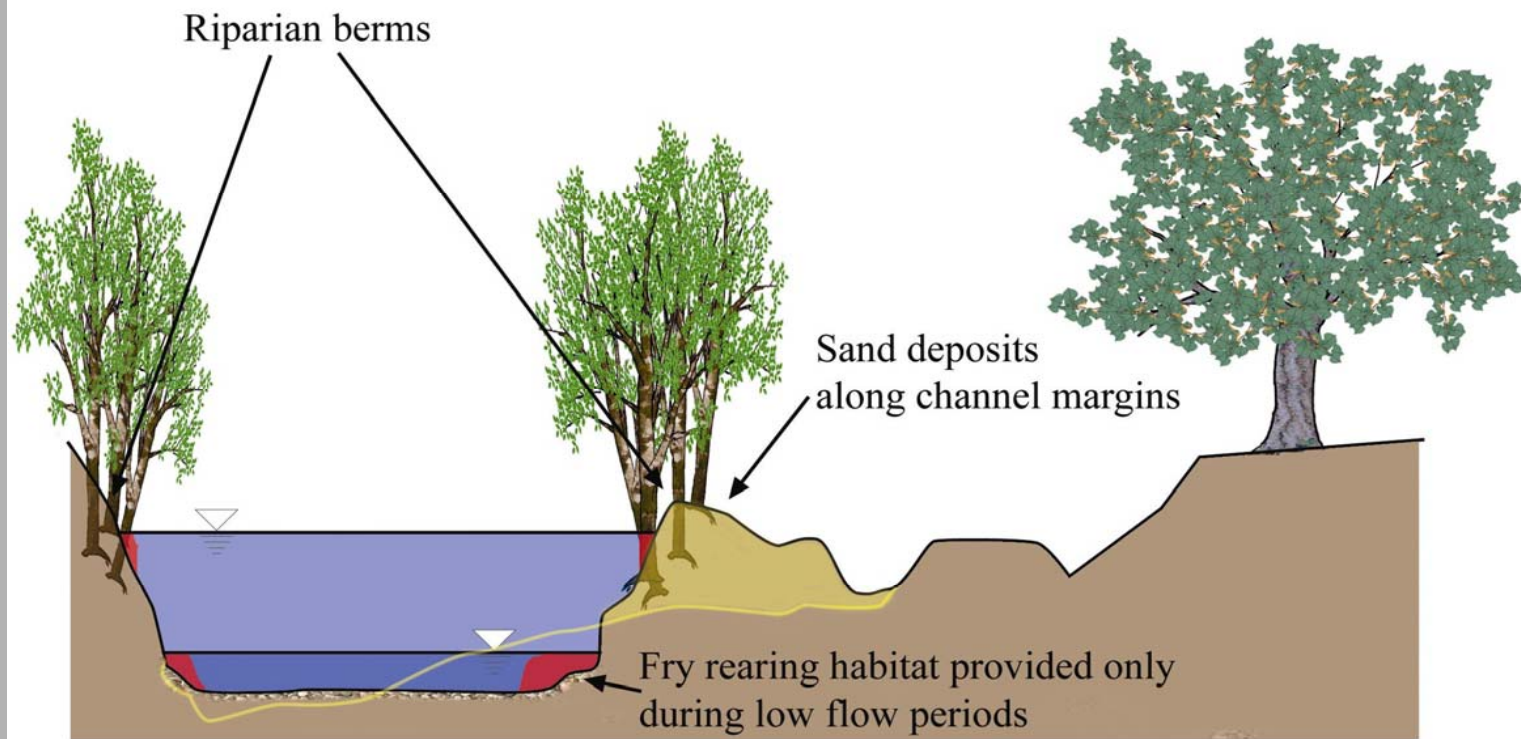
# Historical Morphology and Habitat



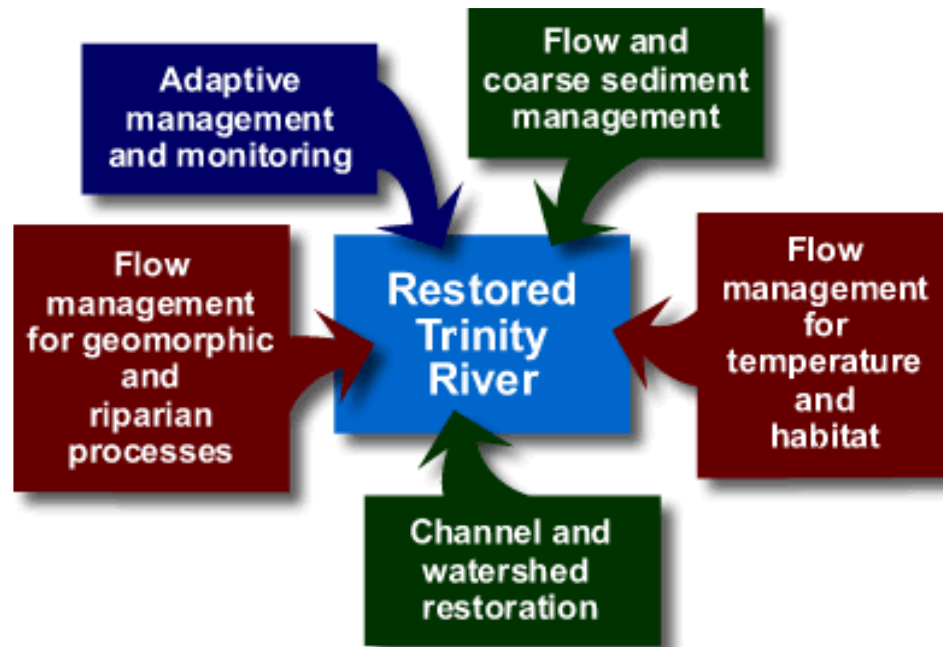
Salmonid fry require clean exposed cobble gravel channel margins with low water velocity



