



**PACIFIC SALMON COMMISSION WORK PLAN**  
**2016-2017**

**Panel / Committee:**

The Chinook Technical Committee reports to the Pacific Salmon Commission.

**Date:** PSC Fall Session - October 3-7, 2016

**Update on Bi-lateral Tasks Assigned Under the Current PSC Agreement:**

***1. Annual Reports***

**Progress This Past Cycle:** The CTC typically produces two annual reports each year: the Catch and Escapement (C&E) report and the Calibration and Exploitation Rate (CLB&ER) report. The CTC has not yet published the 2015 or 2016 CLB&ER reports. As per instructions from the bilateral CIG, finalizing the 2015 document will require separate reports, one on the exploitation rate analysis portion prepared by the bilateral CTC and one on the 2015 PSC Chinook Model calibration portion prepared by individuals that wish to participate. Work on both the 2015 and 2016 CLB&ER reports was negatively impacted during this cycle by the need for the Analytical Work Group (AWG) to focus attention on the base period recalibration of the PSC Chinook Model and to complete other assignments from the Commission. The 2016 C&E report was finalized in July of 2016.

**Anticipated Progress this Cycle:** The 2017 C&E (data through 2016) and 2015, 2016 and 2017 CLB&ER reports are anticipated to be completed in 2017.

***2. Model Improvements***

**Progress This Past Cycle:** Progress was made on five specific Model Improvement initiatives:

1) Base period calibration of the Chinook Model: The AWG began work on the base period calibration of the PSC Chinook Model in 2009 and this work continued this cycle based on the February 10<sup>th</sup> Model Action Plan developed bilaterally by the Chinook Interface Group (CIG).

Preliminary base period calibrations in 2014, 2015 and 2016 expanded the number of stocks (Phase I) and the number of fisheries (Phase II) to more accurately reflect AABM and ISBM management. At the PSC Fall meeting, the CTC will report progress on the Phase I and II work, and present preliminary results of the new base period Model calibration.

Work on four key model improvement projects occurred during this cycle and will be completed either during this cycle or early in the next one. These are:

2) DGM (Data Generation Model): Work on this tool, which can be used to evaluate various fisheries metrics and alternative management models, is nearing completion by the contractor. Testing and validation by the CTC will be necessary.

3) ForecastR: ForecastR is a computer program developed to facilitate forecasting of Chinook returns and provide a statistical evaluation and decision-making framework for forecast model selection. Model improvement funds were used to develop most of the forecasting framework and a graphical user interface (GUI) is currently being developed using Southern Endowment Funds. The GUI will make Forecast R immediately accessible to forecasters. ForecastR will be available for agency use in 2017.

4) CIS (Chinook Integrated System): CIS is a Microsoft Access-based approach for storing all inputs and outputs for the annual exploitation rate analysis and Chinook Model calibration. The CIS is expected to improve speed and efficiency of many annual routine tasks. Further development of CIS is occurring this cycle using Chinook Abundance Based Management Implementation funds. CIS will be completed early in the next cycle. Testing and validation by the CTC will be necessary.

5) Maturation Rate and EV Investigation: The CTC-AWG was asked to evaluate the assumptions made for maturation rates and EVs used in the Chinook Model's forecasting procedure. The resulting investigation was submitted in a report (TCCHINOOK16-1) to the Commission in February. The recommendation to use a 9-year average for maturation rates and a 1-year EV was adopted by the Commission and implemented in the 2016 Model calibration procedure.

