



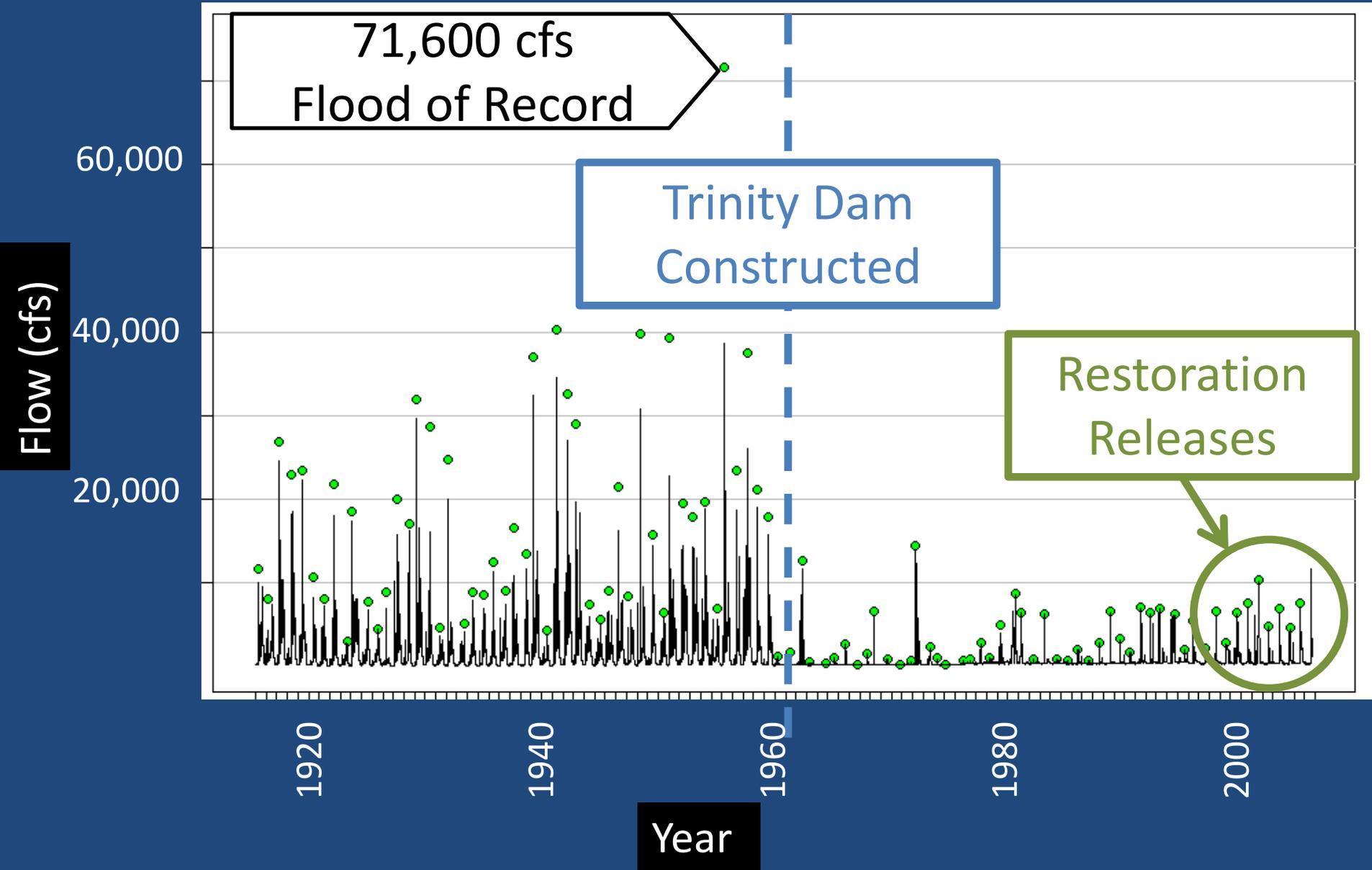
Riparian Vegetation Approaches and ESA species

