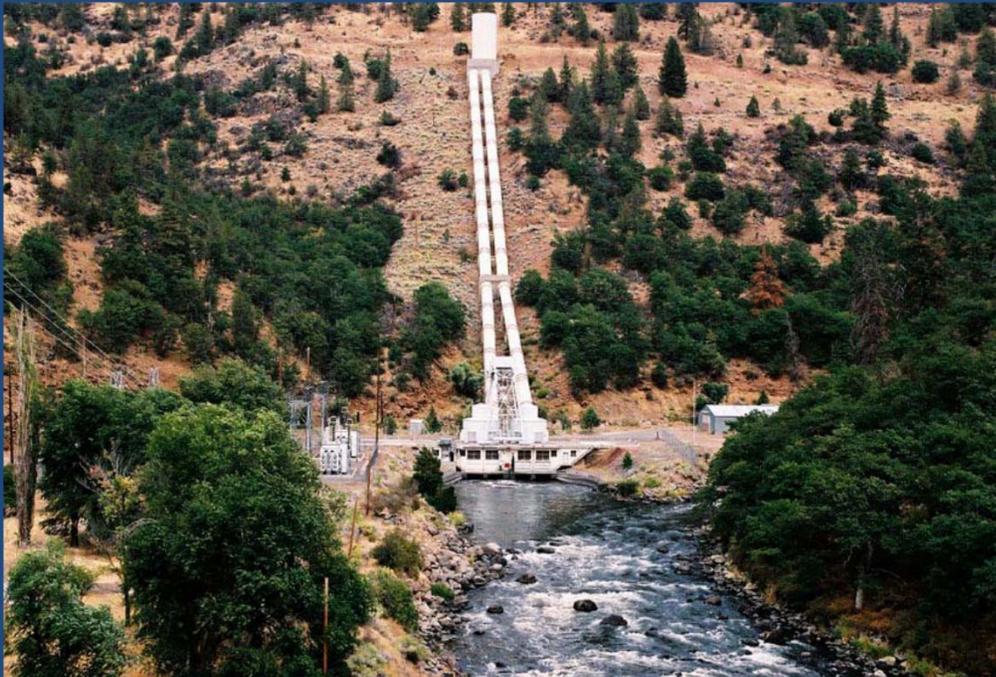


Klamath Basin Secretarial Determination on Dam Removal

Public Meeting
Klamath Falls, OR
March 16, 2011

JC Boyle penstocks and turbines



Panel:

Dennis Lynch, USGS
Matt Baun, US FWS
Curt Babcock, CDFG
Ted Wise, ODFW

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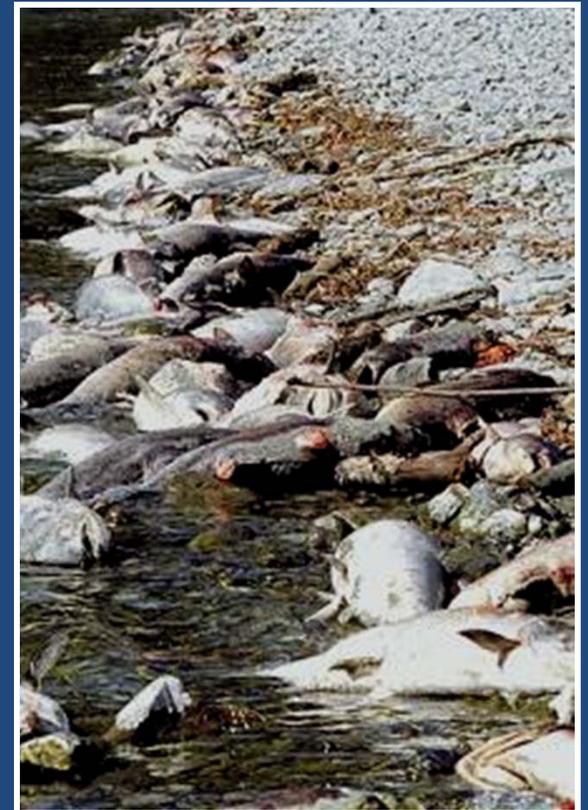
Why a Secretarial Determination?

- Last Decade of Natural Resource Problems:
 - 2 years of reduced farm water deliveries
 - 3 years of limited or closed ocean salmon fishing
 - 2002 major salmon die off
 - Ongoing water shortages for refuges
 - Ongoing juvenile salmon disease
 - Sucker fishery closed for 25 years

