ATTACH # 3

IAP PART II – THE PLAN

1. Post TMC Meeting Conference Call	June 26, 2007; 10 a.m.	Your office	Schedule deliberation; Assess written Part I comments; Tasks for lead authors
2. Interim Period	June 27 - Nov 2, 2007	Your office	Lead authors draft response to comments, circulate to writing group(s); Preparation for Part I wrap-up; Acquisitions; Contracting; Field work; ***Mandatory reading of Part I, Response document, Conceptual Model & Hypotheses, IMEP Chapters 4-9***
3. Part I Wrap-up; Part II planning (Workshop #0)	Nov 6-8, 2007	Weaverville	Schedule resolution; Resolve most recent comments; Group review of Response document – Group consensus; Specific work tasks pre-Work Shop 1; Literature Review plans/tasks; General Part II planning; Disposition of high level review? Use of Part I in FY09 budget process (RFP process???)
4. Interim period	Nov 9, 2007 - Jan 11, 2008	Your office	Pre-workshop tasks; Holidays

It is very important that we accomplish many significant tasks during this period. We must come to Workshops #1 and #2 prepared with straw dog drafts (start with IMEP Chapters 4-9, Conceptual Models & Hypotheses; Follow structure specified in Part I; Follow chapter template agreed to at November (June 26??) meeting) of Part II sections and clearly identified unresolved issues for the group to deliberate. ***Workshops #1 and #2 are decision-making discussions, not writing workshops.*** We expect lead authors to propose methodologies, techniques, and analyses. Workshop participants will make decisions on the ***draft*** content of IAP Part II following concise scientific discussion.

5. Workshop #1	Jan 15-17, 2008	Weaverville	*Fish to Habitat (F2H) – SALMOD??; Review of interim work products*; Plan to finish IAP Part II Chapters

The purpose of Workshop #1 is to produce (not necessarily finish) IAP Part II chapters on populations (both fish & wildlife) and initiate (not finalize) discussions focused on aquatic habitat rehabilitation and increased fish production. The focus of the workshop is biology & ecology. The emphasis the first few days of the workshop would be on populations and their related assessments, then transition towards habitat and its role in or connection to increasing populations.

The participants should leave the workshop with either completed sections of the respective IAP Part II chapters, or concrete plans for finishing those sections before Workshop #2.

We will also endeavor to complete the contracting for the outmigration evaluation so that the contractor is available to attend this workshop. No promises, but that person's attendance at this workshop is a high priority.

We will work out the detailed agenda for this workshop at Workshop #0. We should include discussion of linking all assessments to the IIMS in all future workshops.

6. Interim period	Jan 21-Feb 22, 2008	Your office	Pre-workshop tasks; Acquisitions; FY09 Budget
7. Workshop #2	Feb 26-28, 2008	Weaverville	*Habitat to Physical (H2P); Review of interim work products*; Plan to finish IAP Part II Chapters

The purpose of Workshop #2 is to produce (not necessarily finish) IAP Part II chapters on Habitat, Geomorphology, and Riparian. The emphasis the first days of the workshop is on physical habitat (spatial, temporal, temperature, etc.), then transition towards geomorphology, riparian vegetation, sediment (read integration). The second workshop is the bridge between the biological and physical aspects of the program with the focus of the workshop being physical/biological (in the case of riparian vegetation) sciences and their relationship to creating and maintaining habitat.

The participants should leave the workshop with either completed sections of the respective IAP Part II chapters, or concrete plans for finishing those sections before Workshop #3.

We will work out the detailed agenda for Workshop #2 at and following Work Shop #1.