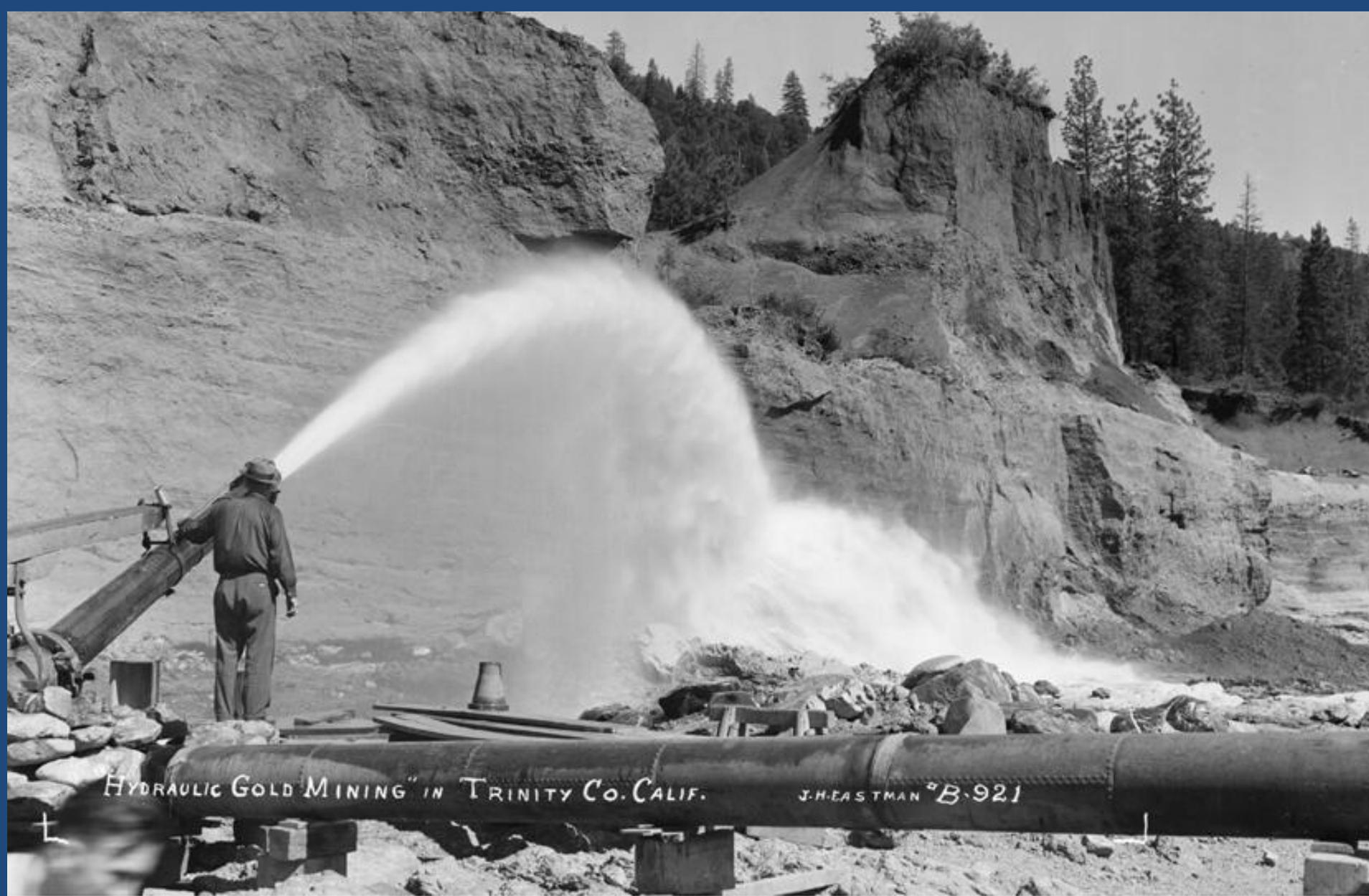
James Lee
TRRP Riparian Ecologist
Hoopa Valley Tribal Fisheries Department
March 27, 2014

Riparian Approaches- Why is riparian vegetation important?

- Influences channel form
- Provides shade, organic matter, and instream cover for aquatic species
- Provides habitat elements for valued terrestrial species
- Native riparian vegetation resists infestation by many invasive weed species
- Native riparian vegetation can slow advancing wildfires

Flows at Lewiston, CA





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Source: U.S. Bureau of Reclamation