Lost River Sucker



Lower Klamath
River, 2002



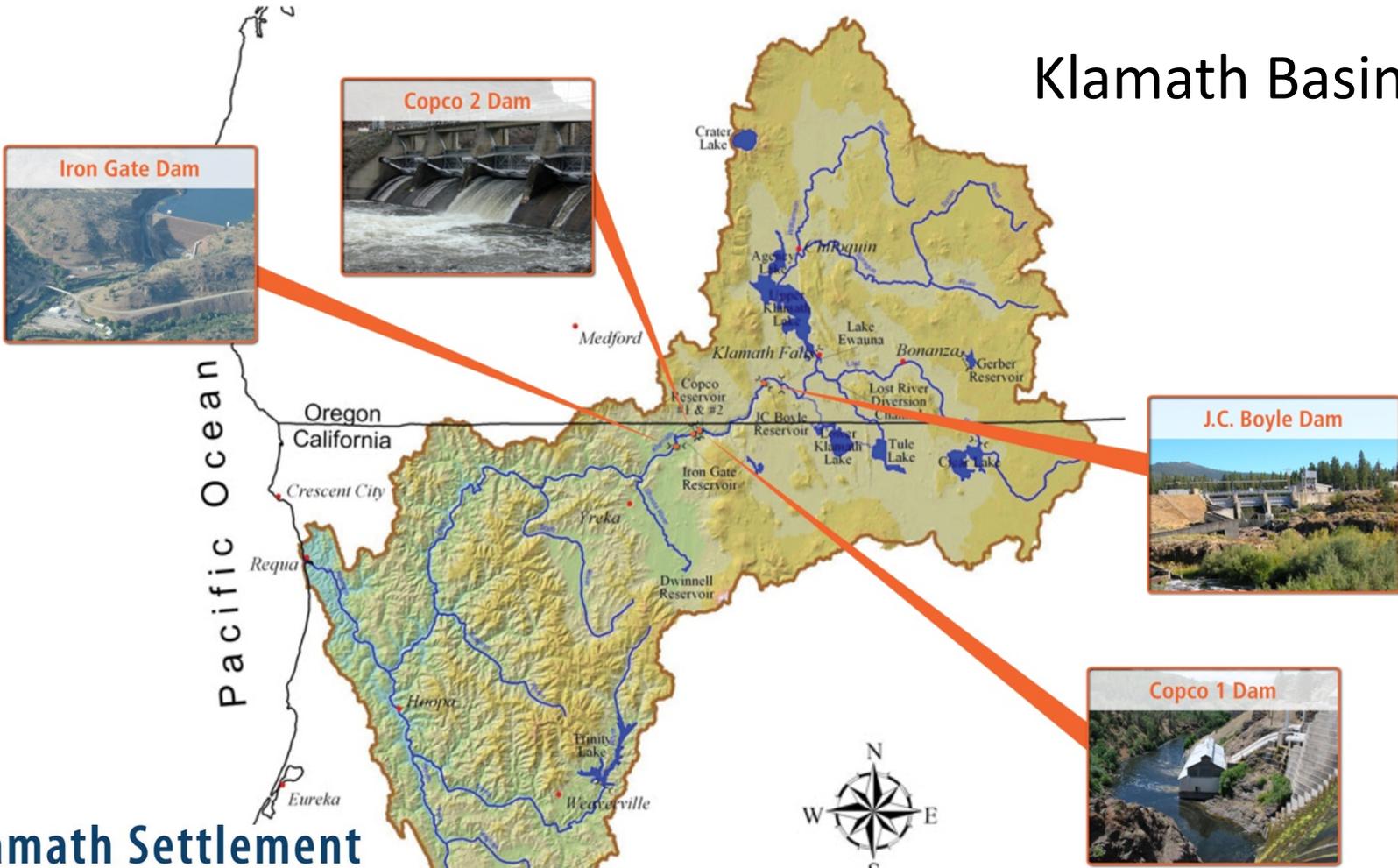
Klamath Hydroelectric Settlement Agreement (KHSA)

- Proposal to remove 4 PacifiCorp dams in 2020
- Secretarial Determination Analysis:
 - New federal technical studies
 - Environmental review
 - Complete by March 2012
- Determination questions:
 - Dam removal plan and cost?
 - Advance salmonid fisheries restoration?
 - In public interest?