# 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”

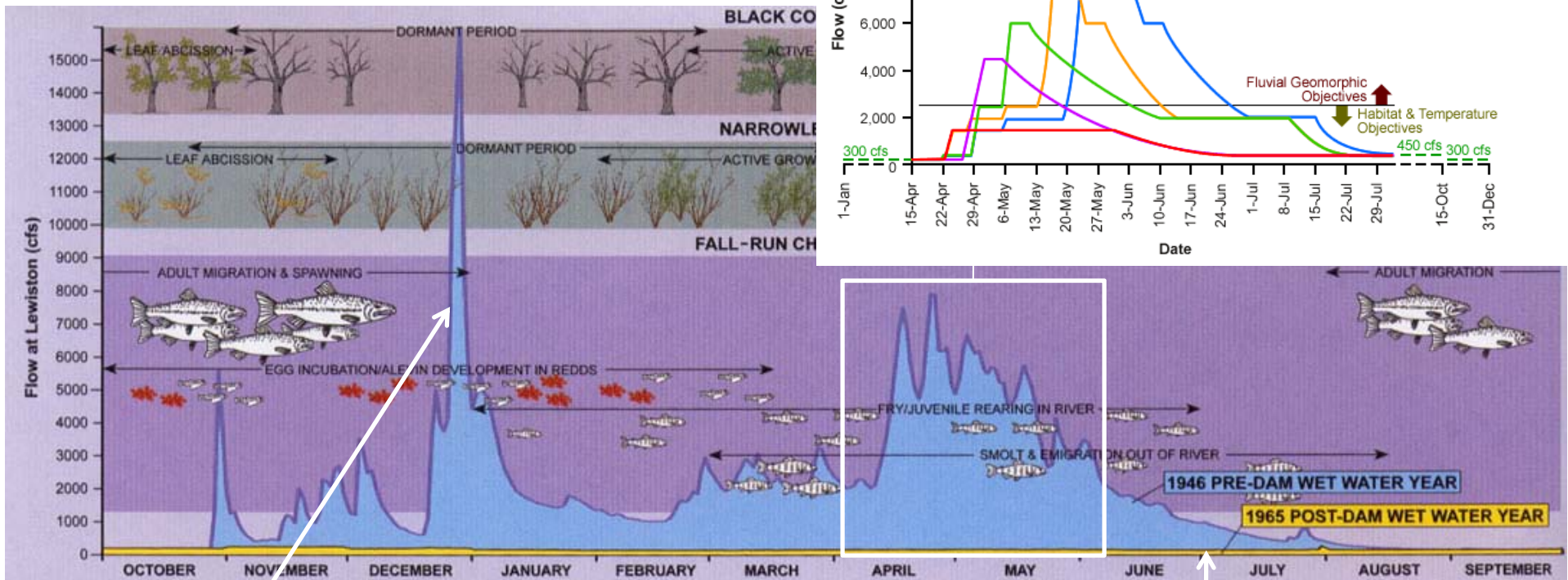
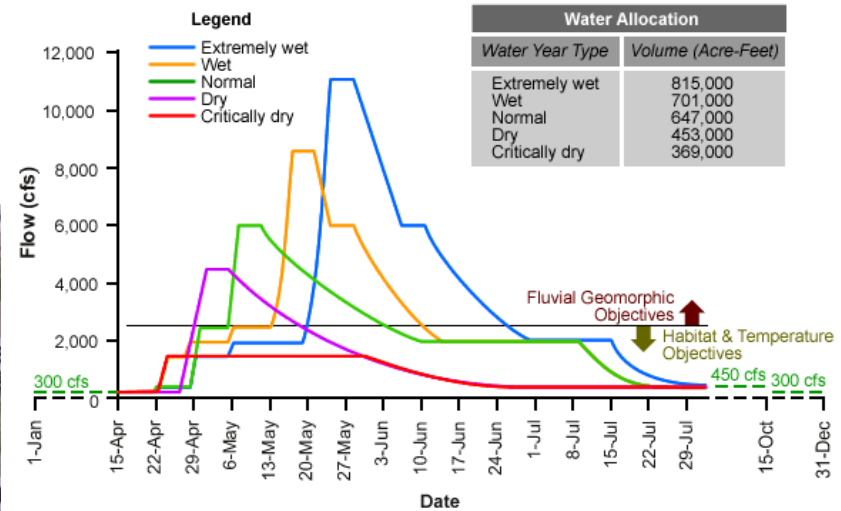
**Key Components: Flows + Channel Restoration  
+ Gravel Injection**