Exhibit 31

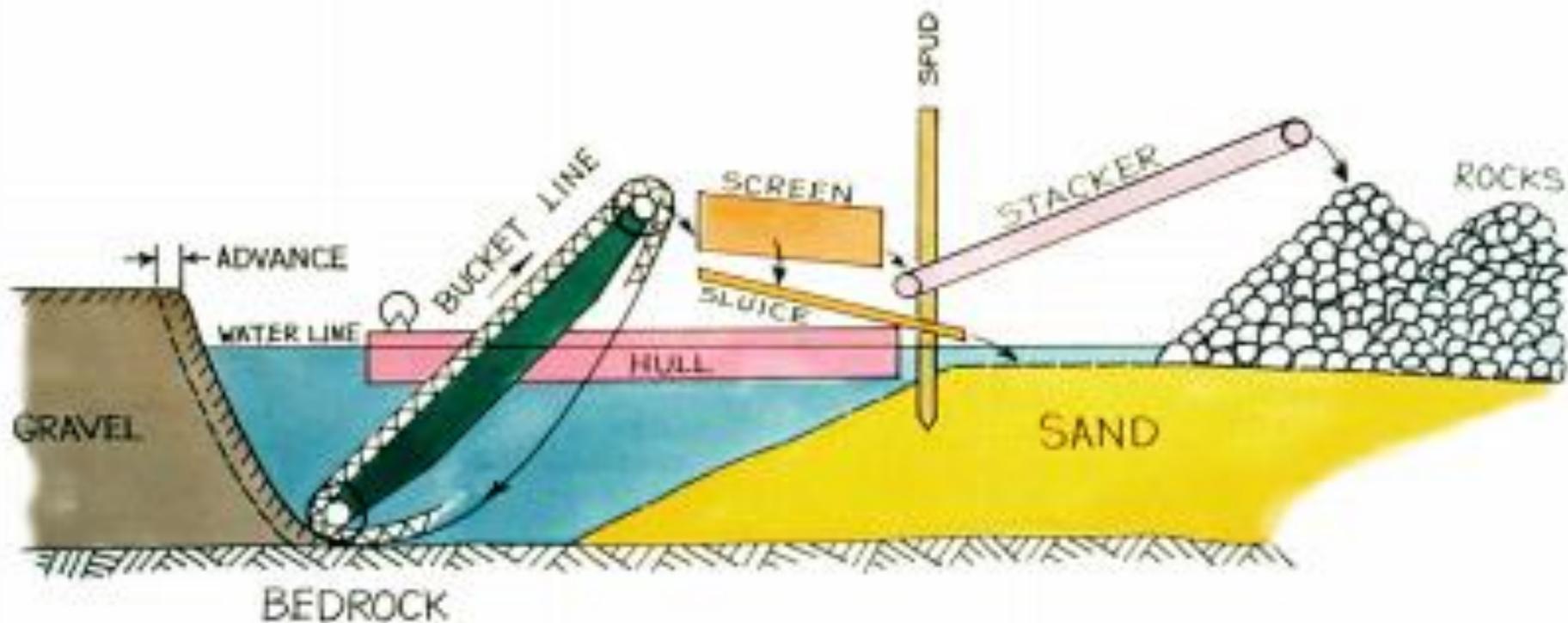
Junction City Dredge in 1944, North of Junction City



LUMBER MILL NEAR WEAVERVILLE, CALIF.