Location of Four PacifiCorp Dams

Klamath Basin

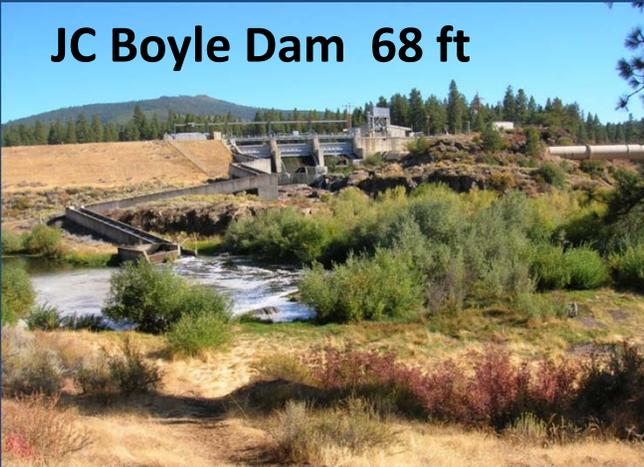


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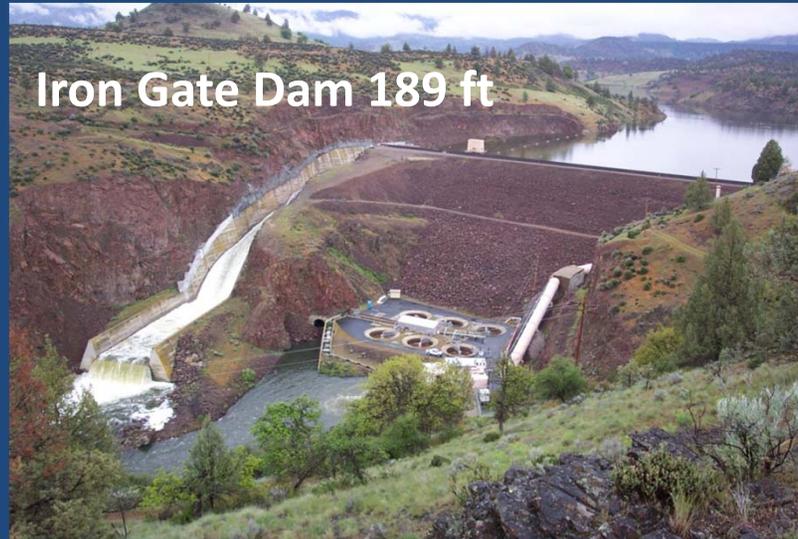


PacifiCorp Hydroelectric Dams

JC Boyle Dam 68 ft



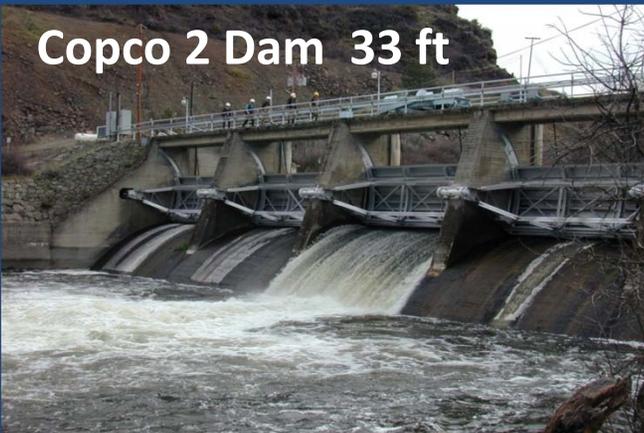
Iron Gate Dam 189 ft



Copco 1 Dam 115 ft



Copco 2 Dam 33 ft



- 82 megawatts (70,000 homes)
- Inadequate fish passage
- Downstream water quality
- Ratepayer savings with dam removal
- No drought relief
- Minimal flood benefit

Potential Effect of Dam Removal on Droughts and Floods

- PacifiCorp dams provide no drought benefit
 - Narrow “full-pool” operating range
 - No seasonal drawdown or supplementing flow
- Four PacifiCorp dams slightly dampen flood peaks:
 - Upper basin contributes 5% to flood peaks
 - Link River Dam provides flood control
 - PacifiCorp dams decrease flood peaks by:
 - 10 -15% at Iron Gate Dam
 - 2 - 3% at Seiad Valley
 - < 1% at mouth
- 100-yr flood plain update, as needed



Klamath Basin Restoration Agreement (KBRA)

- KBRA programs designed to complement dam removal agreement
- Proposed actions “connected” to KHSA
- KBRA goals:
 - Reliable water supplies for all uses
 - Reliable power supplies
 - Restore salmonid fisheries for all uses
 - Durable solution for communities