# 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)



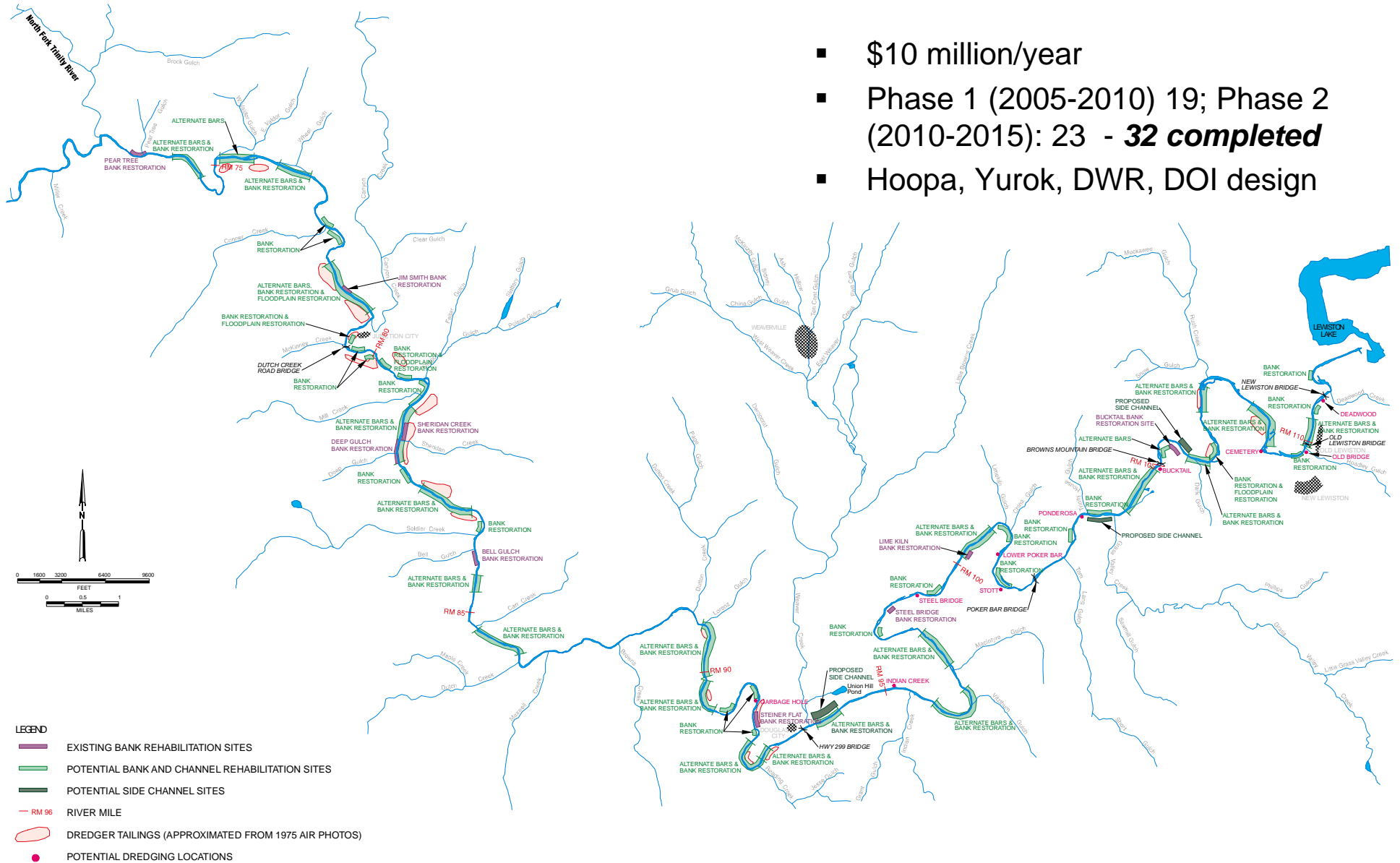


# Bucktail Bridge at 11,000 cfs (2011)

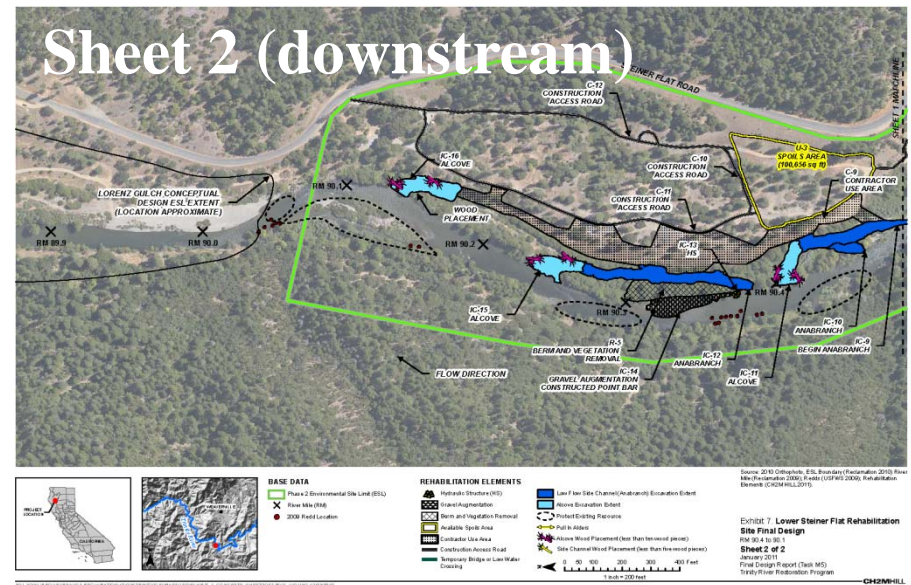
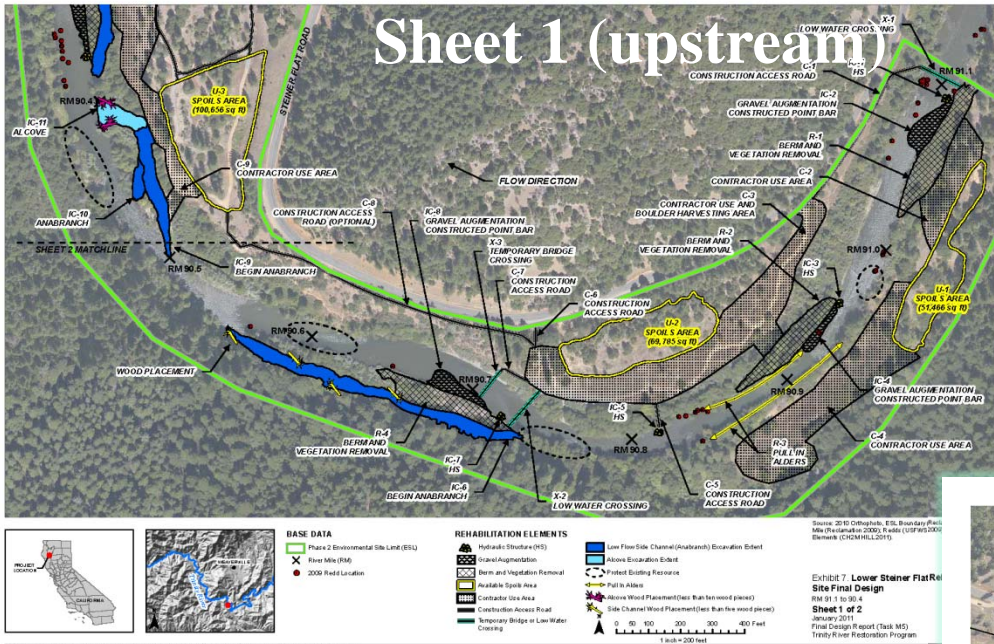
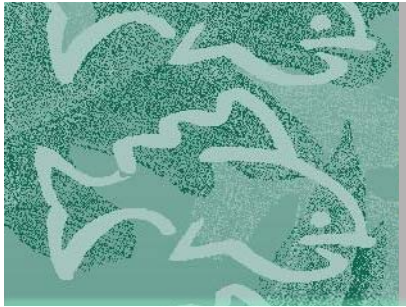