8. Interim period	Mar 3 - Apr 11, 2008	Your office	Production of Part II chapters; FY09 Budget; Flow Scheduling; ESSA Tech Edit
9. Workshop #3	Apr 15-17, 2008	Arcata	Presentations of individual sections; Consensus building; Group review; Direction for completion of 1st Part II draft
10. Post Workshop period	Apr 21 - May 2, 2008	Your office	Lead authors revise sections based on input/consensus from Workshop #3
11. ESSA Technical Edit	May 5 – 16, 2008	Vancouver	ESSA edits draft in preparation for programmatic review
12. Programmatic Review	May 16 - Jun 13, 2008	Your office	Pre-SAB review of IAP Parts I & II; FY09 Budget preparation
13. SAB Review Workshop[1]	Jun 16 – 20, 2008	Weaverville	Science Advisory Board review of entire IAP, focusing on Part II
14. Post SAB Review[2] Conference Call	Jun 25, 2008	Your office	Assess written Part II (and Part I) comments; Tasks for lead authors
15. Interim period	Jun 25 – Jul 7, 2008	Your office	Authors prepare response to comments
16. Workshop #4	Jul 8-9, 2008	Arcata	Respond to comments; resolve outstanding issues; tasks for authors
17. Interim period	Jul 10-25, 2008	Your office	Lead authors finalize Part I & Part II sections
18. ESSA Technical Edit	Jul 28 – Aug 15, 2008	Vancouver	ESSA edits draft in preparation for TAMWG/TMC review/adoption
19. Lead author review/edits	Aug 18-22–, 2008	Your office	Final author revisions/edits
20. ESSA final drafting	Aug 25-29–, 2008	Vancouver	ESSA polishes review draft

[1] IAP Co-chairs propose that this time serve the dual purpose of SAB review and High Level Policy Review.
[2] The programmatic review (Task 20) is ***NOT*** the major review. The purpose is to verify that the major issues identified by the SAB and partners are resolved within the consensus of the program.

21. Programmatic Review	Sep 1-19–, 2008	Your office	Pre-TAMWG/TMC review of IAP Parts I & II; FY09 Budget preparation
22. TAMWG/TMC meetings	Late September 2008	Weaverville	Adoption of the IAP by the TAMWG and TMC
23. Post TAMWG/TMC Conference Call	post TMC meeting	Your office	Resolution of remaining outstanding issues
24. Final revisions/edits	post TMC mtng	Your office	In conjunction with ESSA
25. Issuance of IAP Version 1.0, Parts I & II			Curtis & Dave M. host close-out party in Cancun.

IAP Part II Authors

Legend

L – Leader
W – Writer
R – Reviewer
TE – Technical Editor
Exp – Experiment
FG – Fluvial Geomorphology
HA – Habitat Assessment
NJ – Natural Production Juveniles
NA – Natural Production Adults
Har – Harvest
Rip – Riparian
WL – Wildlife

Name	Organization	1 & 2 Exp	3.1 FG	3.2 HA	3.3 NJ	3.4 NA	3.5 Har	3.6 Rip	3.7 WL
Curtis Anderson	DWR	L	R	R	R	R	R	R	R
Don Ashton	USFS – RSL								W
John Bair	Hoopa Valley Tribe (McBain & Trush)	R	R					L	R
Mike Berry	CDFG	R	R	R				R	
Jamie Bettaso	USFWS								W
Charlie Chamberlain	USFWS		R	W	W			R	R
Robert Franklin	Hoopa Valley Tribe			W				W	
Dave Gaeuman	TRRP – TMAG	R	L	R	R	R	R	L	R
Damon Goodman	USFWS			W	W				
Larry Hanson	CDFG	R			R	R	R		R
Tim Hayden	Yurok Tribe	R	R	R	L	R	R	R	R
Nina Hemphill	TRRP – TMAG	R	R	W	W	L	R	R	R
Dave Hillemeier	Yurok Tribe	R	R	R	R	R	R	R	R
George Kautsky	Hoopa Valley Tribe	R			W	R	R		
John Klochak	TRRP – TMAG	R	R	L	R	R	R	R	W
Andreas Krause	TRRP – TMAG	R	R	R	R	R	R	R	R
Dave Marmorek	ESSA	L	TE	W	TE	TE	TE	TE	TE
Aaron Martin	Yurok Tribe	R	R	W	R	R	R	R	R
Scott McBain	Hoopa Valley Tribe (McBain & Trush)								
Sherri Miller	USFS – RSL							W	L
Darcy Pickard	ESSA	TE	TE	TE	TE	TE	TE	TE	TE
Bill Pinnix	USFWS				W				
Joe Polos	USFWS	R			W	R	L		
Marc Porter	ESSA	TE	TE	TE	TE	TE	TE	TE	TE
Wade Sinnen	CDFG	R			R	W	R		
Tom Stokely	Trinity County	R	W	W					
Bill Trush	Hoopa Valley Tribe (McBain & Trush)	R	W	W	R	R		R	R
Tom Weseloh	TAMWG (CAL-Trout)	R			R	R	R		R
Rod Wittler	TRRP - TMAG	L	W	R	R	R	R	R	R
Diana Abraham	ESSA	TE	TE	TE	TE	TE	TE	TE	TE
Kelly Robson	ESSA	TE	TE	TE	TE	TE	TE	TE	TE