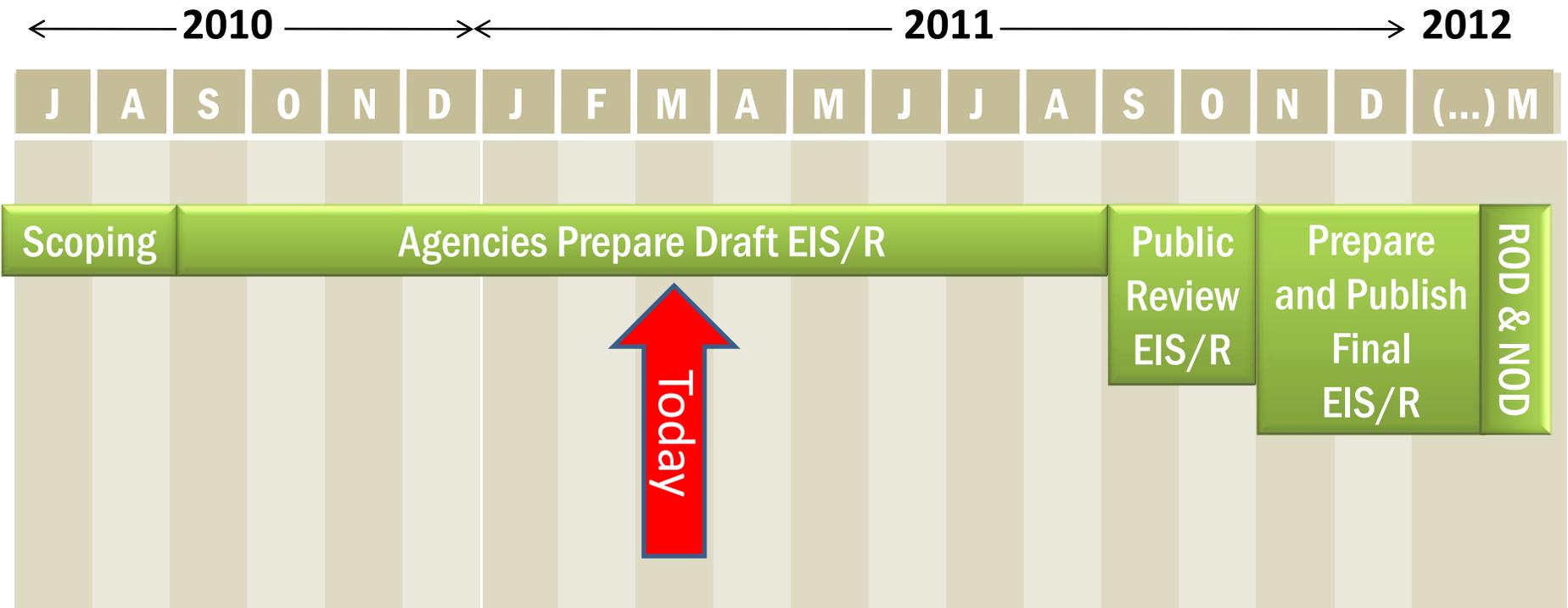


Secretarial Determination – Two Track Process

- New technical studies “track”
- Environmental Compliance “track” (NEPA/CEQA)
 - Environmental Impact Statement (EIS)
 - California Environmental Impact Report (EIR)
 - No Action, Proposed Action, Other Alternatives
- Both tracks will inform final Determination:
 - Record of Decision (DOI Secretary)
 - Notice of Determination (CA Governor)
 - OR Governor Concurrence



