	Applicant	Amount Requested	Final Funding
Middle Trinity Decom and Upgrade	TCRCD	$80,000	$80,000
Union Hill Road Improvement	SPI	$87,500	$87,500
SFTR Road Decom and Upgrade	TCRCD	$150,000	$70,000
Conner Creek Migration	5 Counties	$80,000	$50,000
Indian Creek Phase II	PWA	$107,000	$107,000
Browns Study	5 Counties	$125,000	$50,000
West Weaver Rapid Assessment	TCRCD	$65,000	$55,500
Gravel Mine Restoration	WRTC	$40,000	Unfunded
Lower East Weaver	5 Counties	$204,062	Unfunded
Trinity County Native Seed Bank	TCRCD	$13,000	Unfunded
Totals		**$951,562**	**$500,000**

DRAFT Trinity River Restoration Program

Roles and Responsibilities of Partner Agencies and Governments (Program Partners)

Prepared by: Jennifer Faler

Date: December 13, 2010

This document is intended to provide current information on the roles and responsibilities of Program partners and to clarify oversight aspects of Trinity River Restoration Program (Program) activities. It is anticipated that this document will be updated each fiscal year.

Trinity River Restoration Program: The December 19, 2000 Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Impact Report directed the Department of the Interior to undertake an innovative and system-oriented approach to recovering the River's anadromous fish populations. The Trinity River Restoration Program (Program) was established to restore the attributes found in natural alluvial river systems on a managed river downstream of a dam. A combination of mechanical rehabilitation, a naturalized flow release schedule, and adaptive environmental assessment will be used to mitigate the impacts caused by decades of flow diversion on one of California's most significant rivers. In addition to recovery of naturally-spawning anadromous fish populations in the Trinity River, the Program also presents a unique opportunity to advance scientific understanding of alluvial river systems and the recovery processes of natural systems for broader application.

Program funding is largely provided by two Department of Interior agencies: the U.S. Bureau of Reclamation (Reclamation) and U.S. Fish and Wildlife Service (Service). Reclamation and the Service are joined in managing the Program by several other agencies, referred to as Program partners, including the Hoopa Valley Tribe, Trinity County, the Yurok Tribe, the U.S.Department of Agriculture, Forest Service, the California Resources Agency (California Department of Water Resources and California Department of Fish and Game), and the NOAA Fisheries Service.

Trinity Management Council: The TMC has management responsibility for the Trinity River fishery restoration goals and implementation actions described in the ROD and Implementation Plan. The TMC functions as a board of directors that sets the priorities and schedules for strategic implementation by the Executive Director and determines when corrective actions are required. This shared responsibility of the TMC assumes participation and support from each member organization.

Agency	Primary	Alternate
U.S. Bureau of Reclamation	Brian Person, Chair	Don Reck
U.S. Fish and Wildlife Service	Nancy Finley, Vice-Chair	Joe Polos
Hoopa Valley Tribe	Leonard Masten	Mike Orcutt, George Kautsky
Yurok Tribe	Dave Hillemeier	Tim Hayden
California Resources Agency	Neil Manji, DFG	Teresa Connor, DWR
National Marine Fisheries Service	Irma Lagomarsino	Seth Naman
Forest Service	Sharon Heywood	Bill Brock

Trinity County	Roger Jaegel	Dero Forslund

Executive Director: The Executive Director is the primary advocate for the Program and works with Program administrative staff propose tactical priorities, budgets, schedules, an annual flow schedule, implementation work plan, and science work plan for approval by the TMC. The Executive Director leads the coordination of activities within Program partner staff and among the TMC, TAMWG, regulatory agencies, and general public, ensuring a common understanding of progress toward the achievement of the Program goals and objectives. The Executive Director is responsible for implementing management actions established in the ROD and for tracking the development of any recommended changes in management actions developed through the adaptive environmental assessment process. The Executive Director will submit any such recommendations to the TMC or consideration.

Program Office Administrative Staff

Position	FTE	Major Responsibilities/Duties
Executive Director, USBR Vacant	1.0	• Program management/reporting/budget/schedule. • TMC/TAMWG support. • Federal trust responsibility. • Public outreach. • Program integration amongst partners • Scientific Advisory Board coordination. • Supervise Reclamation science and administrative staff.
Science Coordinator, USFWS Ernie Clarke	0.5	• Assist ED in program management / reporting / budget / schedules.
Implementation Branch Chief, USBR Jennifer Faler	0.5	• Assist ED in program management / reporting / budget / schedules.
Budget – Grants & Agreements, USBR Priscilla Davee	1.0	• Manage budgets, payments and financial reporting. • Grants and agreements lead.
Contracts Technician (COR), USBR Vacant	1.0	• Contracting lead. • Perform administrative duties for AFAs. • Grants and agreements support.
Receptionist/Secretary, USBR Deanna Jackson	1.0	• Clerical. • Receptionist. • Office management.
Public Affairs, Contract	0.5	• Public education and outreach.

Adaptive Environmental Assessment And Implementation Team: The Program staff provides technical support to the TMC as it relates to design, scientific assessment, and implementation of fishery restoration activities. The team consists of two groups, Implementation and Science and Monitoring. The science and monitoring group is responsible for tracking Program performance and informing decision-making by identifying and addressing uncertainties. The implementation group is responsible for the on-the-ground implementation activities such as infrastructure modifications, channel rehabilitation, coarse sediment augmentation, and watershed restoration. Numerous staff positions serve both groups.

U.S. Fish and Wildlife Service		
Position	**FTE**	**Major Responsibilities/Duties**
Fish and Wildlife Biologist Ernie Clarke	1.0	• Work Groups: Interdisciplinary. • Science Coordinator for TRRP. • Oversees and coordinates all aspects of the TRRP Science Program (work group function, workshops, internal/external reviews, hypothesis development and testing, etc.). • Develops annual science work plan.
Fisheries Program Lead Nick Hetrick	0.5	• Program management/budget/personnel. • Direct supervision of AFWO Trinity Lead/other AFWO senior biologists - indirect supervisor of all Trinity bios (excluding science coordinator). • Responsible for collaboration between and integration of Klamath and Trinity programs. • Technical specialist in adult weir operations, video escapement monitoring technologies.
Fishery Biologist Joe Polos	1.0	• Work Groups: Fish, Flow Scheduling. • Conducts analyses of fisheries population and habitat data in evaluating program effectiveness. • Liaison between Science Coordinator and AFWO Fisheries Program staff.
Fish and Wildlife Biologist Jamie Bettaso	0.75	• Work Groups: Wildlife / Riparian. • Coordinates and conducts herpetology population and habitat assessments, effectiveness assessments, contaminants studies. • Coordinates with the RIG to minimize effects of construction activities on amphibians/reptiles.
Supervisory Fish Biologist Charlie Chamberlain	0.50	• Work Groups: Design Team • Biologist for the DOI Design Team • Coordinates and conducts salmon redd/carcass assessment. • MOCC Trainer for TRRP participants.