# Existing and Potential Channel Rehabilitation Sites

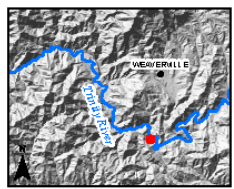
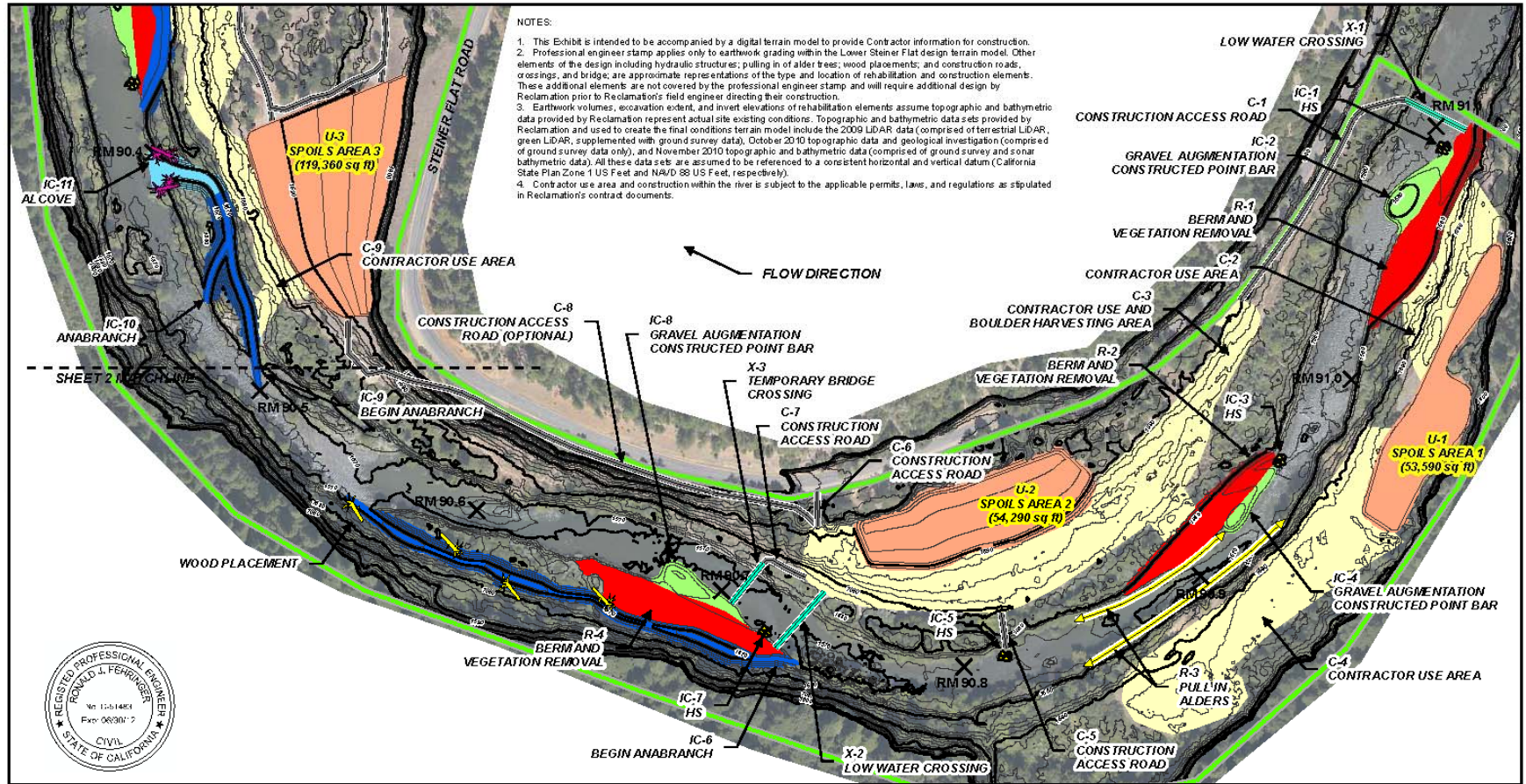
- \$10 million/year
- Phase 1 (2005-2010) 19; Phase 2 (2010-2015): 23 - **32 completed**
- Hoopa, Yurok, DWR, DOI design



