Klamath Settlement

EIS/EIR PROCESS

Klamath Dam Removal Draft EIS/EIR Hearing

October 2011

Dennis Lynch,
USGS, Portland, OR
Program Manager

60-day comment period:
Sep 22 to Nov 21, 2011

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How We Got to this Point – Status Quo is Not Working

Recent Klamath Basin History

- Basin-wide hardships for communities
- Large reductions in farm water deliveries
- Major adult salmon die off
- Juvenile salmon disease
- Closed ocean salmon fishing
- No salmon in upper basin for over 90 years
- Ongoing water shortages for wildlife refuges
- Reservoir algal toxin health advisories
- High cost and uncertainty for dam relicensing

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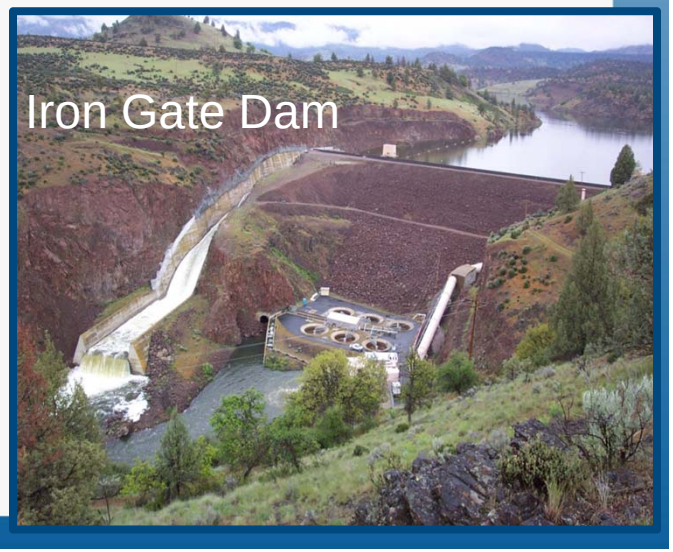
Klamath Agreements

Klamath Hydroelectric Settlement Agreement (KHSA)

- Proposal to remove 4 PacifiCorp dams in 2020
- Advance salmonid fisheries and in public interest
- Proposed Action in this Draft EIS/EIR

Klamath Basin Restoration Agreement (KBRA)

- Connected action to the KHSA
- Fish habitat restoration programs
- Fish reintroduction programs
- Assurances of water for farms and wildlife refuges