		• Serves on the Region 8 Tribal Grants Review Team.
Fish Biologist Damon Goodman	0.75	• DOI lead for the Integrated Habitat Assessment (IHAP). • Serves as the Region 8 Pacific Lamprey Coordinator.
Fish Biologist Bill Pinnix	0.50	• DOI lead for the salmonid outmigration assessment, salmonid fry/juvenile assessments, salmonid survival and habitat use assessments employing telemetry technology (Klamath & Trinity).
Supervisory Fish Biologist Paul Zedonis	0.25	• Work Groups: Temperature. • Coordinates and conducts monitoring/modeling for water quality assessments. • Sacramento River Temperature Task Group.
Fish Biologist Vina Frye	0.6	• DOI coordinator for the TAMWG. • Assists with Trinity field studies, as time allows.
Hydrologist Conor Shea	0.1	• Work Groups: Physical • Technical review.
Term/Temp Employees	~ 6	• AFWO term and temporary employees - conduct field activities for Trinity projects.

U.S. Bureau of Reclamation		
Position	**FTE**	**Major Responsibilities/Duties**
Hydraulic Engineer Andreas Krause	1.0	• Work Groups: Flow Scheduling, Physical. • Conduct gravel augmentation/channel complexity study (0.5 FTE). • Coordinates with USGS on stream gages.
Aquatic Ecologist/638 Coord. Nina Hemphill	1.0	• Work Groups: Fish, Wildlife / Riparian. • Conduct fish and wildlife monitoring and assessments. • AFA development and management for MP Region.
Physical Scientist Dave Gaeuman	1.0	• Work Groups: Physical, Design Team, Watershed. • Geomorphologist for DOI design team. • Conducts channel rehabilitation, gravel augmentation, and sediment transport monitoring and assessments.
Implementation Branch Chief Jennifer Faler	0.5	• Work Groups: Design Team, Watershed, Interdisciplinary. • Senior project manager for implementation activities.
Project Manager Vacant	1.0	• Work Groups: Design Team. • Project manager for construction/mitigation projects (project planning, contracting, QA, cost control)
Realty Specialist Diana Clifton	1.0	• Realty actions (ROW, acquisitions, etc.). • Infrastructure relocations.
Project Engineer DJ Bandrowski	1.0	• Work Groups: Design Team. • Civil Engineer for DOI design team. • Implementation / Design Team work group co-coordinator.

		• Project Engineer for construction projects. • Landowner coordination.
Engineering Technician Kent Steffens	1.0	• Civil and riparian design support. • Construction inspection and documentation. • GIS-AutoCAD mapping.
Environmental Specialist Brandt Gutermuth	1.0	• Work Groups: Design Team, Wildlife / Riparian. • Environmental compliance (CEQA-NEPA-permits). • Environmental mitigation support (wetlands, re-vegetation, etc.). • Public outreach.
Natural Resource Specialist (Data Steward) Eric Petersen	1.0	• Work Groups: Data Team. • Coordinate with partners to achieve TRRP data stewardship goals. • Data manager and Spatial Analyst activities. • TRRP website lead.
Civil Engineer Rod Wittler	0.65	• Work Groups: Temperature. • Liaison between CVO and TRRP (representing TRRP interests). • Reservoir operations and modeling. • Sacramento River Temperature Task Group. • Technical support for research and development (0.35 FTE).

Hoopa Valley Tribe		
Position	**FTE**	**Major Responsibilities/Duties**
Deputy Director/Biologist 2 George Kautsky	0.8	• Work Groups: Fish, Data Team, Budget Team, Watershed (alternate), Flow Scheduling (alternate). • Trinity Adult Fish Monitoring. • Self-Governance compacting technical representative.
Administrative Assistant Lesley Sherman	0.5	• Meeting logistics/coordination. • Filing. • Document preparation. • Technical Services.
Accountant Vacant	0.7	• Account management. • Payroll. • Travel expenses. • Capital additions. • Prepares for Audit. • Contracts. • Technical Services.

Habitat and Water Division Co-Lead/Hydrologist 2 Robert Franklin	0.8	• Work Groups: Temperature, Flow Scheduling. • Sacramento River Temperature Task Group. • Coordination and reporting of interagency projects: o Rotary Screw Trap. o Integrated Habitat Assessment. o Construction Planning and Design. • Klamath-Trinity Science Coordination. • Technical Policy Analysis for TMC.
Habitat and Water Division Co-Lead/Biologist 2 Andrea Hilton	0.9	• Work Groups: Design Team, Physical, Watershed. • Participates in all Channel Rehabilitation Design-related work. • Conducts planning, field work, analysis, and report writing for Interdisciplinary Habitat Assessment. • Manages contracting and project management with McBain & Trush, Inc.
Field Biologist Paul Petros	1.0	• Work Groups: Fish (Alternate). • Manages out-migrant trapping at North Fork screw trap; analysis; report writing. • Hoopa lead for Juvenile Density/Fry Study.
Field Biologist Justin Alvarez	0.9	• Work Groups: Wildlife / Riparian. • Conducts planning, field work, analysis, and report writing for Interdisciplinary Habitat Assessment.
Field Biologist Billy Matilton	0.9	• Work Groups: Fish (Alternate). • Field lead for Fisheries Management Activities. o Recreational Creel Census. o Tribal Harvest Monitoring. o Trinity River Hatchery Co-management. • Fish Work Group (Alternate).
Field Technicians	0.9	• Implement field aspects of monitoring for all TRRP projects compacted by HVT.
Scott McBain McBain & Trush, Inc.		• Work Groups: Physical. • Oversees the work of John Bair and Fred Meyer in other work groups. • Participates in IHAP Monitoring.
John Bair McBain & Trush. Inc.		• Work Groups: Wildlife / Riparian, Physical (as needed), Design Team (as needed). • Participates in IHAP Monitoring (Riparian Lead).
Fred Meyer McBain & Trush, Inc.		• Work Groups: Design Team.
Geoff Hales McBain & Trush, Inc.		• Participates in IHAP Monitoring (Physical Lead).

Yurok Tribe		
Position	**FTE**	**Major Responsibilities/Duties**
Senior Fisheries Biologist Tim Hayden	1.0	• Work Groups: Fish, Flow Scheduling, Design Team (Alternate), Temperature, Physical (Alternate), Budget Team • TRRP Annual Report Advisory Committee. • Science Symposium Advisory Committee. • TRH MOU Technical Advisory Group (TRH TAG). • Sacramento River Temperature Task Group.
Habitat Biologist Aaron Martin	1.0	• Work Groups: Design Team, Fish (Alternate), Flow Scheduling (Alternate), Temperature, Physical (Alternate). • Yurok Channel Rehabilitation Site Design Team. • Channel Rehabilitation LWD Construction Advisor. • Yurok IHAP lead biologist.
Rocco Fiori Fiori GeoSciences	0.25	• Work Groups: Design Team, Physical (tentative). • Yurok Channel Rehabilitation Site Design Team. • Channel Rehabilitation LWD Construction Advisor.
Population Biologist Shane Quinn	1.0	• Work Groups: Data Team, Watershed, Wildlife / Riparian. • TRH MOU Technical Advisory Group (TRH TAG). • Yurok TRH Co-management coordination. • TRH Assessment Field crew supervisor.
Wildlife Biologist Chris West	.25	• Work Groups: Wildlife / Riparian (tentative Alternate).

