

Rhinoceros Auklet (*Cerorhinca monocerata*) and Fraser River sockeye salmon

Rhinoceros auklet is a common marine bird, which breeds in throughout the northern Pacific, including in BC, and which tend to overwinter in California. There are, however, occurrences in BC waters throughout the year.

Rhinoceros auklet feeds primarily on fishes, though squid and krill also forms part of the diet. Indications are that anchovy, sandlance, capelin, and juvenile rockfish are important prey items around the Pacific Rim (Thayer et al., 2008). It has been raised as a possibility that the auklets may have an impact as predators on juvenile sockeye salmon. Indications are thus that the breeding success of auklets at Triangle Island in BC was positively correlated with the abundance of sockeye salmon from nearby Smith Inlet (Borstad et al., 2011).

The Borstad et al. study indicates a bottom up control, where stronger abundance of prey leads to better survival of the auklet offspring, which does not point to the rhinoceros auklets having a controlling impact on its prey. They are likely not abundant enough for this to be the case.

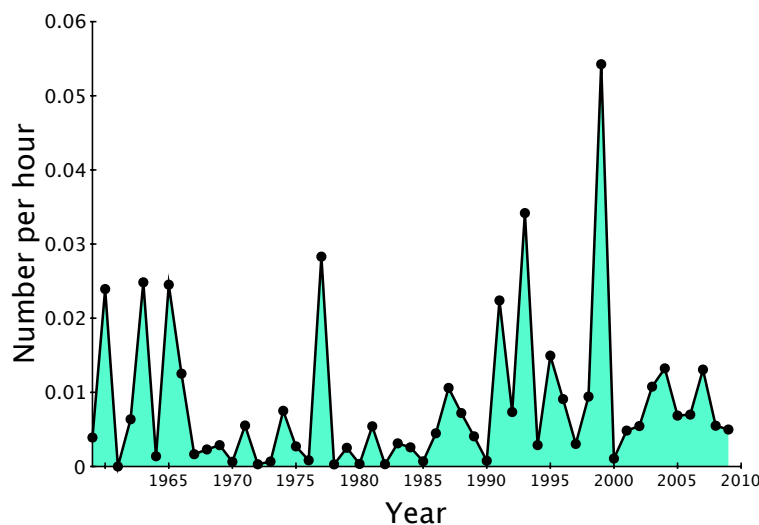


Figure 1. Rhinoceros auklet counts (number per observer hour) in BC.

To evaluate abundance trends for rhinoceros auklets, I extracted abundance estimates for British Columbia (Figure 1) and for California (Figure 2) from the Audubon Christmas Bird Counts. Given that most auklets appears to overwinter in California

(<http://bna.birds.cornell.edu/bna/species/212/articles/migration>), the California count may be indicative of overall population trend.

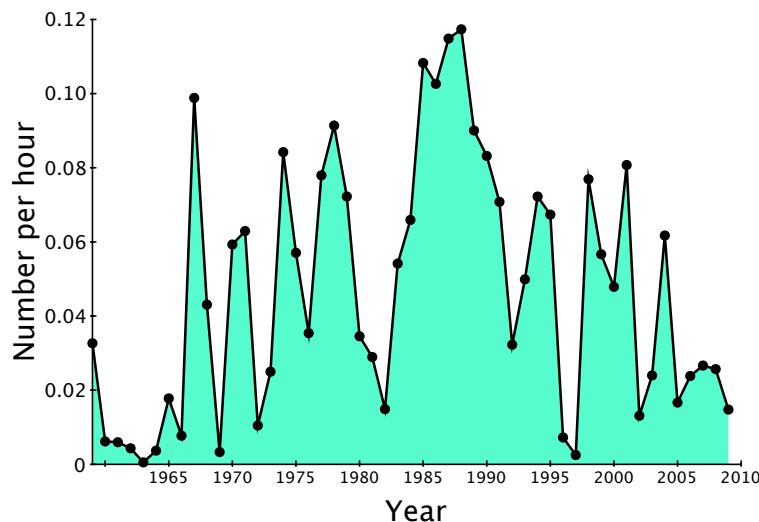


Figure 2. Rhinoceros auklet counts (number per observer hour) in California.

Based on the Christmas Bird Counts there is no indications that the population of rhinoceros auklets has been increasing in recent decades, rather the opposite trend is indicated. I do therefore not see any indication that rhinoceros auklets should be responsible or a major factor for the decline in Fraser River sockeye salmon.

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References

- Borstad, G., Crawford, W., Hipfner, J. M., Thomson, R. & Hyatt, K. (2011) Environmental control of the breeding success of rhinoceros auklets at Triangle Island, British Columbia. *Mar Ecol Prog Ser*, 424, 285-302.
- Thayer, J. A., Bertram, D. F., Hatch, S. A., Hipfner, M. J., Slater, L., Sydeman, W. J. & Watanuki, Y. (2008) Forage fish of the Pacific Rim as revealed by diet of a piscivorous seabird: synchrony and relationships with sea surface temperature. *Canadian Journal of Fisheries and Aquatic Sciences*, 65, 1610-1622.