

Coleman National Fish Hatchery Adaptive Management Plan

Public Scoping Meeting
May 24, 2012

*Red Bluff Community Center
Red Bluff, California*



*Pacific Gas and
Electric Company*





Meeting Agenda

- Introductions
- Ground rules
- What is scoping?
- Project background:
 - Coleman National Fish Hatchery
 - Battle Creek Restoration Project
 - Adaptive management planning
- Public scoping comments
- Wrap up



Meeting Ground Rules

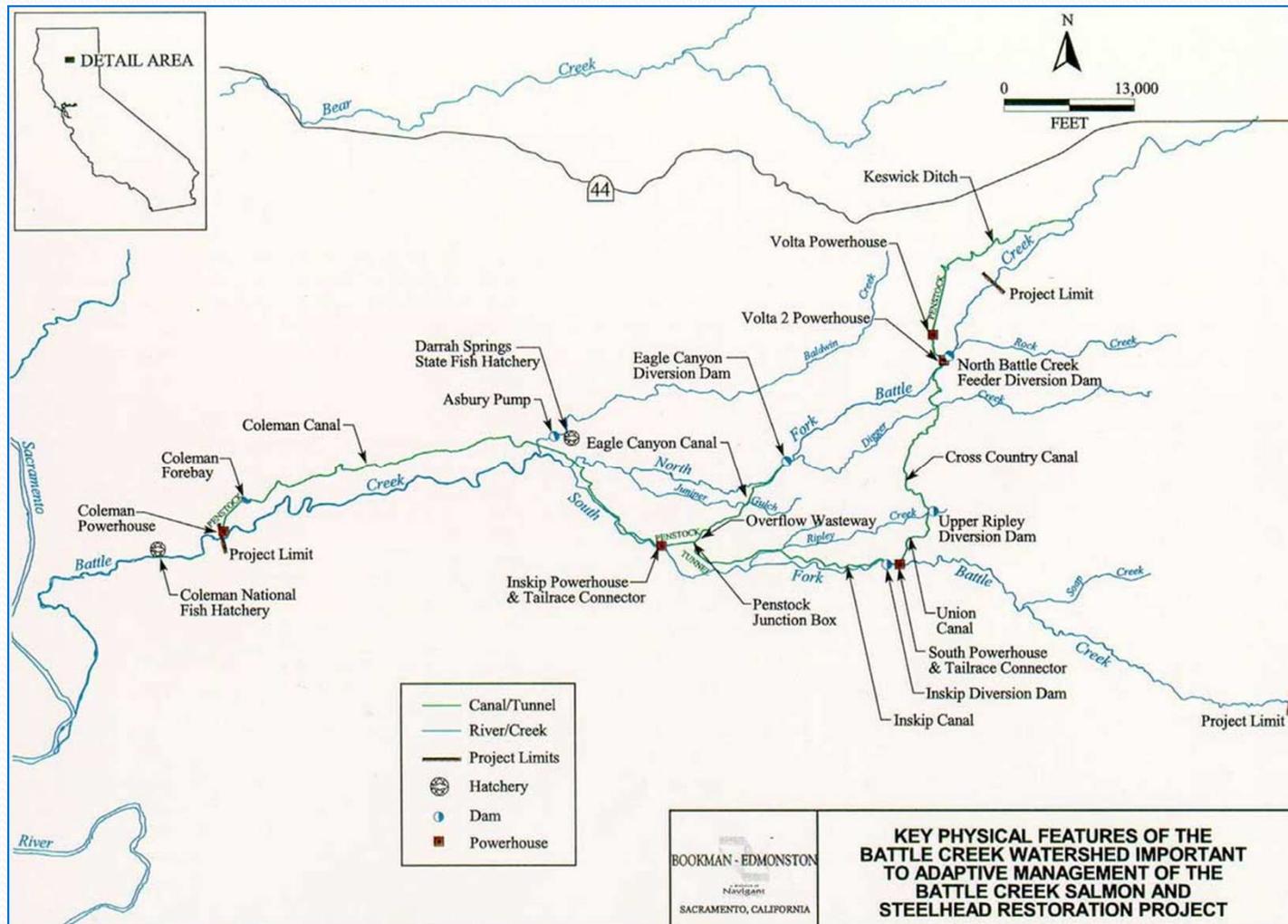
- Respect others
- Listen
- Focus on Coleman National Fish Hatchery Adaptive Management Plan
- Wait to be recognized before speaking
- One person speak at a time
- Be brief to allow all to speak
- Communicate interests, not positions



What is Scoping?

- **For the public**
 - Opportunity to provide input early in the planning process
- **For the project proponent**
 - Opportunity to solicit comments from stakeholders to refine issues, define area of study, and collect additional information for plan development

The Battle Creek Watershed



Shasta Dam



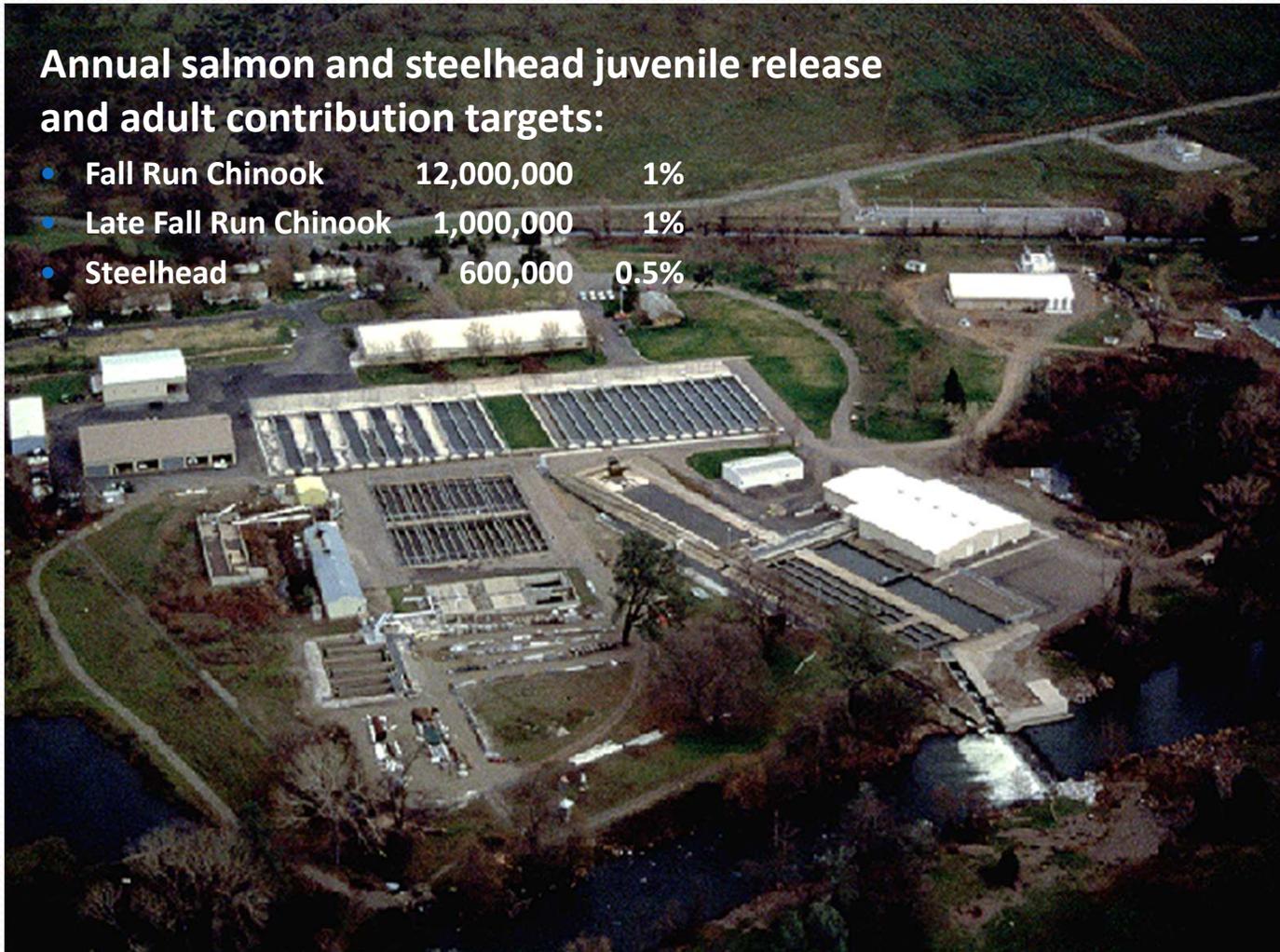
- Built between 1937 and 1945 as part of the Central Valley Project
- 187 miles of lost habitat accounting for:
 - 50% of all salmon spawning
 - 100% for Winter Chinook salmon