U.S. Forest Service		
Position	**FTE**	**Major Responsibilities/Duties**
Fish Biologist Samantha Chilcote	0.2	• Work Groups: Fish, Wildlife / Riparian, Watershed.
Fish Biologist Eric Wiseman	0.2	• Work Groups: Design Team, Flow Scheduling.
Fish Biologist Andrea Collins	0.2	• Work Groups: Fish, possibly others.
Research Scientist CJ Ralph	0.1	• Work Groups: Wildlife / Riparian.
Wildlife Biologist Sherri Miller	0.2	• Work Groups: Wildlife / Riparian.

California Natural Resources Agency		
Position	**FTE**	**Major Responsibilities/Duties**
Senior Engineer Teresa Connor	.5	• Work Groups: Design Team, Physical, Temperature, Flow Scheduling.
Senior Biologist Supervisor Larry Hanson	.5	• Work Groups: B-team (Interim), Wildlife / Riparian (Interim), Watershed, Flow Scheduling.
Engineering Geologist Mark Smelser	.25	• Work Groups: Physical, Watershed.
Associate Fisheries Biologist Wade Sinnen	1.0	• Work Groups: Fish.
Staff Environmental Scientist Vacant (vice Berry)	.5	• Work Groups: Watershed, Wildlife / Riparian, Temperature, Flow Scheduling.
Senior Environ. Scientist Mike Berry	.1	• Work Groups: Temperature.
Civil Engineer Scott Kennedy	0.33	• Work Groups: Design Team, Data Team. • Civil Engineer for State design team.
Civil Engineer Nancy Snodgrass	0.33	• Work Groups: Design Team. • Civil Engineer for State design team
Assistant Civil Engineer Trevor Morgan	0.25	• Assistant Civil Engineer for State design team
Surveyor James West	0.25	• Lead State Land Surveyor

National Marine Fisheries Service		
Position	**FTE**	**Major Responsibilities/Duties**
Fisheries Biologist Seth Naman	0.5	• Work Groups: Fish, Temperature. • Provide ESA service/advice
Hydrologist James Montesi	0.25	• Work Groups: Flow Scheduling. • Provide hydrology expertise (inflow forecasting, etc.)

Trinity County		
Position	**FTE**	**Major Responsibilities/Duties**

Grant/Contract Administrator Susanne Baremore	0.5	• Work Groups: Budget, Temperature, Flow Scheduling, Watershed, Public Relations. • Public involvement/information, liaison with Trinity County Board of Supervisors.

Trinity Adaptive Management Working Group: The TAMWG is a Federal Advisory Committee Act (FACA) chartered group, charged with representing the stakeholder interests related to the restoration of the Trinity River fishery resources. The TAMWG provides management recommendations to the TMC.

Stakeholder	Primary	Alternate
Northcoast Environmental Center	Emelia Berol	Greg King
Glen-Colusa Irrigation District	Sandy Denn	
Willow Creek Community Services District	Edgar Duggan	Bruce Nelson
Trinity County Resource Conservation District	Patrick Frost	Alex Cousins
City of Redding Electric Utility Department	Elizabeth Hadley	Brent ten Pas
Environmental Defense Fund	Ann Hayden	
Big Bar Community Development Group	Dana Hord	
Friends of the Trinity River	Byron Leydecker	Abbey Stockwell
Trinity County Resident	Richard Lorenz	Howard May
Recreational Fishing Guide/Trinity County Resident	Joseph McCarthy	
Redwood Regional Audubon Society	Gilbert Saliba	
Six River Outfitter and Guide Association	David Steinhauser	
Tehama-Colusa Canal Authority	Jeffrey Sutton	
Natural Resources Conservation Service	Timothy Viel	Tiffany Riess
California Trout	Thomas Weseloh	
Trinity County Resident	Arnold Whitridge	

Scientific Advisory Board: The SAB reviews the annual assessment designs for the selected annual flow schedule, reviews long-term trend monitoring designs and reviews significant changes in objective specific assessment designs. The SAB reviews TMAG model use and analytical processes, and peer reviews final reports of Program studies and research projects. The SAB also conducts a periodic review of the Program performance.

Affiliation	Name
Consultant	Mike Merigliano, Jr.
USDA Forest Service	John Buffington
Former USGS (Retired)	Clair Stalnaker
NOAA	Chris Jordan
Ecometric Research	Josh Korman

Expert Review Panels: Additional panels or committees will review objective specific proposals or activities. For each objective specific activity, an expert review panel composed of subject area experts, not directly involved with the proposed project or other conflict of interest will be solicited to provide review and recommendations on proposals submitted in response to internal (Program partner) and external (outside Consultant) RFPS. For fiscal year 2012 work plan development, the Program intends to have all internal proposal reviewed by an expert review panel with the exception of rotary screw trap work which was just reviewed in 2010. Scopes of work and cost estimates for outside RFPs will also be reviewed by expert review panels.

Work Groups:

Guiding Principles

1. Work groups members and discussions shall overwhelmingly emphasize technical matters over organizational concerns. Policy or organizational concerns should be immediately identified and documented for consideration by the ED, TMC, or others.

2. Consensus based decision making is preferred. Consensus is a process by which a group makes a decision, without voting, which all members can support. Consensus does not mean unanimity. Consensus does not require everyone to fully agree or feel equally strongly about every single point of a proposal or potential agreement. It does mean that the agreement is the best one for the group as a whole, if not for each individual group member, and it is one that people can accept and "live with".

3. Program participants will seek to resolve disputes at the lowest level. When consensus agreement is not reached, the work group coordinator, with the assistance of work group members will develop a written document describing the unresolved issue. Documentation should include a short paragraph of the problem or issue; alternative positions of work group members; the recommended course of action and justification for that action. The Science Coordinator will review these briefs and sign as concurring or not concurring prior to any action being initiated that is in contention. Non-concurrence by the Science Coordinator on an issue will be brought to the attention of the Executive Director to clearly communicate the problem and the Science Coordinator will provide a final recommendation to resolve the concern to the Executive Director. Disputes associated with technical decisions may be made to the Executive Director from Science staff within 2 weeks of submitting the briefing.

Fish Work Group

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: Joe Polos, U.S. Fish and Wildlife Service
Fiscal Year 2011 Interdisciplinary Team Interim Representative: Joe Polos, U.S. Fish and Wildlife Service

Core Members:
Tim Hayden, Yurok Tribe
Nina Hemphill, U.S. Bureau of Reclamation
Joe Polos, U.S. Fish and Wildlife Service
Wade Sinnen, CA Department of Fish and Game
George Kautsky, Hoopa Valley Tribe
Samantha Chilcote, U.S. Forest Service
Seth Naman, National Marine Fisheries Service

Other Participants/Alternates:
Aaron Martin, Yurok Tribe
Billy Matilton, Hoopa Valley Tribe
Paul Petros, Hoopa Valley Tribe
Tom Weseloh, California Trout, Inc.

