

Klamath Science Meeting Summary

May 9, 2008

Summary

Federal, state, tribal and other scientists that work in the Klamath Basin met on April 10th and 11th in Mount Shasta, California to review the potential fishery benefits and risks associated with the Proposed Klamath Basin Restoration Agreement. This is a summary of the meeting.

The Fish and Wildlife Service is revising the paper *Compilation of Information to Inform USFWS Principals on Technical Aspects of the Klamath Basin Restoration Agreement Relating to Fish and Fish Habitat Conditions* based on oral comments received at the meeting and written comments from meeting participants. A revised paper is expected in mid-May. Comments from Thom Hardy, Greg Kamman, and Robert Franklin are attached to this summary. Comments from Bill Trush will be added as soon as they are available.

Purpose Statement for Meeting: “To achieve a common understanding and knowledge of existing data and analyses related to potential fishery benefits and risks associated with implementation of the proposed Klamath Basin Restoration Agreement. We will achieve this purpose by engaging in a facilitated discussion of the draft agreement’s projected Klamath River flows and biological benefits for fish and wildlife.”

Technical Review of Klamath Basin Restoration Agreement

The participants reviewed the flow and restoration measures in the Proposed Klamath Basin Restoration Agreement. The review included:

- Fishery Program
 - Fisheries habitat restoration measures.
 - Fisheries reintroduction measures.
 - Fisheries Monitoring Plan.
- Dam removal.
- Water Program
 - Agricultural allocation and water rights retirement programs
 - In season management
 - Technical Advisory Team
 - Environmental Water.
 - Projected Instream Flows
 - Headwaters to Keno
 - Keno to Iron Gate
 - Iron Gate to estuary
 - Upper Klamath Lake levels
 - Discuss water availability assumptions and level of uncertainty

- Protection measures—Groundwater
- Drought Plan.
- Governance and Implementation of the Basin Agreement.

Klamath Basin Restoration Agreement Issues

Participants discussed and clarified a number of elements in the proposed Agreement. Issues included:

- **Operation of Keno Dam:** Once the four PacifiCorp dams are removed, Keno Dam will be operated with no peaking for electricity generation. Reclamation and Fish and Wildlife Service staffs will develop a plan to address ramping.
- **Groundwater pumping:** The USGS model will be used to evaluate the impact of groundwater pumping on springs. If the impact exceeds 6 percent of 2000 levels at any of the index streams the Agreement includes requirements to remedy the impacts. State agencies clarified that it is very difficult to get new permits for groundwater pumping. Oregon Department of Water Resources indicated that under existing Oregon water law, groundwater pumping may not impact surface flows in streams.
- **Uncertainties:** Participants discussed the assumptions used in the WRIMS modeling and whether the actions assumed in the modeling are likely to occur. Issues included:
 - **Retirement of Upper Basin water rights:** Participants felt these actions had the least certainty; the Agreement has a voluntary program to reduce water diversions by 30 KAF. The modeling of this action is conservative in one respect because it assumes average gains in dry years when gains are likely to be greater.
 - **Additional storage:** Participants believed that the measures to increase storage in Upper Klamath Lake by 100 KAF were likely to occur given the proposed wetland restoration activities that have been implemented or are being planned.
 - **Project water use:** the model assumes full use of the sliding scale allocation of 330,000 to 385,000 acre feet and that the full 385,000 acre feet allocation will be used in all wet years; this was viewed as a conservative assumption because historically irrigators did not use this much in wet years.
 - **Evaporation losses in Upper Klamath Lake:** the model assumes 4 feet per year per acre; this was viewed as a conservative estimate and actual evaporation is expected to be lower.
 - **Evaporation losses at PacifiCorp dams:** the modeling did not assume any gains when there are no longer evaporation losses from the reservoirs behind the four dams. The estimated gain is 8 KAF per year.
 - **Drought Plan:** the model did not assume any increases in in-river flows during drought years. However, it is anticipated under the Settlement Agreement that the Drought Plan will entail some reductions in diversions.
 - Uncertainty is also a factor in the status quo.

Science Review

Participants discussed the biological benefits provided by the Basin Agreement.