Purpose of Integrated Assessment Plan

The purpose of the Trinity River Restoration Program (TRRP) Integrated Assessment Plan (IAP) is to describe the integrated ***Assessments*** (***Monitoring*** and ***Analyses***) of the TRRP for adaptively managing ***Implementation Actions*** and assessing progress towards ***Program Goals***.

Means to Achieve Purpose
(1) ***Hypothesis Testing*** (***Objective Specific Monitoring***) in the Adaptive Environmental Assessment & Management (***AEAM***) context to gain better understanding (***Assessment***) of system response to management actions.
(2) Trend analysis (***Long-Term Monitoring***) to track progress towards program goals

Target Audience
The target audience for the IAP is the entirety of the TRRP organization.

Chapters 1-3 of the IAP Should...

- be the TRRP plan for executing AEAM. It is a bridge that spans Record Of Decision (ROD) policy, Trinity River Flow Evaluation Final Report (TRFE) strategy, integrated assessments, and monitoring tasks.

- be concise (target 50 pages or less), with a 2-3 page executive summary.

- be straight forward, easily understood by the scientists – managers (TMC) – and program stakeholders (TAMWG)

- be a living plan. The IAP should be an evolving/improving document as the program implements AEAM. Programmatic and TRFE/ROD objectives (fundamental objectives) and most management targets would not change without TMC policy direction. Assessment methodologies could change based on demonstrated need.

- summarize program goals, Assessments, and ***Assessment Objectives***. The *Policy* framework for the program has at least three components:
  1. Overall Program Goals (Tribal & Public Trust)
  2. Program ***Policy*** (Record of Decision)
  3. Program ***Strategy*** (TRFE)

- be the ***Science*** framework for the program. It is the plan for assessing the scientific and physical implementation of the program in the AEAM context. Chapters 1-3 will summarize the program goals and background, define the objectives of the individual assessments, describe the integration of all assessments, and set the stage for inviting (RFP process) multiple methodologies for accomplishing individual assessments.

- illustrate how the program will apply AEAM. The IAP should promote understanding of the AEAM process by illustration. The IAP will utilize examples (flow scheduling) of how the AEAM organization will be implemented, and how information will be used in the decision-making process. The IAP must specifically illustrate the concept of having two or more viable management objectives each year and how choices can be made. This is an opportunity to revisit AEAM and begin doing it better by helping all components of the TRRP organization to understand the AEAM process and become involved in discussion and choosing annual action plans. AEAM is being successfully implemented in some areas but a common understanding of the process among all parts of the TRRP organization is essential.

- identify Priority Performance Measures. The IAP should summarize ***Performance Measures*** that drive science issues that originate within applicable legislation, the ROD and TRFE. Tables 8.5-8.9 of the TRFE list many of these measures as 'Management Targets'.

- identify Process for Identifying, Prioritizing, and Testing Hypotheses. The IAP will propose a process for identifying testable hypotheses, predicting outcomes, and assessing responses. This process must also include developing prioritization criteria for existing and new hypotheses. Unanimous agreement on specific hypotheses and assessments is not required. The IAP authors should attempt to get unanimous agreement on the process for identifying, prioritizing, and testing hypotheses. The process must illustrate opportunity for dissenting opinions in the form of alternative testable hypotheses as long as they adhere to the overall TRFE/ROD strategy and outlined goals and objectives. The IAP should provide a transparent process to resolve scientific disagreements/uncertainties (e.g., resolution roundtable) An update of TRFE Appendix O and the Conceptual Models & Hypotheses document could be attached as appendices.

