Trinity River Restoration Program:

Integrated Assessment Plan

Version 1.0 – September 22, 2009

Prepared by staff, partners and interested parties of

Trinity River Restoration Program
P.O. Box 1300
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and

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-*E. Peterson, June 2019*

Headwaters 2018 TRRP Refinements

- "Documents like the Integrated Assessment Plan (IAP) provide details that are **commonly found in an AM Plan but that has never been formally adopted** by the TRRP" and "general consensus among interviewees that the IAP is not being used in that way "
- "Other interviewees called it **a "wish list"** that would be helpful if funding were unlimited"
- "Several interviewees pointed to the **goal statement** drafted in the Integrated 65 Assessment Plan (IAP) as being the best overall statement of a TRRP goal"
- "The TRFE, ROD, Implementation Plan, IAP, and a multitude of other TRRP documents **contain much of the guidance and information necessary** to build an official and negotiated TRRP Program Document (as a central foundational document) and an AM Plan." Recommended: "Build off existing foundational documents and the IAP."

Roll the clock back…

Get some perspective!

Why Adaptive Management for the Trinity River?

- To Establish Credibility of the Trinity River Salmon Restoration as a Science Based Management Program

Wittler – August 1999 presentation to Task Force

Adaptive Management Should be Implemented Keeping the Following Two Points in Mind:

1. What gives scientific validity to adaptive management and distinguishes it from crisis management, is the deliberate setting of goals, selection of indicators for monitoring, design and implementation of a management strategy, and regular revising and updating of the strategy based on the monitoring data.

Wittler – August 1999 presentation to Task Force

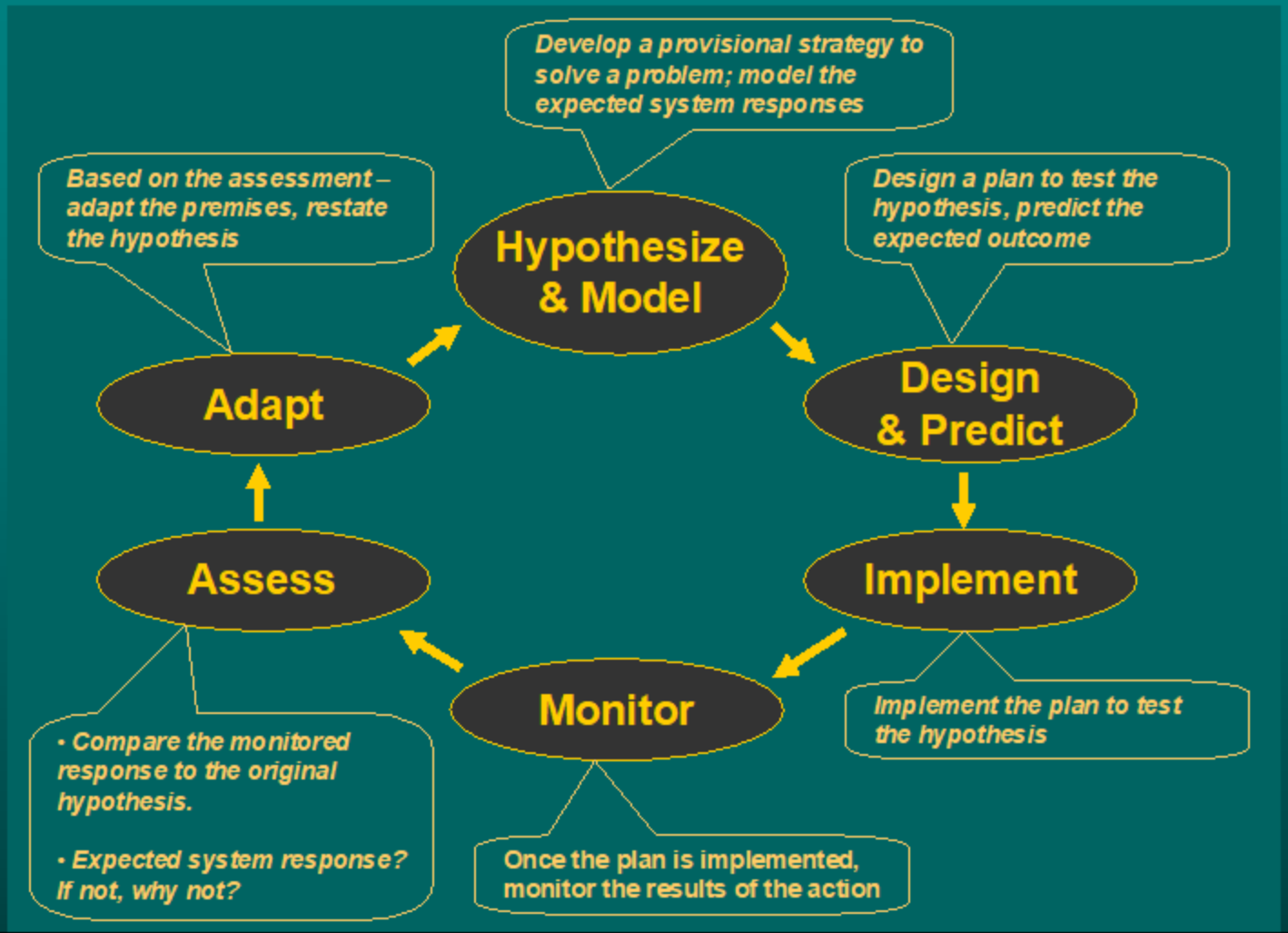
Adaptive Management Should be Implemented Keeping the Following Two Points in Mind:

2. What gives political reality to adaptive management is an open and inclusive process for establishing the elements of its framework. Vital to success is the agreement of stakeholders on the rules, especially the rules for revising operating plans based on the monitoring data. A strong commitment to maintain the monitoring program for the long term will not only provide good management data but will also build trust among participants in the soundness of the process.

1998 Water in the West

Wittler – August 1999 presentation to Task Force

Assessment Process



The Trinity River Restoration Strategy

- The TRRP is an administratively created program, directed to test a primary strategy:
  - A combination of mechanical alterations and vegetation removal in addition to managed high-flow releases in the spring will promote geo-fluvial processes leading to a new channel form that is expected to provide significantly increased rearing and spawning habitat for anadromous salmonids

Wittler - March 2007 presentation to TMC

Central Hypothesis No. 1

- Habitat diversity in upper river, both on the meso- and micro-habitat scale, will increase following the implementation of the restoration strategy

Trinity River Restoration Program

1. TRRP actions -> Channel Diversity

2. Channel Diversity -> Juvenile Habitat

Central Hypothesis No. 2

- Juvenile salmonid rearing habitat, believed to be limiting smolt production in the Trinity River, will increase in both quantity and quality following the creation of a more complex and dynamic channel form

Trinity River Restoration Program

3. Temperature changes
-> juvenile survival

Central Hypothesis No. 3

- Salmonid smolt survival will improve as a result of better temperature conditions that increase growth and promote extended smoltification and reduced travel time associated with emigration

Modeling and Analysis

Linkage

Sediment / Geomorphology → Habitat / Utilization → Population Recovery

Models

Sediment Model	Habitat Model	Stock Assessment
HEC-RAS SRH 1-D	**PHABSIM / Hardy 2-D**	**SALMOD**

Data Needs

- Fine Sediment
- Coarse Sediment
- Storage
- Scour

- Meso - Habitats
- Micro - Habitats
- Transects
- Water Temperature
- Fish Distribution

- Water Temperature
- Habitat
- Fish Movement
  - Smolt Outmigration
  - Fry Movement
  - Adult Returns
- Carcass Survey

Wittler - March 2008

Conceptual Models and Hypotheses for the Trinity River Restoration Program

FINAL REPORT

Prepared by staff, partners and interested parties of

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With support from

North State Resources
5000 Bechelli Lane, Suite 203
Redding, CA 96002

March 12, 2009

135 pages
Mostly done by 2005
(though not finalized until 2009)

Trinity River Restoration Program:

Integrated Monitoring and Evaluation Plan

Jan 23, 2006 - Preliminary Draft

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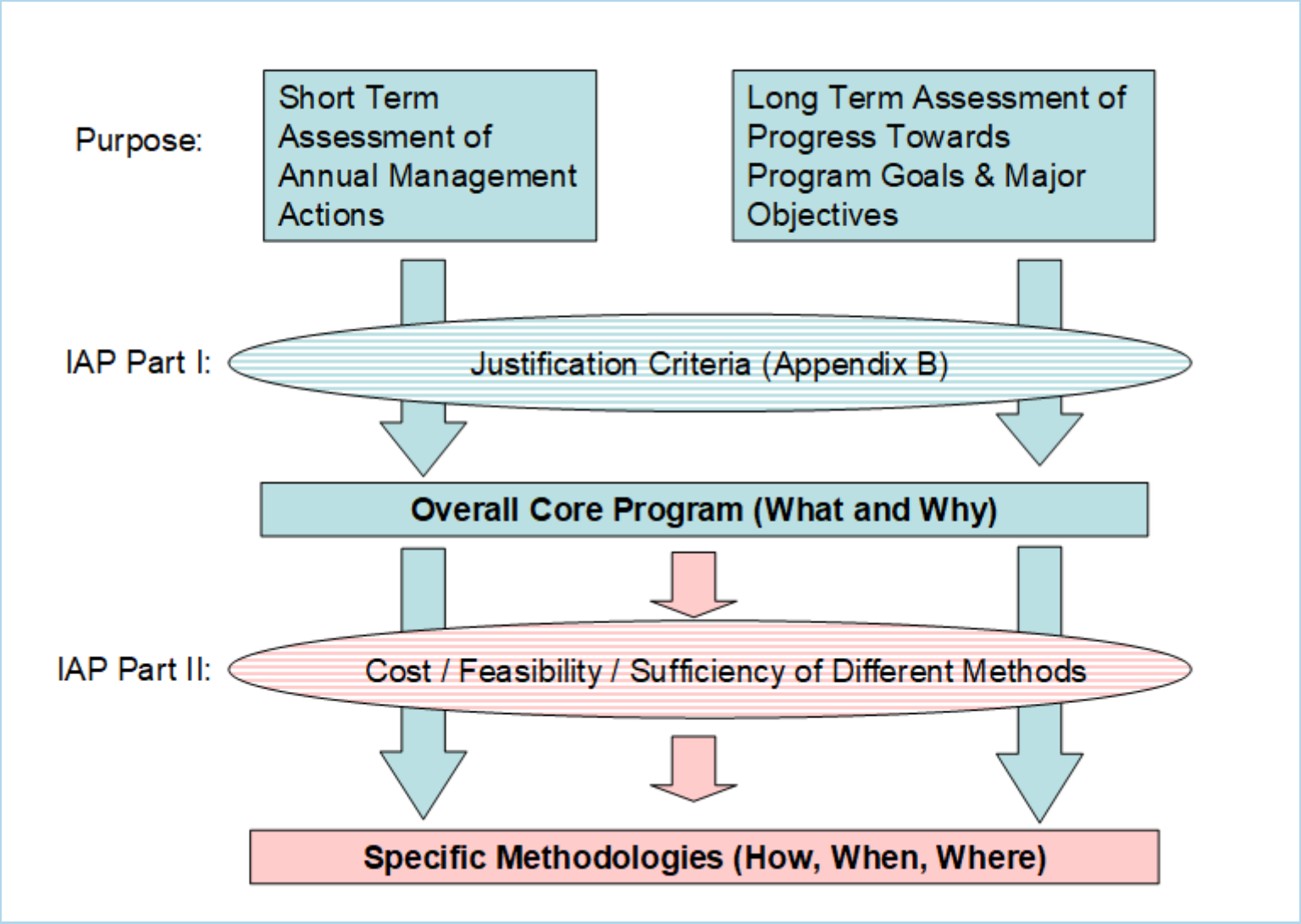
Longer than the IAP!
Never finalized.