Schedule for Environmental Compliance Track *

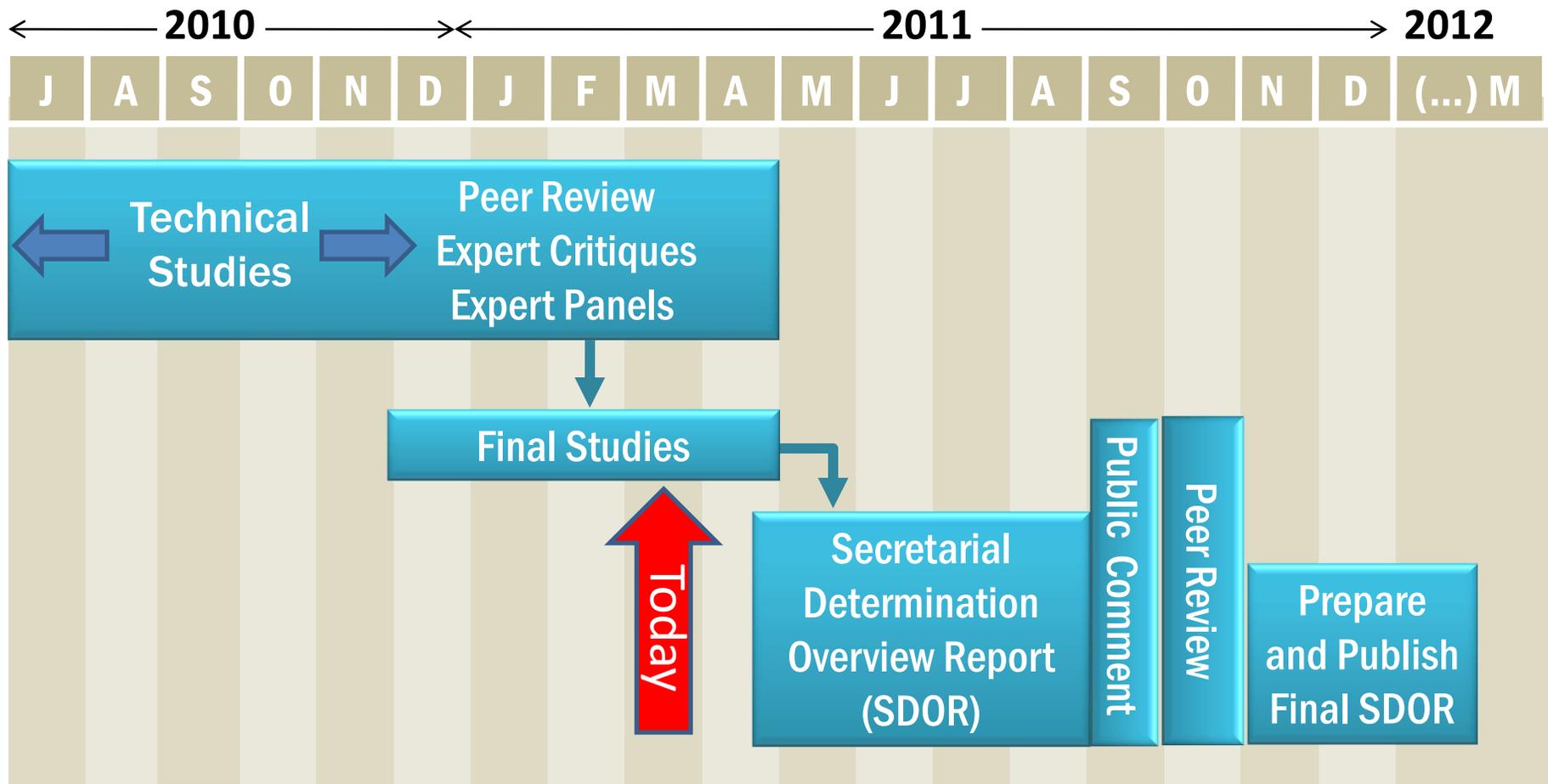


* Some milestones reflect target dates. Graphic will be updated accordingly.

Klamath Settlement



Schedule for Secretarial Determination Technical Studies Track *

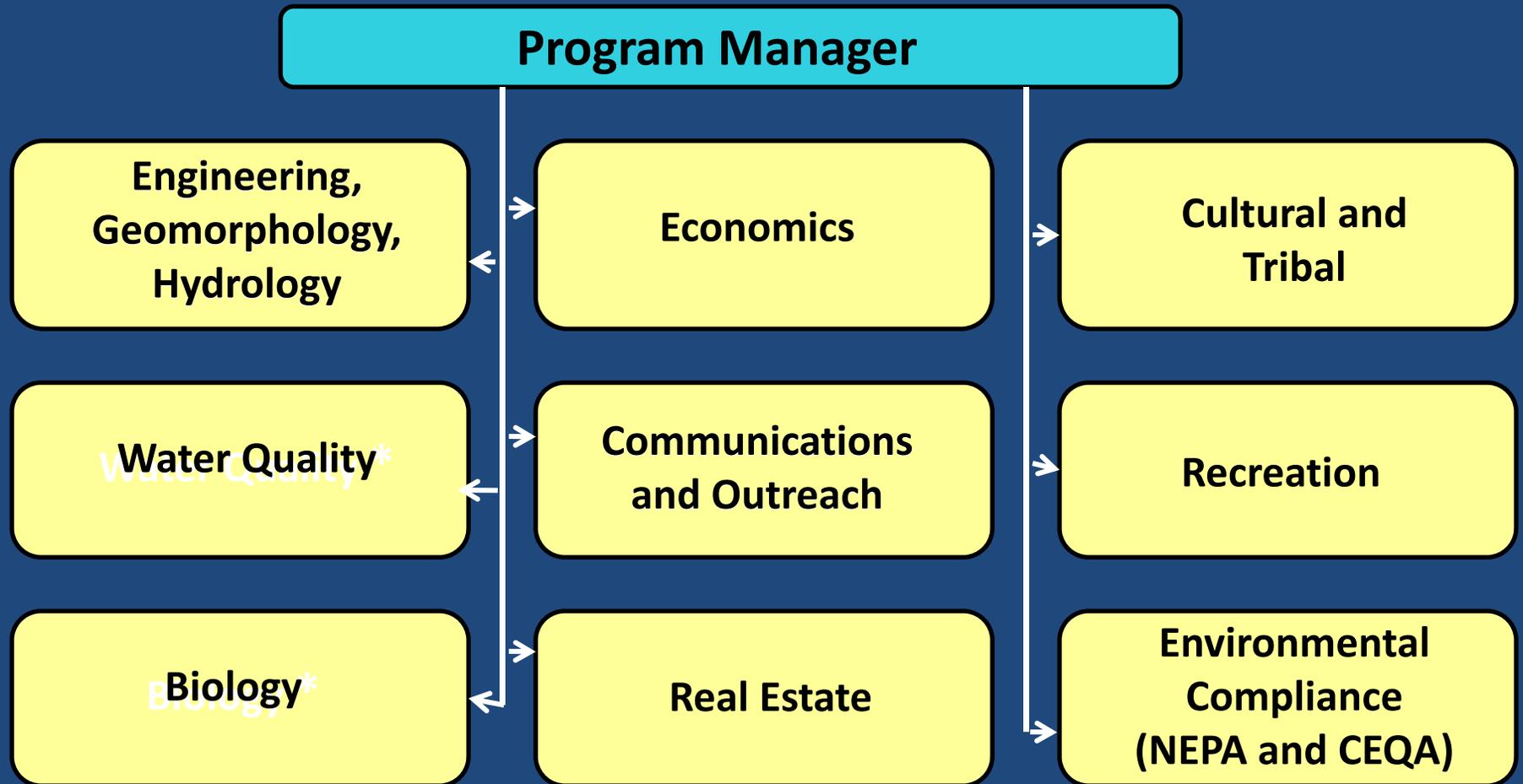


* Some milestones reflect target dates. Graphic will be updated accordingly.