- specify assessments and assessment objectives for: (1) evaluating long-term program success, and (2) testing specific, as well as annual, priority hypotheses. Chapters 1-3 of the IAP focus on Objectives, Performance Measures, Analyses, and External review. The IAP should identify mileposts for evaluating objectives (e.g., fish production, habitat creation, sediment budget) related to specific performance measures. For example, the TRFE articulates several objectives for assessing aquatic habitat response to management actions. Those assessment objectives will be central to the development of study designs and acquisition of monitoring and analytical data.

The ingredients of each individual assessment include:

a. Objectives
b. Performance measures
c. Analyses
d. Monitoring plan designs
e. Data requirements
f. External review
g. Deliverables

- prioritize integrated scientific assessments by priority performance measures. Prioritization is a function of analyses tied to management targets and programmatic goals, the number and type of data (monitoring) required for said analyses, and the cost of acquiring that data.

- articulate an Integrated Assessment Strategy that tests priority hypotheses using associated performance measures derived from the management targets specified in Chapter 8 (Tables 8.5-8.9) of the TRFE, other programmatic goals and purposes, or associated with alternative hypotheses developed within the AEAM process. This assessment strategy couples with a monitoring strategy, and includes analyses, ***Prediction*** (modeling), and reconnaissance-level studies.

- will provide an overview of methodologies for accomplishing the assessment objectives. Chapters 1-3 of the IAP will focus on the '*WHAT*' and '*WHY*', that is what and why assessments (and their associated objectives) are high priority. The IAP will only touch on the '*HOW*', '*WHERE*', '*WHEN*', of each assessment. The RFP process will answer the '*WHO*'. The assessment objectives and associated analyses should drive assessment topics and methodologies. Chapters 1-3 will provide only enough detail to ensure the integration of various discipline assessments is clear to the program. Specific methodologies will be highlighted, but not detailed. The focus of the latter chapters will be the '*HOW*', '*WHERE*', '*WHEN*', proposed by the '*WHO*'.

- address regulatory ***Compliance Monitoring***. Regulatory monitoring is a program requirement and should be included at an appropriate scale and scope in relevant assessments.

Chapters 1-3 of the IAP Should Not...

1. provide detailed monitoring methodologies (let creative folks develop methods as part of a ***RFP***/Proposal/***ERP*** Review process)
2. be 'set in stone'. It should be an evolving/improving document as we implement AEAM. However, the assessment objectives are rather firm. The methodologies for conducting assessments are much more flexible.
3. be a 'silver bullet' for solving all budgetary prioritization difficulties. The IAP will recommend a set of integrated assessments, all of which are a 'priority', yet retain articulated flexibility in scale and scope.
4. resolve all scientific disagreements/uncertainties. Rather, it should provide a transparent mechanism/process to resolve priority scientific disagreements/uncertainties.

Please see the goals-objectives hierarchy (Figure 2.1) and the IAP Framework diagram (Figure 2.2) after the Glossary.