Physical Work Group

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: Andrea Hilton, Hoopa Valley Tribe
Fiscal Year 2011 Interdisciplinary Team Representative: TBD

Core Members:
Scott McBain, McBain & Trush, Inc. (consultant to the Hoopa Valley Tribe)
Andrea Hilton, Hoopa Valley Tribe
Mark Smelser, CA Department of Fish and Game
Teresa Connor, CA Department of Water Resources
Rocco Fiori, Fiori Geosciences (consultant to the Yurok Tribe)
Conor Shea, U.S. Fish and Wildlife Service
Andreas Krause, U.S. Bureau of Reclamation
Dave Gaeuman, U.S. Bureau of Reclamation

Other Participants/Alternates:
Tim Hayden, Yurok Tribe
Aaron Martin, Yurok Tribe
John Bair (As Needed), McBain & Trush, Inc. (consultant to the Hoopa Valley Tribe)

Wildlife / Riparian Work Group

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: TBD; Interim coordinator: Nina Hemphill, U.S. Bureau of Reclamation
Fiscal Year 2011 Interdisciplinary Team Representative: TBD

Core Members:
Justin Alverez, Hoopa Valley Tribe
Samantha Chilcote, U.S. Forest Service
John Bair, McBain & Trush, Inc.
Larry Hanson, CA Department of Fish and Game
Jamie Bettaso, U.S. Fish and Wildlife Service
Nina Hemphill, U.S. Bureau of Reclamation
Eric Peterson, U.S. Bureau of Reclamation
Brandt Gutermuth, U.S. Bureau of Reclamation
Shane Quinn, Yurok Tribe
TBD (vice Berry), CA Department of Fish and Game

Other Participants/Alternates:
Chris West, Yurok Tribe

Temperature Team

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: TBD
Fiscal Year 2011 Interdisciplinary Team Representative: TBD

Core Members:
Robert Franklin, Hoopa Valley Tribe
Tim Hayden, Yurok Tribe
Aaron Martin, Yurok Tribe
Teresa Connor, CA Department of Water Resources
Mike Berry, CA Department of Fish and Game
Seth Naman, National Marine Fisheries Service
Paul Zedonis, U.S. Fish and Wildlife Service
Rod Wittler, Bureau of Reclamation
Susanne Baremore, Trinity County

Other Participants/Alternates:
Elizabeth Hadley, City of Redding Electric Utility Department

Flow Scheduling Work Group

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: Andreas Krause, U.S. Bureau of Reclamation

Fiscal Year 2011 Interdisciplinary Team Interim Representative: Andreas Krause, U.S. Bureau of Reclamation

Core Members:
Robert Franklin, Hoopa Valley Tribe
Joe Polos, U.S. Fish and Wildlife Service
Tim Hayden, Yurok Tribe
Teresa Connor, CA Department of Water Resources
Larry Hanson, CA Department of Fish and Game
James Montesi, National Marine Fisheries Service
Andreas Krause, U.S. Bureau of Reclamation
Susanne Baremore, Trinity County
Eric Wiseman, U.S. Forest Service
TBD (vice Berry), CA Department of Fish and Game

Other Participants/Alternates:
George Kautsky, Hoopa Valley Tribe
Aaron Martin, Yurok Tribe

Interdisciplinary Team (IDT)

Purpose:

Membership:
Co-Coordinators: Ernie Clarke, U.S. Fish and Wildlife Service and Implementation Branch Chief, U.S. Bureau of Reclamation

Core Members:
Joe Polos, U.S. Fish and Wildlife Service - Fish Work Group Interim Representative
Andreas Krause, U.S. Bureau of Reclamation - Flow Scheduling Work Group Interim Representative
TBD - Physical Work Group Representative
TBD - Temperature Work Group Representative
TBD - Riparian and Wildlife Work Group Representative
+
A representative from any TMC agency not represented above

Data Team

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: Eric Peterson, U.S. Bureau of Reclamation

Core Members:
George Kautsky, Hoopa Valley Tribe
Shane Quinn, Yurok Tribe
Eric Wiseman, U.S. Forest Service
Eric Peterson, U.S. Bureau of Reclamation
Scott Kennedy, CA Department of Water Resources

Other Participants/Alternates:

Budget Team

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Coordinator: Executive Director, U.S. Bureau of Reclamation

Core Members:
Mike Orcutt, Hoopa Valley Tribe
George Kautsky, Hoopa Valley Tribe
Tim Hayden, Yurok Tribe
Larry Hanson, CA Department of Fish and Game
Susanne Baremore, Trinity County
**Implementation Branch Chief, U.S. Bureau of Reclamation*
**Ernie Clarke, U.S. Fish and Wildlife Service*

Other Participants/Alternates:

Watershed

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: TBD

Core Members:
Andrea Hilton, Hoopa Valley Tribe
Shane Quinn, Yurok Tribe
Larry Hanson, CA Department of Fish and Game
Mark Smelser, CA Department of Fish and Game
Dave Gaeuman, U.S. Bureau of Reclamation
Mark Lancaster, 5 Counties Salmonid Conservation Program
Bill Brock, U.S. Forest Service
Andy Hill, CA Department of Fish and Game
Arnold Whitridge, Local Resident
Alex Cousins, Trinity County Resource Conservation District
TBD (vice Berry), CA Department of Fish and Game
Implementation Branch Chief, U.S. Bureau of Reclamation
Susanne Baremore, Trinity County

Other Participants/Alternates:
George Kautsky, Hoopa Valley Tribe

Design Team

Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: TBD

Core Members:
Andrea Hilton, Hoopa Valley Tribe
Fred Meyer, McBain & Trush, Inc.
Aaron Martin, Yurok Tribe
Eric Wiseman, U.S. Forest Service
Teresa Connor, CA Department of Water Resources
Scott Kennedy, CA Department of Water Resources
Nancy Snodgrass, CA Department of Water Resources
Charlie Chamberlain, U.S. Fish and Wildlife Service
Dave Gaeuman, U.S. Bureau of Reclamation
DJ Bandrowski, U.S. Bureau of Reclamation
Rocco Fiori, Yurok Tribe
Implementation Branch Chief, U.S. Bureau of Reclamation
Brandt Gutermuth, U.S. Bureau of Reclamation

Other Participants/Alternates:
Tim Hayden, Yurok Tribe
John Bair (as needed), McBain & Trush, Inc.