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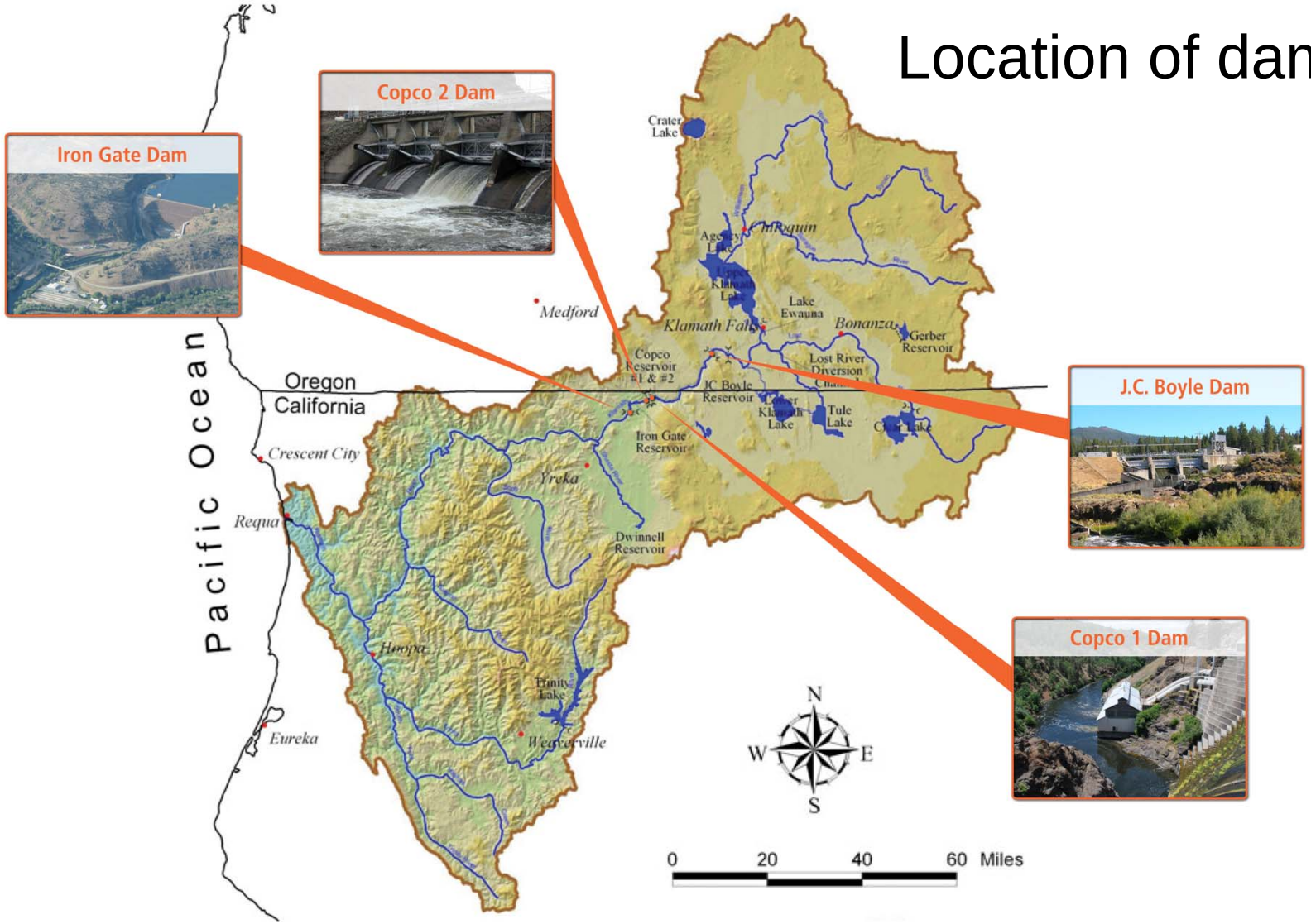
Klamath Basin Map

Location of dams



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Five Alternatives Analyzed in Detail in EIS/EIR

Alternative 1 – **No Action/No Project**
(Required)

Alternative 2 – **Full Facilities Removal of Four Dams**
(The Proposed Action)

Alternative 3 – **Partial Facilities Removal of Four Dams**

Alternative 4 – **Fish Passage at Four Dams with Flow Requirements**

Alternative 5 – **Fish Passage at J.C. Boyle and Copco 2, Removal of Copco 1 and Iron Gate Dams**

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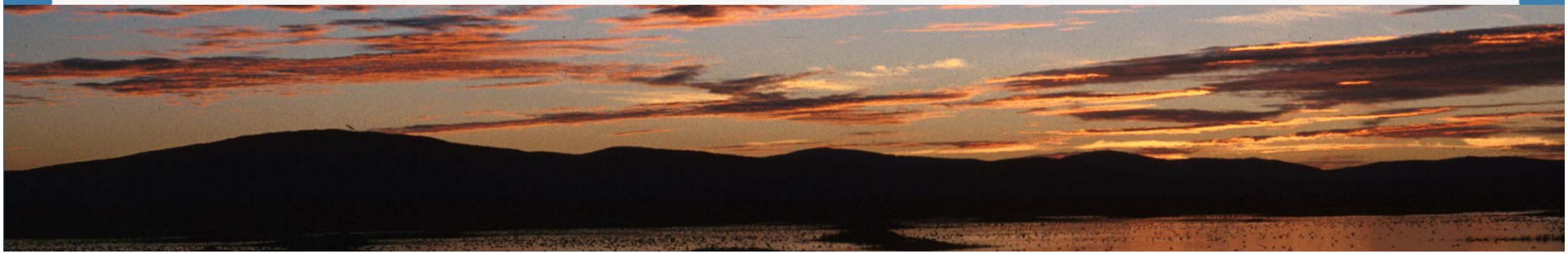
Short-Term Adverse Impacts to the Environment

- **Release of reservoir bottom sediments (alts 2, 3, 5)**
  - Minimized by winter release in a single year
  - Relocation of impacted aquatic species
  - Lethal effects and stress on some fish (1 to 2 years)
- **Water-quality impacts (alts 2, 3, 5)**
  - Low dissolved oxygen
  - Impacts for 2 to 3 months
- **Construction-related impacts (alts 2, 3, 5)**
  - Notable noise, vehicle air emissions, dust, and vibrations