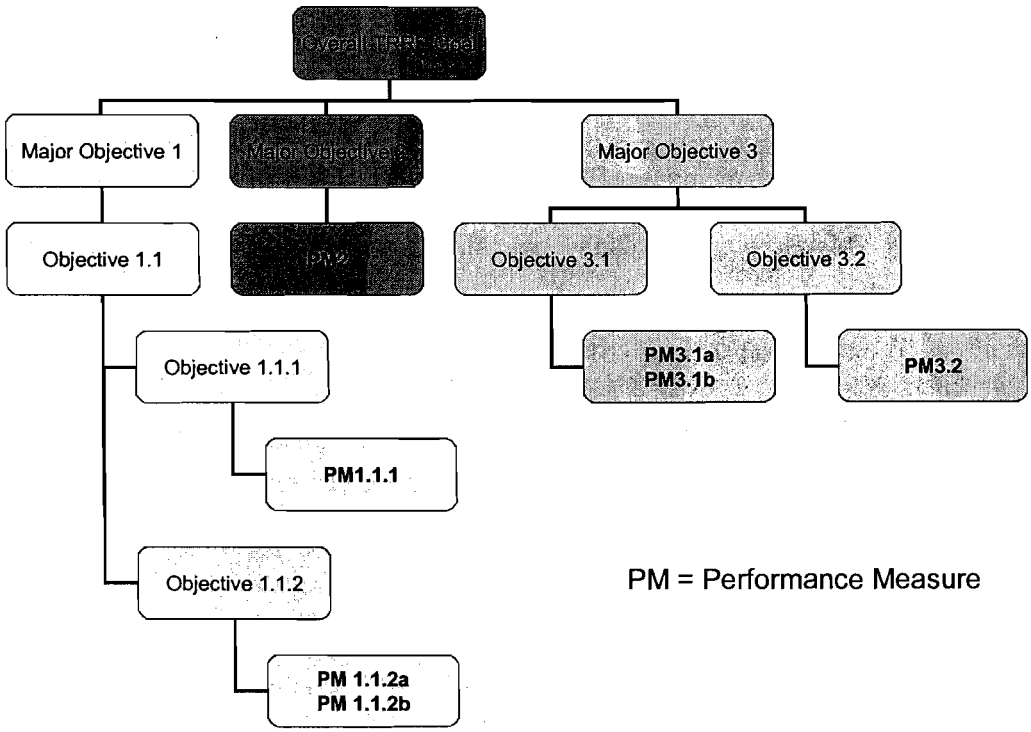

Figure 2.1. Goals, objectives and performance measures logically form a hierarchy. Near the top of that hierarchy (close to goals), objectives may still be quite broad, but they should become increasingly specific as you move down the hierarchy towards performance measures, which are specific metrics associated with the higher level objectives and/or overall goal.

Glossary of Terms

Adaptive Environmental Assessment & Management – The method of management directed by the Secretary of the Interior for the Trinity River Restoration Program. The AEAM method encompasses the scientific process with a strong managerial interface. AEAM is a formal, systematic, and rigorous program of learning from the outcomes of management actions, accommodating change, and improving management (Holling, 1978). AEAM uses conceptual and numerical models and the scientific method to develop and test management choices. Decision makers use the results of the AEAM process to manage environments characterized by complexity, shifting conditions, and uncertainty about key system component relations (Haley, 1990; McLain and Lee, 1996). The AEAM approach to management relies on teams of scientists, managers, and policymakers to jointly identify and bound management problems in quantifiable terms (Holling, 1978; Walters, 1986). In addition, the adaptive approach to management "recognizes that the information we base our decisions on is almost always incomplete" (Lestelle et al., 1996). This recognition encourages managers to treat management actions as experiments, whose results can better guide future decisions. AEAM must not only monitor changes in the ecosystem, but also must develop and test hypotheses of the causes of those changes to promote desired outcomes. The results are informed decisions and increasing certainty within the management process.

Analyses – The work of inquiring into a subject thoroughly and systematically

Assessment – A group of AEAM actions including analyses, modeling, monitoring, and reconnaissance-level observations. Prerequisite to the 'Adaptive' part of AEAM.

Assessment Objectives – Objective of each particular assessment. Directs planning for analyses, performance measures, and monitoring for each assessment. Distinct from 'program objectives' or 'Program Goals'.

Compliance Monitoring – Monitoring associated with permitting and other regulatory requirements on the RIG.

ERP – **E**xpert **R**eview **P**anel (sometimes referred to as an Independent Review Panel or Specific Review Committees). A panel of experts, compensated by the TRRP but independent of the TRRP, convened to review, judge, and rank proposals received by the TRRP in response to an RFP.

Hypothesis Testing – An AEAM and science term that describes a major component of the scientific (***Science***) process. A hypothesis is a tentative theory about the natural world; a concept that is not yet verified but that if true would explain certain facts or phenomena; a scientific hypothesis that survives experimental testing becomes a scientific theory.

Implementation – primarily the execution of physical manipulations of the Trinity River ecosystem, including infrastructure improvements, channel rehabilitation, gravel augmentation, and flow releases from Lewiston Dam to the Trinity River. The term also applies to execution of assessments associated with adaptively managing the physical manipulations.

Monitoring – The activity of recording data in accord with a study plan aimed at observing the resource response to a management action.