Public Relations Team

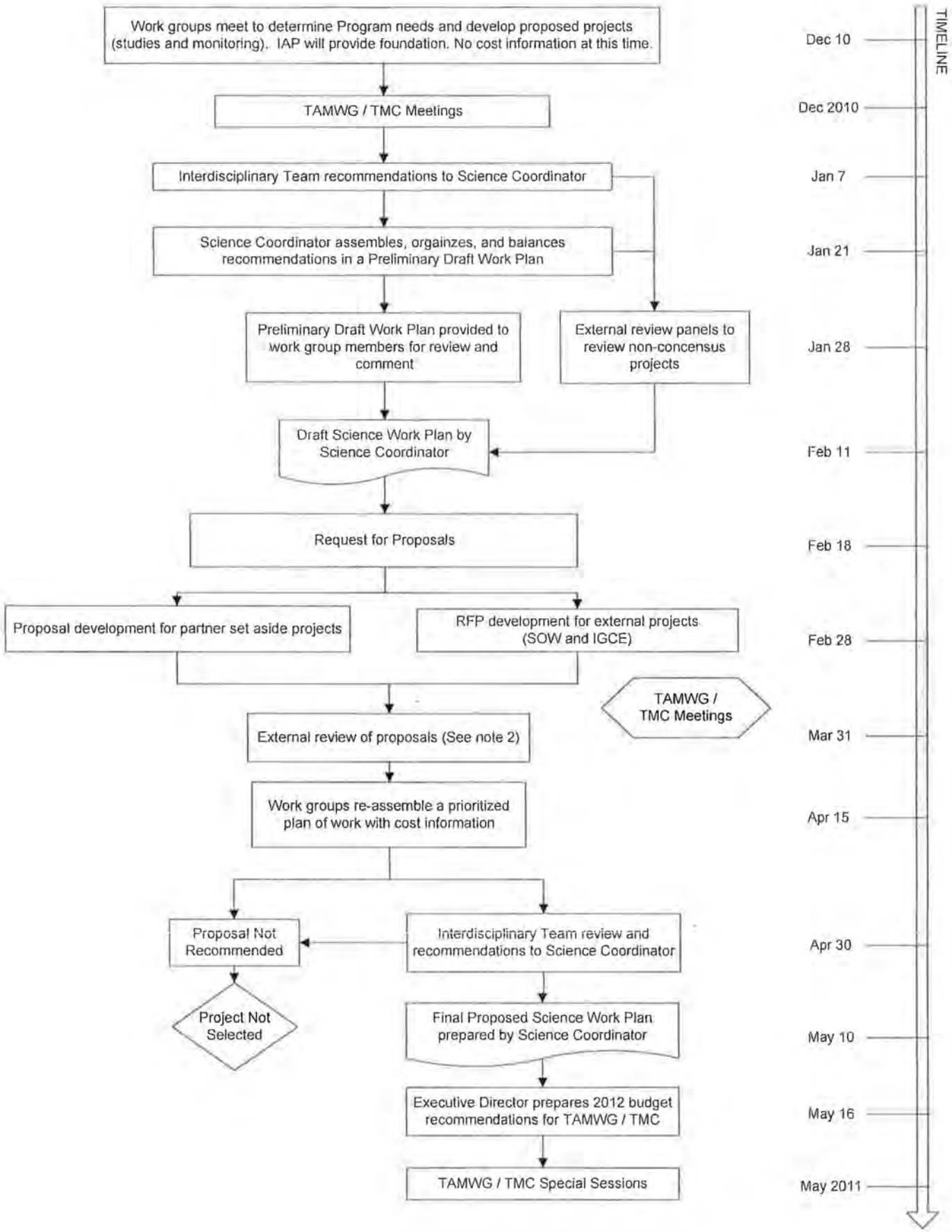
Purpose: UNDER DEVELOPMENT IN WORK GROUP

Membership:
Fiscal Year 2011 Coordinator: Public Affairs Specialist, Contractor

Core Members:
Executive Director, U.S. Bureau of Reclamation
Eric Wiseman, U.S. Forest Service
Diana Clifton, U.S. Bureau of Reclamation
Susanne Baremore, Trinity County
Public Affairs Specialist, Contractor

Other Participants/Alternates:

Science Work Plan Development Process



Notes:
(1) Recurring or on-going projects may not be subject to this full process.
(2) Program intends to have all 2012 proposals reviewed by expert review panels, except rotary screw trap projects which were reviewed in 2010.

Trinity River Restoration Program
P.O. Box 1300, 1313 South Main Street, Weaverville, California 96093
Telephone: 530-623-1800, Fax: 530-623-5944

Adult fish kill/disease?

MEMORANDUM

TO: Trinity Management Council

FROM: Ernie Clarke, Science Coordinator, Trinity River Restoration Program

SUBJECT: Science Program Report

DATE: December 15, 2010

This report discusses the major activities that have occurred since September 2010 and major initiatives now underway.

Priorities of the Science Program:

- Assess / synthesize / report on existing information.
- Implement work group changes.
- Institute reviews systematically.
- Execute the new work planning process.
- Support Phase II planning effort.

Reports

- Concerted effort to assemble all past monitoring reports to ensure they inform future management actions. – Eric Peterson / Americorps member?
- Performance measures: – Nina Hemphill draft for March TMC mtg.
  - Goal: Develop a small set of performance measures that are determinants of success by the end of Fiscal Year 2011. These would help articulate Program impact to managers, stakeholders and the public.
  - Status: Work groups have identified tentative lists.
  - Next steps: Work groups to refine lists / apply measures / mock up results.
  - Option: Seek outside help in application.

↳ Focus on results, not process
Progress

- Staff is identifying areas where analysis / synthesis are needed and committing to report dates. For example: – Ernie Clarke
    - Analysis of the behavior of injected gravels.
    - Nature and extent of geomorphic change in the upper 40 miles from 2003 – 2009.
    - Flow releases 2000 – 2010.
    - Evaluate trends in presmolt and smolt condition and health in relation to thermal regimes.
- 2012 Science Symposium. – Rod Wittler?
    - Theme – State of the Trinity River.
    - Contributors would examine the state of the Trinity River, a system that is undergoing change as a result of Program actions.
    - Proposal – contributors would submit papers that would be assessment in a report. Submissions would undergo expert review. Reports would be compiled in a bound report along with an overview paper.

Work groups

- Recent activities have centered around: (1) constituting groups with subject matter expects identified by TMC members, (2) identifying coordinators, (3) developing discretionary charter language, (4) developing FY12 work plans, and (5) identifying performance measures.

Work group members (coordinator in bold, back-up in italics, * = interim appointment)

Fish: *Tim Hayden* (Yurok Tribe), Nina Hemphill (Reclamation), **Joe Polos** (USFWS), Wade Sinnen (CA Department of Fish and Game), George Kautsky (Hoopa Valley Tribe), Samantha Chilcote (U.S. Forest Service), Seth Naman (National Marine Fisheries Service).

Physical: Scott McBain (McBain & Trush, Inc., consultant to the Hoopa Valley Tribe), **Andrea Hilton** (Hoopa Valley Tribe), Mark Smelser (CA Department of Fish and Game), Teresa Connor (CA Department of Water Resources), Rocco Fiori (Fiori Geosciences, consultant to the Yurok Tribe), Conor Shea (USFWS), Andreas Krause (Reclamation), Dave Gaeuman (Reclamation).

Wild. / Rip.: Justin Alverez (Hoopa Valley Tribe), **Samantha Chilcote*** (U.S. Forest Service), John Bair (McBain & Trush, Inc., consultant to the Hoopa Valley Tribe), Jennifer Carlson (CA Department of Fish and Game), Jamie Bettaso (USFWS) , Nina Hemphill (Reclamation), Eric Peterson (Reclamation), Brandt Gutermuth (Reclamation), Shane Quinn (Yurok Tribe), Chris West (Yurok Tribe), *Sherri Miller** (U.S. Forest Service).

Flow: Robert Franklin (Hoopa Valley Tribe), Joe Polos (USFWS), *Tim Hayden* (Yurok Tribe), Teresa Connor (CA Department of Water Resources), Larry Hanson (CA Department of Fish and Game), James Montesi (National Marine Fisheries Service), **Andreas Krause** (Reclamation), Susanne Baremore (Trinity County).