# Lower Steiner Flat Reach Conceptual Designs



# Final Lower Steiner Flat Design (sheet 1 of 2)



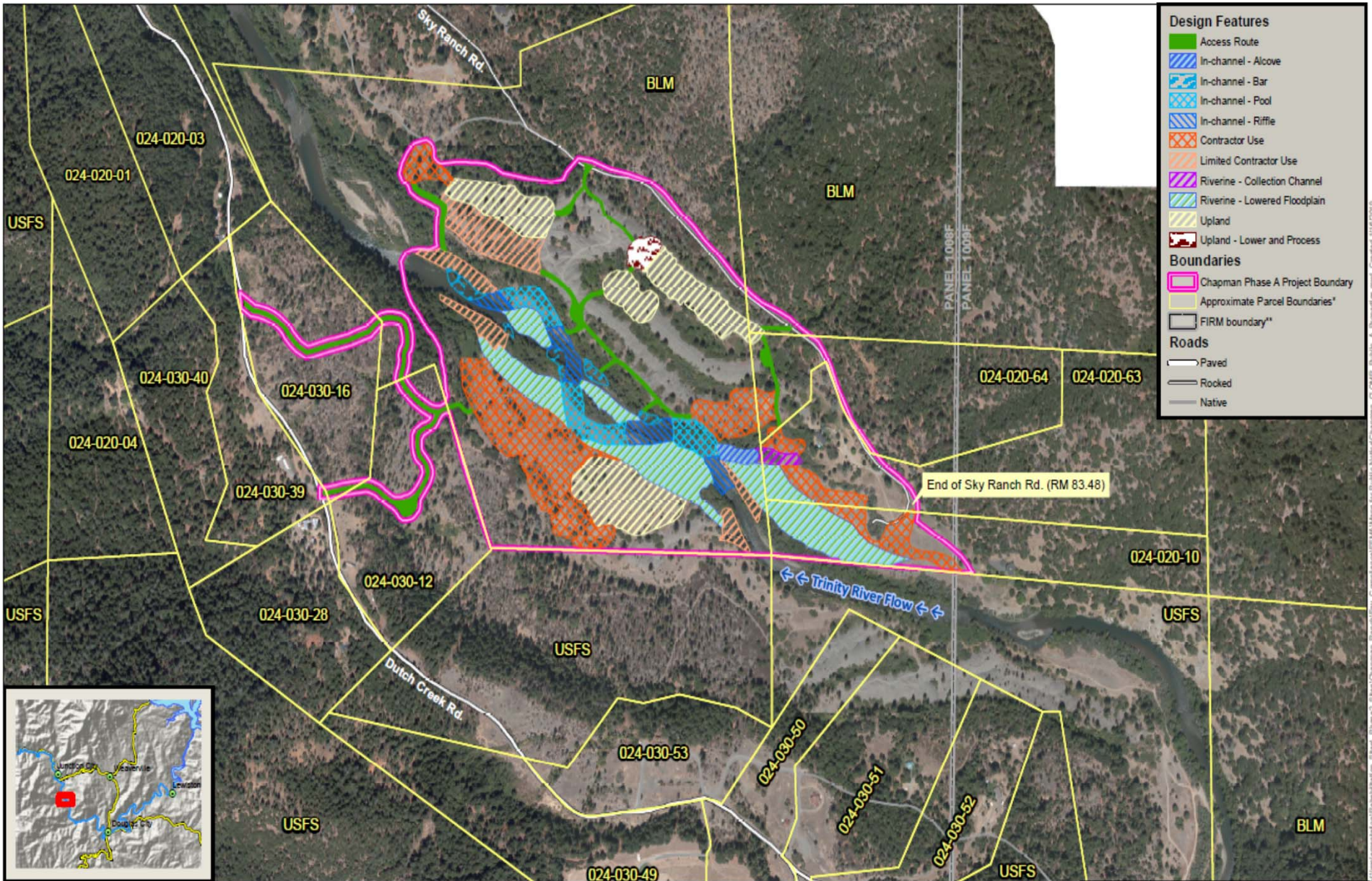
- BASE DATA**
- Phase 2 Environmental Site Limit (ESL)
  - River Mile (RM)
  - Terrain Model Major Contour (ten foot interval)
  - Terrain Model Minor Contour (two foot interval)
  - Site Design Terrain Model Boundary

- 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)
- Scale: 0 50 100 200 300 400 Feet  
1 inch = 200 feet

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



**Design Features**

- Access Route
- In-channel - Alcove
- In-channel - Bar
- In-channel - Pool
- In-channel - Riffle
- Contractor Use
- Limited Contractor Use
- Riverine - Collection Channel
- Riverine - Lowered Floodplain
- Upland
- Upland - Lower and Process

**Boundaries**

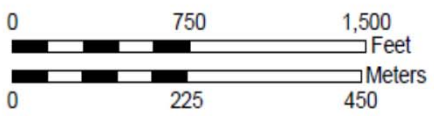
- Chapman Phase A Project Boundary
- Approximate Parcel Boundaries\*
- FIRM boundary\*\*

**Roads**

- Paved
- Rocked
- Native



**TRINITY RIVER RESTORATION PROGRAM (TRRP)**  
 U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region  
 P.O. Box 1300, 1313 South Main St.  
 Weaverville, CA 96093  
 Tel: (530) 623-1800; Fax: (530) 623-5944



