ATTACHMENT #3

TRRP Fall Flow Criteria Evaluation Process 2012

The Fall Flows Subgroup of the TRRP Flow Workgroup will investigate the need for flow augmentation during the late summer and fall of 2012 based on predicted Dry or Critically Dry conditions and the large projected run of Klamath Basin fall Chinook salmon. The process by which the Fall Flows Subgroup will formulate flow management recommendations in 2012 is outlined below and is based on the 2010 and 2011 Fall Flow Criteria and Evaluation Process as described in the March 20, 2012 Memorandum (see attached) . 2010 and 2011 Fall Flow Criteria are summarized below.

Proactive Fall Flows Release Criteria and recommended **Management Action.**

Proactive Criteria	**Management Action**
Flows projected above 2,800 cfs at Klamath River (RKM 13) during the adult fall-run Chinook salmon migration season (3rd week August-Sept 30)	No Proactive Fall Flow release
Flows projected below 2,800 cfs at Klamath River (RKM 13) during the migration season and projected fall Chinook salmon run-size at or above 170,000 fish	Implement Proactive Fall Flow release to increase base flows to 2,800 cfs during primary fall Chinook salmon migration season (3rd week August-Sept 30)
Flows projected below 2,500 cfs at Klamath River (RKM 13) during the migration season	Implement Proactive Fall Flow release to increase base flows to at least 2,500 cfs at Klamath River RKM 13 during the migration season regardless of projected fall Chinook salmon run-size.

Emergency Fall Flow Release Criteria and recommended **Management Action.**

Emergency Criteria	**Management Action**
No Proactive Fall Flow release is planned	
AND	
A single incidence of Ich is observed	Increase amount and intensity of Ich disease monitoring
Multiple severe confirmed Ich infections are observed	Implement immediate Emergency Fall Flow release with a 7 day duration pulsed spike to ***double pre-existing base flows*** at the time of Ich infections, followed by a bench release to increase base flows to the minimum recommended level of 2,500 or 2,800 cfs for the remainder of the migration season.

2012 Planning

The fall flow subgroup will convene in early April to plan, and consider any new data that can assist with informing the need, timing, and potential magnitude for a fall flow. This plan will be finalized in May and provided to managers to facilitate planning efforts. Fall flow forecasts to evaluate flow criteria and run size information will be assessed as the peak season for migration approaches to evaluate the need for a fall flow using the following tools:

Lower Klamath River Flows Forecast

1. Klamath River at RKM 13 flow forecasts and real-time discharges will be monitored by TRRP staff. Long range forecasts will be predicted using a tool developed by the National Weather Service California Nevada River Forecast Center available at http://www.cnrfc.noaa.gov/espTrace.php?id=KLMC1.
2. Starting in July, short term projected flows will be predicted as well using the National Weather Service Advanced Hydrologic Prediction Service 5-day forecast excluding reservoir releases for Klamath near Klamath, CA available online at: http://water.weather.gov/ahps/
3. Real-time flows are measured by the USGS Gauge #11530500 Klamath River near Klamath, CA available online at: http://waterdata.usgs. gov/ca/nwis/current/?type=flow.

2012 Fall Chinook Salmon Run-size Projections

1. The in-river run (prior to tribal and sport harvest after ocean harvest) of Klamath Basin fall Chinook (KRFC) salmon in 2012 is projected to be approximately 380,000 adult fish (Preseason Report II, March 2012).
2. We will discuss in 2012 how to project numbers for 2 year olds as these numbers cannot be predicted in the same way adults are predicted.
3. The Pacific Fishery Management Council (PFMC) will adopt 2012 ocean salmon fishery management regulations in April 2012.
4. Additionally, a large adult Klamath Basin spring Chinook salmon run is also expected, possibly as large as 85,000 adults.

References

Belchik, M., D. Hillemeier, and R.M. Pierce. 2004. The Klamath River Fish Kill of2002; Analysis of Contributing Factors. Yurok Tribal Fisheries Program. 42pp.

Pacific Fishery Management Council. 2012. *Preseason Report II: Stock Abundance Analysis and Environmental Assessment Part 1 for 2012 Ocean Salmon Fishery Regulations.* (Document prepared for the Council and its advisory entities.) Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, Oregon 97220-1384.

Strange, J.S., 2010. Summary of scientific evidence to guide special flow releases to reduce the risk of adult fall Chinook salmon mass disease mortality in the lower Klamath River. TRRP. 17 pp.

Turek, S., M. Rode, B. Cox, G. Heise, W. Sinnen, C. Reese, S. Borok, M. Hampton, and C. Chun. 2004. September 2002 Klamath River Fish-Kill: Final Analysis of Contributing Factors and Impacts. California Department of Fish and Game. 183pp.