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Secretarial Determination Team



Agencies: BOR, FWS, NMFS, BLM, BIA, EPA, DOI, USGS, and USFS

Guidelines for Technical Studies to Inform the Determination

- Open and objective process
- High quality science and data
- Peer review of new reports
- Public updates and comments
- Focused on information gaps:
 - Detailed plan of dam removal/mitigations/costs
 - Effect on salmonid fisheries
 - Public Interest information



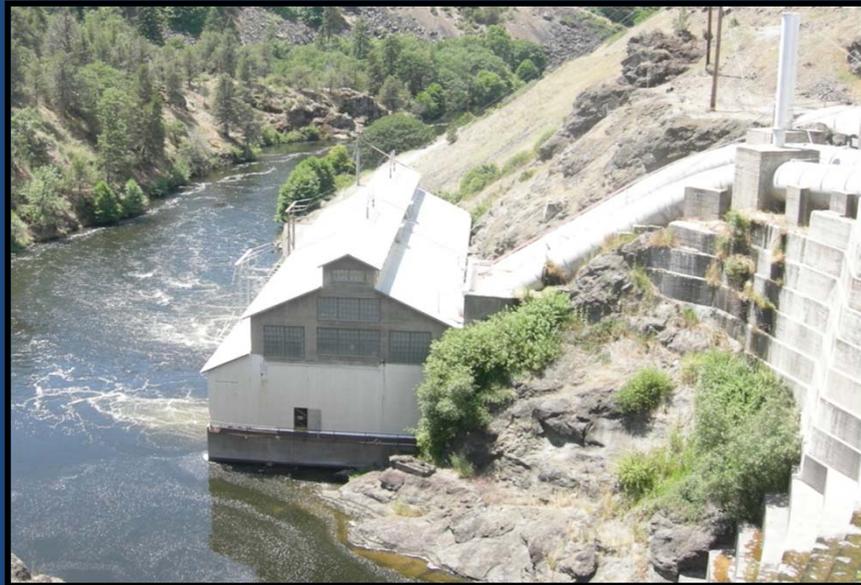
Dam Removal Detailed Plan

- Full Dam Removal:
 - Draft plan complete
 - Independent peer review complete
 - Response/revision to peer review – ongoing
 - Evaluation of mitigations and their costs -- ongoing
- Partial Dam Removal:
 - Structures that could safely remain
 - Free flowing river at all four dam sites
 - Unassisted fish passage

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Other Structures: Removed or Left Behind?



Dam Removal Detailed Plan -- continued

- Reservoir draw-down plans/timing
- Deconstruction methods and timing
- Material disposal sites
- Details of costs:
 - Low
 - High
 - Most probable



Dam Removal Mitigation Measures and Costs

- Mechanical sediment removal?
- Bottom sediment re-vegetation plan
- Culturally important sites
- Infrastructure:
 - Roads, bridges, and culverts near reservoirs
 - Yreka Water Supply
 - Ground water wells

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Flows and Lake Levels

- Hydrology is foundational for other analyses
 - Dam removal, sediment transport, biology, etc.
- Hydrology assumptions with dams:
 - Current biological opinions
 - 1961-2009 climate repeats
- Hydrology assumptions with agreements:
 - Free-flowing river at 4 dam sites
 - Programs in KBRA:
 - Irrigation limitations and voluntary purchase of water in upper basin, water to refuges, environmental flow, etc.
 - 1961-2009 climate repeats

