



Significance of Bristol Bay Study to Columbia River Fisheries Overstated

Much ado has been made recently by members of the Northwest Chapter of the Coastal Conservation Association (CCA) concerning a study published in a British scholarly journal by two biologists at the University of Washington. The study concerns the significance of dropouts in the gillnet fishery for sockeye salmon returning to Wood River in the Bristol Bay drainage in Alaska.¹

In the study, the authors posit that spawning populations of sockeye salmon returning to Wood River exhibited substantial numbers (11-29%) of past entanglement encounters with commercial gillnets. Further, the fish exhibiting signs of such past encounters and escaped had significantly reduced rates of survival and spawning success. Their conclusion was that since the fishery on Bristol Bay is managed for minimum spawning escapement, gillnet dropouts may not contribute adequately to spawner recruitments, and therefore should be discounted from escapement calculations. They also noted that “This additional source of fishing mortality has not prevented sustainability in the Bristol Bay fishery due to a precautionary approach to fishery management.” Additionally, it should be noted that the habitat of the Wood River is pristine, with no development or major population center, as is much of the rest of the Bristol Bay drainage.

The implications of the study to CCA members is that the gillnet fishery on the Columbia River probably causes much higher pre-spawning mortalities than currently acknowledged by fishery managers. However, this is an apples to oranges comparison. The Bristol Bay sockeye salmon fishery is compressed into a time period of about three weeks. Bristol Bay is subject to sudden violent storms on a body of water in which the range of the tide exceeds the average depth, thus setting up highly volatile conditions. It is a rough and dangerous fishery, which undoubtedly contributes to the high dropout rate mentioned in the study. It is also a fishery managed by the Alaska Dept. of Fish and Game at a harvest rate in the 80-85% range, which has proven to be fully sustainable for well over a century. Predictions for returns to the Wood River in 2010 are estimated at 6.18 million fish, with a projected harvest of 4.89 million. (See Alaska Dept. of Fish and Game website).

¹ Matthew Baker and Daniel Schindler. “Unaccounted mortality in salmon fisheries: non-retention in gillnets and effects on estimates of spawners.” *Journal of Applied Ecology*, 2009, **46**, 752-761.

Columbia River fisheries take place in an entirely different setting, without the severe weather conditions or extreme tidal fluctuations known in Bristol Bay. Commercial harvest rates are also considerably lower than those in Bristol Bay fisheries. For example, in 2009 the total commercial harvest of spring Chinook was less than 4% of the entire run. For summer Chinook, commercial harvest accounted for 4.4% of the total run. Total non-Indian harvest of Columbia River sockeye is limited to less than 1%. For fall Chinook, the commercial harvest amounted to less than 11.22% of the total run. Various management techniques are used to protect ESA listed fish on the Columbia, including time and area closures, mesh sizes, and tangle nets when appropriate.

The Wood River study demonstrates the wide variety of contexts in which gillnets are used in sustainable fisheries along the entire west coast. They are adaptable in a variety of conditions, and can be changed, via mesh size regulations, timing of when fishing is permitted, and composition of the net. Even in the extreme environment of Bristol Bay, gillnets have proven to be both effective as a commercial fishing gear, and environmentally sound.