Long-Term monitoring – Monitoring directed at analyses with time as the independent variable.

Objective Specific monitoring – Monitoring directed at analysis of cause and effect relationships, using non-temporal metrics for both the independent and dependent variables.

Performance Measures – Simply, a way of assessing the attainment of a Program Goal or Objective, in either quantitative or descriptive terms. More technically, the dependent variable of an assessment, measured during monitoring, calculated during analysis, and reported to the program, either as an estimate of the performance of one or more relevant management actions against one or more Program Objectives, or the performance of the overall program relative to Program Goals. There should be one or more performance measures which are relevant to each Program Objective, though some of these may be proxy measures for something that cannot be directly measured (e.g. while flows are measurable precisely, there is no single measure of smolt health).

Policy – The expression of the political will of Congress, the Department of Interior, or the Trinity Management Council (TMC).

Prediction – That aspect of assessment (scientific process) that makes a statement about the expected outcome of the management action (experiment). The ROD directs the TRRP to use models (Conceptual, Analytical, Numerical) to predict the outcome of flow releases, channel rehabilitation projects, and gravel augmentations (among other management actions). Predictions are compared to observed resource response as part of the adaptive portion of AEAM.

Program Goals – Desired outcomes from restoration actions articulated in applicable legislation (fish populations), EIS/EIR (Program organization), ROD (Program strategy). How do distinguish goals from objectives?

- Goals are broad; objectives are narrow.
- Goals are general intentions; objectives are precise.
- Goals are intangible; objectives are tangible (i.e. measurable)
- Goals are abstract; objectives are concrete.
- Goals can't be validated as is; objectives can be validated.

Program Objectives – The proposed means of achieving Program Goals, or disaggregating goals into logical components. The TRFE includes a number of program objectives, relating to the implementation of actions, the creation of habitat-forming processes, the establishment of habitats and other conditions to support fish and wildlife populations. These Program Objectives are being organized into a hierarchy as part of the development of the IAP. For example, the TRFE Management Targets (Chapter 8) are a means of achieving of larger program goal of healthy river attributes.

RFP – **R**equest **F**or **P**roposal. Mandated by the Secretary of Interior for the Trinity River Restoration Program in the EIS through the Record of Decision as the primary means of acquiring monitoring (long-term or objective specific) data.

Science – the process of posing an hypothesis, designing an experiment to test the hypothesis, predicting the outcome of the experiment, conducting the experiment, recording the experimental observations, comparing the observations with the prediction, making a statement about the invalidity of the original hypothesis, then restating the hypothesis.

Strategy – The plan for executing and accomplishing the policy of the TRRP Strategy exists within the political process thus:

1. Legislation (e.g. CVPIA)
2. Policy (e.g. ROD)
3. Strategy (e.g. TRFE)
4. Tactics (e.g. IAP)
5. Logistics (e.g. TRRP Budget)