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Long-Term Adverse Impacts to the Environment

- **Loss of hydroelectric power for all the action alternatives**
- **Increases green house gas (GHG) emissions as replacement power is brought on line**
  - Largest for alternatives 2 and 3 (removes 4 dams)
  - Less for alternative 5 (removes 2 dams)
  - Smallest for alternative 4 (fish passage with flow requirements)

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Long-Term Improvements to the Environment

- **Water quality**
  - Removal of dams (alts 2, 3, 5)
    - Improves summer & fall water temperatures
    - Improves summer & fall dissolved oxygen
    - Improves algae and algal toxins
  - KBRA programs (alts 2, 3)
    - Achieves OR and CA TMDL goals more quickly
      - Upper Klamath Lake -- algae
      - Keno Reach – dissolved oxygen

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Long-Term Improvements to the Environment

- **Higher base flows at Iron Gate Dam (alts 2 and 3)**
  - Target low flow of 800 cubic feet per second (cfs)
- **More frequent flushing flows and bed movement**
  - Potential to reduce juvenile salmon disease
- **Sufficient water deliveries to National Wildlife Refuges in 9 of 10 years**

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Long-term Improvements to the Environment

Fishery benefits for <u>all</u> the action alternatives

- Opens upper basin habitat (> 400 stream miles)
- Provides access to thermal refuge areas in upper basin
- Volitional fish passage through hydroelectric reach
- Reduces adult salmon crowding and less disease
- Reduces or eliminates stranding of fish in hydroelectric reach

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Long-Term Improvements to the Environment

Fisheries benefits from <u>only</u> alternatives 2 and 3:

- Increases fish habitat restoration
- Opens all habitat in a free-flowing river up to Keno
- Maximizes recruitment of gravel for spawning
- Optimal fish passage in a free-flowing river up to Keno
- Peak flows to reduce juvenile salmon disease
- Higher base flows in dry years
- Salmon reintroduction program

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Long-Term Changes in Fisheries for Alternatives 2 & 3

- **Increases in steelhead and redband trout fisheries**
- **Smaller increases in coho salmon**
- **Modeled Chinook fisheries increases (averages):**
  - 81% increase in overall Chinook production
  - 46% increase in commercial & sport ocean harvest
  - 55% increase for tribal in-river harvest
  - 9% increase for recreational in-river harvest

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Longer-Term Adverse Impacts to Communities

Impacts of alternatives 2 and 3

- Cultural Resources – possible exposure of burial and other culturally sensitive sites, and removal of historic dams
- Real Estate -- decreased value of view and water-front properties near Copco I and Iron Gate Reservoirs
- Recreation -- loss of recreation on the reservoirs and some whitewater rafting below JC Boyle Dam = 18 jobs

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Longer-Term Adverse Impacts to Communities

Impacts of alternatives 2 and 3

- Flooding – 1 to 2 feet increase in 100-year flood elevations for about 5 miles downstream of Iron Gate Dam
- Loss of dam operation and maintenance = 49 jobs

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Beneficial Effects for Local Communities -- Jobs

Effects of alternatives 2 and 3

- Jobs from KBRA spending over 15 years = 4600 (average annual of about 320)
- Dam removal jobs in 2020 = 1400
- Saves agricultural jobs in drought years = 70 to 695
- Wildlife refuge recreational jobs = 5
- Recreational salmon fishing jobs = 9

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Other Beneficial Effects for Local Communities -- Jobs

Increase of 453 jobs (annual average) for commercial fisheries, spread among five management areas

- Central Oregon Coast = 136
- KMZ-OR (Curry County) = 11
- KMZ-CA (Humboldt and Del Norte Counties) = 19
- Fort Bragg = 69
- San Francisco = 218

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Other Beneficial Effects for Local Communities – Tribal

Tribal benefits (alts 2, 3)

- Salmon and steelhead return to upper basin; not seen by Klamath Tribes for over 90 years
- Improves chances of recovery for two endangered sucker species in upper basin
- Improves salmon fisheries in the lower basin
- Improves water quality (algal toxins) in lower basin
- Benefits to tribal way of life -- subsistence, health, jobs, ceremonies, and spiritual well being

