

Northeastern Bering Sea Juvenile Salmon Research

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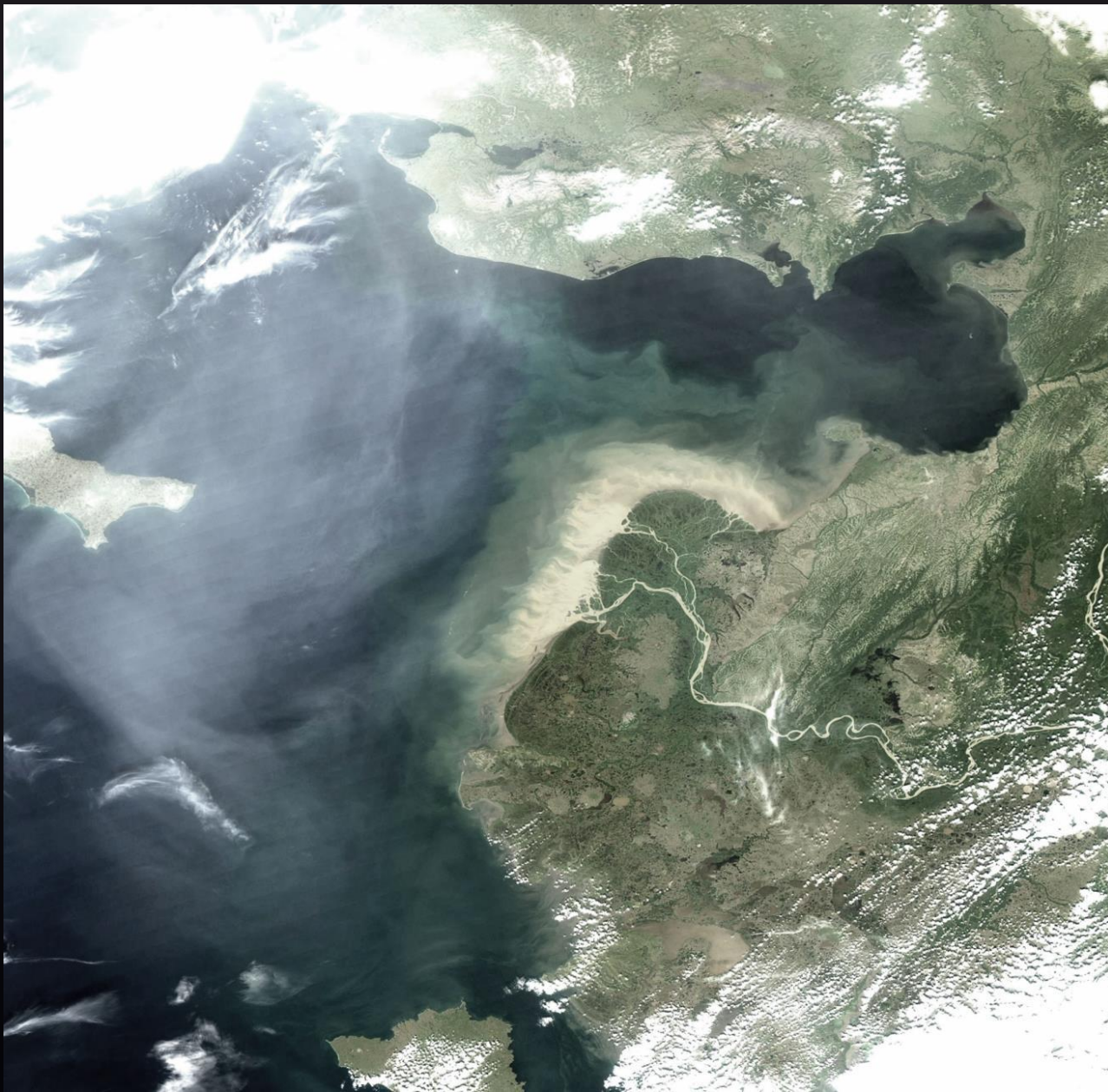
eaufort Sea



Summer



CHINOOK SALMON

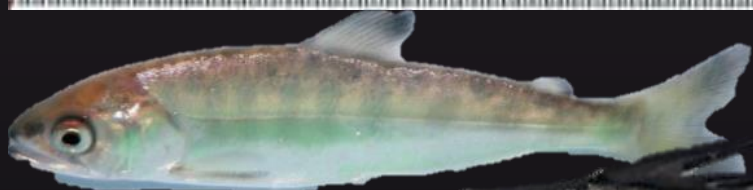


First Year in Ocean is a Critical Time

- Measured smolt migrating out of the river in 1986, 2014 and 2015
- 2014 was earliest ice breakup recorded, but not the earliest outmigration
- 2015 had the warmest spring and the earliest outmigration:
 - **Marine entry timing may be related to spring temperatures**