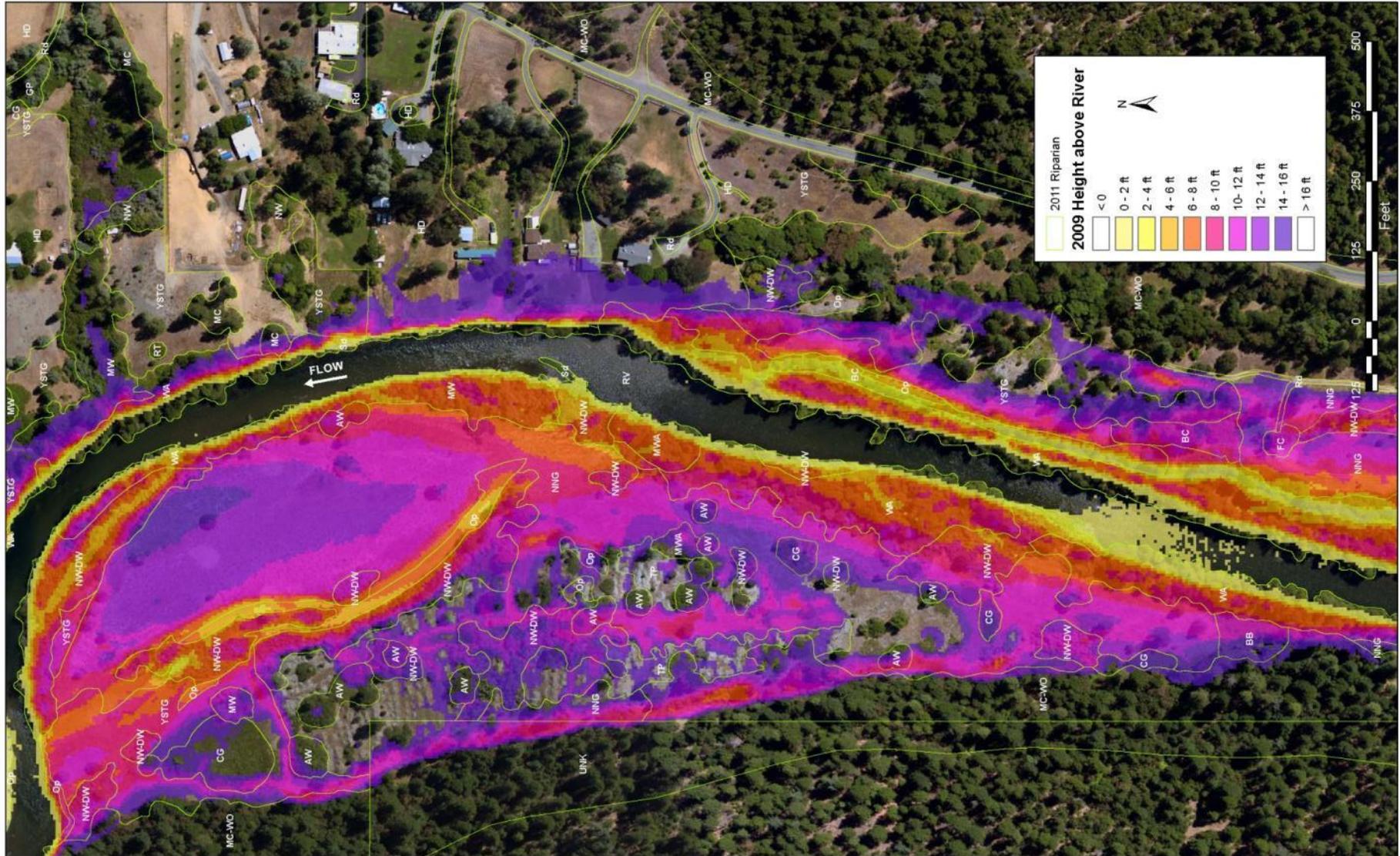
J. R. EASTMAN # B-1278

Source: Image courtesy of TCHS, all rights reserved

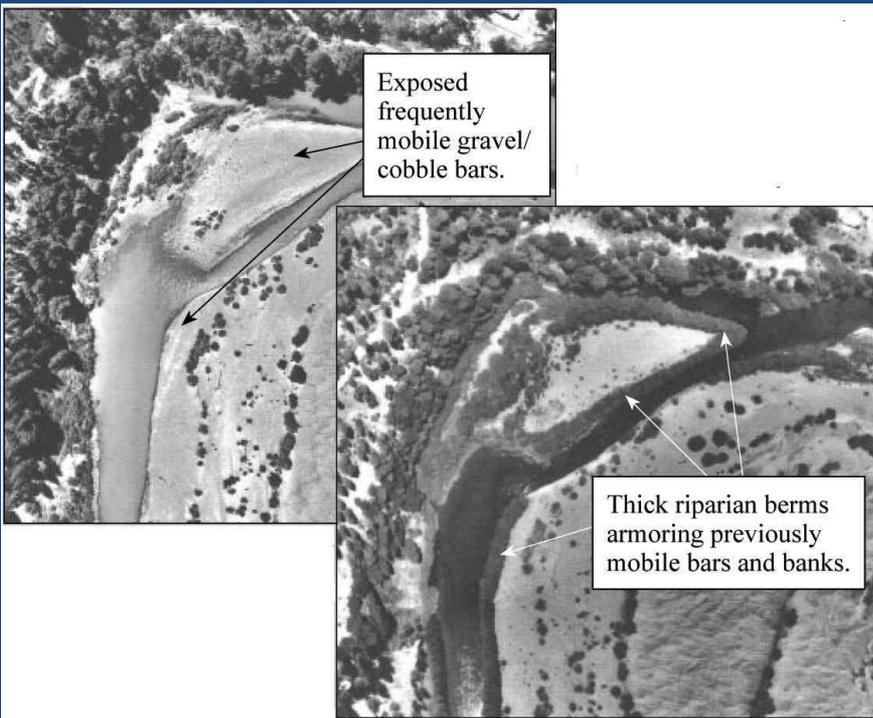


Source: John H. Wells 1996

Ground Height above 450 cfs



Resulting Vegetation Patterns



Encroached Channel
Margins

Parafluvial “Barrens”

Riparian Approaches- what are our goals?

Ecological Goals:

- “More Proper Riparian Function” (ROD)
- Promote vegetation that supports fish and wildlife (IAP)
- “Self-sustaining early successional riparian vegetation characteristic of unregulated streams in the region” (TRFE)

Regulatory Goal:

1:1 replacement of impacted riparian vegetation within 10 years (CEQA)