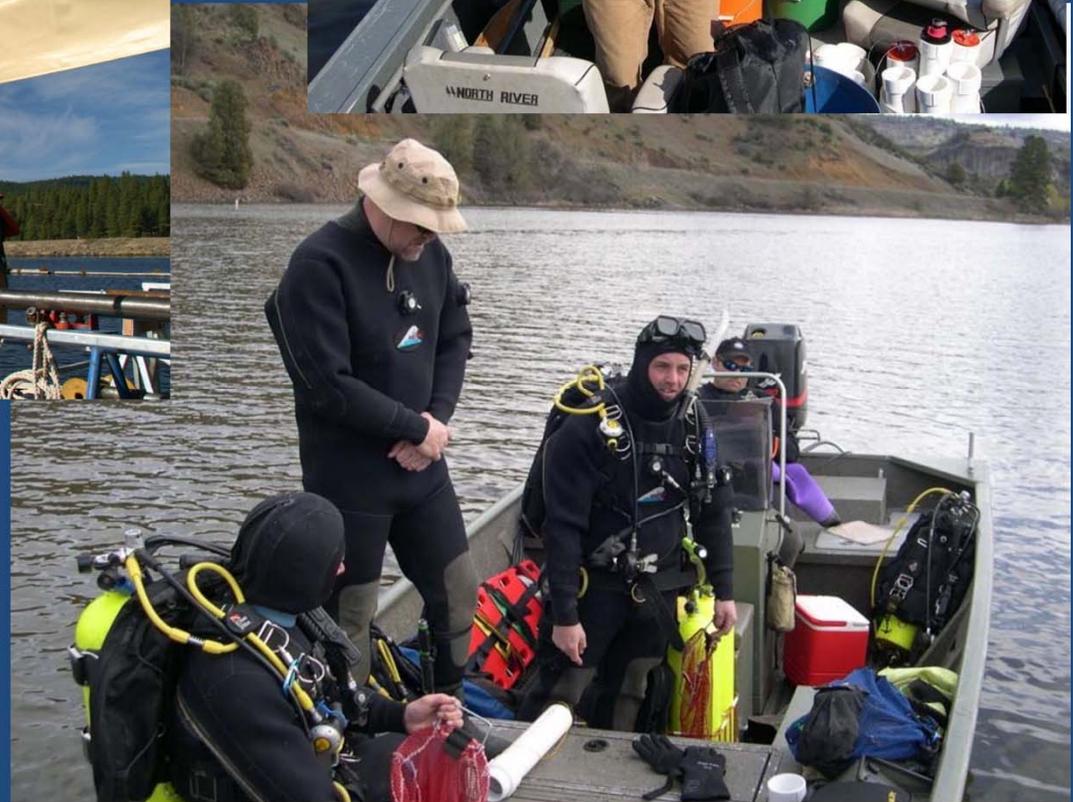
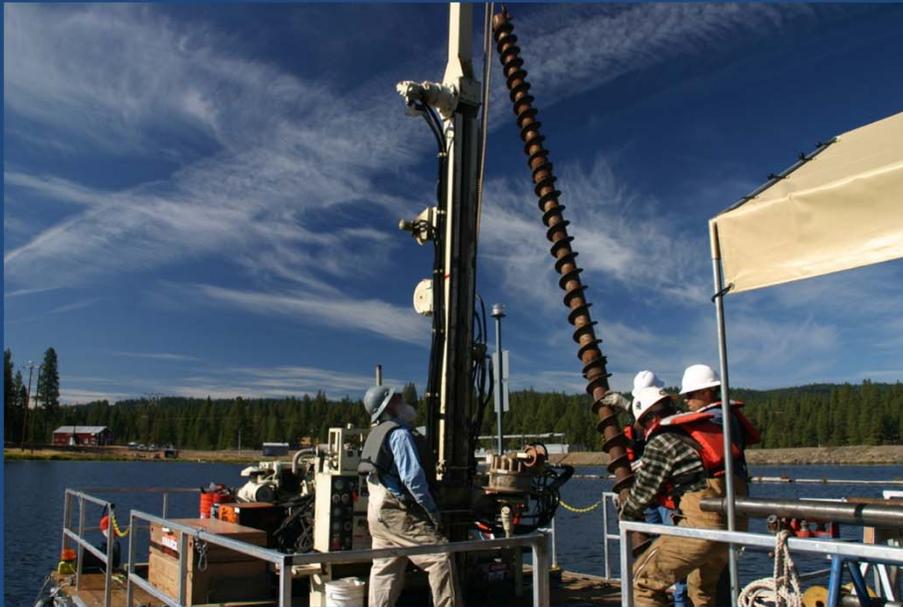


