Trinity River Restoration Program

Restore • Adapt • Improve

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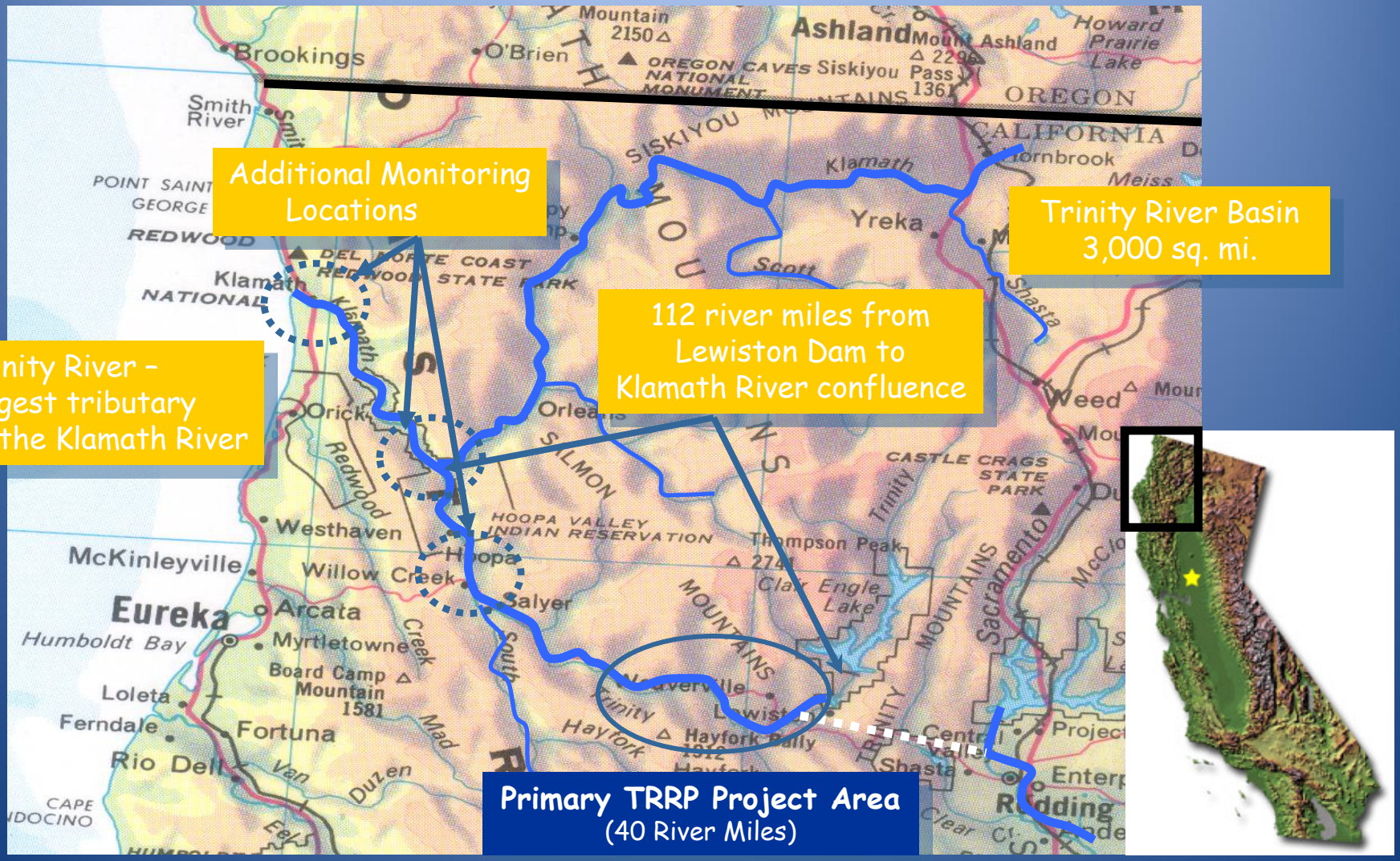
Location