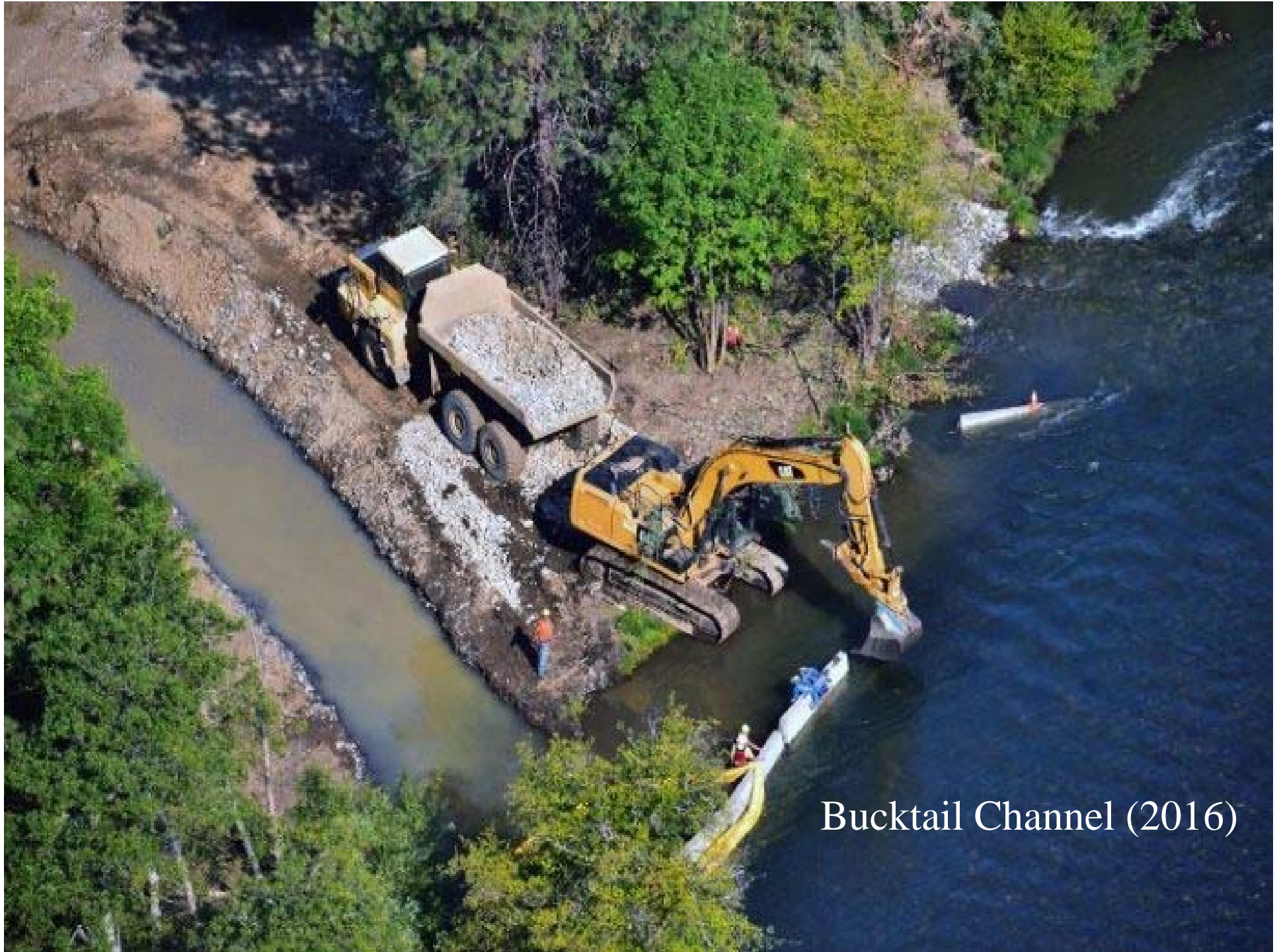
\* Approximate Boundaries are from the Trinity County Resource Conservation District.  
 \*\* This map shows portions of Flood Insurance Rate Map (FIRM) Panels 1008F and 1009F.

**Exhibit A.**  
**Chapman Ranch**  
**Channel Rehabilitation**  
 Proposed Project with  
 Approximate Parcel Boundaries

C:\Complemental\03\Revised\03\_01\03\_01\_Plan\_02\_EBWS\_EBWS\Chapman\_Ranch\03\_01\_Plan\_02\_EBWS\_EBWS\Map\_03\_01\_Plan\_02\_EBWS\_EBWS.mxd Created 11/6/2016

# Chapman Ranch





Bucktail Channel (2016)





Sawmill Channel (2009)