**Anticipated Progress This Cycle:** Several model improvements will be addressed this cycle.

1) Phase II of the base period calibration (BPC) is scheduled to be completed prior to the October 2016 PSC Fall meeting. A Chinook Model Calibration using this new BPC will be evaluated and, if it is deemed acceptable, will be used to translate the new time series of AIs into a new Table 1. A preliminary report on the BPC will be presented at the 2016 PSC Fall meeting and a final report including the translation of Table 1 is scheduled to be completed and presented to the Commissioners by June of 2017. A preliminary plan for Phase III of the BPC has been developed, including modeling mark selective fisheries, further stratification of time periods within a year, dividing fisheries into components when size limits differ, incorporating empirical estimates of legal and sub-legal Chinook releases, and enabling the use of pre-fishery ocean abundance forecasts in the model calibration procedure. The timing of work on Phase III will depend on Commission priorities, other CTC tasks relating to the renegotiation of Chapter 3 and available personnel and monetary resources.

2) DGM: The DGM should be completed this cycle. Testing and validation by the CTC will be necessary. The design specification for the next phase, which will include a model evaluation framework, is being developed. However, no Model Improvement funds remain. A new funding source will need to be identified if this work is to continue.

3) ForecastR: The stock forecasting tool will be completed and available for use in 2017.

4) CIS: Chinook Abundance Based Management Implementation Funding will be used to improve current functionality and introduce new functionality.

5) Maturation Rate and EV Investigation: No further work on this task is anticipated this cycle.

### **3. *Bilateral Data Standards***

**Progress to Date:** No progress was made on bilateral data standards during the 2015-2016 cycle.

**Anticipated Progress This Cycle:** Work on this assignment will occur at the direction of the Commission.

### **4. *Individual Stock Based Management Index***

**Progress to Date:** No progress on evaluating alternative ISBM indices was made during the 2015-2016 cycle. This task can be advanced when the DGM is completed and validated.

**Anticipated Progress This Cycle:** Progress on this task depends on two inputs. First, the CTC is waiting for guidance from the CIG regarding policy issues identified in memos to the CIG during January 2012 and February 2012. Second, the DGM is needed to perform quantitative evaluations of the metrics identified in TCCHINOOK(11)-4. The CTC will continue evaluating ISBM fisheries, per paragraph 13(d) and 13(e) and reporting the results in the annual CTC CLB&ER report. This evaluation was initiated in 2013.

### **5. *Escapement Goal Reviews***

**Progress This Past Cycle:** No escapement goals were presented to or adopted by the CTC during the 2015-2016 cycle.

**Anticipated Progress This Cycle:** Any escapement goals presented for review and acceptance will be evaluated by the CTC.

### **6. *Five Year Review (Chapter 3 Performance Review)***

**Progress This Past Cycle:** The Chapter 3 Performance Evaluation (C3PE) Report (TCCHINOOK16-2) was completed in May of 2016.

**Anticipated Progress This Cycle:** Errors in some of the data presented in the C3PE report have been identified and corrected information will be forthcoming.

## ***7. Attachments I-V***

**Progress This Past Cycle:** The review of Attachments I-V has not yet been addressed.

**Anticipated Progress This Cycle:** Like the Five Year Review, this task was assigned a completion year of 2014 in the current Agreement. The CTC could use information from the base-period calibration, CWT data, and available escapement indicator stocks to proceed on this task. Conceptual development of this task could proceed at the direction of the Commission in advance of completing the new base period calibration. The required analytical work could then proceed once data from the new BPC are available. The Commission may need to decide how to prioritize this task with other CTC tasks.

## ***8. Total Mortality (TM) Regimes***

**Progress This Past Cycle:** No work on implementing a Total Mortality regime occurred in the 2015-2016 cycle. The CTC is waiting for the Commission's instructions regarding when and how to proceed with implementation of a total mortality regime.

**Anticipated Progress This Cycle:** The CTC is waiting for direction and guidance from the Commission before proceeding on further TM work.

## ***9. Framework for Precautionary Management (PM)***

**Progress to Date:** No work on implementing a framework for Precautionary Management occurred in the 2015-2016 cycle. The annotated PM draft report was presented to the Commissioners at the October 2013 Fall Session and no further instructions have been received.