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EIS/EIR Timeline

Public comments Sep 22 to Nov 21, 2011

Preparation of a Final EIS/EIR Feb 28, 2012

- Preparation of responses to public comments

Record of Decision March 30, 2012

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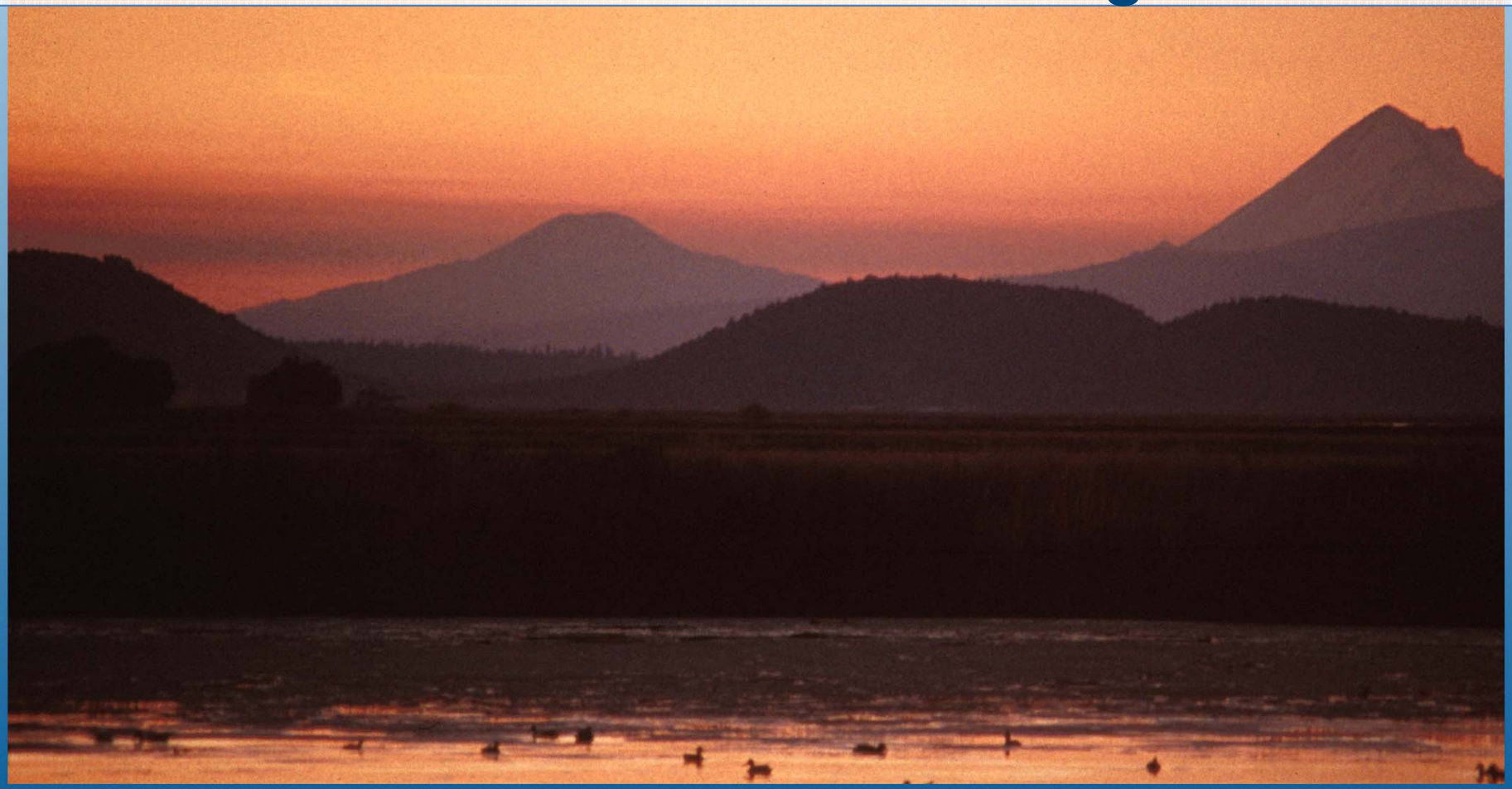
For More Information

www.KlamathRestoration.gov