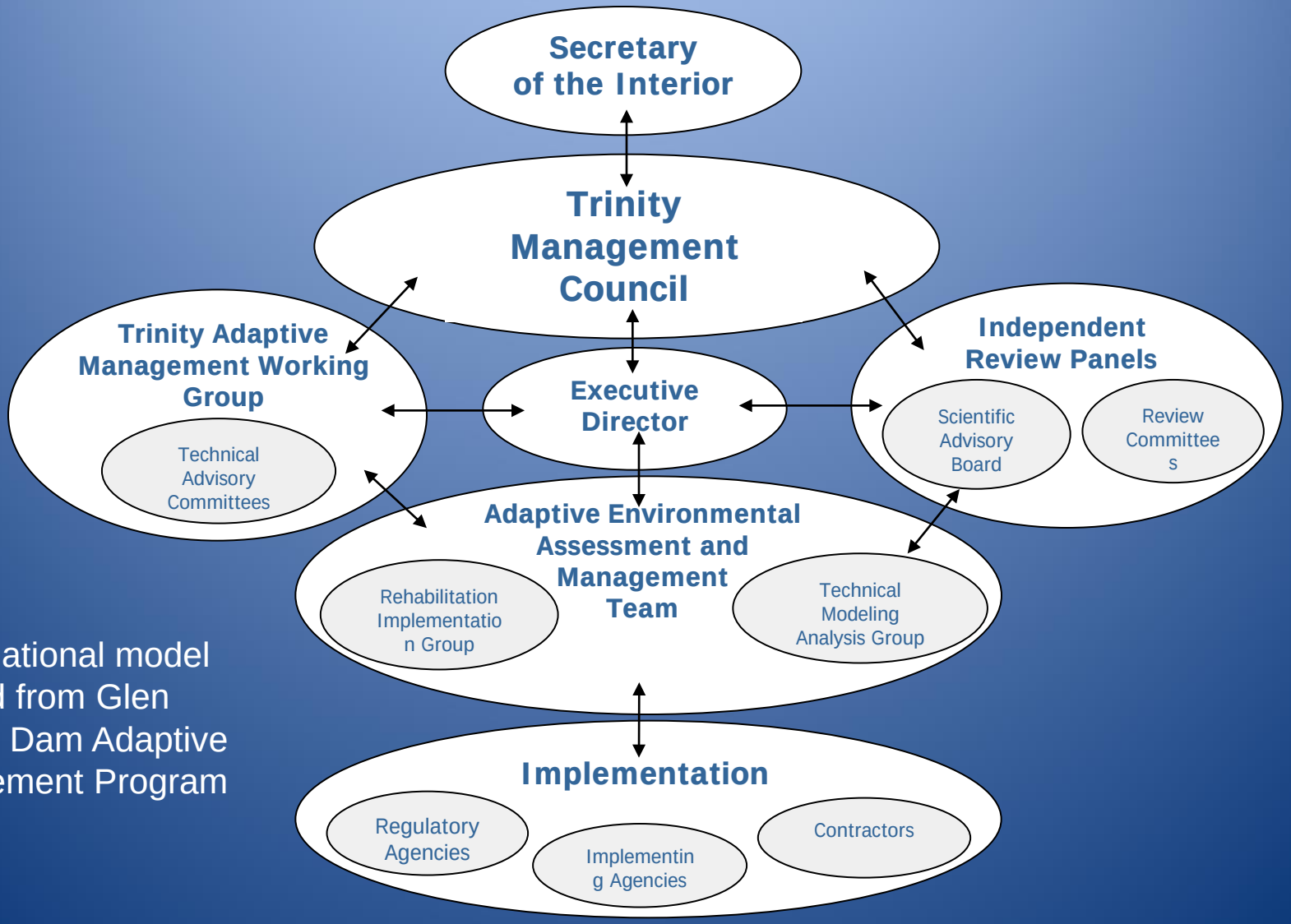
TRRP Background

- *Central Valley Project Improvement Act of 1992 – P.L. 102-575, Title 34 (CVPIA) - legal authority for projects that restore the fishery resources of the Trinity River.*
- Trinity River Flow Evaluation Final Report (TRFES) prepared by the U.S. Fish and Wildlife Service and the Hoopa Valley Tribe (USFWS and HVT, 1999)
- Trinity River Environmental Impact Statement (TREIS/R) U.S. Fish and Wildlife Service et al. 2000) provided the Preferred Alternative
- Implementation Plan for the Preferred Alternative of the TREIS/R (2000)
- Record of Decision (ROD; U.S. Department of the Interior 2000) – summarizes the guidance found in all of the above