Studies of Reservoir Sediments

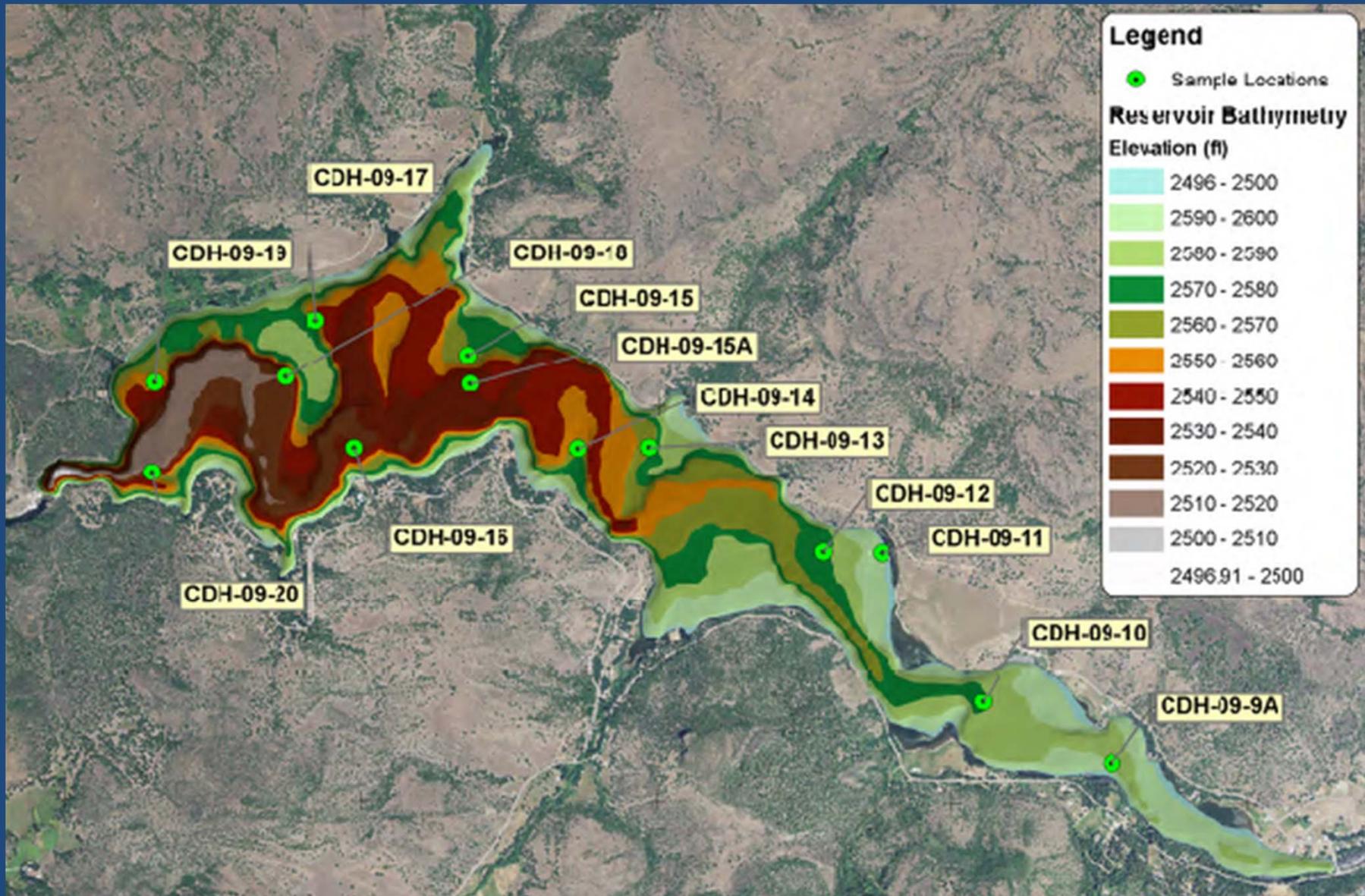
- Volume of sediment in each reservoir
 - Location of sediments
 - Physical characteristics
- Sediment transport, if eroded naturally
 - Effects of reservoir drawdown strategies
 - Effects of low, average, or high flow years
 - Downstream concentrations
 - Short and long-term effects on fisheries



Studies of Reservoir Sediment Chemistry



Copco 1 Sediment Sampling Sites



Preliminary Sediment Chemistry Results

- Sampled JC Boyle, Copco 1 and Iron Gate reservoirs
- Broad range of chemicals analyzed
- Data available at: KlamathRestoration.gov
- Confirmed previous study
- Generally low-levels of chemicals in sediments
- Dioxin twice “background” in Copco 1 and JC Boyle
- No risk to humans from direct sediment contact

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Fish Tissue Chemical Analysis – Human Consumption Evaluation

- From three reservoirs
- Analyzing for chemicals that bioaccumulate
 - Dioxins
 - PCBs
 - Pesticides
- Results around April 2011



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Would Agreements Advance Salmonids and Other Fish Species?

- Relies on hydrology, water quality, sediment transport, and water temperature analyses
- Chinook fish-production modeling
- Synthesis report on effects of KHSA and KBRA on multiple fish species
- Four independent fish expert panels



Fish Expert Panels

- Independent expert panels
 - Lamprey
 - Resident fish (suckers and trout)
 - Coho and steelhead
 - Chinook
- Would fish populations change with agreements?
- Technical reports/oral presentations -- done
- Findings published/posted by contractor at:
<http://www.pbsj.com/KLAMATHRIVER>



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Are These Agreements in the Public Interest?

- Federal team gathering information
- Public Interest determined by Secretary
- Identify potential risks and hazards, e.g.
 - Sediment chemistry
 - Potential for flooding
- Documenting non-monetary and monetary community effects



Non-Monetary Effects on Tribes

- Cultural values
- Subsistence fishing
- Other resources
- Ceremonial values
- Tribal member health
- Two tribal reports:
 - Existing effects of dams
 - Potential effects of agreements



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Monetary Effects

- Local effects on communities
 - Commercial fishing
 - Recreational fishing
 - Other recreational activities
 - Hydropower
 - Agricultural output/stability
 - Real estate
 - County tax bases
- Non-use valuation survey
 - measures national interest



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Effects on Jobs and Employment Stability

- Commercial fishing jobs
- Recreational jobs +/-
 - Fishing (reservoir, river, and ocean)
 - Rafting industry
 - Flat-water boating
- Lost hydropower jobs
- Agriculture job stability
- Jobs associated with
 - Dam removal (shorter term)
 - KBRA (longer term)



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Public Outreach on Secretarial Determination Issues

- Regular updates on KlamathRestoration.gov
- Posting of SD Science Studies
- Public input on EIS/EIR
- Public input on Secretarial Determination Overview Report
- Future public meetings and technical workshops
- Public Engagement Plan



Questions and Comments

KlamathRestoration.gov

Next Public Meeting: Orleans, CA, June 15, 2011

Formal Planned Public Comment Periods:

- Secretarial Determination Overview Report: Sept 2011
- Draft EIS/R: Sept and Oct 2011

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