



## 2008 High-Flow Monitoring



TRRP

### Coho Juvenile Survival

- Coordinated with Klamath River study
- 6 groups of 30 radio-tagged fish at the hatchery to track survival relative to flows
- 6 fixed stations down the Trinity and then several more down the Klamath River to below Steelhead Lodge
- Trinity flows (cfs):
  - 300
  - 750
  - 1,200
  - 6,175
  - 3,092
- Study is ongoing for another 120 days

## Effectiveness of Channel Rehab Sites in Providing Coho Habitat

- Snorkeling at 4,000 cfs. To look at distribution of Coho sac fry and fry
  - Under Lewiston Bridge
  - Cemetery Side Chanel
  - Bucktail off channel flow near parking area
  - Indian Creek floodplain near side channel and Weaver Creek
  - Lime Point
  - Pear Tree alcove

### Coho Habitat Under Old Lewiston Bridge



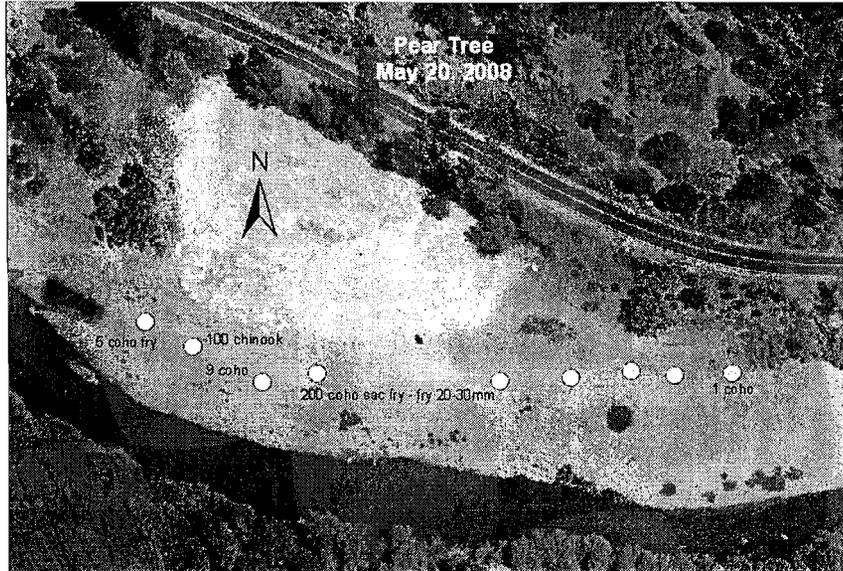
Erosion Provides Habitat  
Indian Creek Project near Weaver Creek



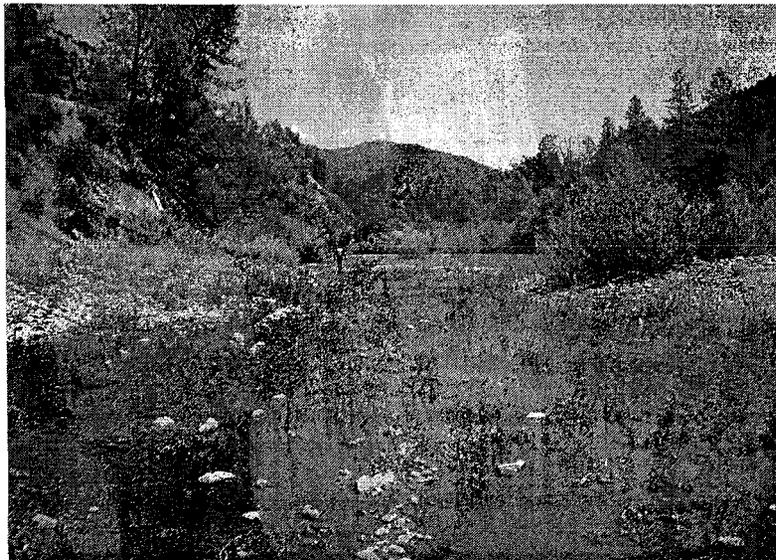
Robert Chase counting at Cemetery side channel -  
4,000 cfs.