- 2001 – Litigation filed by water/power interests in March
- 2002 – Program Office opens in Weaverville
- 2004 – Litigation resolved in favor of Interior in November
- 2005 – First unconstrained ROD flows released, first rehab site
- Master EIR (2009)
- Annual Environmental Assessments by specific project
- Gravel, Rehabilitation and Fine sediment 401 permits renewed by the WQCB *

Roles and Responsibilities

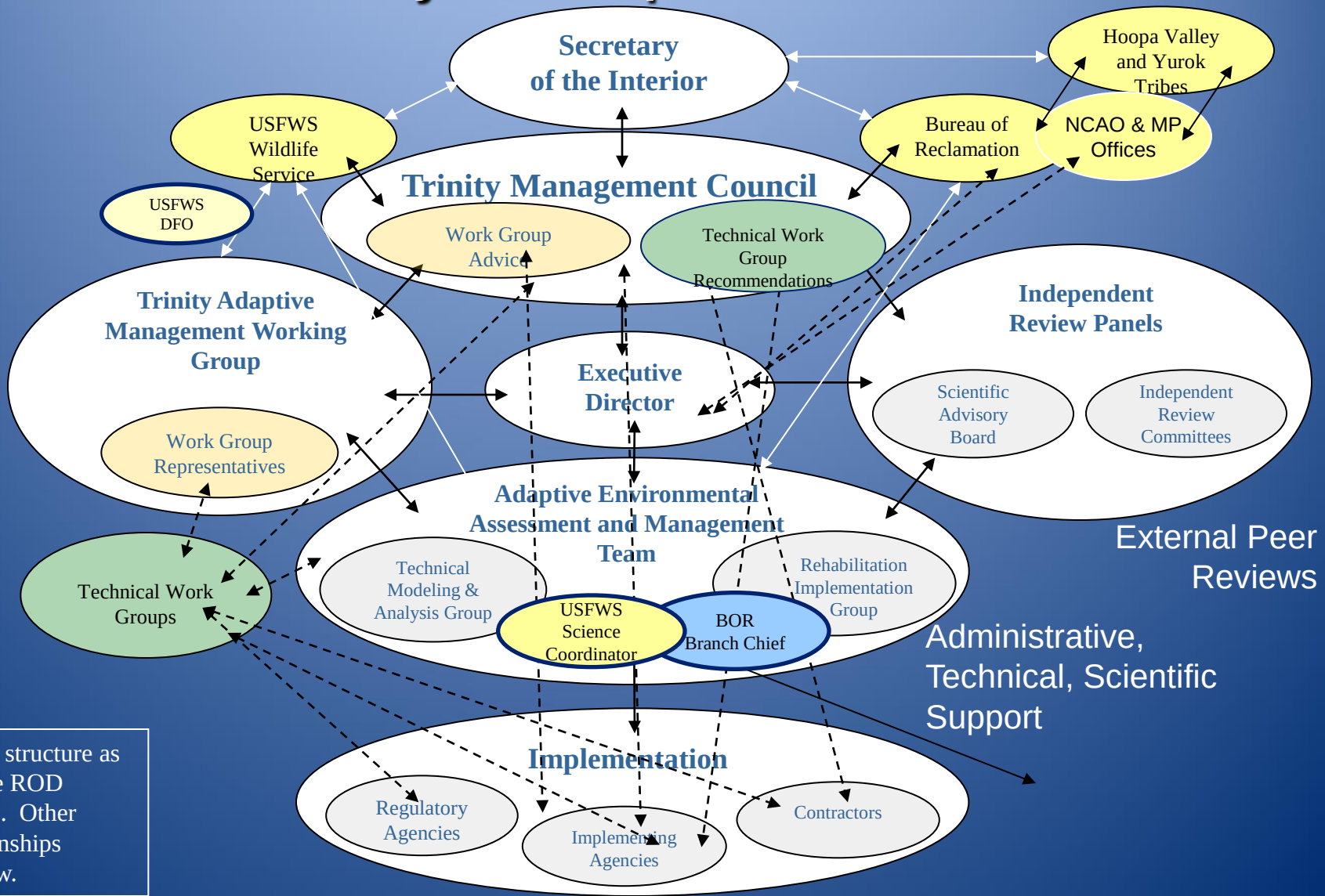
As established in the ROD



Organizational model adapted from Glen Canyon Dam Adaptive Management Program

Roles and Responsibilities

The Reality - A Complex Network



Existing TRRP structure as approved in the ROD shown in white. Other existing relationships shown in yellow.

