

- Final -
CRCIP AMT Quarterly Meeting Notes
April 10, 2013

The CRCIP Adaptive Management Team held its quarterly scheduled meeting from 9:30 am – 3:30 pm on April 10, 2013 at the Robert Duncan Plaza. The following AMT members, technical support personnel, and invited guests participated in person:

Greg Smith, USACE	Shyam Nair, E2	Steve Bartell, Cardno
Gretchen Smith, USACE	Ben Meyer, NMFS	ENTRIX
Antonio Baptista, OHSU	Kathy Roberts, FWS	Charles Seaton, OHSU
Toby Kock, USGS	Paula Calvert, ODEQ	Walter Pearson*
Jarod Norton, USACE		

*participated via teleconference

The following topics were addressed by the AMT participants during the April 2013 quarterly meeting:

January 2013 AMT Meeting Notes

Draft meeting notes for the January 2013 AMT meeting were provided to the AMT members prior to the April 2013 meeting. The draft meeting notes for the January 2013 AMT meeting were approved as final during the April 2013 meeting.

The finalized meeting notes for the January 2013 AMT quarterly meeting will be posted to the E2 CRCIP web site.

O&M and Project Mitigation Update

An update for operations and maintenance and project mitigation were postponed until the July 2013 AMT meeting.

AEM Workbook 1st Quarter Review for 2013

The relevant components of the CRCIP AEM Workbook were discussed at the April 2013 quarterly meeting.

MA-1 CORIE Analyses

The available data for the April 2013 AMT meeting reflect the previous and current status of the CORIE (CMOP) stations required for the MA-1 analyses. The following data were available for analysis prior to the April meeting:

cbnc3: temperature and salinity (no data)
grays: temperature, salinity and depth (January through March 2013)
tansy: temperature and salinity (January through March 2013)
woody: temperature (January through March 2013)
dsdma: salinity (no data)

Temperature

Daily median water temperature values calculated for the tansy station for the January – March 2013 period were generally within the 20th and 80th percentile decision criteria. Temperatures were lower in mid-January and ranged between the 5th and 20th percentile decision criteria, but subsequently returned to mid-range values for the remainder of the monitoring period.

For the January – March 2013 period, daily median values of water temperature computed for the grays station demonstrated a temporal pattern similar to the tansy station. With the exception of mid-January, when temperatures were generally lower and between the 5th and 20th percentile decision criteria, daily median values were within the 20th and 80th percentile decision criteria. However, daily values for the last week in March ranged between the 80th and 95th percentiles, with several values exceeding the 95th percentile values at the end of March.

The availability of January – March temperature data from the woody station permitted the development of normalized water temperature plots for the first quarter of 2013. The plots were constructed for the tansy and grays stations. Inspection of the normalized temperature plots for 2012 indicated several outlier points in comparison with the clusters of points defined by the pre-construction data for either station. The lower daily median temperatures computed for mid-January for tansy, grays, and woody produced points on the normalized plots that were slightly outside the pre-Project cluster (i.e., 1996-2004), but consistent in the overall pattern defined by the pre-Project normalization.

Analysis of the post-Project construction CORIE data available through 2013 continues to suggest that the channel improvements did not have any measurable impact on water temperatures recorded at the MA-1 stations.

Salinity

The January - March 2013 daily median salinity values computed using data available for the tansy station were generally at the lower range of values defined by the 20th-80th percentile decision criteria. Several daily median values were less than the 20th percentile criteria values for mid-January and early February. No values exceeded the 5th or 95th percentile decision criteria.

Daily median values calculated for salinity data available from January -March 2013 for the grays station were mainly distributed between the 5th and 20th percentile decision

criteria or less than the 5th percentile value. These comparatively higher salinity values at the grays station at the end of January and February appear consistent with correspondingly lower Columbia River flows reported during these periods in 2013. No values exceeded the 5th or 95th percentile decision criteria.

Salinity data were not available for the dsdma station during January – March 2013. Normalized salinity plots were not developed for the first quarter. If the dsdma salinity data become available for this period, the normalized plots will be developed and presented at a future AMT meeting.

The post-Project construction CORIE data available through the first quarter of 2013 continue to suggest that the channel improvements did not result in any significant saltwater intrusions at the MA-1 stations.

Depth

Depth data were available for only the grays station from January through March 2013. Daily median depths were well within the previously established AMT decision criteria. The monthly average values calculated for the 1st quarter were within the corresponding 20th and 80th percentile decision values.

Extended Time-Series Plots

Shyam Nair (E2) continued the multi-year time series plots of temperature, salinity, and depth for the MA-1 CORIE stations. These plots were updated based on data available through March 2013 and presented at the April 2013 meeting.

The results of the 1st quarter 2013 MA-1 analysis have been posted in the MA-1 folder of the AEM Workbook on the E2 CRCIP web site.

MA-2 Construction and Disposal of Dredged Materials

MA-2 has been completed as a component of the CRCIP AEM Program. Volumes and placement of dredged materials are now reported in accordance with regular annual O&M procedures.

MA-3 Crossline Surveys

Crossline survey results for 2013 were not scheduled for the April 2013 AMT meeting.