# 2015/2016 Flow Augmentation

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

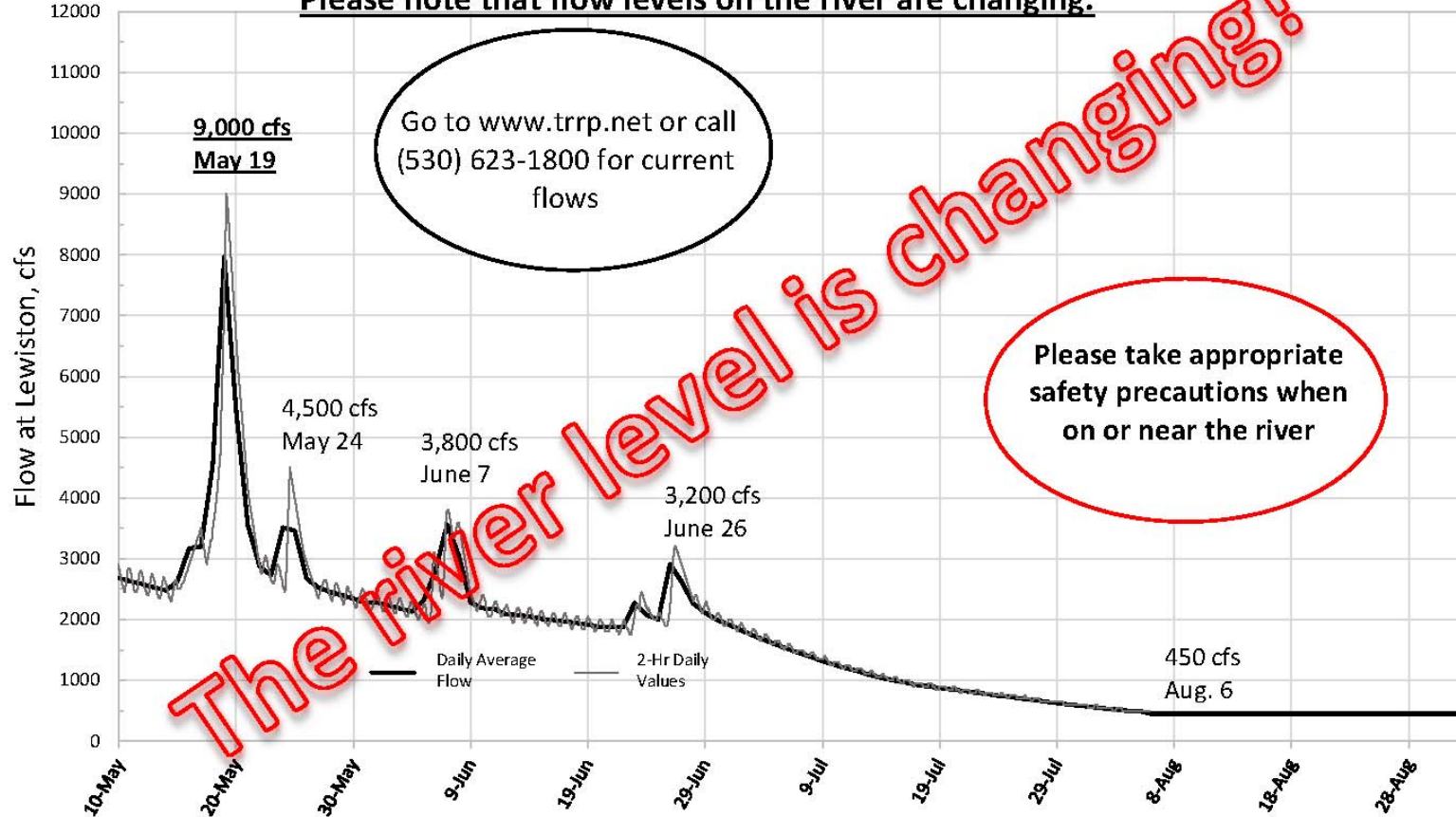


- Additional 47 taf release in mid-Aug - Sept to maintain water temperatures and flush parasites to avoid outbreak
- Peak flow of 2800 cfs on Lower Klamath River

2019 Trinity River Restoration Spring flow release from Lewiston Dam

**Updated 5/16/2019**

**Please note that flow levels on the river are changing.**



Note: Hydrograph shows daily average flow releases and instantaneous flows. The table on the reverse side shows the daily average flow schedule and the daily peak instantaneous release. This preliminary release schedule, updated May 16, 2019, does not follow the Trinity Management Council recommended schedule due to issues at Trinity Dam. Implementation of this schedule is dependent on full-operation at Trinity Dam.

# TRRP 2019 Summary

- **Flows:** Dam releases followed a 'wet' year hydrograph (9000 cfs peak in mid-May) - up to 701,000 af allocation (1.6 MAF inflow)
- **Rehabilitation:** Chapman Ranch site - largest site yet (led by the Yurok Tribe)
- **Watershed / Gravel Augmentation:** (based on sediment budget calculations) above Weaver Creek





# Trinity River Project and Restoration Program

Northern California  
Water Education Foundation Tour  
October 3, 2019