Trinity Management Council Membership

Part-time designees from the following organizations:

- US Fish & Wildlife Service (Service)
- US Bureau of Reclamation (Reclamation)
- US Forest Service
- Hoopa Valley Tribe (HVT)
- Yurok Tribe (YT)
- State of California (designee from Secretary of Resources)
- Trinity County
- NOAA National Marine Fisheries Service

Chairperson (Federal Agency) selected from the membership

Roles & Responsibilities

- Has decision making authority for their agency/organization
- Interprets and recommends policy, stays out of day-to-day operations, similar to board of directors
- Coordinates and reviews management actions
- Provides organizational budget oversight
- When necessary elevates unresolved conflicts within the council to the Secretary
- Conducts search for and selects a nominee for Executive Director (actual hiring conducted within appropriate agency's personnel rules and regulations)
- Reviews personnel actions by Executive Director
- Authorizes and approves Requests-For-Proposals

Adaptive Environmental and Assessment Management Team

Coordinates with agencies implementing specific program elements

Roles & Responsibilities

- Hired and supervised by a lead Interior agency as determined by the Secretary
- Coordinates execution of all TMC decisions through the AEAM Team
- Ensures coordination of flow schedule and rehabilitation activities with other operational agencies
- Facilitates information exchange workshops with stakeholders & regulatory agencies
- Submits annual flow schedule to TMC for review and approval
- Submits annual budget to TMC for review and approval
- Monitors budget expenditures
- Secures necessary permits for all program activities
- Reports progress towards restoration goals to TMC, TAMWG, Stakeholders, Regulatory Agencies, and the public

Legislative Detail

Program Authorizations

- The Central Valley Project Improvement Act of 1992, Public Law 102-575, 3406(b)(1) “other” for river restoration and (b)(23) for restoration flow related activities provides the authorizations for Reclamation to fund the program activities:
  - To protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;
  - To address impacts of the Central Valley Project on fish, wildlife, and associated habitats.

* The Trinity River Flow Evaluation Study was already in progress when the CVPIA was passed, providing the funding mechanism

Driving Issues for TRRP

- The Preferred Alternative of the Trinity River EIS/EIR summarized in the ROD (2000) is very prescriptive.
- Adaptive management was/is a foundational concept.
- Partner, other stakeholder and public expectations differ.
- Short term nature of available data to measure success – first restoration flow in 2004, first rehabilitation project in 2005.
  - Flows are expected to make geomorphic change in the river
  - Rehabilitation sites are expected to change over time
  - Time frame of fish population response is unknown
  - Uncontrollables

Restoration Approach

Promote physical processes

↓

Complex channel form

↓

Rearing and spawning habitat

Program Goal

Restore populations of naturally spawning salmon and steelhead to pre-dam levels

Adaptive Environmental Assessment and Monitoring

- Program to change management approaches and improve restoration activities through experience.

- Includes all the physical and biological monitoring and evaluation, assessments, and analysis (modeling) that provide the results to inform future adaptation of existing management approaches.

- The Scientific Advisory Board has been conducting a “Phase 1” review of the 23 rehabilitation projects completed by 2012.
  - Review was broadened to look at key ecological indicators of change in the river that are indicative of improvement in fish habitat and fishery resources restoration.
  - Program is supporting development of the Fish Production Model (completion December 2015) as the missing component of a Trinity River Decision Support System

Physical Habitat Rehabilitation Strategies

- **Flow Management** – a variable flow regime based on five water-year types, with specific water allocations in AF by type of water year (as projected by the NWS and the CA DWR early in April), to mimic natural flows but at a smaller scale.
- http://www.cnrfc.noaa.gov/water_supply.php

- **Mechanical Channel Rehabilitation** – in-channel projects to reshape the current channel form to allow physical processes to create and maintain fish habitat (treatments to construct and facilitate development of different habitat features). Forty seven (47) locations for in-channel rehabilitation were identified in the Preferred Alternative of the Trinity River EIS/EIR. Twenty eight (28) of the prescribed projects have been completed.