Coleman National Fish Hatchery (CNFH)

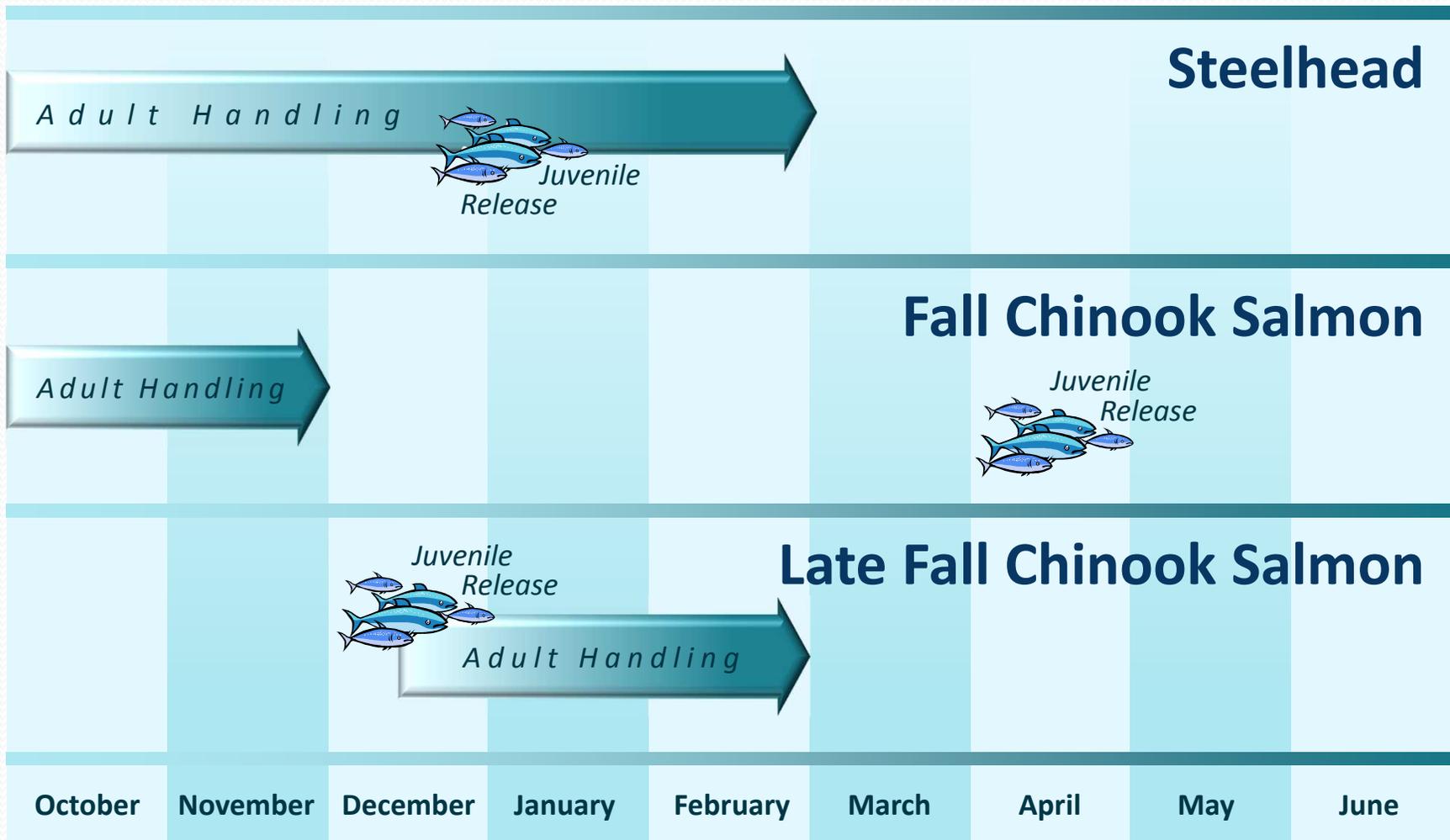
Annual salmon and steelhead juvenile release and adult contribution targets:

• Fall Run Chinook	12,000,000	1%
• Late Fall Run Chinook	1,000,000	1%
• Steelhead	600,000	0.5%

- Built in 1942 in the lower Battle Creek watershed as mitigation for Shasta and Keswick dams
- Five miles from the confluence with the Sacramento River