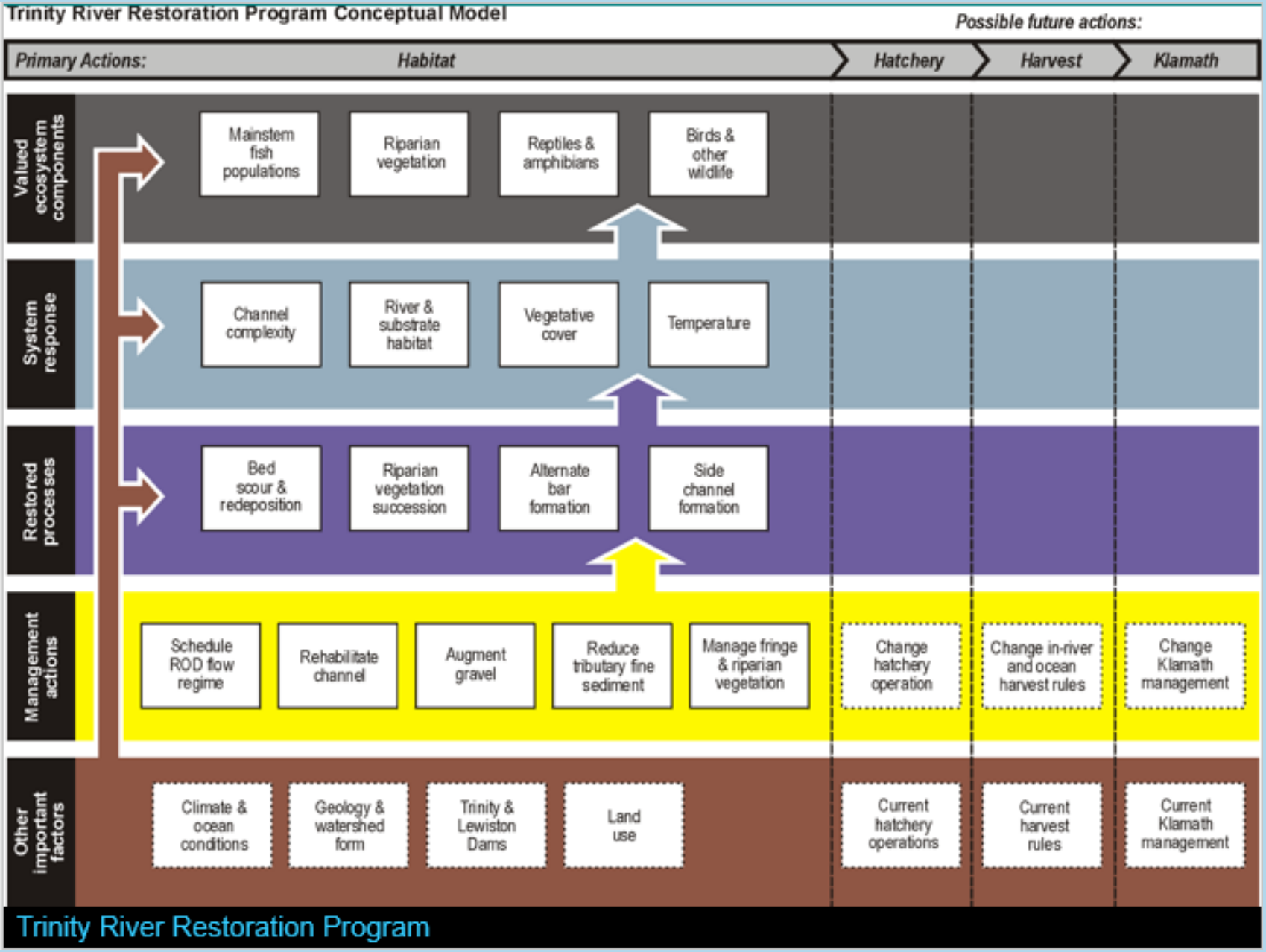
IAP Purpose

Integrated & Prioritized Assessments that:

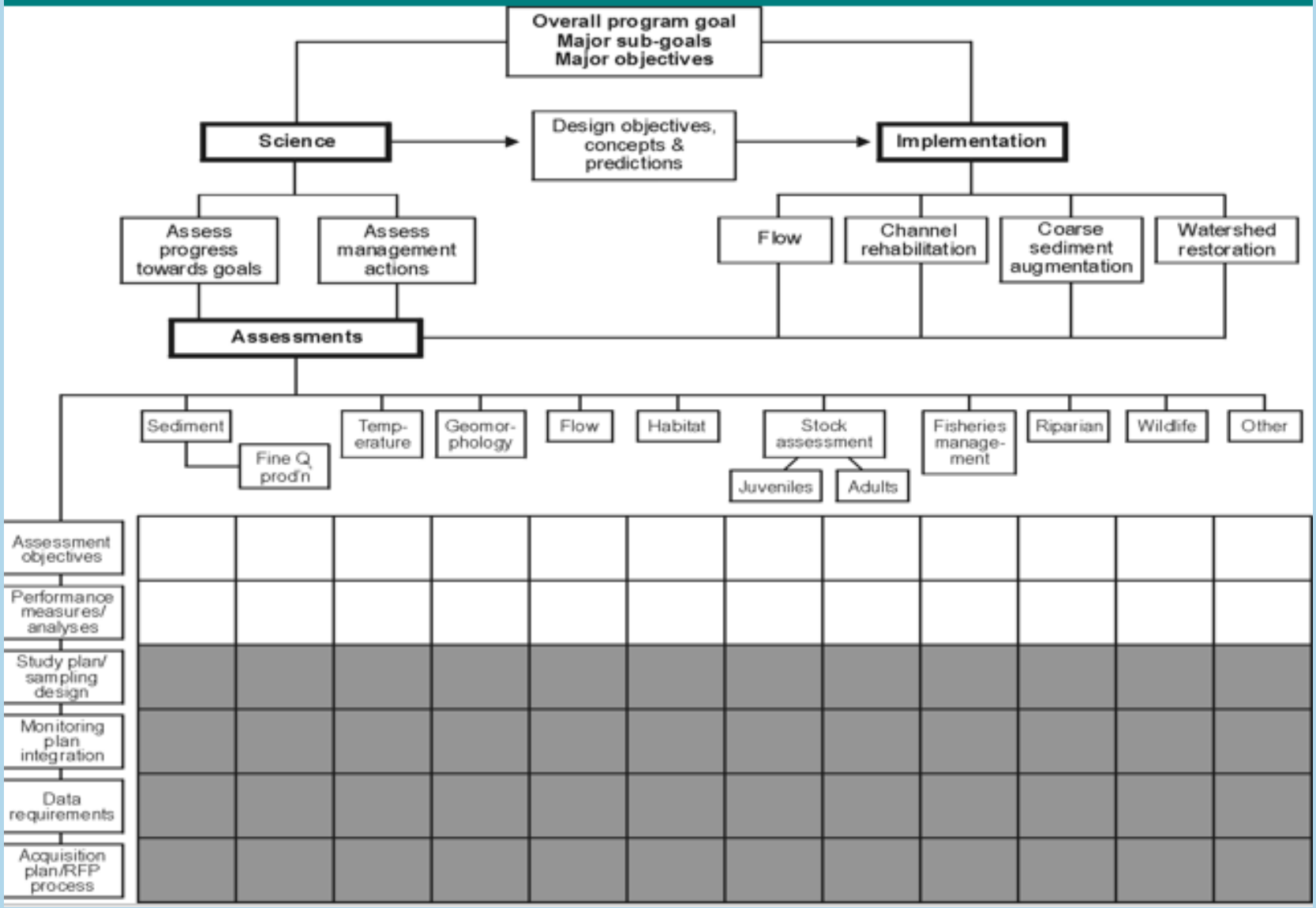
1. Evaluate long-term progress towards achieving Program goals and objectives; and,
2. Provide short-term feedback to improve Program management actions by testing key hypotheses and reducing management uncertainties.

Wittler - March 2007 presentation to TMC


Purpose:
Short Term Assessment of Annual Management Actions
Long Term Assessment of Progress Towards Program Goals & Major Objectives
IAP Part I:
Justification Criteria (Appendix B)
Overall Core Program (What and Why)
IAP Part II:
Cost / Feasibility / Sufficiency of Different Methods
Specific Methodologies (How, When, Where)


Trinity River Restoration Program Conceptual Model
Possible future actions:
Primary Actions:
Habitat
Hatchery
Harvest
Klamath
Valued ecosystem components
Mainstem fish populations
Riparian vegetation
Reptiles & amphibians
Birds & other wildlife
System response
Channel complexity
River & substrate habitat
Vegetative cover
Temperature
Restored processes
Bed scour & redeposition
Riparian vegetation succession
Alternate bar formation
Side channel formation
Management actions
Schedule ROD flow regime
Rehabilitate channel
Augment gravel
Reduce tributary fine sediment
Manage fringe & riparian vegetation
Change hatchery operation
Change in-river and ocean harvest rules
Change Klamath management
Other important factors
Climate & ocean conditions
Geology & watershed form
Trinity & Lewiston Dams
Land use
Current hatchery operations
Current harvest rules
Current Klamath management
Trinity River Restoration Program

IAP Structure



Yes, a kitchen sink
But a well-built and organized kitchen sink.

What does it actually have?