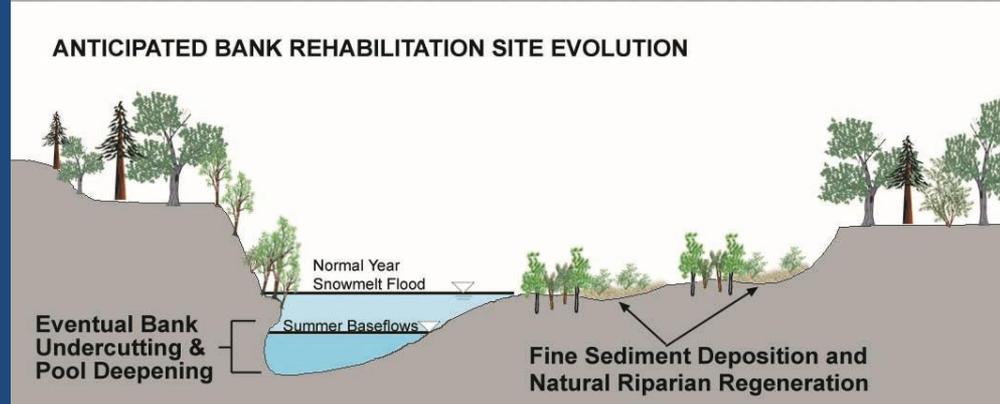
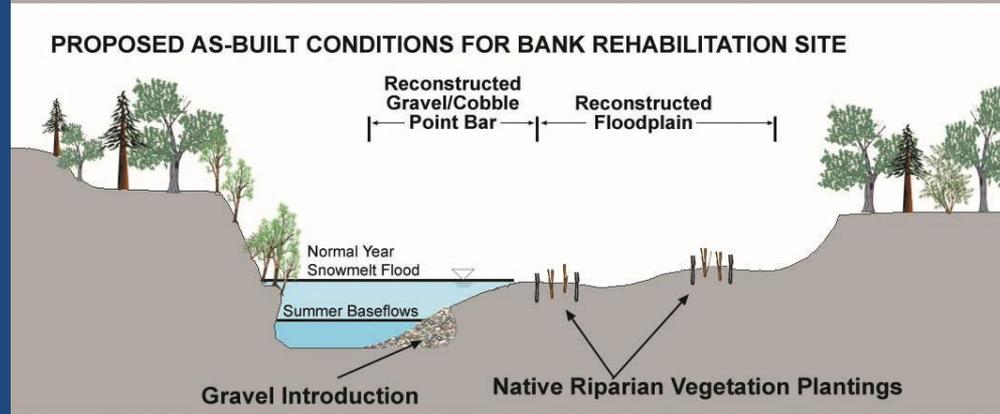
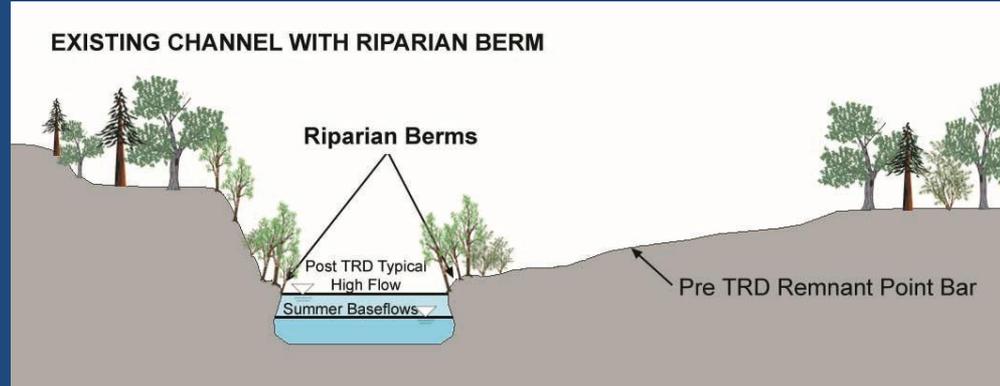
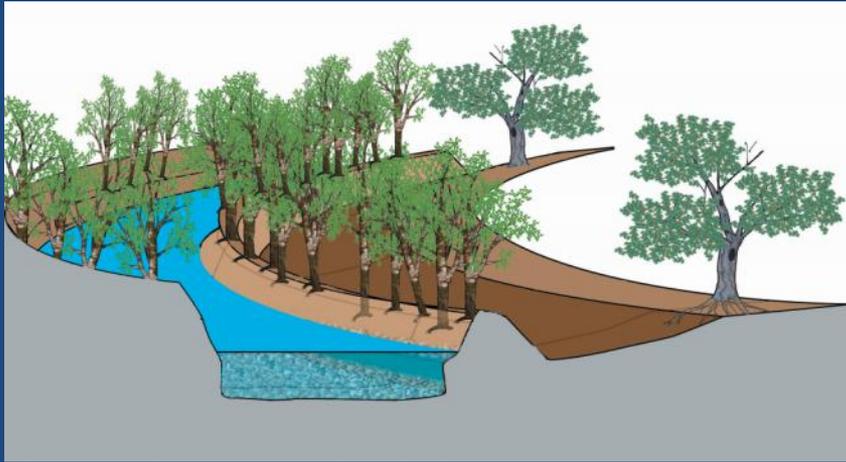
How has riparian vegetation changed over the years in the Trinity River?

