

Inter-annual distribution of Yukon River juvenile chum salmon in the eastern Bering Sea

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Introduction

The Yukon River has two distinct runs of chum salmon: a more abundant summer-run and a less abundant fall-run.

Concern about fall-run chum salmon abundance in some years has reduced fishing opportunities on the Yukon River.

Little is known about the survival of juvenile Yukon River chum salmon in their freshwater or saltwater environments.

Previous analyses with allozymes indicate that juvenile chum salmon on the eastern Bering Sea shelf, north of 60°N, were predominantly from the Yukon River.

Question 1

What is the origin of juvenile chum salmon on the eastern Bering Sea shelf off the mouth of the Yukon River and does it vary across years?



Sampling juvenile chum salmon at sea. NOAA, AFSC, ABL, EMA Program

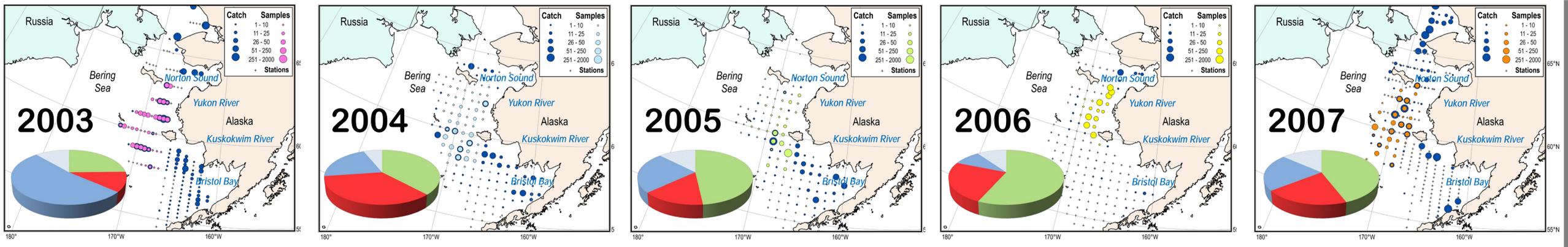
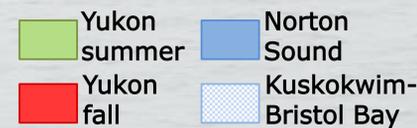
Samples

Juvenile chum salmon were collected on the eastern Bering Sea shelf off the mouth of the Yukon River, between 58-65°N, during the 2003-2007 U.S. BASIS cruises.

Genetic analyses

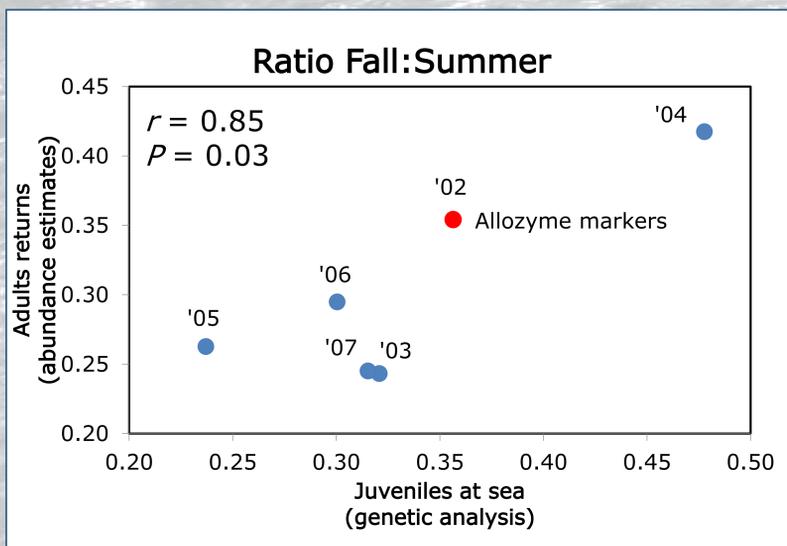
More than 5,000 samples genotyped for 11 microsatellite loci.

Stocks identified with the BAYES program and a 381-population genetic baseline (Fisheries and Oceans Canada).



Question 2

Is there a correlation between juveniles at sea and adult returns in the relative abundance of fall and summer run Yukon River chum salmon?



Conclusions

- Juvenile chum were mostly from coastal western Alaska and upper-middle Yukon populations.
- Regional stock contributions were generally similar year-to-year, even with latitudinal shifts in catch distribution.
- Juvenile chum from western Alaska migrate west and south across the eastern Bering Sea shelf.
- The proportion of fall-run juveniles is correlated with brood-year returns.
- Yukon River summer and fall-run chum salmon proportions are determined early in the first year of life.

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