Temp.: Robert Franklin (Hoopa Valley Tribe), Paul Zedonis (USFWS), Tim Hayden (Yurok Tribe), Teresa Connor (CA Department of Water Resources), Mike Berry (CA

Department of Fish and Game), Seth Naman (National Marine Fisheries Service), **Rod Wittler*** (Reclamation), Susanne Baremore (Trinity County), Eric Wiseman (U.S. Forest Service).

IDT: **RIG Branch Chief**, **Science Program Coordinator**, and appointed representatives of the following TRRP work groups: Flow, Temperature, Physical, Fish, and Wildlife / Riparian. Additionally, any TRRP partner organization not represented in the above appointments will have a seat on the IDT.

Charter

- Template included in ATTACHMENT 1.
- Example purpose statements (temperature team):
    - The purpose of the Trinity River Temperature Work Group is to make management recommendations that will help ensure water temperatures in the Trinity River are sufficient to meet the needs of native aquatic species. The work group will provide technical support to the Trinity River Restoration Program & Sacramento River Temperature Task Group regarding all aspects of water temperature management for the Trinity River. The work group will evaluate how Trinity River Restoration Program (TRRP) management actions and Trinity River Division (TRD) facilities and operations impact water temperatures in the Trinity River. The Work Group will: (1) track water temperatures in the Trinity River; (2) assess the operational capabilities of the TRD in order to utilize the best management of coldwater storage and transmission to meet water temperature objectives in the Trinity River in all years; and (3) evaluate physical, operation, management, and other options within TRD that could enhance temperature management.
- Example of work group specific objectives (temperature team):
    - Provide input to the annual flow scheduling process.
    - Participate in and provide recommendations to the Sacramento River Temperature Task Group.
    - Assess modifications to TRD facilities & operations for improved management of coldwater resources.
    - Conduct inter-annual analyses to develop management strategies to deal with drought.
    - Address temperature issues listed in the IAP that impact the aquatic ecology of the Trinity River.
    - Track water temperatures in the Trinity River
    - Recommend alternative operations to CVO for TRD facilities at times when water temperatures are exceeding targets.
    - Assess how TRRP activities alter the temperature regime of the Trinity River.

Reviews

- In progress:
    - The 2009 juvenile density pilot study draft report (POC: Ernie Clarke).

- 2011 juvenile density investigation plan (POC: Ernie Clarke).

- Future:
  - Fiscal Year 2011 Sub-Program Review: Adult monitoring projects (POC: Joe Polos).
  - Work planning:
    - SAB review of Fiscal Year 2012 draft work plan (POC: Jennifer Faler).
    - The Program intends to have all internal proposal reviewed by an expert review panel with the exception of rotary screw trap work which was just reviewed. Scopes of work and cost estimates for outside RFPs will also be reviewed by expert review panels. IDT needs to develop process (POC: Ernie Clarke).
  - SAB programmatic review - a review of the overall AEAM Organization by the SAB, per the Implementation Plan, is planned for Fiscal Year 2011 (POC: Jennifer Faler).

Fiscal Year 12 Work Planning

- The Trinity River Restoration Program (TRRP) science work plan will:
  - Clearly establish and communicate the priorities of the science program.
  - Define reporting dates and products, which can be shared with the Trinity Management Council, the Trinity River Adaptive Management Working Group, and other interested parties.
  - Allow science to drive budget decisions.
  - Permit and document adjustments based on learning and / or changing priorities.

- Work plan fundamentals:
  - Discipline specific work plans will be developed by TRRP work groups.
  - A comprehensive work plan will be developed by the Interdisciplinary Team (IDT) based on the discipline specific submissions.
  - Work plans will be overarching. Details will be developed through the creation of RFPs, Independent Government Estimates (IGEs), and proposals.
  - Work plans will be guided but not limited by the Integrated Assessment Plan.
  - Work plans will identify projects that are recurring. Additionally, work plans will identify projects best accomplished by TRRP partners and those which are to be competed through the RFP process.
- Work plan contents:
  - Cover sheet including the work plan's major goals and a prioritized list of elements.
  - Summary (2-pages maximum) of each element including: (1) objective, (2) project scope (with analysis and metrics), (3) technical approach, (4) schedule, (5) organization / responsibilities, and (6) deliverables / tasks (see ATTACHMENT 2).

Example prioritized list (for December 10 deadline; from fish work group):

1. Map and quantify the extent (area) of available fry/juvenile rearing habitat throughout the mainstem.
2. Map and quantify the extent (area) of available fry/juvenile rearing habitat at rehab sites.
3. Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead.
4. Monitor smolt outmigrant numbers,Monitor smolt timing.
5. Monitor smolt timing, as well as pre-smolt/smolt size, condition and disease incidence at outmigration (fish in hand).
6. Monitor water temperatures at existing Trinity River temperature stations (supplemented where necessary) to model achievement of species-specific Water Year and seasonal temperature targets for rearing juveniles, outmigrating smolts and spawning adults.
7. Monitor redd distribution, abundance, and densities (includes carcass surveys).
8. Monitor harvest (tribal, sport and commercial) of naturally produced fall Chinook.
9. Pre-smolt/smolt size, condition and disease incidence at outmigration (fish in hand).
10. Monitor fry density and abundance at GRTS sites across upper 40 miles (standing stock assessment).
11. Map and quantify the extent (area) of available adult spawning habitat at rehab sites and throughout the mainstem.
12. Develop cohort reconstructions for Chinook and coho and evaluate cohort performance or year class strength, and population growth rate.
13. Monitor fry density and abundance at rehab sites.
14. Estimate Trinity natural juvenile coho survival (ID temporal and spatial bottlenecks).
15. Monitor smolt outmigrant numbers.
16. Monitor size (length/wt and condition of fry)(fish in hand).
17. Monitor harvest (tribal, sport and commercial) of naturally produced spring Chinook.
18. Monitor pre-spawning mortality to assess the number and proportion of un-spawned or partially spawned female Chinook and coho salmon.
19. Monitor the proportion of hatchery reared to natural smolt outmigrants (best undertaken in conjunction with assessment 4J).

ATTACHMENT 1
Work Group Charter Template

XXXXX Work Group Charter (Date of latest update)

PURPOSE
TO BE DEVELOPED BY EACH WORK GROUP

AUTHORITIES
Trinity River Restoration Program (Program) work groups are chartered under the Trinity Management Council (TMC).

WORK GROUP OBJECTIVES

- Develop science-based management recommendations for the Program.
- Address priority technical uncertainties and information needs.
- Coordinate with other work groups and contribute towards synthesis and integration of Program science information through participation in the Interdisciplinary Team (IDT)

EACH WORK GROUP MAY ADD SPECIFIC OBJECTIVES

MEMBERSHIP
Core members of work groups shall be scientists designated by TMC partners. These may be partner scientists or their designees (consultants). Ideally, core members should have expertise in the area of focus of the work group for which they are being designated for membership. A TMC partner can designate more than one person to be a member of a work group. Core members have authority to be involved in development of recommendations, decisions or actions by the work group. The Program will maintain a list of core members and this list will serve as a distribution list for agendas, pre-meeting materials, and other information (SEE ATTACHED LIST). Biographies describing the relevant experience and expertise of each core member will be posted on the Program website.

Additional members may be included and involved in work groups to promote collaboration or obtain subject matter expertise and experience from. These may be drawn from state, tribal and local governments. Additionally - with the approval of work group members - consortia, academic, industry representatives or other interested individuals may be encouraged to participate in a work group.