- Pre-gold rush condition was not documented
- Post-gold rush condition was mostly barren
- Post flow-regulation (1960's), riparian vegetation increased
 - ~300 acres in 1960
 - ~800 acres in 1980
 - ~800 acres in 2000
 - ~900 acres in 2012
 - ~3,000 acres of bottomland and adjacent hillslopes along restoration reach





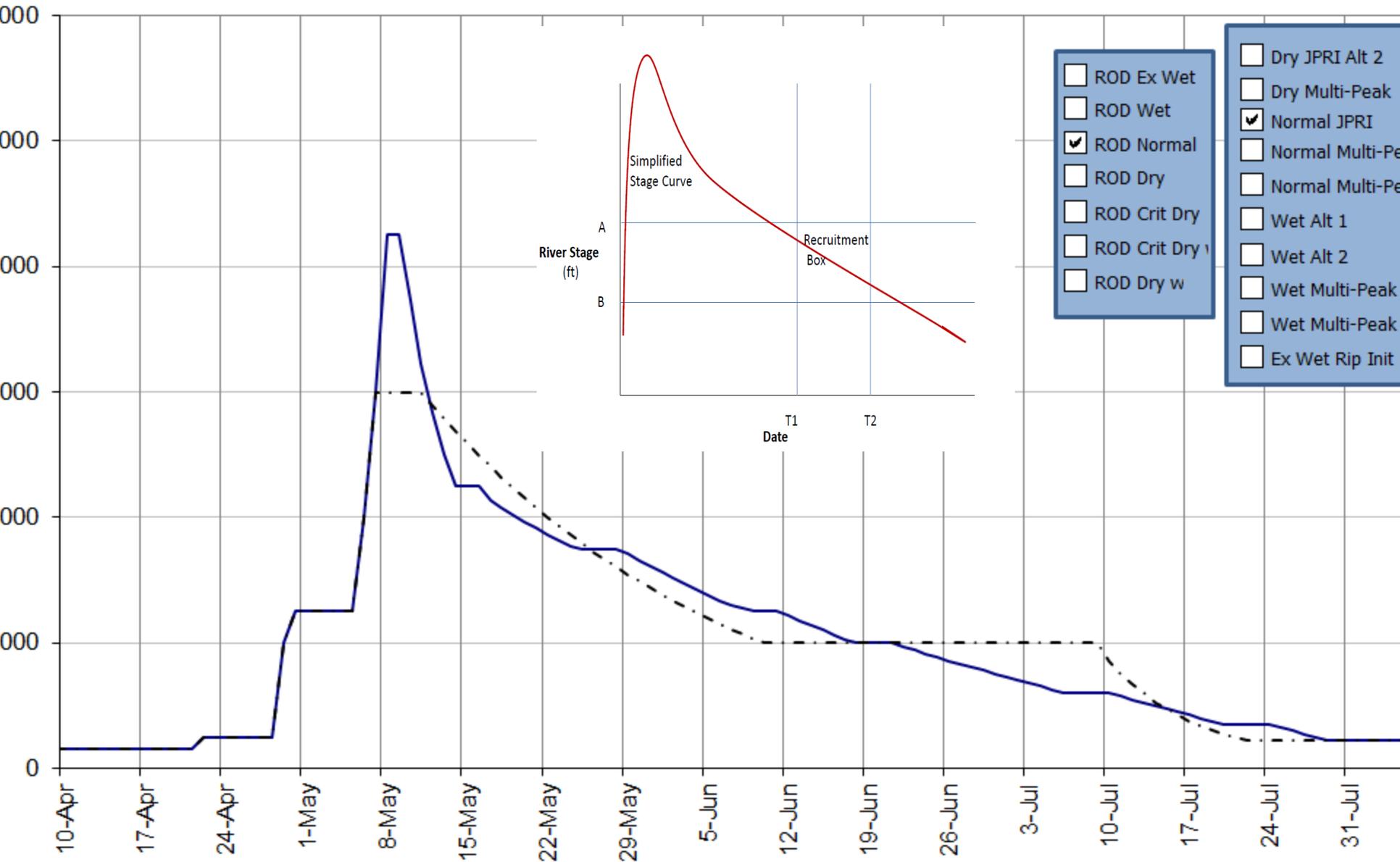
Channel Rehabilitation Concepts



Riparian Approaches- What tools do we have?