Broodstock Collection and Spawning, and Juvenile Release

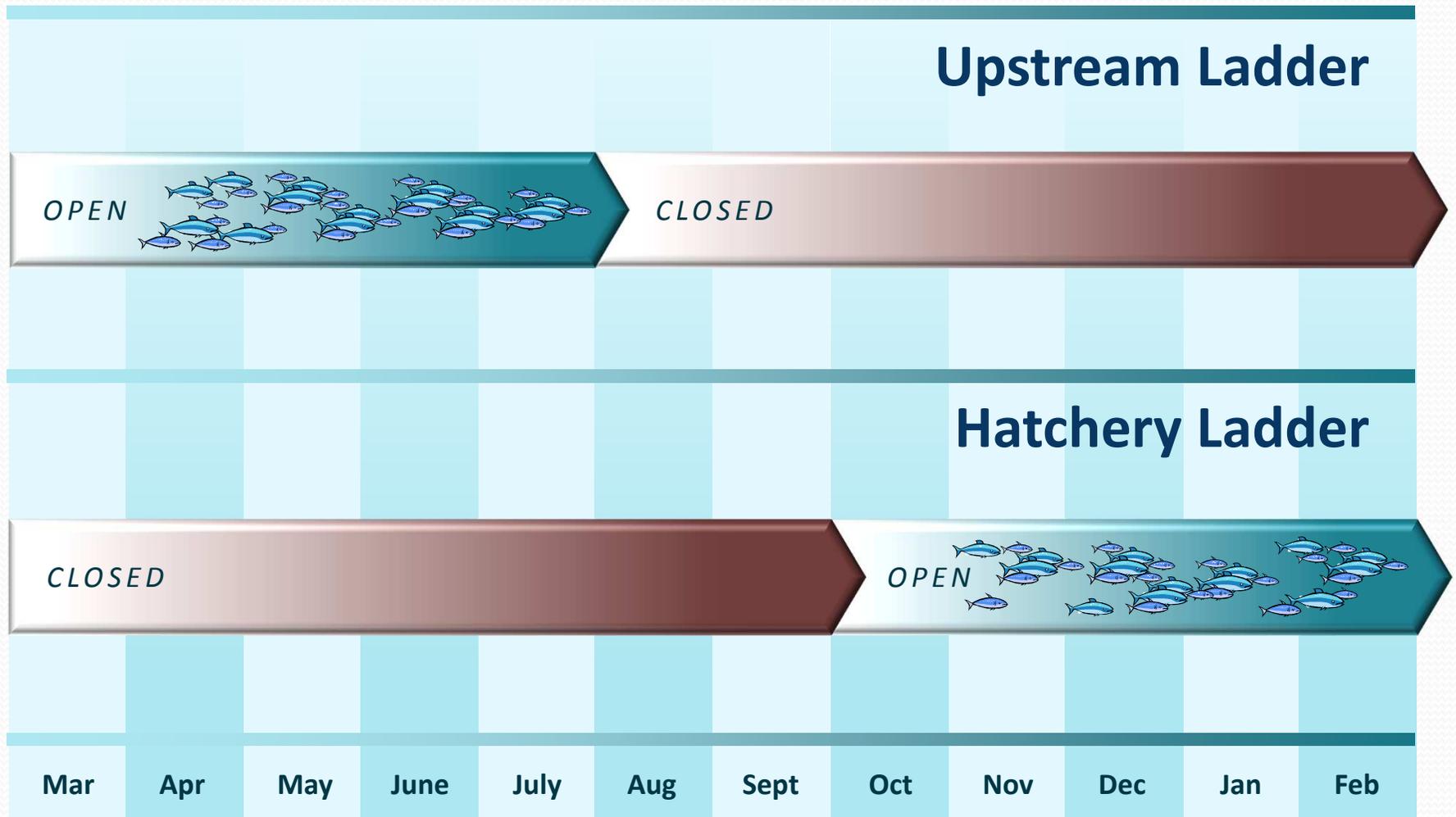




Important Hatchery Operational Considerations

- Meet production/mitigation obligations
- Meet regulatory requirements
- Participation in aquatic species recovery actions
- Participation and cooperation in research programs
- Environmental education and outreach
- Integration with Battle Creek restoration efforts

Coleman National Fish Hatchery Operation of Fish Ladders





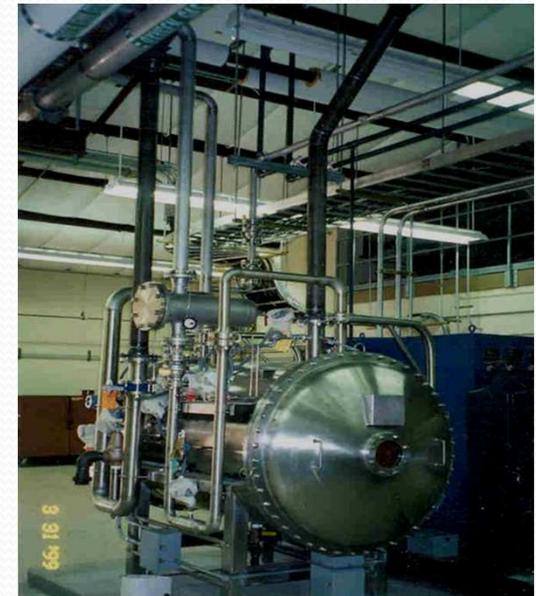
We Have Come a Long Way... Key/Recent Modifications at CNFH

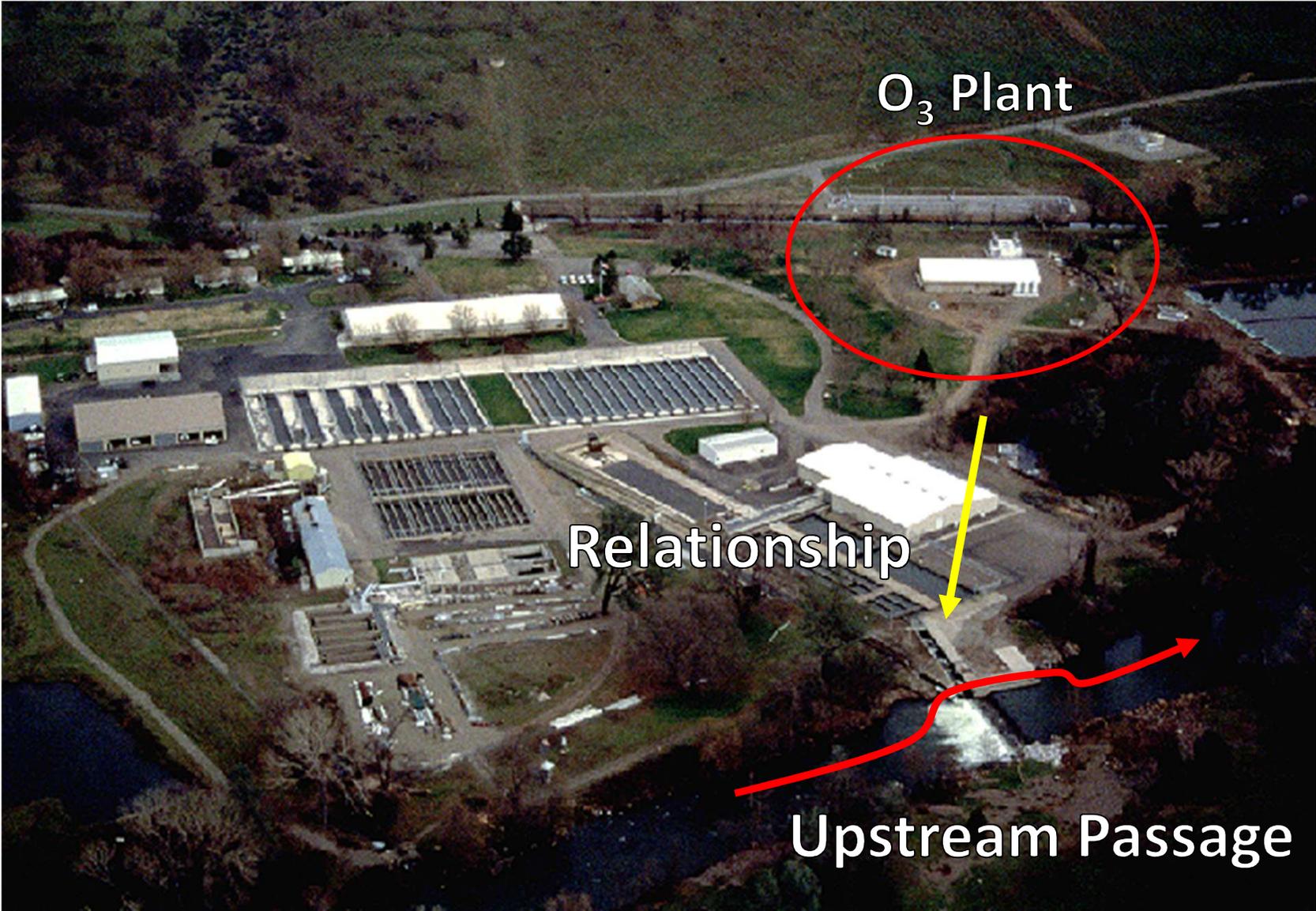
- **1993-2002:**
Construction of Ozone Water Treatment Plant
- **2007-2008:**
Modification of barrier weir and fish ladders
- **2008-2010:**
Modification of facility water delivery system