OFFICERS
The Science Coordinator shall lead coordination between work groups and oversee all work groups, including agenda development and identification of needed meeting outcomes. A work group coordinator shall be elected annually by the participants, with concurrence from the Science Coordinator. The work group coordinator must themselves be a core member (pursuant Membership section above) of the subject work group. The work group coordinator presides over meetings of the assembled group and is responsible for scheduling meetings, developing agendas, ensuring that materials are provided to work group members, ensuring meeting outcomes are achieved and documented, and reporting on activities to the Science Coordinator.

The Science Coordinator, in collaboration with the Executive Director (ED), will ensure a note taker is appointed for each scheduled meeting.

The work group may appoint a core member other than the work group coordinator as their representative on the Interdisciplinary Team.

SUBGROUPS

The work group may establish ad hoc subgroups to accomplish narrowly-defined problems or questions relevant to work group objectives. Subgroup membership should include at least one member from the work group who serves as the lead, but may also include external members with the necessary expertise. Upon completion of their work, the subgroup leader will document and present their findings and/or recommendations for the work group for consideration and will subsequently dissolve their membership.

PROCEDURES

The work group coordinator will call work group meetings.

Dates for quarterly meetings will be determined at the beginning of each fiscal year. Agendas that clearly establish the meeting's purpose and the specific questions to be addressed will be distributed at least ten working days in advance of proposed meeting date (Attachment A –Meeting Agenda Template). Materials for meeting topics will be provided via email and posted on Share Point at least ten working days prior to the meeting to allow for review by work group members. If substantial amounts of materials are necessary for a topic, then a longer review period will be warranted.

The work groups will focus on the science issues associated with the discipline focus of their work group, and will avoid discussion of policy issues, technical issues outside their technical work group focus, or technical issues not on the agenda for a given meeting. The work group coordinator will be responsible for ensuring that the meeting discussions stay focused on the science topics identified in the agenda. The work groups will not make decisions on any management action, funding action, or policy action. The work groups shall make recommendations on study plans, work plans, and other science topics to the Science Coordinator. The work group may identify an information need and develop a recommendation on how to address this need (e.g. subgroup, external review, etc.). Work group meetings are a forum for coordination for all on-going and planned studies. Quarterly status reports will be provided at each work group meeting for all on-going projects (Attachment B – Quarterly Report Template).

Decisions shall be on the basis of consensus agreement. Where agreement is not reached, the work group coordinator, with the assistance of work group members will develop a written document to describe the unresolved issue. This document will be provided to the Science Coordinator and scheduled for resolution pursuant to the dispute resolution process as described in the Trinity River Restoration Program Roles and Responsibilities of Partner Agencies and Governments.

The note taker will prepare work group meeting summaries that include a record of persons present, a description of topics discussed, recommendations, minority opinions on recommendations, outstanding disputes, and action items. Each meeting summary will be distributed to the work group distribution list within 10 work days of the work group meeting (Attachment C – Meeting Summary Template). Suggested edits to the meeting summary will be accepted from work group members by work group coordinator. The work group will approve the meeting summary, including acceptable edits, at their next meeting.

REPORTS

The work group is responsible for the following products:

- Meeting Agendas and Summaries - will be produced as described under "Procedures".

- Annual Work Plan - the work group shall develop a work plan each year by January 15.
- Contribute to a Programmatic Annual Science Report – Each year by December 1, the work group will provide annual contribution and participation to this report.
- Disputes – for issues that the work group is unable to resolve, the chairperson is to develop a written brief. Written briefs should include a short paragraph of the problem or issue; the position of partner or work group members; the chairperson's recommended course of action and justification for that action.
- Additional Requests - the Science Coordinator and/or the IDT may request special reports, white papers, technical papers and the like to address pertinent issues, interdisciplinary activities, informational or matters of urgency consistent with the larger Program community needs.

APPROVALS

This Charter will remain in effect until amended or replaced. Thirty days written notice is required for considerations of amendments.

_____

Program ED & Date

ATTACHMENT 2
Work Plan Item Summary

EXAMPLE OF A WORK PLAN ITEM SUMMARY

Title: Trinity River Chinook Salmon redd and carcass survey

Objective: The goal of this project is to assess the abundance and distribution of spawning spring and fall Chinook Salmon in the mainstem Trinity River and to evaluate the temporal and spatial response of mainstem Chinook Salmon spawning to restoration activities.

Specific objectives are:

1. Assess the spatial distribution of Chinook Salmon redds, particularly in relation to TRRP management actions.
2. Quantify Chinook Salmon natural spawning in the mainstem Trinity River.
3. Quantify pre-spawn mortality for female Chinook Salmon.
4. Quantify and describe spatial distribution of natural and hatchery origin Chinook Salmon spawning in the mainstem.
5. Collect biological data ancillary to escapement (fork lengths for estimating size distribution and jack proportion, scales for age composition, sex ratio, etc.).
6. Address the above objectives for the portion of Coho Salmon spawning that overlaps with the Chinook Salmon survey season.

This project provides information necessary to addresses the following objectives identified in the TRRP IAP (V1.0):

3.1.1 Optimize adult utilization of suitable spawning habitat areas in the mainstem.
3.1.3 Reduce temperature related pre-spawning mortality and protect in-vivo egg viability
3.3.3 Minimize adverse competition between hatchery and naturally produced adult salmonids.
4.1.1 Increase escapement of naturally produced fall Chinook Salmon adults.
4.2.1 Increase escapement of naturally produced spring Chinook Salmon adults.

Hypothesis: The distribution of natural origin Chinook Salmon redds will respond longitudinally and laterally as rehabilitation activities influence fry and juvenile rearing success, gravel distribution and supply, wetted channel footprint, and bar formation.

Assuming channel rehabilitation and other management actions increases available salmonid fry and juvenile rearing habitat area throughout the upper 40 miles by 400% from baseline conditions (an initial interim target), we expect the longitudinal distribution and abundance of redds constructed by natural origin Chinook Salmon to increase substantially. We postulate that the spatial distribution of returning spawners is influenced by the spatial distribution of deposited eggs that successfully rear and recruit to adulthood. Increases in the longitudinal distribution and abundance of redds will be influenced by the annual in-river run size and quantity, quality and distribution of available spawning habitat.

Project Scope: This assessment is based on recurring annual surveys which occur between Lewiston Dam and Weitchpec. Changes over time in the distribution and abundance of spawners and redds will be examined using trend analyses and spatial analyses. These analyses will be dependent on annual spawning and redd distribution surveys. The following metrics were identified in the TRRP IAP (V1.0): ***Density of redds*** per longitudinal river segment or reach, or tributary, ***Longitudinal distribution and abundance of redds*** in the upper 40 miles, ***Number of redds/spawning habitat*** in association with reach or river segment, ***Redd Superimposition*** (e.g., ratio of spawners to constructed redds, index of

clustering, distance between redds). and ***Number (proportion) of un-spawned or partially spawned females***.

Technical Approach: Redd and carcass surveys will be conducted by raft in 14 contiguous survey reaches from Lewiston Dam to Weitchpec. This project will provide estimates of in-river escapement (by week and season) using (1) the Petersen mark-recapture estimator and (2) the Schaefer estimator. Redd coordinates (xy) will be provided in GIS shapefile format and on hardcopy aerial photos.