- Hydrographs
- Site preparation (during channel rehabilitation)
- Planting
- Post-planting maintenance

2014 Flow Scheduler



- ROD Ex Wet
- ROD Wet
- ROD Normal
- ROD Dry
- ROD Crit Dry
- ROD Crit Dry v
- ROD Dry w
- Dry JPRI Alt 2
- Dry Multi-Peak
- Normal JPRI
- Normal Multi-Pe
- Normal Multi-Pe
- Wet Alt 1
- Wet Alt 2
- Wet Multi-Peak
- Wet Multi-Peak
- Ex Wet Rip Init

- Dry JPRI Alt 2
- Wet Alt 2
- Dry Multi-Peak
- Wet Multi-Peak 1
- Normal JPRI
- Wet Multi-Peak 2
- Normal Multi-Peak 1
- Ex Wet Rip Init
- Normal Multi-Peak 2
- - ROD Ex. Wet
- - ROD Wet
- Wet Alt 1



Douglas City Area, 1944



Douglas City Area, 1965



Douglas City Area, 1980



Douglas City Area, 2009
One year prior to channel rehabilitation



Douglas City Area, 2010
During channel rehabilitation



Douglas City area, 2013
Post channel rehabilitation



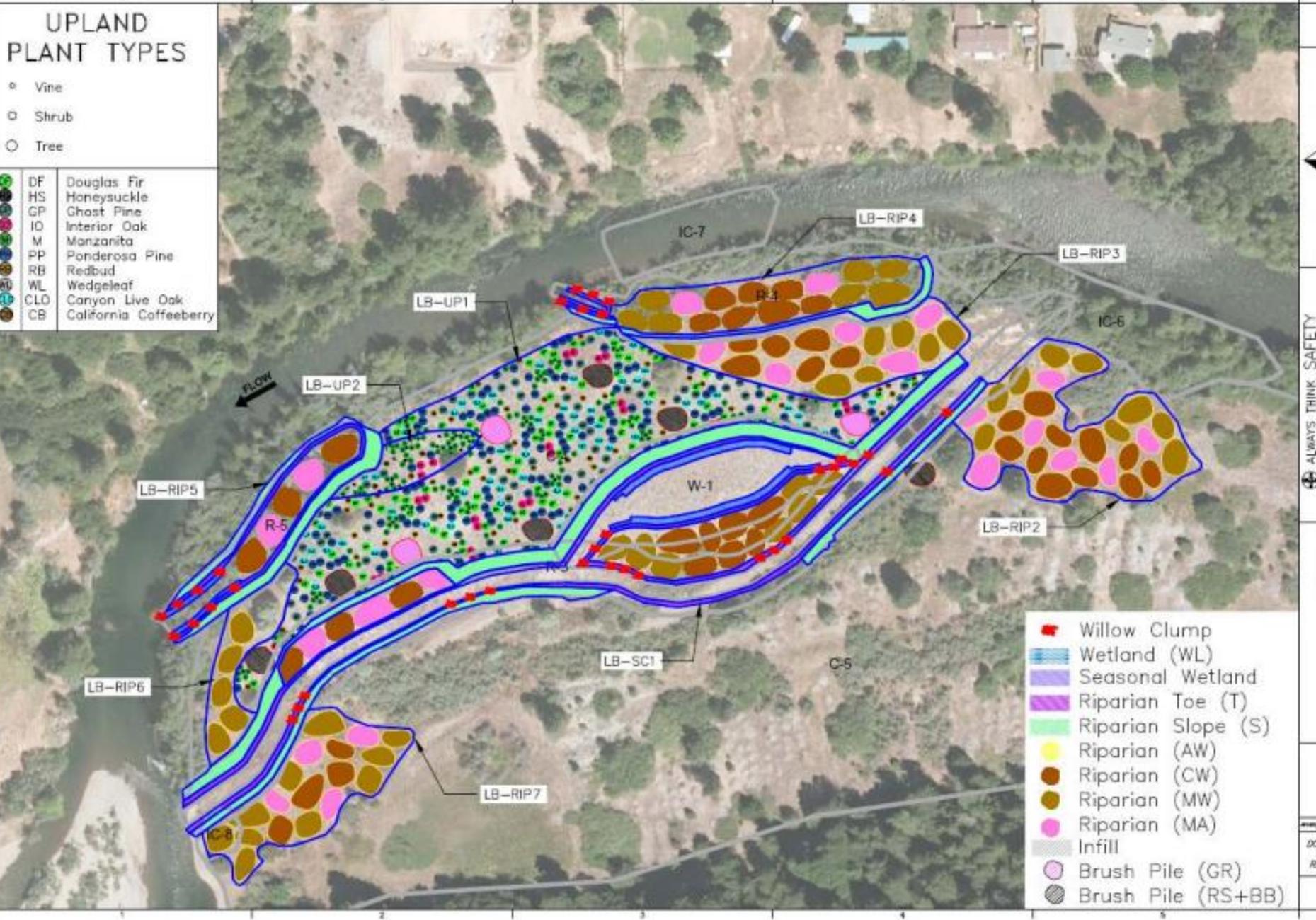
Planting

- Poles, salvaged clumps, container stock as appropriate or available
- Backfill planting holes with best soil available
- Maintain browse protection and soil moisture during planting period



