



Thursday, May 2nd, 2019

Early-Look 2019 Yukon River Chinook Run Timing Forecast

With warm spring-time weather in the Bering Sea being similar to what we saw last year, the early-look forecast of run timing for Yukon River Chinook salmon indicates an early to average run. The forecast relies on the previously-published [1] relationship between the timing of the run and April air temperatures at the Nome, AK airport. Years with warm April air temperatures typically co-occur with early to average run timing and years with cooler April air temperatures typically co-occur with later run timing (Figure 1). The average air temperature at Nome, AK during April of this year was -4.8°C , which was just slightly warmer than the long-term average of -6.7°C (coolest: -17.1°C ; warmest: 1.3°C). Continuing the trend of unusual springtime weather events in the Bering Sea, Nome also hit a new record daily high temperature in March [2] and the Bering Sea ice extent was at a record low at the beginning of March [3].

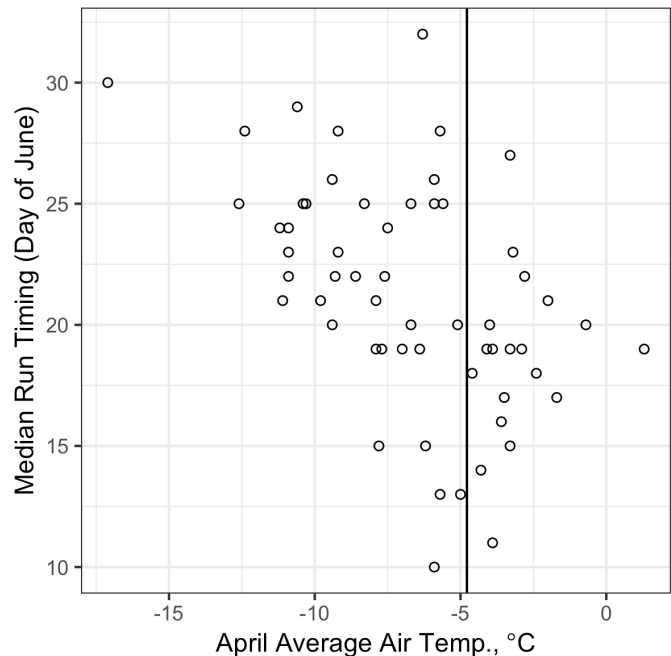


Figure 1: Historical average April air temperatures at Nome, Alaska. 2019 value of -4.8°C marked with a vertical line.

Based on this relationship, we forecast that 15% of the run will arrive on the Yukon River Delta by June 12th, 25% by June 14th, and 50% by June 19th.

The final pre-season run timing forecast will be released in the first week of June and is historically more accurate, likely because it includes two more sources of data shown [1] to relate to Yukon River Chinook run timing: Average sea surface temperatures in May off the Yukon River Delta and the proportion of ice coverage off the Delta between the vernal equinox and the end of May.

Credits

Prepared and reviewed by Bryce Mecum (brycemecum@gmail.com), Jordan Watson (jordan.watson@noaa.gov) , and Phil Mundy (proymundy@gmail.com). Data management and web page support by Will Koeppen (will@axiomalaska.com). Web support also provided by Holly Kent (kent@aoos.org). Yukon Chinook in-season salmon data and management agency coordination by Fred West (fred.west@alaska.gov), Holly Carroll (holly.carroll@alaska.gov), and Sean Larson (sean.larson@alaska.gov). Financial and material supports were provided by the Alaska Ocean Observing System, NOAA National Marine Fisheries Service, and the Alaska Department of Fish and Game.

Footnotes

[1] Phillip R. Mundy, Danielle F. Evenson, Environmental controls of phenology of high-latitude Chinook salmon populations of the Yukon River, North America, with application to fishery management, ICES Journal of Marine Science, Volume 68, Issue 6, July 2011, Pages 1155–1164, <https://doi.org/10.1093/icesjms/fsr080>

[2]

<https://www.washingtonpost.com/weather/2019/04/02/alaskas-historically-warm-march-ended-with-even-more-records>

[3] <http://nsidc.org/arcticseaicenews/2019/03/>