U.S. Fish and Wildlife Service Paper: Nick Hetrick and Tom Shaw provided a presentation on their draft paper: *Compilation of Information to Inform USFWS Principals on Technical Aspects of the Klamath Basin Restoration Agreement Relating to Fish and Fish Habitat Conditions*. The Executive Summary is attached to this summary. Key conclusions include:

- Implementing the water allocation proposed in the Agreement prior to dam removal using Real Time Management (RTM) would significantly improve production potential of fall Chinook salmon below IGD in years resembling historic low and average production years.
- The removal of the Iron Gate, J. C. Boyle, and Copco 1 and Copco 2 complex of dams will provide the single greatest contribution to the recovery of native anadromous fish populations, as needed to support full participation in ocean and in-river harvest opportunities.
- The benefits to the Klamath River and its dependent fisheries will begin to be realized in the interim period leading up to dam removal, with a higher probability of significant improvements occurring once the dams are removed.
- The timing and magnitude of improvements, however, will largely depend on the timing and degree to which the suite of restoration and management actions identified in the Agreement are fulfilled

Discussion Issues:

- **Benefits for Scott and Shasta fish:** There are not many specific actions in the Agreement for these rivers. In the discussion, participants noted that there is funding assumed in the Agreement for these areas. They also discussed the benefits from lowered main stem Klamath River temperatures when dams are removed. These factors should improve survival both upstream adult migrants and out-migrant juveniles for all anadromous species.
- **Low river flows:** Robert Franklin provided analysis showing that it was not possible to meet low flow criteria including ESA requirements, fish-kill avoidance, and the 1,000 cfs minimum flow in Hardy Phase II flows during some months in a number of years. Most participants assumed that the water bank, in-season management, and Drought Plan will help address some dry years. Thom Hardy indicated that the real concern in flows below 1,000 cfs was an increased risk from disease and thermal effects; removal of the dams would help address this concern and the threshold flows at which significant concerns over thermal and disease factors will more likely be on the order of 700 to 800 cfs.

- **Coarse sediment management:** There appeared to be a consensus that additional actions may be needed to ensure more natural spawning habitat. Larry Dunsmoor, in consultation with other science staff drafted the following language as a potential insert for Sections 10.1.2 or 10.2.2:

Within the context of the availability of funding and the outcome of a comprehensive assessment of fisheries restoration needs, coarse sediment management in the mainstem Klamath River between Keno Dam and the Shasta River confluence will be pursued with the goal of ensuring sufficient coarse sediment supply to replenish existing in-river coarse sediment storage capacity, and to sustain it over time. Once the existing in-river storage capacity has been replenished, the biological benefits of increasing and sustaining storage capacity will be evaluated and implemented as appropriate.

- **Natural hydrograph:** there was concern that the Agreement does not achieve the full characteristics of the historic hydrograph. Other participants felt it was a significant improvement over the status quo.
- **Fish targets:** Several participants believed that the Agreement should include specific targets for fish production, harvest and escapement. Other participants felt that the qualitative goals in the Agreement were appropriate. Several basin tribes oppose setting numerical fish goals, while the Hoopa Valley Tribe is a proponent.
- **Limiting factors:** There was discussion on whether the Agreement should contain specifics on limiting factors. Other participants stated that the key limiting factors are known: the dams and water availability.

Next Steps: FWS will incorporate comments into a revised paper that is expected in mid-May.

Other Recommendations

- There appeared to be a consensus that the final Fish and Wildlife Service Report should be referenced in the Klamath Basin Restoration Agreement.
- There appeared to be a consensus that a laypersons summary of the Hetrick et al. paper would be helpful.
- The group also discussed the benefits of an executive summary, including the biological benefits, at the beginning of the Agreement to provide a fuller context for the actions in the document.

Science Meeting Participants

Larry Dunsmoor, Thom Hardy, Bill Trush, Greg Kamman, Mike Belchik, Dave Hillemeier, Tom Shaw, Nick Hetrick, Robert Franklin, Daniel Jordan, George Robison, Curtis Knight, Keith Shultz, Jon Hicks, Jim Simondet, Toz Soto, Sue Corum, Glen Spain, Jim Dupree, John Hamilton, Laurie Simons, Roger Smith, Cindy Smith, USGS, Julie Perrochet, Dave Hogen, Mark Smelser, Mark Hampton, Mark Rockwell, Jim DePree, and Ed Sheets.

Participants in Policy Briefing (2:30 pm on April 11, 2008)

Brian Barr, Lyle Marshall, Phil Detrich, Irma Lagomarsino, Pablo Arroyave, Tom Schlosser, John Corbett, Troy Fletcher, Craig Tucker, Steve Kandra, Dave Solem, Gary Stacey, Steve Turek, Mary Graineey, Sue Knapp, Scott Williams, Annie Manji, Jeff Mitchell, Greg King.