Construction of Ozone Water Treatment Facility



Largest O₃ Plant for
Fish Culture in the World





O₃ Plant

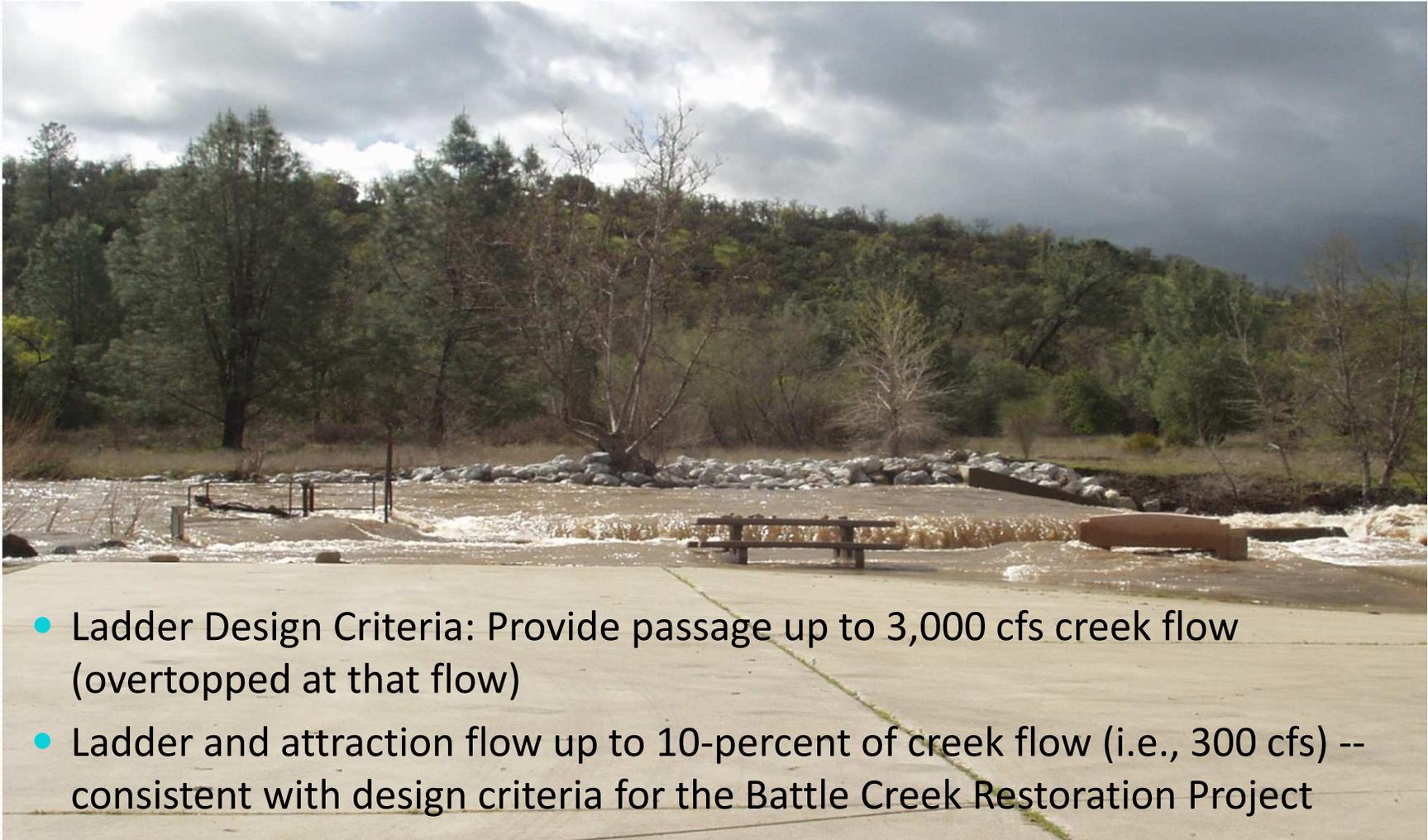
Relationship

Upstream Passage

Modification of Barrier Weir and Fish Ladder



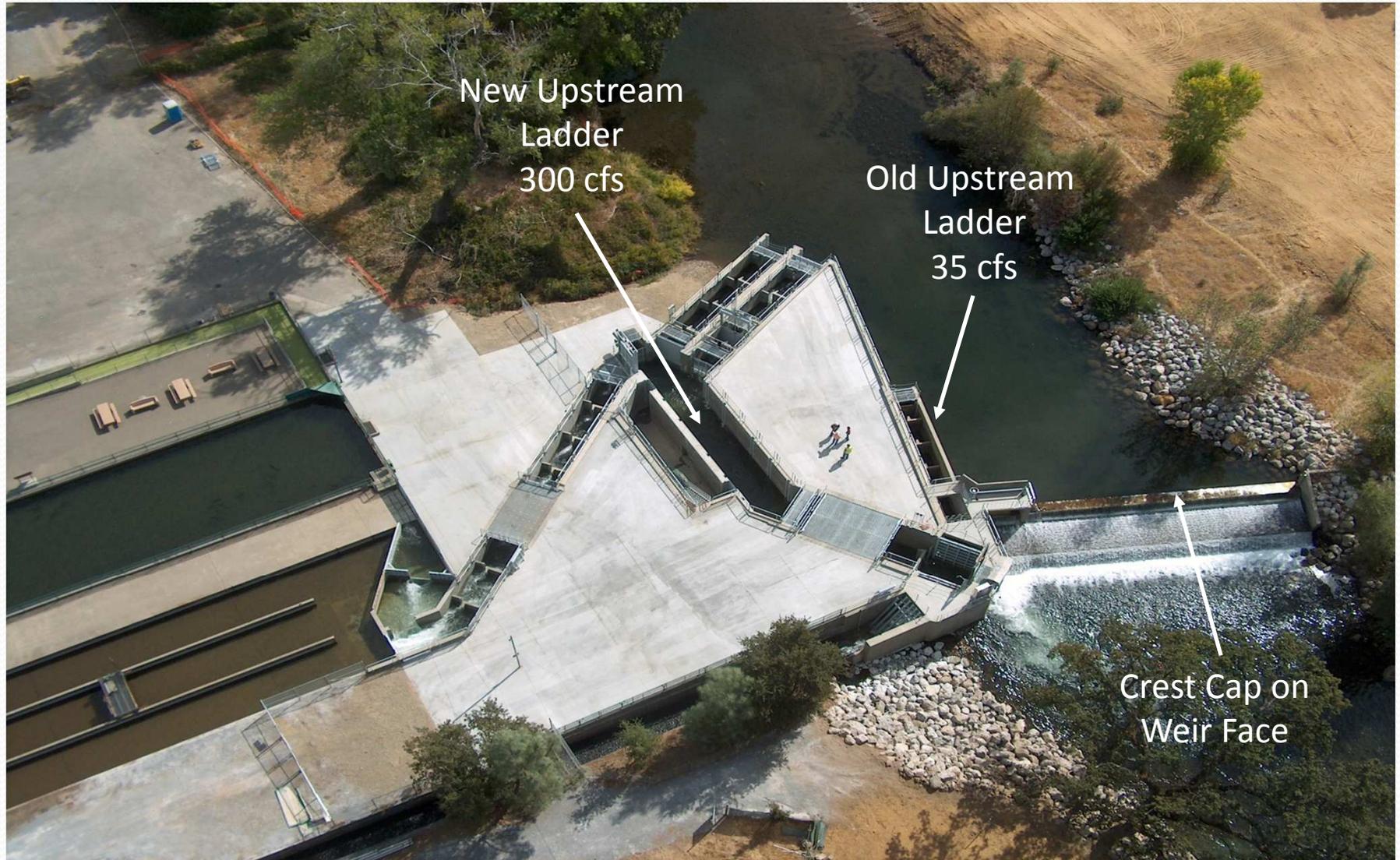
Design Criteria



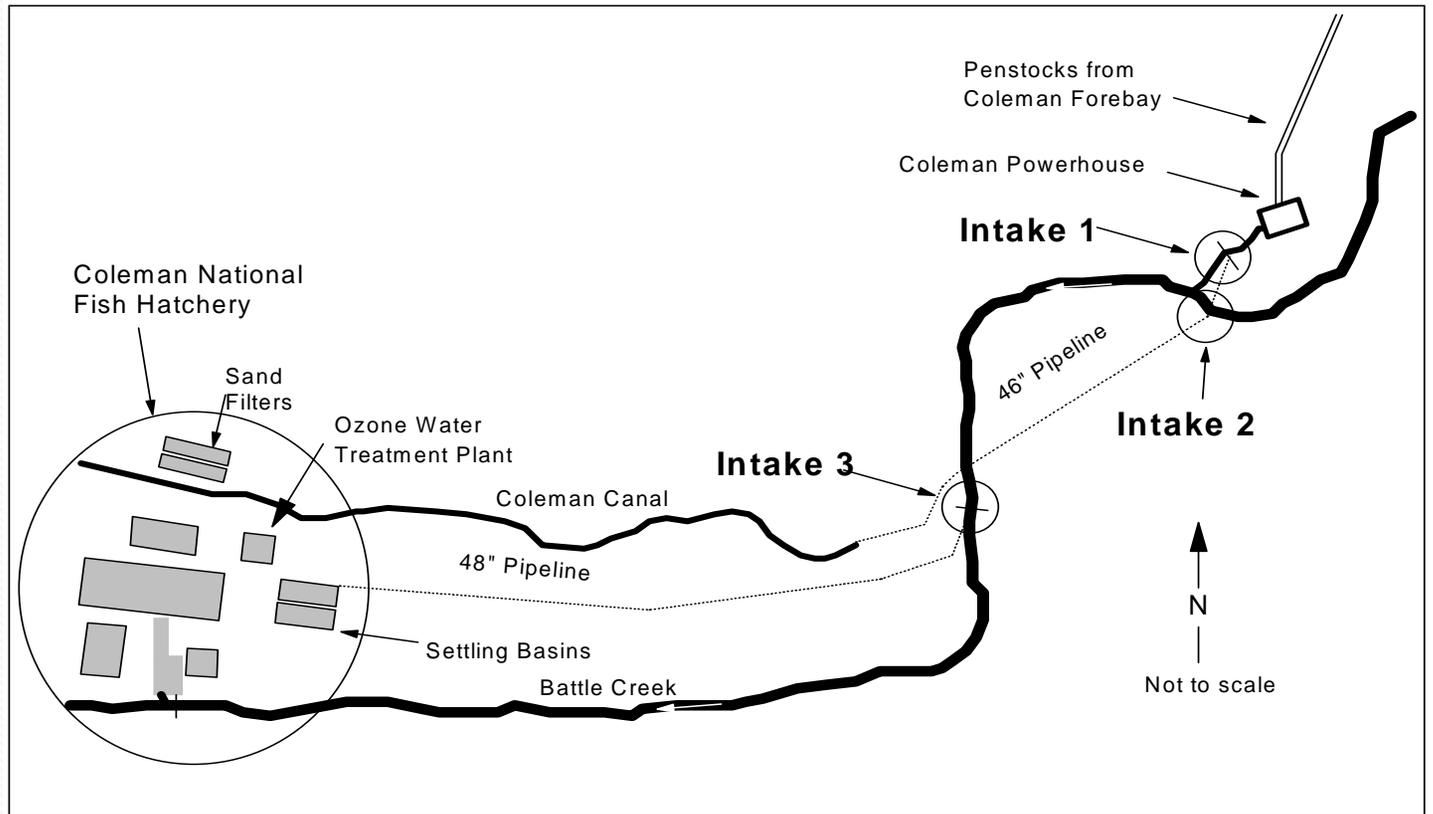
- Ladder Design Criteria: Provide passage up to 3,000 cfs creek flow (overtopped at that flow)
- Ladder and attraction flow up to 10-percent of creek flow (i.e., 300 cfs) -- consistent with design criteria for the Battle Creek Restoration Project

Blocks Undesired Passage





Water Supply Intake Structures



Battle Creek Salmon and Steelhead Restoration Project - Background



Battle Creek Salmon and Steelhead Restoration Project - Overview



BATTLE CREEK SALMON & STEELHEAD RESTORATION PROJECT

*'Restore Anadromous Fish Habitat –
Minimize Loss of Hydropower Production'*

1999 Memorandum of Understanding
USFWS – PG&E – NMFS – Reclamation – DFG

GREATER
BATTLE CREEK
WATERSHED
WORKING GROUP

PROJECTS WITHIN
THE BATTLE CREEK
WATERSHED

LANDOWNERS

PUBLIC

STAKEHOLDERS

BATTLE CREEK
WATERSHED
CONSERVANCY

PROJECT MANAGEMENT

Project Management Team (PMT)
Project Manager: Reclamation
Technical Teams
Environmental Compliance
Design/Engineering
Construction
Schedule
Budget