- **Sediment Management** – augmentation of spawning gravels and reduction in fine sediments. A range of gravel augmentation levels are found in the ROD to mitigate for the gravel deficit caused by the damming of the upper Trinity River watershed. This year 3000 CY will be added at two sites.

- **Watershed Restoration** – a basin-wide program to reduce fine sediment input to the Trinity River. The TRRP develops cooperative projects with basin entities to reduce direct inputs of fine sediment into the mainstem. Tributary watersheds contribute major sediment inputs to the Trinity River, and cooperative projects with matching funds are conducted in those tributary watersheds.

Mitigation and Compliance

- **Infrastructure Improvements** – modification of structures in the floodplain to allow peak flows before restoration flows and rehabilitation projects were initiated – recent short term remediation of potable wells/septic system affected by first restoration flow of 11,000 cfs

- **Environmental compliance**– measures to minimize or eliminate short-term impacts on riparian vegetation, riparian and riverine bird species, and amphibians and reptiles as identified by the permitting agencies

Monitoring and Assessment

- **Physical**
  - **Sediment transport** - quantity of sediment (by size class) mobilized within each mainstem sub-reach under various release-hydrograph scenarios; used to develop a **Sediment budget**
  - **Bed mobility and scour** - evaluate if established thresholds are being achieved
  - **Implementation monitoring and analysis** - monitoring activities needed to inform rehabilitation site design and gravel augmentation
  - **Geomorphic assessment** - quantify nature, extent, and rate of geomorphic change since 1980
  - **Linking sediment supply and channel complexity** - morpho-dynamic modeling to investigate specific daily release hydrographs and gravel augmentation scenarios that best promote development of the desired complex channel.

Monitoring and Assessment

- **Biological**
  - **Adult salmonid harvest and escapement monitoring** – provides status and trend information used to evaluate long-term progress toward achieving Program goals
  - **Juvenile salmonid outmigrant monitoring** - assesses the juvenile salmonid abundance, run timing, condition and health -
  - **Salmonid habitat assessment** – assesses the effects of restoration actions on Chinook Salmon and Coho Salmon rearing habitat
  - **Riparian establishment and development** – evaluates whether scour, encroachment, initiation and establishment objectives are being met
  - **Birds** – Monitoring five focal species expected to show measureable responses to habitat restoration: Tree Swallow, Yellow Warbler, Yellow-breasted Chat, Song Sparrow, and Black-headed Grosbeak

Fisheries Managers

US Fish and Wildlife Service – Federal TRRP Co-lead
http://www.fws.gov/arcata/fisheries/activities/habRestoration/default.html

CDFG –harvest, escapement, run size estimates
http://nrm.dfg.ca.gov/documents/ContextDocs.aspx?cat=KlamathTrinity

NOAA – NMFS Protected Resources Division
- salmon/steelhead of S. Oregon and California
- SONCC draft recovery plan

http://swr.nmfs.noaa.gov/recovery/SONCC.htm

Hoopa Valley Tribal Fisheries Dept –
http://www.hoopafisheries.org/

Yurok Tribe Fisheries –
http://www.yuroktribe.org/departments/fisheries/FisheriesHome.htm

US Forest Service
http://www.fs.usda.gov/detail/stnf/about-forest/?cid=stelprdb5366849

TRRP Reporting

- Congressional, DOI and OMB queries about planning, implementation, funding, results and deliverables.
- Annual Bureau Measures as performance metrics that describe how the program meets flow, habitat and fish targets.
- TMC and TAMWG – quarterly public meetings
- CVPIA annual report.
- TRRP annual program report .
- TRRP performance measures (information sheets on the website).

www.trrp.net

Performance Measures

Aquatic Habitat

Wildlife

Riparian Vegetation

What makes a successful restoration program

- TRRP – program was well designed
  - Trinity Management Council – decisions include federal, state, Tribes, county
  - FACA federal advisory committee – ensures other stakeholder and public input
  - Technical workgroup meetings are open
  - All face-to-face meetings include public forum
- TRRP – known water allocation by WY
  - Reduces uncertainty of system response
- TRRP – consistent funding

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