Timing



Marine Entry (May-July)



Juvenile Ocean (August)

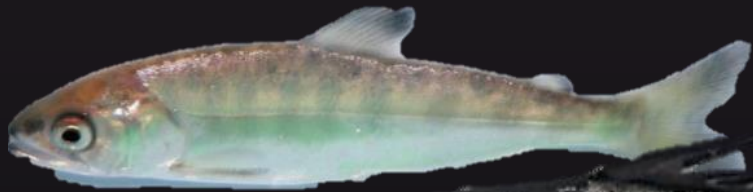


Juvenile Ocean (September)

**More
than
double!**

Size/Growth

- Fish that enter ocean earlier tend to be smaller
- Smallest individuals less likely to survive



Marine Entry (May-July)



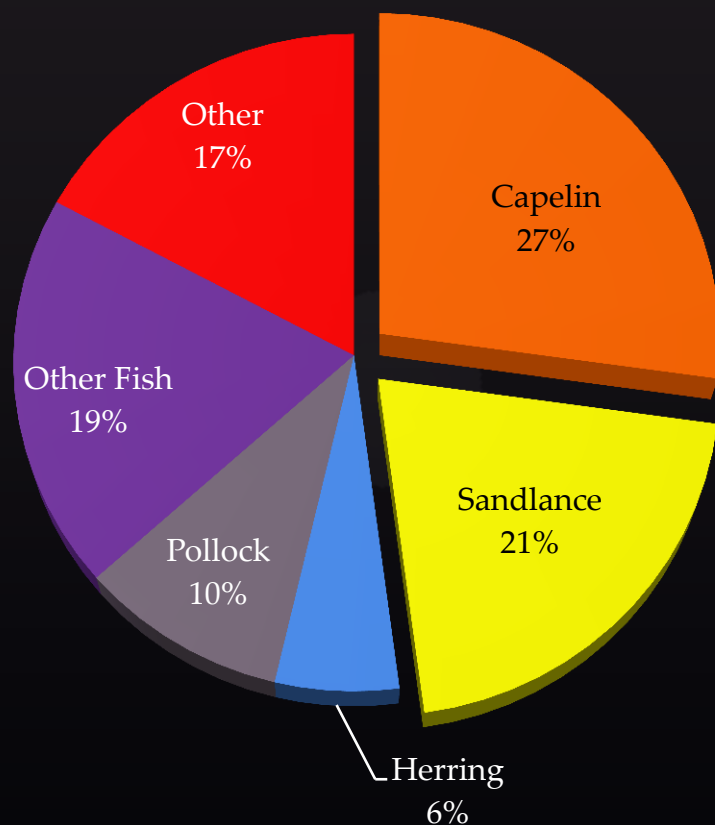
Juvenile Ocean (August)



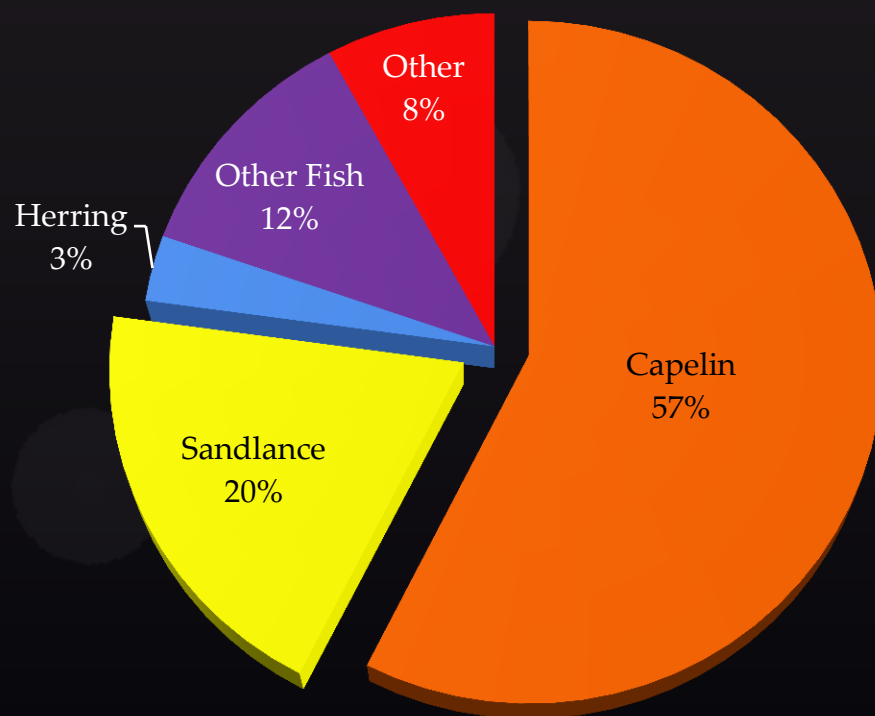
Juvenile Ocean (September)