**Anticipated Progress This Cycle:** No further work by the PM Workgroup or the CTC is anticipated during this cycle.

## ***10. Recommended Research Projects***

**Progress This Past Cycle:** The CTC has not recommended, developed or reviewed project proposals, aside from those associated with Model Improvements. The Sentinel Stocks Program and the Coded Wire Tag Improvement Program have expired although some of the work funded by these programs is now being funded by the Northern and Southern Endowment Funds. Projects for 2017 are currently being evaluated for possible funding by the Endowment Fund committees.

**Anticipated Progress This Cycle:** The CTC will provide input to the Joint Fund Committees as directed by the PSC.

## ***11. Alternative Fishery Regulatory Measures***

**Progress This Past Cycle:** The differential impacts of mark-selective fisheries on marked and unmarked Chinook DIT stocks were again evaluated and will be reported in the CLB&ER report. A small subgroup of the CTC and others was also tasked with providing a review and recommendations concerning an alternative approach proposed by Alaska for managing the SEAK AABM fisheries (the CPUE-based winter troll fishery model). This task was completed during the February PSC Annual meeting.

**Anticipated Progress This Cycle:** The CTC will continue to evaluate and report on impacts of mark-selective fisheries in its future annual reports. CTC members will also continue to work on mark selective fishery issues with the Selective Fishery Evaluation Committee. Analytical methods have been, and will continue to be, discussed and developed in anticipation of incorporating mark selective fisheries in the CTC Exploitation Rate Analysis and the PSC Chinook Model calibration. Methods for modeling MSF impacts will be developed during Phase III of the base period calibration.

### **Obstacles to Completing above Bi-lateral Tasks:**

#### ***Time Constraints***

As in previous years, the primary obstacle is the amount of time and effort required to complete the large number of tasks assigned to the CTC under the 2009 agreement and the technical complexity of those tasks. Although the formation of smaller CTC workgroups to address individual assignments creates some efficiency, the necessity of assigning CTC members to multiple workgroups creates bottlenecks. There will undoubtedly be scheduling conflicts for workgroup meetings and CTC members will have to prioritize their workloads among the workgroups to which they belong. In the coming year, there will also be additional demands on CTC members to provide data and analyses in support of renegotiation of the Chinook chapter of the Treaty. It is difficult to predict the number and complexity of these assignments and additional bilateral CTC meetings beyond those detailed in this memo could be required.

#### ***Funding Constraints***

The MI funds paid for a large portion of AWG travel during the past six years. However, the funds were exhausted during 2016 and funds available for CTC travel may be limited due to budget constraints in both the Canadian and US sections. Meeting costs have the potential to significantly impact the CTC's ability to complete the ERA, PSC Chinook Model calibration, MI tasks, and annual reporting.

#### ***Policy Issues***

Progress could be hindered by policy issues that arise in the workgroups, and subsequent lack of resolution by the Commission.

### **Outline of Other Panel / Committee Tasks or Emerging Issues:**

None.

**Potential Issues for Commissioners:**

***CWT Sampling Programs***

The viability of the coastwide CWT program depends on stable funding for tagging, sampling and reporting programs. A funding source needs to be identified to maintain the integrity of the coastwide CWT program. The CWT program remains the only tool that provides the coastwide data required for implementation of the current PST Chinook agreement. The CTC requests that the Commission carefully consider the possible ramifications before Commission funds are used to explore alternative technologies such as PBT. This may have the unintended consequence of eroding and undermining the viability of the CWT program.

***Transition Planning***

During the past several years the CTC has lost three AWG members, and is anticipating the loss of additional AWG members in the near future. Succession planning is needed in order to provide continued capacity to implement and evaluate the requirements of Chapter 3 of the PST Agreement. Of particular concern is the loss of key programmers.

***Chinook Model Improvements***

As mentioned earlier, any modifications or improvements to the PSC Chinook Model, including the BPC, have the potential to alter the time series of AIs and the historical relationship between AIs and landed catches. When the historic estimates of these indices change the CTC will need guidance from the PSC in order to maintain the historic relation between catch and the abundance indices as specified under the current Agreement.