Main Sections:

1. Overview
2. Assessment Needs (including 'synthesis assessments')
3. Programmatic Objectives
   - Level 1 Objectives: 6
   - Level 2 Objectives: 25
   - Level 3 Objectives: 60
4. Sampling Framework (including GRTS)

- 16 Appendices
- Recommendations for next steps
- Priority Issues To Address (PITAs)
- Roughs out a Peer Review process and SAB role

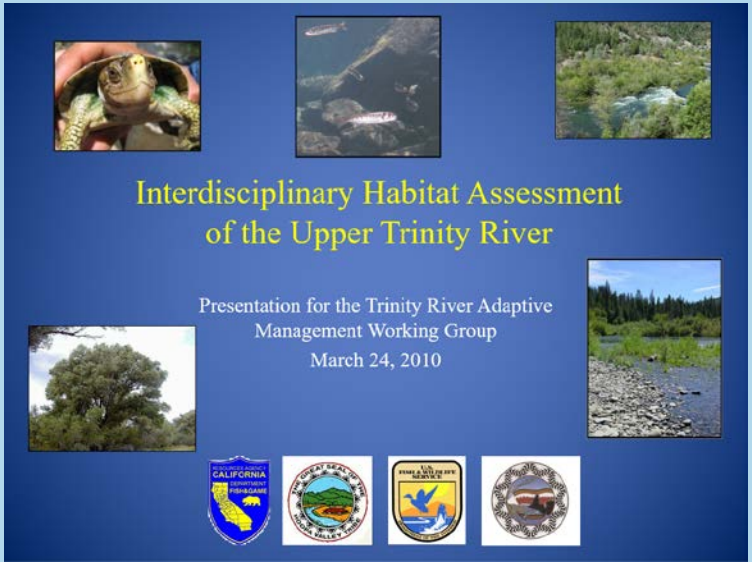
With appendices = 286 pages

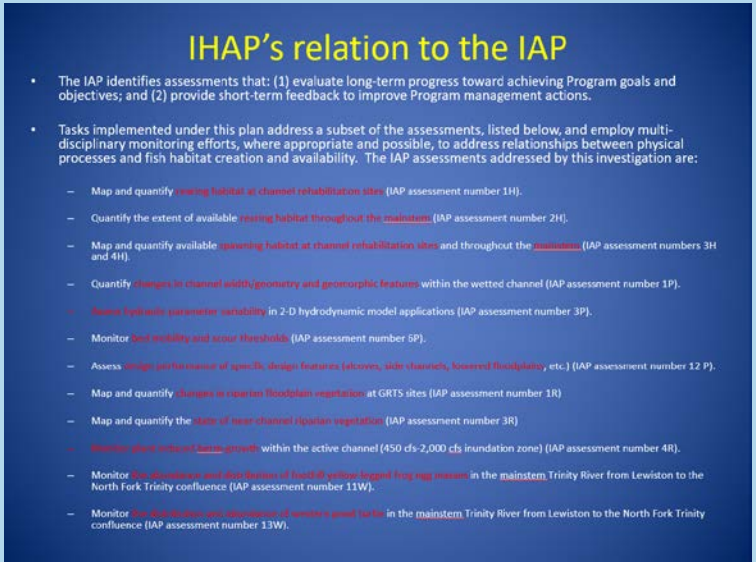
The IAP describes itself…

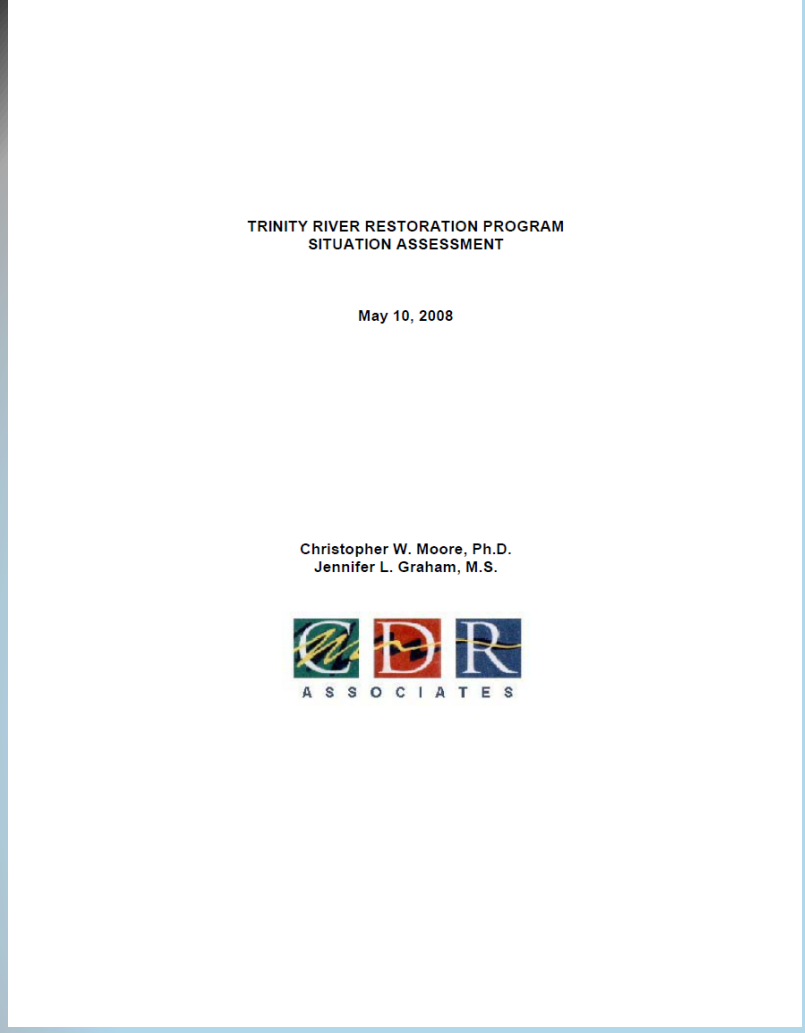
- a “living document” that will evolve as we learn more *[… and determine …]* which assessments are of the highest priority
- Identifies key assessments that
  - Evaluate long-term progress toward goals and objectives
  - Provide short-term feedback to improve Program management actions
- Sets the foundation for future Requests for Proposals
- Greatest challenge was consensus among Partners
- Remaining challenge is the prioritization of assessments

A few ways the IAP has been used

- Basis for Science Workplan
- Basis for certain focused projects (e.g. IHAP)
- PITAs were a hot topic for a number of years
- Initiation of Objectives refinement that continues today







Basic summary is that there was a problem of trust and relationships between parts of the program…

a people problem,

not a technical problem.

"At a fundamental level, there is disagreement over what science is needed to inform decision-making within the program and what constitutes good science."