Schedule: Field work will occur from September through mid-December. Results will be reported periodically over the season on the Arcata Fish and Wildlife Office's website.

Organization / Responsibilities: Traditionally, this work has been accomplished by a group of Program partners: U.S. Fish and Wildlife Service, US Forest Service, California Department of Fish and Game, Yurok Tribal Fisheries Program, Hoopa Valley Tribal Fisheries Department. These organizations jointly have the expertise and experience to efficiently section complete the necessary work.

Deliverables / Tasks: This project will provide: (1) Redd coordinates (xy) will be provided in GIS shapefile format and on hardcopy aerial photos (2) estimates of in-river escapement by week and for the entire season for the mainstem Trinity River. Results will be reported in an annual multiagency report. The draft report will be provide by March 2012. The final report by July 2012.

FY12 Work Planning

- Prioritized lists of work plan items as submitted by the work groups.
- Two page summaries will accompany each item (due January 3).
- Interdisciplinary Team will integrate lists into a single list.
- Integrated list will be evaluated against Program needs by SAB.
- Work groups will have the opportunity to revisit the lists below(1) when summaries are developed and (2) after costs are integrated.

Fish:

1. Map and quantify the extent (area) of available fry/juvenile rearing habitat throughout the mainstem.
2. Map and quantify the extent (area) of available fry/juvenile rearing habitat at rehab sites.
3. Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead.
4. Monitor smolt outmigrant numbers,Monitor smolt timing.
5. Monitor smolt timing, as well as pre-smolt/smolt size, condition and disease incidence at outmigration (fish in hand).
6. Monitor water temperatures at existing Trinity River temperature stations (supplemented where necessary) to model achievement of species-specific Water Year and seasonal temperature targets for rearing juveniles, outmigrating smolts and spawning adults.
7. Monitor redd distribution, abundance, and densities (includes carcass surveys).
8. Monitor harvest (tribal, sport and commercial) of naturally produced fall Chinook.
9. Pre-smolt/smolt size, condition and disease incidence at outmigration (fish in hand).
10. Monitor fry density and abundance at GRTS sites across upper 40 miles (standing stock assessment).
11. Map and quantify the extent (area) of available adult spawning habitat at rehab sites and throughout the mainstem.
12. Develop cohort reconstructions for Chinook and coho and evaluate cohort performance or year class strength, and population growth rate.
13. Monitor fry density and abundance at rehab sites.
14. Estimate Trinity natural juvenile coho survival (ID temporal and spatial bottlenecks).
15. Monitor smolt outmigrant numbers.
16. Monitor size (length/wt and condition of fry)(fish in hand).
17. Monitor harvest (tribal, sport and commercial) of naturally produced spring Chinook.
18. Monitor pre-spawning mortality to assess the number and proportion of un-spawned or partially spawned female Chinook and coho salmon.
19. Monitor the proportion of hatchery reared to natural smolt outmigrants (best undertaken in conjunction with assessment 4J).

Physical:

1. Retrospective analysis of channel changes (IAP 1P, 10P, 15P), including width, geometry and geomorphic features within the wetted channel (including sinuosity, radius of curvature, thalweg crossing, control, length of edge), lateral scour, deposition and riparian berm evolution, etc.; Channel width changes

(compare old cross sections to 2009 topography); System change 2001 to 2009 Lewiston to North Fork via aerial photo interpretation. How have bed mobility and scour relationships changed and are we meeting stated objectives.

2. Flow portion of the Build and Carve experiment.
3. Topographic comparison to determine the effect of 2011 releases at injected gravel select locations, including pool depths.
4. Monitor bed mobility and scour thresholds (IAP 6P).
5. Supercharge portion of the Build and Carve experiment, including:
    a. Determine how much gravel supply (tributary plus gravel augmentation) is needed to build desired channel complexity? What peak flow magnitude and duration is the best to promote channel complexity?
    b. What is our 'model' of what gravel does?
    c. Is there anything wrong with the gravel augmentation recommendation? Can the recommendation be improved?
6. Mainstem sediment sampling (IAP 5P)
7. Evaluate design criteria that improves longevity and habitat quality in constructed side channels and alcoves. Assess design performance of specific features (IAP 12P) (side channels, alcoves, lowered floodplains, etc).
8. How do we define channel complexity (actually metrics...science issue)? Can areas downstream of Rush Creek, Indian Creek, and Canyon Creek serve as reference reaches for what complexity looks like?
9. Topographic change 2003 to 2009 Lewiston to Grass Valley (i.e. the extent of the 2003 data set); Monitor variability in bed elevations (IAP 2P).
10. Visiting scholar. Submit pre-proposal for Dr. Michele LePointe to serve as a visiting scholar to address program needs.
11. Recreating a map of forest and geomorphology based on historic photos. (Geotechnical investigation for Lorenz rehab site.)
12. Exploring bedrock geology and terrace/hydraulic mining disturbed lands, groundwater distribution.

<u>Temperature</u>

- (FY11 start) Cold-water pool volume sensitivity analysis
- Annual Operations process
    - Reservoir Forecasting (DWR & CVO)
    - Reservoir modeling (CVO & TRRP)
    - River modeling (TRRP & USFWS)
- (FY11 start) W2 & RMA-11 model development for Lewiston reservoir & Trinity River
    - Operations modeling
    - Appraisal Study support
- Monitoring
    - TBD by model (W2, RMA-11, SNTEMP) development/calibration process
- Reclamation S&T proposal on improving short-term forecasting reliability
- Other riverine or reservoir temperature monitoring

Wildlife / Riparian

1. Compliance mapping of rehab sites after 5 years.
2. Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at GRTS sites, including near-channel vegetation.
3. Monitor abundance and composition (richness/diversity) of riparian bird species during breeding, post-breeding and migration periods.
4. Map and quantify the state of near-channel riparian vegetation at GRTS sites.
5. Monitor the abundance and distribution of FYLF egg masses throughout the forty mile system.
6. Monitor the distribution and abundance of WPT.
7. Monitor abundance/density and composition (richness/diversity) of riparian bird species during breeding, post-breeding and migration periods at rehab sites.
8. Monitor the abundance/density of multiple FYLF lifestages, and reproductive output and/or reproductive success (recruitment) at rehab sites.
9. Model how streamflow actions will affect the bank location of initiating seedlings.
10. Monitor abundance of invasives (e.g., bull frogs, New Zealand Mud snails).
11. Monitor age ratios, health, breeding condition, and reproductive success (productivity) of riparian bird species over the 40 mile reach.
12. Monitor abundance and productivity (as measured by the ratio of juveniles to adults observed) of riverine bird species.
13. Wildlife PITA 1.
14. Wilflife PITA – 5.
15. Monitor the structural and thermal complexity of habitats available for Western Pond turtles (WPT) at rehab sites.
16. Riparian PITAs 3,4,5.
17. Monitor age ratios, health and breeding condition (productivity) of riparian bird species at rehab sites.
18. Model how changes in riverine and riparian habitat conditions relate to associated response in riverine bird abundance.

General

- Aerial photography
- Stream gaging