UPLAND PLANT TYPES

- Vine
 - Shrub
 - Tree
- | | |
|-----|------------------------|
| DF | Douglas Fir |
| HS | Honeysuckle |
| GP | Ghost Pine |
| IO | Interior Oak |
| M | Manzanita |
| PP | Ponderosa Pine |
| RB | Redbud |
| WL | Wedgeleaf |
| CLO | Canyon Live Oak |
| CB | California Coffeeberry |



ALWAYS THINK SAFETY

A. & B.

Figure 3. Revegetation design for the downstream portion of the Lorenz Gulch Channel Rehabilitation Project.

Post-planting maintenance

- Irrigation
- Browse protection
- Mulching
- Weed removal
- Replacement of mortalities with better-adapted species



Questions?

Lower Steiner Flat, Fall 2013
Planted Summer 2012

ESA Species

MITIGATION MEASURES

Implementation of mitigation measures 4.7-3a, 4.7-3b, and 4.7-3c (Appendix A) will mitigate this impact to less than significant.

Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (*Empidonax traillii*).

NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to the little willow flycatcher would occur because the project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

Suitable montane riparian habitat for the little willow flycatcher may be present at the Proposed Project sites; the species has previously been detected in the region (Wilson 1995; Miller, Ralph, and Herrera 2003; Herrera 2006). Consequently, little willow flycatchers may nest at the Proposed Project sites. Project activities (e.g., grading, vegetation removal) in montane riparian habitat may result in a temporary reduction of foraging habitat for this species. However, implementation of mitigation measures 4.6-1a, 4.6-1b, and 4.6-1c would ensure that there is no net loss of riparian habitat and a long-term increase in riparian habitat diversity. Due to the temporary nature of the impacts and the regional abundance of similar habitats, the project is not expected to have a significant impact on habitat for the little willow flycatcher. However, the removal of riparian vegetation and the noise associated with construction activities could disturb individuals nesting on or adjacent to the sites. Because activities at the Lower Steiner Flat site would occur in two phases, the potential disturbance could occur in 2012 and when Phase B is implemented. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Loss of fertile eggs or nesting little willow flycatchers or any activities resulting in nest abandonment would be considered a significant impact.

MITIGATION MEASURES

Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher. Therefore, mitigation measures 4.7-4a, 4.7-4b, 4.7-4c, and 4.7-4d described in Appendix A will be implemented to reduce the potential for impacts associated with

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Impact 3.7-2: Implementation of the Proposed Project would result in the loss of upland plant communities.

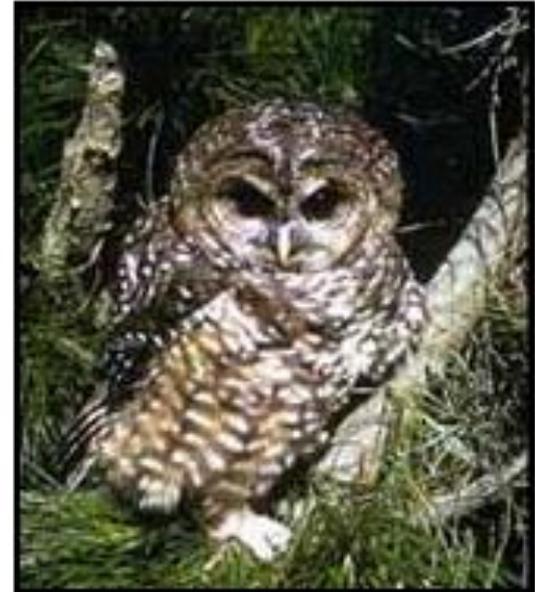
NO-PROJECT ALTERNATIVE

Under the No-Project alternative, no construction-related impacts to upland plant communities would occur because the project would not be constructed. Therefore, there would be no impact.

PROPOSED PROJECT

The Proposed Project would result in the temporary disturbance of upland plant communities (see Figures 15 and 16). At the Lower Steiner Flat site, impacts would occur during Phase A implementation in 2012 as well as during implementation of Phase B. While project activities would modify the contour and slope of upland areas, these areas would be subject to natural recruitment of native plants, supplemented by planting programs consistent with the TRRP vegetation management objectives including minimizing invasive species impacts and the enhancement of wildlife habitat. Over time, these upland areas would be revegetated to the degree that site conditions allow. A combination of replanting and natural revegetation would occur to ensure that upland habitat values on the Trinity River meet wildlife needs. The need for revegetation would be determined via monitoring, coordination with local resource agencies, and

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Northern Spotted Owl

Questions?