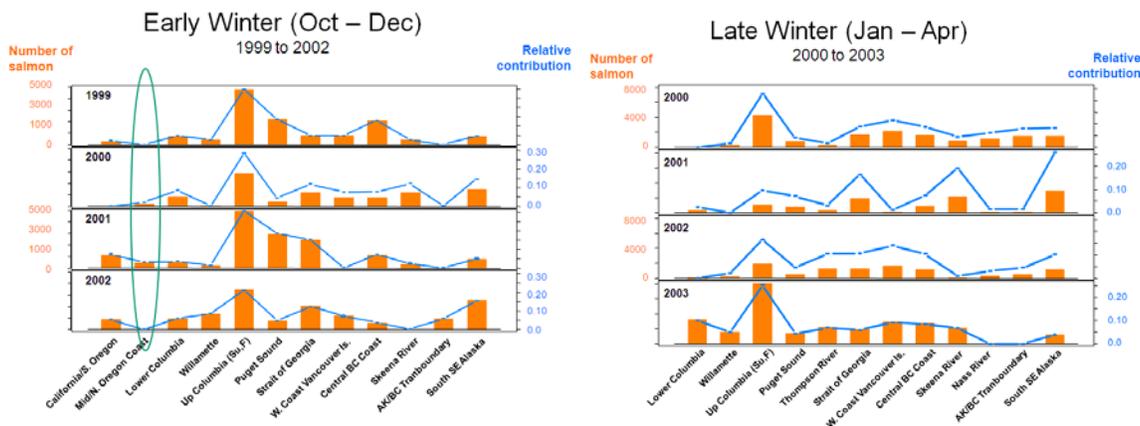


Alaska Dept. of Fish & Game Preliminary Comments Following from 2nd Killer Whale Chinook Workshop

Information and analysis presented at the second workshop raised a number of questions. Although workshop participants were asked to provide comments by March 23, we find that it is not possible to provide comprehensive comments in that short time frame which could provide a reasonably thorough review of issues central to whether fisheries cause variation in SRKW vital rates or alternatively whether an as yet unidentified factor has an effect on both SRKW vital rates and Chinook abundance in a fashion that causes apparent covariance between these populations because details concerning important primary analyses, the results of which were presented at the workshop have not yet been made available for review. We identify the following issues with a few preliminary comments. We expect to provide more complete comments in the coming days.

- 1) The workshop focused on assessing the effect of salmon fisheries on SRKW. While the analysis that demonstrates the covariance of these two populations and the effect that can be expected following from changes to fisheries is of central importance, it is not yet clear that the list of stocks presented to support that covariance is appropriate. At a minimum, it would seem that Chinook salmon stocks that affect SRKW dynamics should exhibit a meaningful level of cohabitation, yet some stocks included in the analysis clearly do not cohabit the same areas at the same times. Clearly, the whales are in one location while members of the salmon stock are in another.

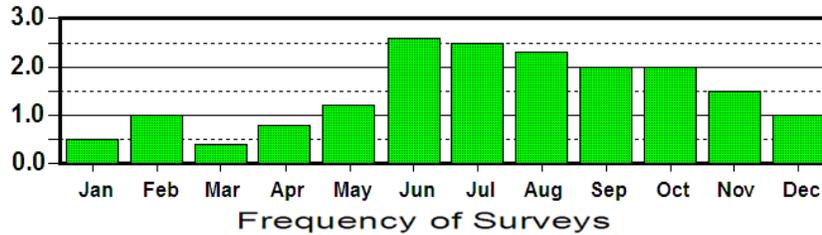
Take the North Oregon Coastal Chinook (NOCs) stock for example. Returns of CWTs from the NOC indicator stock show that the winter range of this stock extends into the Bering Sea well beyond the acknowledged winter range of SRKWs (the north end of Queen Charlotte Island, *see* NMFS recovery plan). Genetic stock identification of catches in the SEAK troll fishery indicates that NOCs are not present in SEAK waters from October to April:



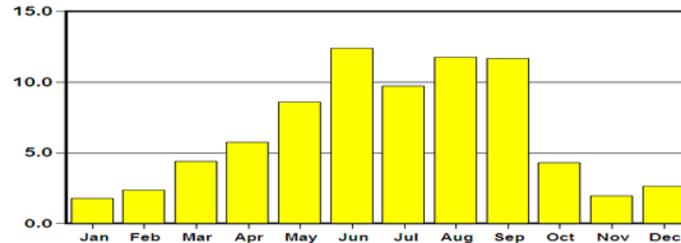
Note that only a few NOC Chinook are in SEAK waters from October to December and there is no presence at all from January through April (no green oval). The NOC stock of Chinook are far north migrating, moving further north from SEAK waters as winter approaches and then returning through SEAK waters in the late spring. To our knowledge there is no indication of this stock being found appreciably in winter in NBC, WCVI, Washington, or Oregon waters. There is no evidence that the NOC Chinook stock are inside the winter range of SRKWs from fall to spring beyond a trace representation, and considerable evidence that they are far north of it as demonstrated by CWTs recovered in the Bering Sea.

