MEETING SUMMARY

Ad Hoc Tule Chinook Workgroup

Pacific Fishery Management Council
Large Conference Room
7700 NE Ambassador Place, Suite 101
Portland, Oregon, 97220-1384
503-820-2280
September 30, 2010

The Ad Hoc Tule Chinook Workgroup (TCW) met at 9 a.m. on September 30, 2010 in the Pacific Fishery Management Council office large conference room. In attendance were:

Ray Beamesderfer (RB), Cramer Fish Sciences	Tom Stahl (TS), ODFW
John North (JN), ODFW	Matt Falcy (MF), ODFW
Guy Norman (GN), WDFW	Cindy LeFleur (CL), WDFW
Stuart Ellis (SE), CRITFC	Tom Cooney (TC), NMFS NWFSC
Larrie LaVoy (LL), NMFS NWR	Peter Dygert (PD), NMFS NWR
Bob Turner (BT), NMFS NWR	Chuck Tracy (CT), Council Staff

The TCW reviewed Council process and schedules associated with developing an abundance based harvest management approach for lower Columbia River (LCR) natural tule Chinook. Significant dates and work products included:

- November 2010 - A brief progress report for the Council meeting, with a briefing book deadline of October 15.
- December 2010 – Next meeting of the TCW and development of a progress report for the Recovery Board and for NMFS consideration in developing guidance on 2011 Council and Columbia Basin fisheries.
- April 2011 – Determination if a viable approach was likely to be developed in time to be integrated with the Council's 2011 salmon methodology review process.
- June 2011 – Possible brief progress report for the Council meeting.
- September 2011 – Determination if the final report write-up would be ready for review during the October salmon methodology review meeting, and if possible, including the final report in the September briefing book (deadline of August 23).
- October 2011 – Presentation of final report at the Scientific (SSC) Salmon Subcommittee and Salmon Technical Team review of proposed salmon methodology changes.
- November 2011 - Presentation of final report to the full SSC and Council for approval. If approved by the Council, the final report would be forwarded to NMFS for consideration in Endangered Species Act (ESA) consultations and guidance to the Council.

The TCW noted there were several abundance based approaches being used for various salmon stocks and fisheries including:

Puget Sound coho	Klamath River fall Chinook
Oregon Coastal Natural coho	Lower Columbia Natural coho
Columbia Up-River brights	

Pacific Salmon Commission's aggregate abundance based management

The merits of several of these approaches were discussed and evaluated with regard to potential application to LCR tules.

Discussion points included:

GN - Objectives for the process were to reduce risk to the natural populations at low escapement levels while providing opportunity to harvest abundant stocks at higher abundance levels. The abundance metric should include an aggregate of both hatchery and natural tules to address both objectives. This will also help address data quality issues for wild fish populations, which is generally poor, but improving. This process should take advantage of new information when available. An initial approach could be to look at exploitation rates (ER) ±5% from the current 38% anchor point.

LL – suggested aggregate abundance should be scaled to hatchery release level to reduce uncertainty from production changes.

GN – An alternative would be to look at abundance later in the life history to account for marine survival.

TC – Suggested risk reduction should have a temporal scale, e.g., reduce risk more if abundance is low for consecutive return years.

LL – Suggested comparing wild population trends with hatchery trends to see how well an aggregate abundance tracks with wild population status.

TC – Recommended starting with Coweeman, East Fork Lewis (EFL), and perhaps Washougal natural populations, and to look at marine environmental factors for both hatchery and natural stocks.

TS – Recommended integrating weak stock management per the recovery plans into the analysis when sufficient information was available, including predictors that are used in the short-term.

PD – Noted that various wild populations have different ER limits.

LL – Noted that marine environmental factors affect 2-3 Chinook broods for a given return year, unlike coho where only one brood is affected.

TC – Proposed using an aggregate hatchery/natural stock approach that accounts for variability in return rates of component stocks. Marine environmental indices could also be incorporated.

CL – Proposed that age specific forecasts should also be investigated, and the effects of mark-selective-fisheries (MSF) should be considered at some point.

PD – Asked how merits of various strategies would be assessed.

TC – Species Life-Cycle Analysis Module (SLAM) model would be one possibility as it was set up to assess risk of variable harvest rates.

RB – Suggested quasi-extinction risk, escapement, proportion hatchery origin spawners (pHOS), and economics would be appropriate metrics, and they are typical outputs for several models. The results for each model should be similar as long as input data are consistent. The model used for the Lower Columbia Recovery Board was the one he was most familiar with. The initial step would be to define parameters, then conduct a trial run, and refine parameters later.

TC – Asked if this exercise would be looking at different base rates or just variations of existing base rate (38%).

PD – Replied the latter, at least initially.

BT – Recommended defining the relationship between harvest rate and recovery, and taking a simple approach first.

PD – Noted that pHOS reduction was partially dependent on harvest rate.

GN – Felt that was a related task affecting recovery, along with MSF.

TS – Asked if the Coweeman and EFL would be indicator stocks. Concerned that weak stocks without pHOS problems could be overexploited in an effort to reduce pHOS on other stocks.

PD – Replied that Coweeman and EFW were not necessarily indicator stocks, just the initial stocks included in the aggregate because of data quality.

GN – Noted that the MSF model being used by Lars Mobrand can assess effects on individual populations in the Columbia.

CL – Suggested defining acceptable risk, then determine ERs based on the model.

RB – Replied that would be possible but there would be different risks to the various populations. The model could determine what aggregate abundance based approach would result in similar balance of risks as a 38% constant ER limit, and population specific effects could be examined in more detail.

PD – Suggested using Chinook Fishery Regulation Assessment Model (FRAM) to determine effects on fisheries, with the goal of determining a minimum ER that would keep fisheries viable.

JN – Felt ER bounds should have a biological basis (risk to recovery) rather than be determined based on what fisheries can afford.

LL – Replied that a retrospective analysis from Chinook FRAM based on lower ER limits could provide insight.

RB – Indicated that biological limits could be subjective, so an analysis of fishery effects would help inform decisions.

GN – Asked if uncertainty in forecast when abundance is high could be accounted for.

RB – Replied yes.

Meeting Summary
The initial objective would be to explore increased fishery flexibility while keeping risks neutral. Subsequently, scenarios to reduce risk and maintain some fishery flexibility could be explored.

An example exercise will be attempted using the current 38% ER limit as a reference point for assessing risk, with ERs of 33%, 38%, and 43% associated with abundance levels of <20%, 20%-80%, and <80% of some average. The initial approach would be based on aggregate hatchery/natural tule abundance, standardized for hatchery release levels. The analysis will then be refined using actual abundance frequencies (with possible consideration of weighting recent abundance estimates), an assessment of correlation between natural and hatchery abundance, forecast uncertainty, and possibly marine environmental indicators.

A retrospective fishery analysis will be conducted to refine sideboards for ERs that would maintain viable fisheries.

Eventually, an approach should be considered that does not assume any specific ER anchor point and over which harvest options are assessed to determine risk to both population and fishery viability.

Follow-up assignments, products, meetings:
Retrospective fishery analysis – LL.
Risk analysis, initial matrix approach – RB.
Forecast uncertainty and age specific errors – CL.
Marine environmental indicators principal components analysis for predictors – MF.
Data sources from Scheuerell Report – TC.
Data Sources from Rupp et al. – CT.
November 6, 2010 progress report to Council – PD.
December 9, 2010 – Next TCW meeting to review products, plan next steps, and draft progress report for submission to NMFS Recovery Board before end of the month.

PFMC
11/03/10