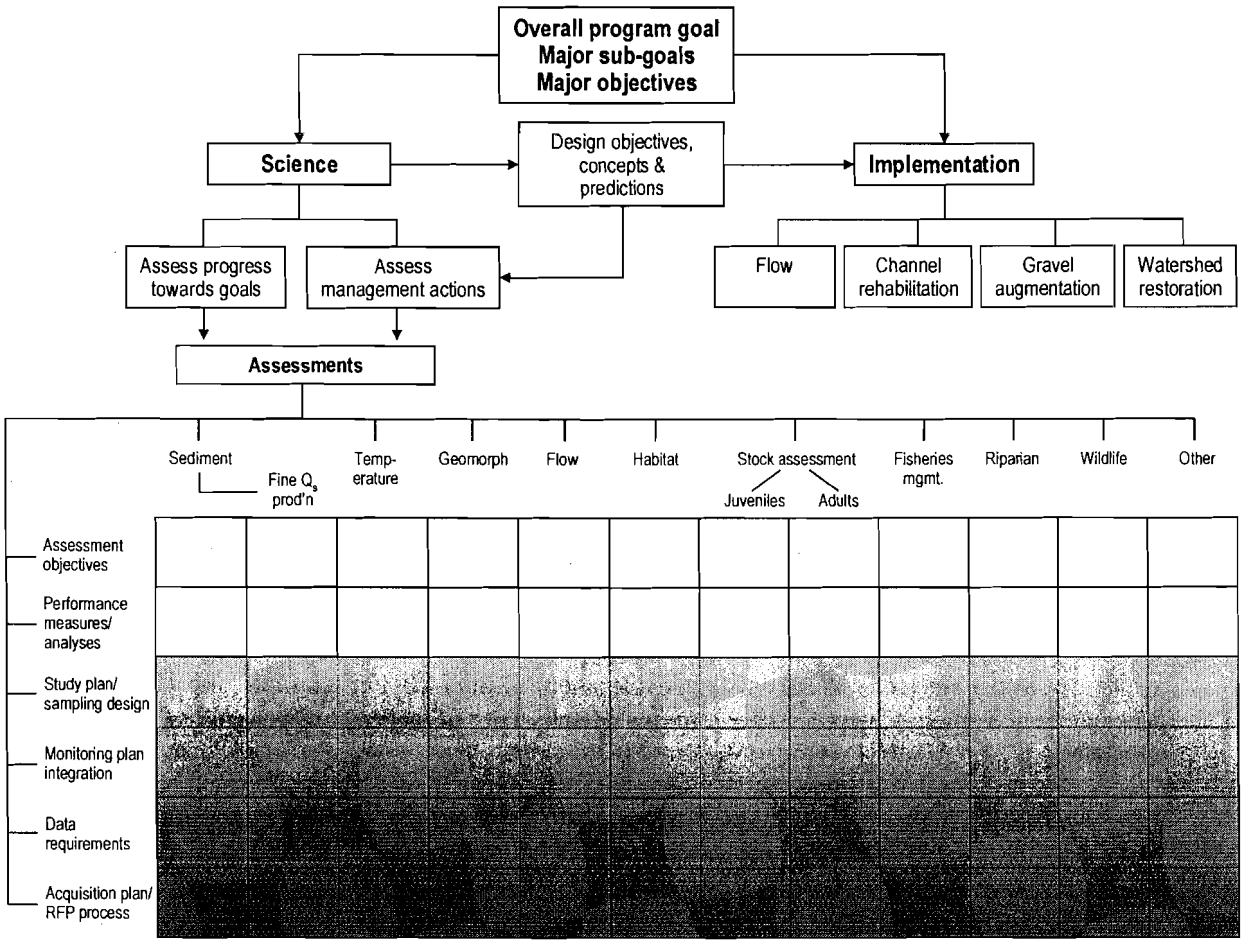

Figure 2.2. IAP Framework. This diagram illustrates how all assessments must serve either to assess progress towards program goals, or to assess the effectiveness (and potentially revise) management actions. The shaded area at the bottom indicates topics beyond the scope of Chapters 1-3 of the IAP. Some high level discussion of sampling design and integration will be in Chapters 1-3, but not the details.

TRRP Program Goal and Strategy

Program Goal[3]

The goal of the TRRP is to restore and sustain natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels, in response to various Congressional mandates as well as the federal government's trust responsibility to the Hoopa Valley and Yurok Indian Tribes (ROD, top of page 17) thus facilitating dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities. The TRRP strategy for accomplishing this goal restores and perpetually maintains fish and wildlife resources (including threatened and endangered species) by restoring the processes that produce a healthy alluvial river ecosystem, which in turn will restore the necessary diversity of habitats for anadromous fish. The above restoration strategy will be achieved by implementing management actions in a science-based adaptive management program.

Program Strategy to Achieve Program Goals (TRFE)

Restore a functioning alluvial river through management of flow, coarse sediment and fine sediment, together with mechanical channel rehabilitation and watershed restoration. Restoration of a functioning alluvial river will restore habitats for all freshwater life stages of anadromous fishes, resulting in increased natural production of juveniles/smolts, and benefiting other ecosystem components. This, in turn, will result in greater adult populations and enhanced harvest opportunity for dependent tribal, commercial, and sport fisheries.

[3] This is the revised goal statement forwarded by the TMC to legal review at the March 2007 TMC meeting.