MA-4 Habitat Analyses

The analysis of habitat in relation to the AM requirements for MA-4 continued at the April 2013 meeting with a presentation of proposed modeling activities by Dr. Antonio Baptista (OHSU). (See separate MA-4 agenda item below.)

MA-5 Sediment Contaminants

MA-5 was not on the agenda for the April 2013 AMT meeting. No new information for MA-5 was presented.

MA-6 Fish Stranding

The evaluation by the AMT in meeting the AEM requirements for MA-6 continued at the April 2013 meeting with an update on the USGS peer review of the Pearson fish stranding model. (See separate discussion of progress below).

Multi-Agency Fish Stranding Workshop Summary

The multi-agency fish stranding workshop anticipated for March 2013 was not held.

MA-4 Discussion of Overall Modeling Approach and Results to Date

Dr. Antonio Baptista presented preliminary results for simulations using 2003 (pre-construction) and 2012 (post-construction) bathymetry data for the Lower Columbia River and estuary. The model results show noticeable differences in salt intrusion for the two bathymetries. Depending on river discharge, the 2012 model results can demonstrate increased or decreased magnitudes of intrusions compared to the results using the 2003 bathymetry. Depending on the selected model output (e.g., salinity intrusion, salt volume, salt area), the relative changes in intrusion ranged from a 14% decrease to 9% increase in intrusion. However, Dr. Baptista emphasized that the changes in modeled salinity intrusion were influenced largely by the previously discussed (January 2013 AMT) shifts in the North Channel bathymetry. The model results suggested minimal influence of channel modification associated with the CRCIP. However, the model results are sensitive to assumptions made in constructing the bathymetry used by the model from the existing data, particularly for the North Channel. Baptista and his colleagues plan on focusing their next efforts in refining the bathymetry data used in the model and characterizing, to the extent possible, the nature of the noticeable changes in the North Channel. By making specified assumptions concerning the North Channel, it may prove possible to better describe any effects of channel construction (i.e., South Channel) on modeled salinity intrusions.

Dr. Baptista presented preliminary results for salmon habitat opportunity computed using the current model. Baseline juvenile salmon habitat criteria for depth, velocity, water temperature, and salinity have been derived for evaluation of the model results for the 2003 and 2012 bathymetries. The 1-year analyses were performed for eight regions of the LCR and estuary that encompassed the Project area. Monthly summaries of the results suggested minimal changes in habitat opportunity associated with changes between the 2003 and 2012 bathymetries. Depending on the region, model results indicated no change or slight increases or decreases in average monthly habitat opportunity. Considering the uncertainties associated with the model results, it is unlikely that any statistically significant differences can be demonstrated based on the current status of the modeling efforts.

Baptista and his colleagues will continue with refinements to the model and present an update on model results at the July 2013 AMT meeting.

Dr. Baptista's presentation will be uploaded to the E2 CRCIP web site and placed in the MA-4 component of the electronic AEM Workbook.

MA-6 Progress Report on Peer Review of Pearson Fish Stranding Model

Toby Koch (USGS) briefly summarized the results and conclusions of reviewing the empirical modeling and analysis of fish stranding performed by Dr. Walter Pearson. A more detailed presentation and discussion of the review occurred at the January 2013 AMT meeting. Koch concluded that there were no significant technical shortcomings in the work provided by Dr. Pearson. Koch also emphasized that fish stranding on the LCR and estuary remains an incompletely understood phenomenon. Koch suggested that more complex simulation modeling might provide additional insights into the stranding process and help characterize the potential magnitudes of fish stranding mortalities in the LCR and estuary. However, it is not within the scope of the CRCIP AEM Program to develop such comprehensive understanding. Toward that objective, several multi-agency fish stranding workshops have been proposed, as discussed previously at the January 2013 AMT meeting. The AMT will continue to monitor the results of the multi-agency efforts directed towards a more comprehensive understanding and assessment of fish stranding in the LCR and estuary.

Dr. Pearson agreed with the USGS review of his empirical stranding model and scenario analysis. He further suggested that year-to-year variations in river flows and fish abundance likely outweigh the effects of channel deepening in determining the magnitudes of fish stranding in the LCR and estuary. As noted by Shyam Nair (E2), continued modifications of the commercial navigation fleet define a dynamic baseline in the assessment of any changes in stranding resulting from channel deepening. Pearson suggested that more complex simulation models might increase the precision associated with the current empirical assessment. However, increases in accuracy would depend more on evaluation of the model results with additional field observations. Pearson's results (i.e., power analysis) indicated that 300 – 400 additional ship passage events

would be needed to provide sufficient data. This would take 3-4 years of study and resources not likely to be available.

As a culmination of previous discussion and analysis since Project completion in 2010, the participants at the April 2013 AMT meeting reached consensus that post-Project studies of fish stranding need not be performed and as a consequence, the objectives of the fish stranding component of the CRCIP AEM Program have been met.

July 2013 Agenda Items

The following were identified as items for the July 2013 AMT meeting:

- Update by Drs. Baptista and Bottom on MA-4 modeling activities

The April 2013 AMT meeting adjourned at 2:30 pm PST.