Size/Growth

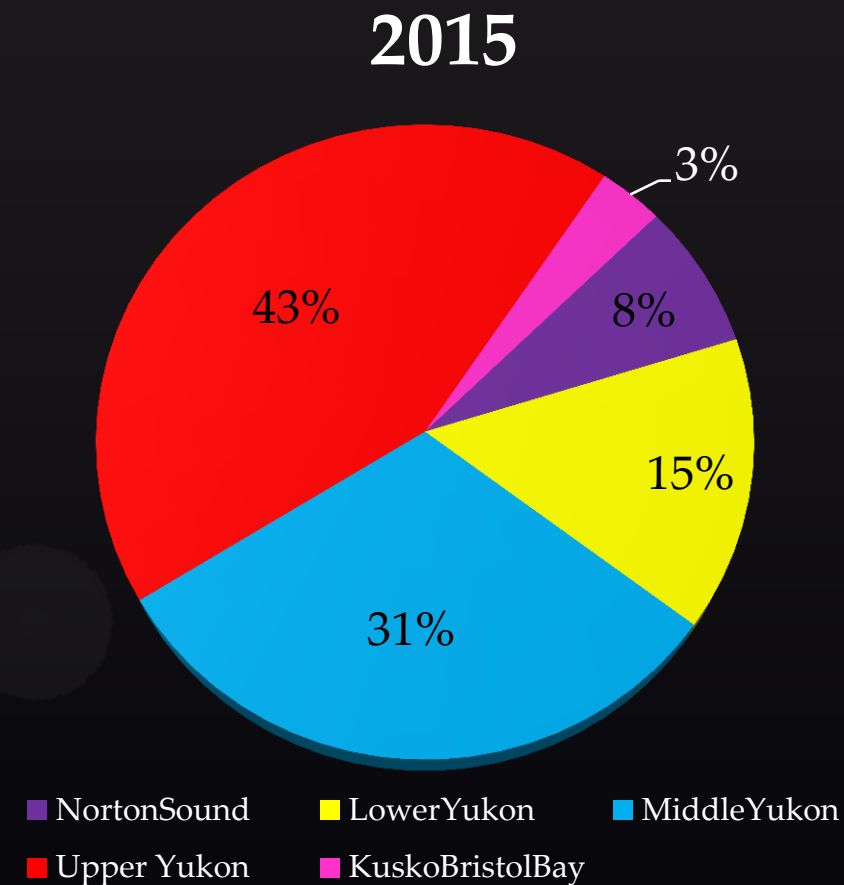
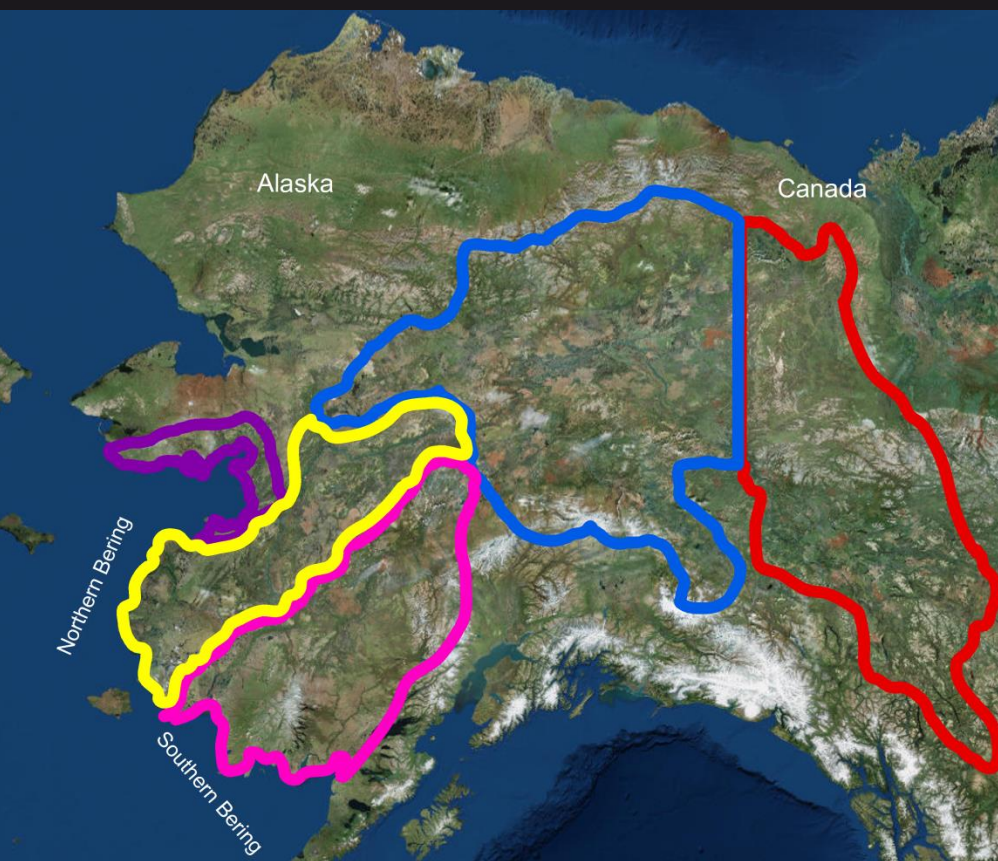
Warm Water Temperature
(2004-07)