Pear Tree Alcove and High-flow Scour Channel  
Locations and Number of Fish



Pear Tree High Flow Channel showing area with coho fry.  
Robert Chase at far end of counting area



## Trinity River Habitat Assessment

- Field mapping at winter base flows officially started on Feb 27, 2008.
- Winter base flow rearing habitat maps were created for Sven Olberston, Cableway, Hoadley, the entire Dark Gulch site, AU Bend, Lower Indian Creek, Hocker Flat, and the untreated area above Dark Gulch.
- Spawning habitat maps for all 4 Lewiston sites, the untreated site, and Dark Gulch were completed at a 300 cfs baseflow.
- Validation diving for our habitat polygons was also completed for both fry and presmolts in the Lewiston area.
- The selected areas (Cableway, Dark Gulch, Lower Indian Creek, and Hocker Flat) for developing habitat-flow relationships were mapped during the 1,200 cfs bench. We will return to these same sections during the 2000 cfs, 700 cfs, and 450 cfs flow benches to finish our habitat-flow relationships.

## Sediment Transport, $Q_s$

- Suspended sediment and Bedload
  - Old Lewiston Bridge
  - Lowden Meadows
  - Limekiln Gulch
  - Douglas City Campground

## Gravel Augmentation

- Large entrainment detection stones inserted in the Rush Creek Pool
- Streambed bathymetry near the gravel injection sites
  - Bed elevations in the diversion pool surveyed via sonar prior to the gravel injection
  - Survey after the release to verify that the injected gravel cleared the holding pool there.
  - Bed elevations surveyed at the Sawmill injection site, and downstream into the Rush Creek pool
  - Survey after the release to determine
    - 1) whether the injected gravel cleared the holding pool at the sawmill site
    - 2) how the injection affected bar morphology downstream from the injection site, and
    - 3) whether the growth of a sediment wedge in the Rush Creek pool can be detected (and the location of the wedge if there is one).

## Channel Rehab Project Design Data

- Pin water surface elevations at all Reading Creek and Trinity House Gulch X-sections
- Monitor existing piezometers at Reading Creek
  - a) 300 cfs
  - b) 1,000 cfs
  - c) 2,000 cfs
  - d) 4,000 cfs
  - e) 6,000 cfs

## Channel Rehab Project Design Data

- Pin water surface elevations at all Sawmill cross sections
- Monitor staff plates at Sawmill during spring releases
  - a) 300 cfs
  - b) 1,000 cfs
  - 2,000 cfs
  - 4,000 cfs
  - 6,000 cfs
- Take discharge measurements at Sawmill side channel during 300 cfs, 1,000 cfs, and 2,000 cfs releases for HEC-RAS split flow calibration.