ADAPTIVE MANAGEMENT

Adaptive Management
Policy Team Manager: USFWS
Adaptive Management
Technical Team Manager:
DFG

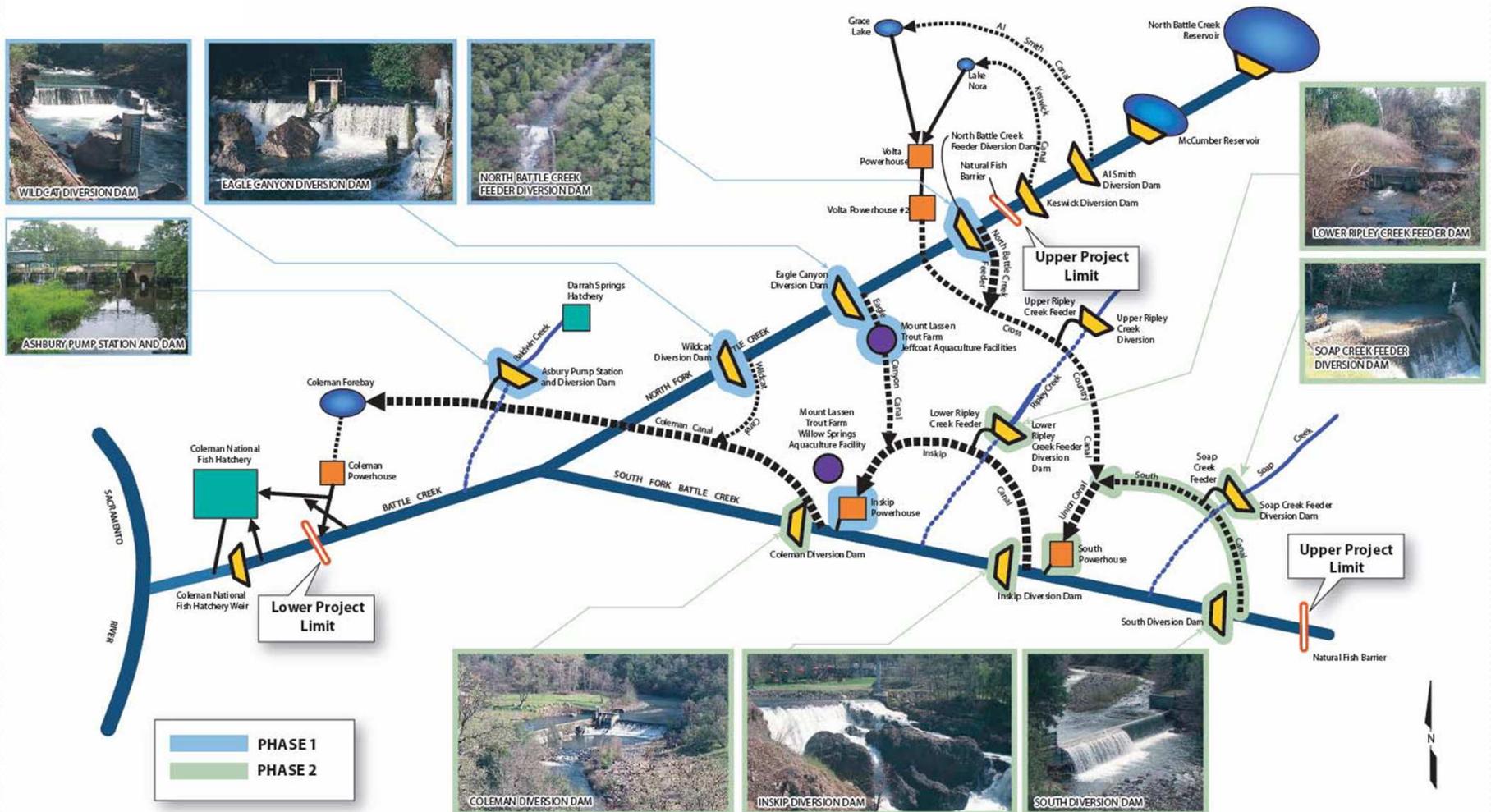
FERC LICENSE AMENDMENT

Manager: PG&E
Construction Easement
Landowner Agreements

FUNDING SOURCES:

- CALFED/California Bay Delta Authority
- The Packard Foundation via The Nature Conservancy
- California Department of Fish and Game
- California Wildlife Conservation Board
- California Department of Transportation
- Iron Mountain Mine Trustee Council
- Recovery Act

Restoration Project Phases and Status



CNFH Adaptive Management Plan





“We do not learn from a system that is constant. This is not serious if the system is known, is static, and presents no surprises. But resource systems are exactly the opposite. They are known only very partially, which will always be so; they are dynamic and they produce endless surprises –from the collapse of fisheries to the reemergence of other ecosystems. And the act of management and harvesting changes the fundamental structure of the resource itself.”

*Carl Walters, 1986,
Adaptive Management of Renewable Resources.*

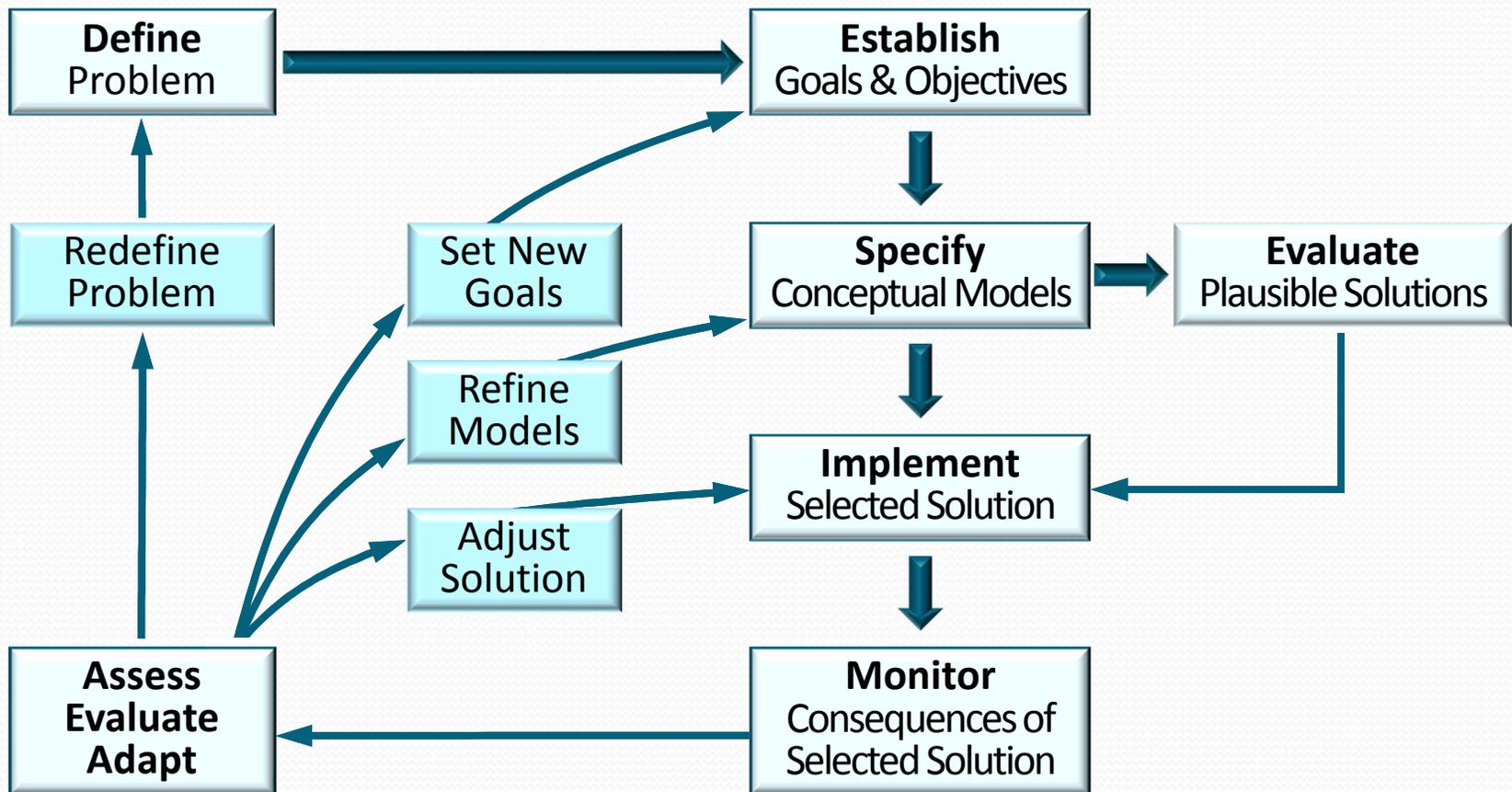
What is Adaptive Management?