***Chinook Model Improvement Funds***

The CTC has exhausted all of the MI funds. Future MI work that cannot be accomplished during the CTC's usual course of business will need to rely on the US Chinook Abundance Based Management Implementation Funding, Northern or Southern Endowment Funds, or some new funding source.

**Potential Issues for Committee on Scientific Cooperation:**

None.

**Proposed Meeting Dates and Draft Agendas:**

Meeting Locations: The CTC proposes to hold all meetings in Seattle, Portland or Vancouver (PSC office) to reduce travel costs, with the exception of one meeting in Juneau, AK. The meeting schedule proposed for 2016-2017 includes seven full bilateral CTC meetings and three additional CTC-AWG meetings. The schedule also includes a US Chinook Abundance Based

Management Implementation Funding meeting. One of the proposed bilateral CTC meetings is designated for work on tasks that may result from renegotiation of the PST or other Commission assignments. However, additional CTC meetings may be required, depending on the number and scope of additional tasks assigned to the CTC.

**October 31-November 4, 2016.** The bilateral CTC will meet in Seattle, WA to review the base period recalibration of the PSC Chinook Model.

**December 1-2, 2016.** The U.S. CTC will meet in Portland, OR for the annual U.S. Chinook Abundance Based Management Implementation workshop. The U.S. CTC will review continuing and completed projects, and will develop a request for proposals for the 2017 Abundance Based Management funds.

**January 9-13, 2017.** The bilateral CTC will meet during the PSC Post-season meeting in Vancouver, BC. The CTC will work on outstanding annual reports, begin work on the 2017 C&E report and will work on other workgroup assignments as time permits. The AWG will begin work on the ERA through 2015.

**February 13-17, 2017.** The bilateral CTC will meet during the 32<sup>nd</sup> PSC Annual meeting in Portland, OR. The AWG will continue work on the ERA and begin work on the 2017 PSC Chinook Model calibration. The CTC will work on outstanding annual reports, begin work on the 2017 C&E report and will work on other workgroup assignments as time permits. The U.S. CTC will reach consensus on its LOA funding recommendations for 2017.

**February 27-March 3, 2017.** The bilateral CTC AWG will meet in Vancouver, BC to complete the annual Chinook ERA and continue work on the 2017 PSC Chinook Model calibration.

**March 13-17, 2017.** The bilateral CTC AWG will meet in Portland, OR to continue work on the PSC Chinook Model calibration and produce a final calibration. The CTC will report the 2017 preseason AIs and allowable catch targets for the AABM fisheries to the PSC Commissioners by April 1.

**April 24-28, 2017.** The bilateral CTC will meet in Seattle, WA to work on the C&E report and to work on outstanding CTC assignments. The AWG will work on the outputs for the CLB&ER report. The C&E report will be completed by June.

**May 13-14, 2017.** The bilateral CTC AWG will meet in Seattle, WA to get up to speed on the improvement to the CIS and to recreate the annual model calibration in CIS.

**May 15-19, 2017.** The bilateral CTC will meet in Seattle, WA to finish work on base period recalibration tasks and work on any tasks assigned by the PSC Commissioners related to the PST renegotiation.

**June 5-9, 2017.** The bilateral CTC will meet in Juneau, AK to finalize the C&E report and draft the CLB&ER report and continue work on outstanding CTC assignments. The CTC will also review progress on workgroup assignments to date and assign tasks for the summer.

**September 18-22, 2017.** The bilateral CTC will meet in Vancouver, BC to work on CTC assignments and complete the 2017 CLB&ER report.

**Status of Technical or Annual Reports:**

The 2016 C&E report is complete. The 2015 and 2016 CLB&ER reports will be completed in 2017 and the 2017 C&E and 2017 CLB&ER reports will be completed in 2017.

**Comments:**

The CTC has no additional comments at this time.