Mature NOCs pass through the winter range of SRKWs on their summer migration to their natal streams. However Puget Sound is the principal summer range of SRKWs. From the Center for Whale Research the frequency of observation of the three pods of SRKWs in Puget Sound by month averaged over several years is:

Mean Number of Full SRKW Pods in Summer Range: 2007 - 2011

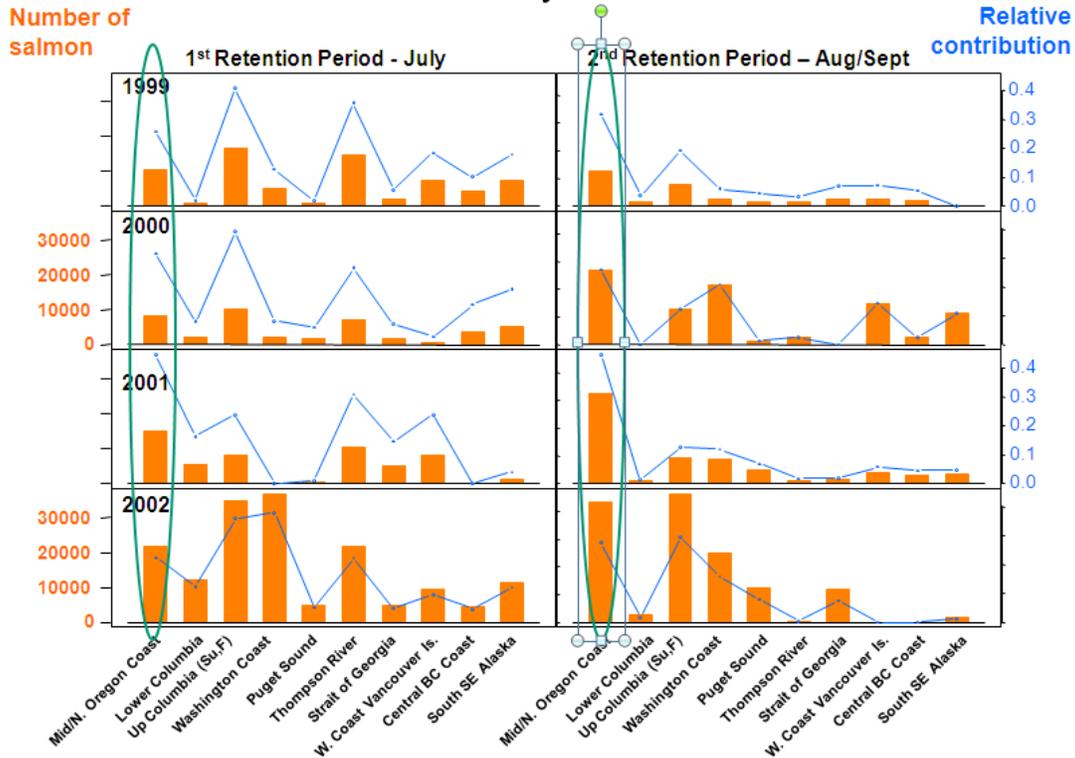


Mean Number of Surveys to Count SRKWs: 2007 - 2011



From May through September surveys were conducted about every 3-4 days. Only full pods were registered in the green bar graph above meaning that if a pod was incomplete (some members encountered during the survey and some not), the pod was not considered as present even though some members were seen. Note that essentially all the SRKWs are in Puget Sound from June through the fall of the year. NOC Chinook salmon are caught in substantial numbers in SEAK in June (the sport fishery) and in July, August, and early September in the summer troll fishery. In fact they are a primary driver stock for the SEAK fishery in the summer, whereas at that time of year, the SRKWs are located far to the south:

Contributions by Retention Period



Stock assessment work on the Nehalem, Siuslaw, and Siletz stocks show that mature NOC Chinook salmon begin to show in the terminal areas sometime in July with the end of the terminal run in late October-early November.

With this kind of geography and timing, the rational explanation for a cause-and-effect predator-prey relationship between mortality rates of SRKWs and abundance of NOC Chinook salmon is clearly lacking. It would seem that a set of Chinook stocks relevant to SRKWs vital rates would be derived from those Chinook stocks within the whales' range. For the set of stocks offered to support a correlation between Chinook abundance and the SRKWs and used to support a predator-prey relationship, it appears that geographic coincidence has not been reasonably evaluated.

We will expand our analysis to other stocks included in the index and provide additional comments.

- 2) We have requested the sets of equations and data used to establish correlation between SRKW vital rates and Chinook abundance. When we have these in hand we will review the assessment and comment on the likelihood of SRKW population dynamics being influenced by changes in fisheries' take of Chinook salmon.
- 3) The Parken-Kope data used to establish a correlation between fisheries and the SRKW population used total run estimates based on terminal run plus ocean catch. Since ocean catch is comprised of both mature and immature fish and the SRKW apparently only feed on large (mature) fish, the Chinook abundance estimates should be revised. The analysis of the relationship between SRKW dynamics and Chinook abundance should be revised taking this into account.