- One type of management strategy
- Process that integrate science practices and principles into management system
- Most often considered for use in ecological systems where
 - Conflicts exist
 - The stakes are high
 - There is uncertainty about the best way to proceed

CNFH Adaptive Management Plan (AMP) Purpose Statement

Acknowledge, identify, study, and evaluate uncertainties regarding the operation of a large-scale fish hatchery in a watershed being restored for natural salmonid populations.

Adaptive Management Cycle



Battle Creek Limiting Factors Model

Showing Key Uncertainties and Linkages

Factors Affecting Upstream Migration:

- **False attraction (facility modifications)**
- **Fish passage at diversion dams (ladders)**
- **Fish passage at barriers (flow)**
- **Water temperature (flow and spring release)**
- CNNFH Barrier Dam §
- Water quality
- Poaching
- Predation
- Competition
- Disease and other natural mortality factors

Factors Affecting Spawning and Incubation:

- **Spawning habitat quantity (flow)**
- **Spawning habitat quality (sediment release)**
- **Redd dewatering (ramping rates)**
- **Water temperature (flow and spring release)**
 - CNNFH effects §
 - Water quality
 - Predation
 - Disease and other natural mortality factors
 - Exotic species invasions

Factors Affecting Rearing:

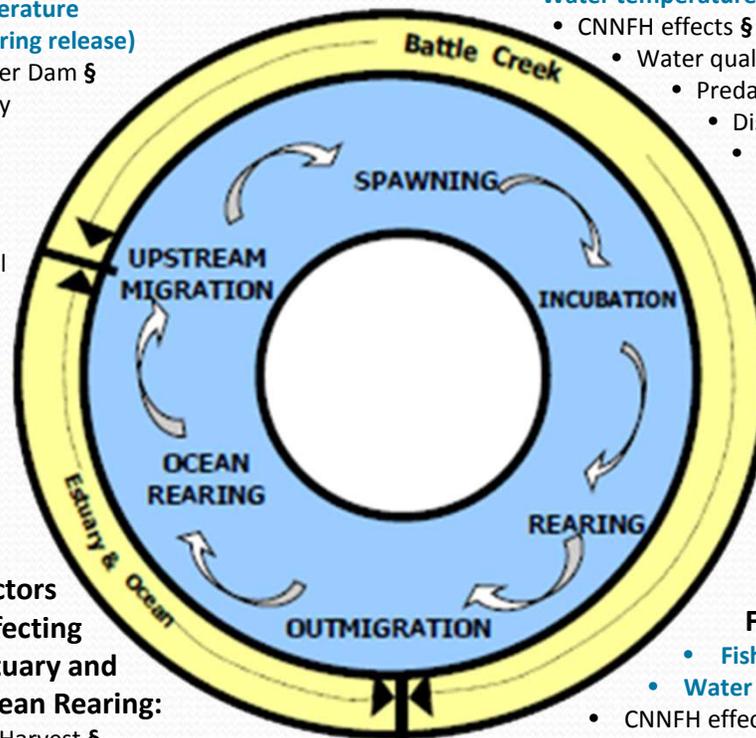
- **Rearing habitat quantity (flow)**
- **Stranding (ramping rates)**
- **Water temperature (flow and spring release)**
 - CNNFH effects §
 - Water quality
 - Habitat quality
 - Food and nutrient availability
 - Predation
 - Competition for resources other than space
 - Disease and other natural mortality factors
 - Exotic species invasions

Factors Affecting Outmigration:

- **Fish passage at diversion dams (screens)**
- **Water temperature (flow and spring release)**
 - CNNFH effects §
 - Water quality
 - Food and nutrient availability
 - Predation
 - Competition
 - Disease and other natural mortality factors