## Post-Construction Indian Creek Project

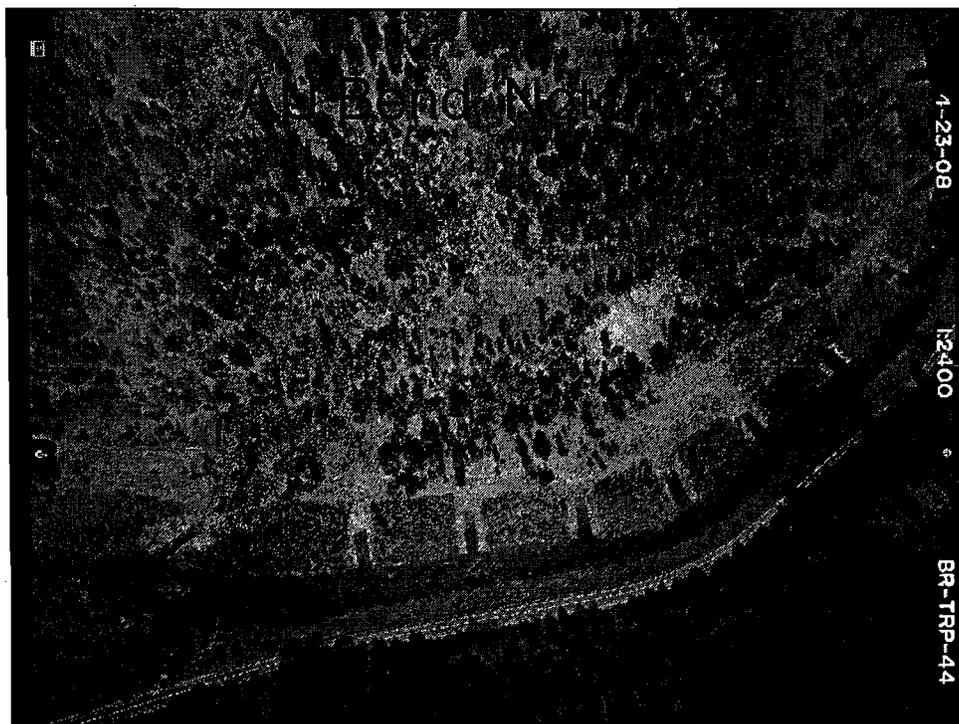
- Topographic survey and photo monitoring of the old Steiner Flat rehab site
  - A half-dozen transects surveyed across the right bank and channel margin
    - Increases in levee high that may occur due to the large quantity of fine sediment introduced upstream at the Indian Creek site.
    - Preliminary observations suggest little or no levee growth occurred, and levee erosion may have occurred in some areas.
- Turbidity at high flow coarse sediment injection sites indicated no measurable differences at 2000 ft. compliance point

## Water Quality – Post Indian Creek

- Turbidity grab samples upstream and downstream of the Indian Creek Rehab site
  - Preliminary data (as well as turbidity data every 15 min from GMA at Douglas City) indicate peak turbidity shortly after peak flows (6 May = 24 NTUs) and that these values decreased rapidly after the high flows (e.g., 8 May = 10 NTUs)

## Indian Creek Project Aerial Imagery

- Pre-flood aerial imagery
  - Steelbridge to Douglas City Campground
  - Post-flood imagery scheduled mid-July
- Oblique imagery
  - Weaver Creek floodplain and side-channel
  - Notches at 4,000 cfs ascending limb, 6,000 cfs, and 4,000 cfs descending limb
  - Wood installations and other features when the flows recede to base.



## Trinity River Salmonid Outmigrant Assessment Lower River Trap Site

- 2008 sampling at Willow Creek Trap Site conducted jointly by USFWS-AFWO and Yurok Tribal Fisheries Program
- Began March 13, 2008.
- 4,010 Chinook salmon captured, with fish being captured each sampling day, most being young-of-the-year (YOY), a few age 1+ natural Chinook salmon.
- 2,646 steelhead captured including 1,748 hatchery produced steelhead. Steelhead YOY at low levels. Normal peaks in YOY steelhead catch occur in mid-June to early July.
- 398 coho salmon captured including 257 hatchery fish.
- Heavy debris load from floating algae have occasionally resulted in null sets and has necessitated repair of traps in the field. This accumulation of algae in the rotary screw traps is a relatively new phenomenon for the Trinity River, and has necessitated increased trap checks.

## Foothill Yellow-Legged Frog Egg Mass Surveys

Site	30-Apr-08	7-May-08	15-May-08	20-21may08	27-28may08	3-5jun08
Canyon Ck	x	0	0	1	1	18
Hocker (MSTR)	x	x	x	x	x	0
25mph curve (MST)	x	0	0	0	0	0
CX (MSTR)	x	0	0	x	0	0
NFTR	x	0	0	0	0	0
SFTR	16	25	28	30	30	33