



# Juvenile & Sub-adult Marine Stages

## Ecology

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- Juveniles complete the smolting process in the Yukon River Estuary and use marine habitats adjacent to, or on, the eastern Bering Sea shelf throughout most of their marine life-history stage (Myers et al. 2009).
- Marine residence may extend from 2 to 6 years and is completed as sexually mature adults return to the mouth of the Yukon River. Male Chinook will typically mature at an earlier age than females.

## Potential Limiting Factors

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- Growth during early marine life is an important determinant of survival and so interannual variation in the abundance and quality of food and the number of predators may be important limiting factors in some years (Murphy et al. 2013).
- Mismatch between outmigration timing (which can be driven by timing of ice breakup) and prey availability during early marine life (Schindler et al. 2013; Ohlberger et al. 2016).
- Changing oceanographic conditions and increased abundance of other Pacific salmon species leading to reduced food in the ocean and increased competition (either directly or indirectly) for available resources (Ohlberger et al. 2016). Predation by marine mammals and bycatch in Pollock fisheries (Iannelli et al. 2015).