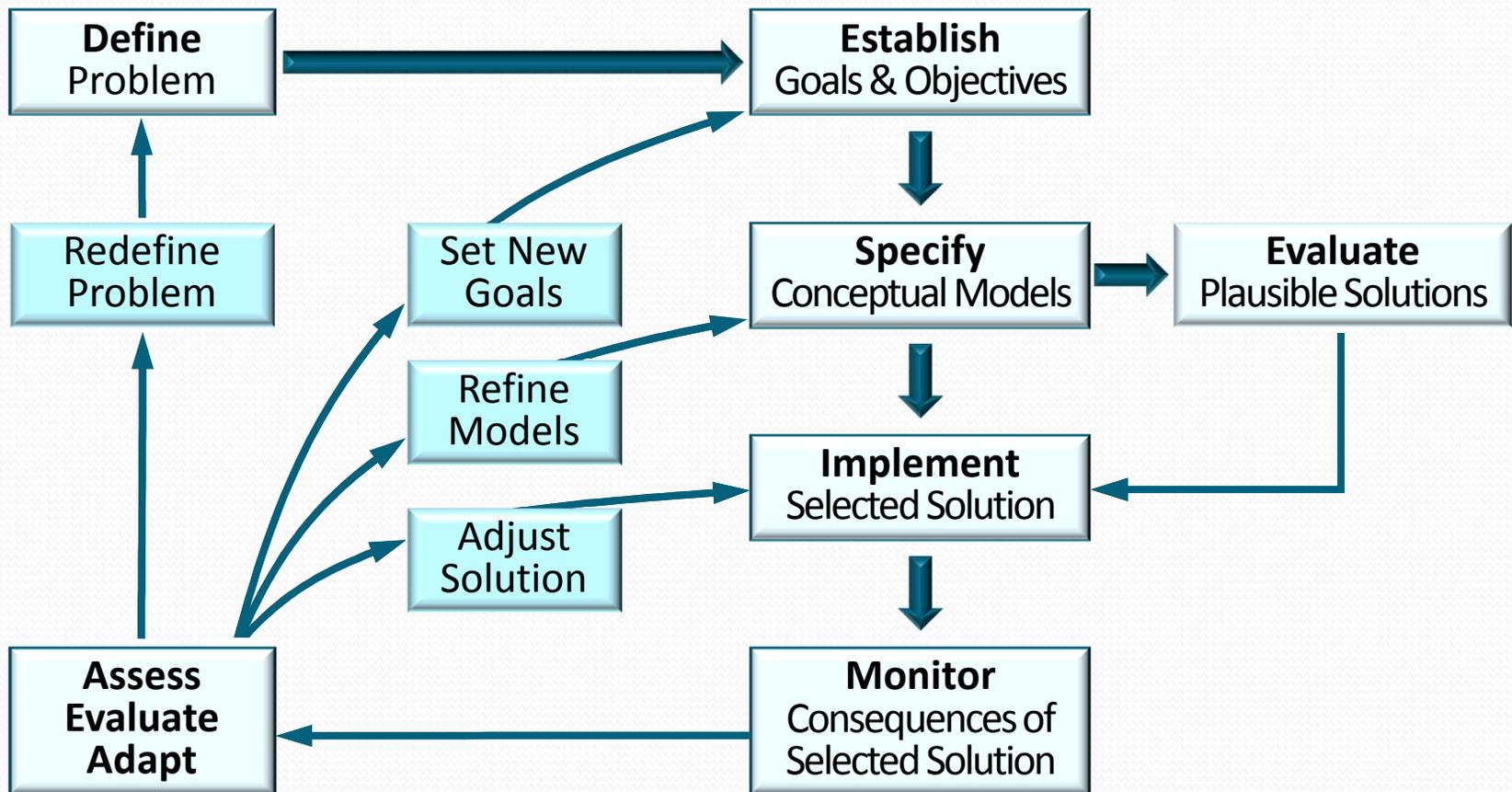
Factors Affecting Estuary and Ocean Rearing:

- Harvest §
- Estuary and ocean conditions

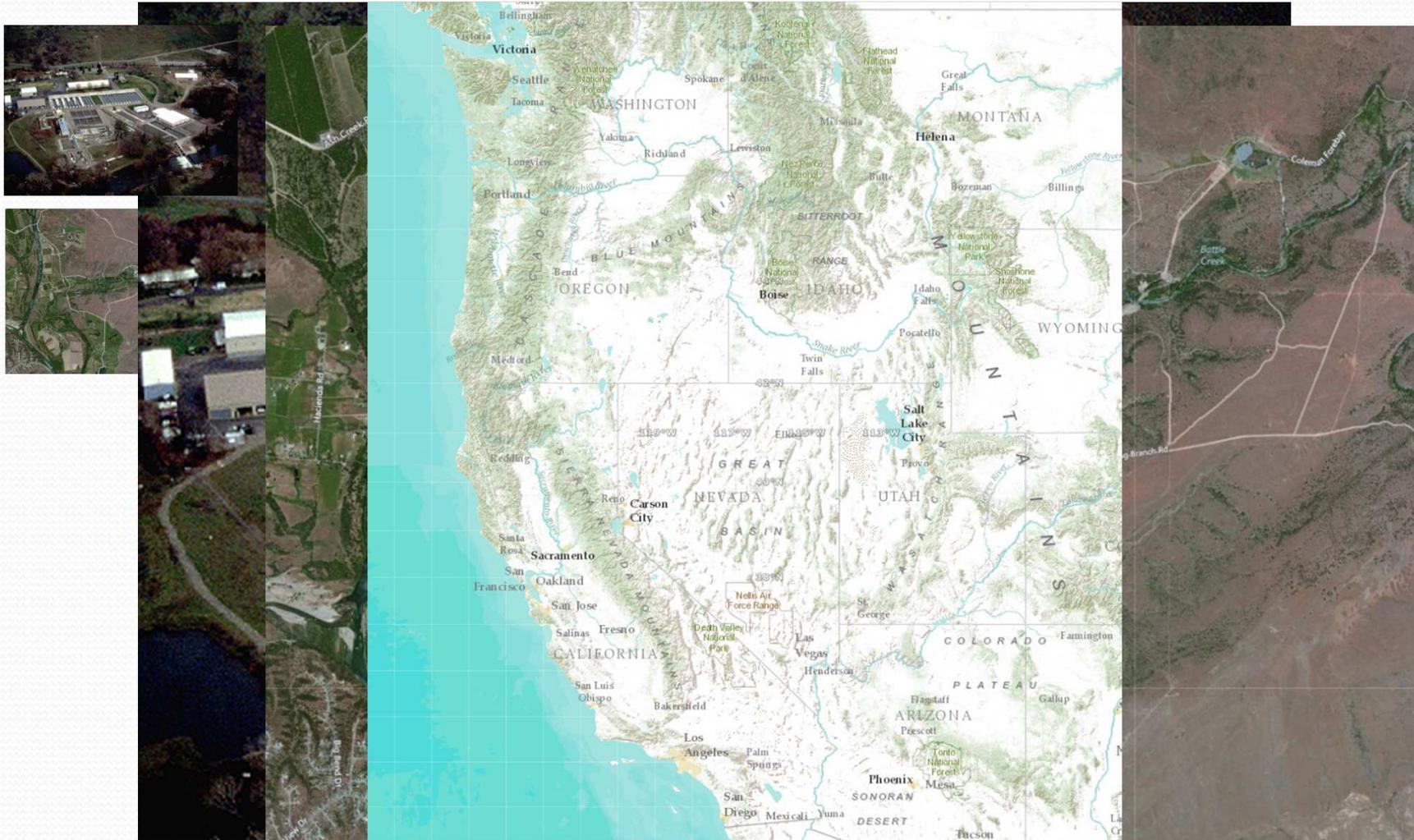


- Factors in **bold blue** are addressed by Restoration Project
- § indicates factors addressed through linkages to other programs

Adaptive Management Cycle



Coleman National Fish Hatchery Adaptive Management Plan - Scope





AMP Draft Outline

- Project description
- Describe adaptive management process
- Identify priority problems
- Describe action alternatives
- Describe recommended studies
- Identify linkages to other programs



CNFH AMP Development Process

- Consultants to the Lead agency develop the plan with advice from Technical Advisory Committee (TAC)
- Input/review from Science Panel
- Public review and comment
- Finalize AMP



Critical AMP Milestones

- **May/June 15 2012:**
Draft AMP outline
- **Dec/Jan 2013:**
Administrative draft AMP
- **April/May 2013:**
Public review and comment on draft AMP
- **July/Sept 2013:**
Final AMP released



Scoping Comments

- Focus comments on CNFH AMP
- Verbal comments
 - State your name
 - Provide comment
 - Make sure it is captured correctly
- Written comments
 - Leave them in comment box OR
 - Mail them (fold, staple, stamp)
- E-mail them to trangnguyen@usbr.gov

Thank you.

