COLUMBIA RIVER COMPACT

Technical Advisory Committee
Statement regarding mortality rates for
2003 non-Indian commercial fisheries

March 4, 2003

The Compact members asked the TAC to review the long-term mortality rates for chinook and steelhead that would be appropriate to use for 2003 management of the non-Indian commercial fishery. TAC met on February 10 and further discussed the issue of mortality rates, and reviewed the draft minutes from previous meetings concerning this issue.

TAC agreed that 50% is an appropriate rate to apply to chinook captured in large mesh. A large proportion of the fish are expected to be gilled and preliminary results from the one-year of study for chinook in 8-inch gear suggests a rate of about 50%.

For 4-¼ inch mesh recommendation for chinook, TAC does not have enough information which we believe is needed to fully review the results of the study. Given our current understanding of the results of the study using small mesh gear, TAC recommends a mortality rate of 25% for the 4-¼ inch mesh based on the large range of uncertainty of results and the large confidence intervals around the estimates instead of using a simple average of 24%.

The life history characteristics are different for spring chinook versus winter steelhead, including: a) shorter time before spawning, b) shorter distance to travel to spawning grounds, c) few, if any dams to cross, d) colder water temperatures during migration. There is no reason to believe they should have the same long-term mortality rate as spring chinook. Because of these differences we think it reasonable to assume that winter steelhead may have a lower release mortality rate when caught in a similar manner in commercial fisheries.

TAC recommends using 35% as an estimate of the mortality rate for steelhead in the large mesh gear. 35% is the mid-point of the estimates of long-term mortality from the TAC report for 2002. It is also two times the immediate mortality rate that has been observed for steelhead using large mesh, based on monitoring results from past years.

On February 10, TAC considered three options for determining long-term mortality rates for steelhead in 4-¼ inch mesh gear.

1. Use the same mortality rate that is used for chinook due to lack of data.
2. Use a mortality rate that is less than that used for chinook because of the life history differences.
3. Use 10%, which is the high end of the range of estimates based on savings, by using 4-¼ inch gear in 2003 versus 5-½ inch gear in 2002.

We are assuming that the estimated passage loss is a valid surrogate for the scale of the differences between the two species. It is really an analogy for the difference rather than saying that because winter steelhead do not go past all those dams it is the difference. If we accept that this passage loss estimate is a reasonable surrogate then we assume we can use it to discount the mortality estimate for winter steelhead.

Based on these assumptions, the chinook mortality rate of 25% would be scaled by 20% to adequately discount the differences between spring chinook and winter steelhead, and the recommended mortality rate for steelhead would be 20% in 4 ¼ inch gear.

Choosing mortality rates for steelhead for use in management is not based on specific empirical data because there is none available. Lacking that, we use rates that appear to represent reasonable rates that are obtained from a variety of sources including rates that are used for chinook. Appropriate long-term mortality rates will continuously be reviewed and may be changed as more information becomes available.

Conclusion

TAC recommends that we fully review and analyze the long-term mortality rate studies, possibly sometime during the summer, so that we can provide managers with the best technical recommendation. TAC also recommends that we work with the researchers during the 2003 study to make sure any questions/concerns are resolved. Determining an appropriate mortality rate in a fishery is an exceptionally difficult process. This is the first time this has been attempted for commercial net fisheries and it should continue to be reviewed.