a perspective…

Within a couple years following the IAP

there was a shift in the biggest TRRP problem

- From trust issues
  - Situation Report
  - But goes back to Task Force
- To completing the AM loop and implementing DSS
  - Phase I Review
  - DSS Symposium
  - Refinements Report

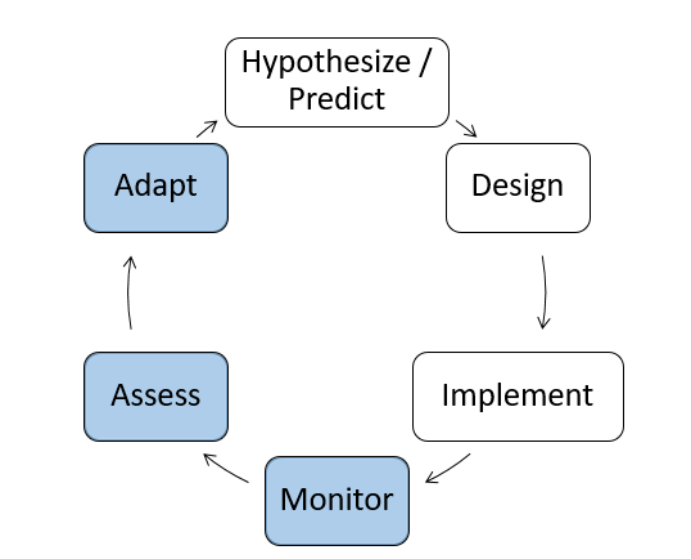
- had laid out (much) scientific background
- Developed (and used) a ‘resolution roundtable’
- A few shifts with staffing

Is the IAP all that TRRP needs?

If so, then why the subsequent efforts to organize and focus the science program:

Efforts since:

- Science Retreat
- Current Workgroup organization
- Investigation planning / workplan system
- 'Big Questions'
- Performance measures
- Phase I Review by SAB
- Channel rehab assessments
- Objectives Workshop
- Movement toward S3 modeling and DSS
- Clarification of adaptive management workplan vs status and trend monitoring
- Synthesis reporting



Clarke's notes on rehab assessments

Extra Slides

Goal Statement in the IAP

"The goal of the Program is to restore and sustain natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels, to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities. The Program 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. The above restoration strategy will be achieved by implementing management actions in a science-based adaptive management program."

Headwaters (2018 – p. 24) provides a good discussion of this.