Cold Water Temperature
(2009-11)

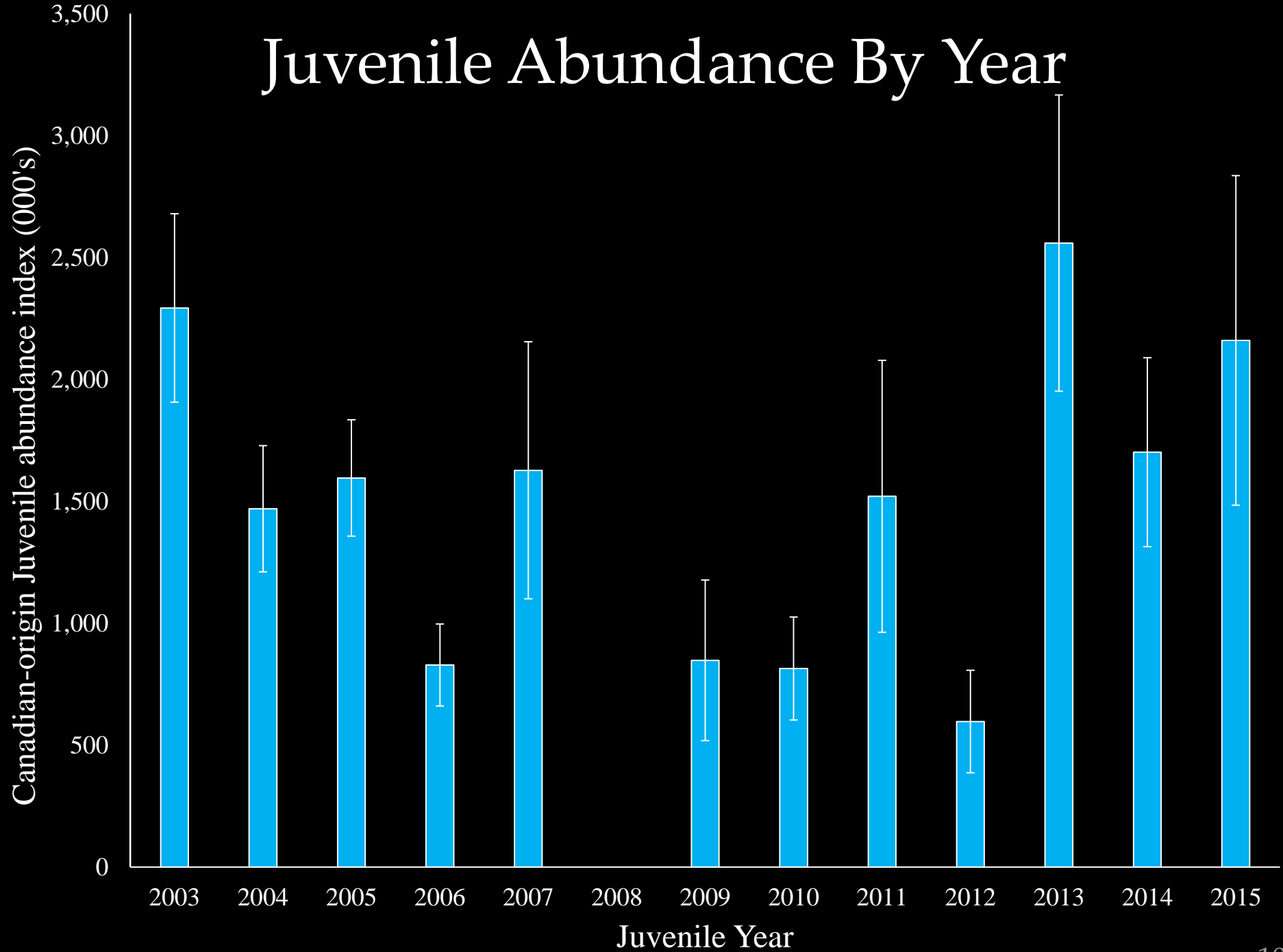


Food

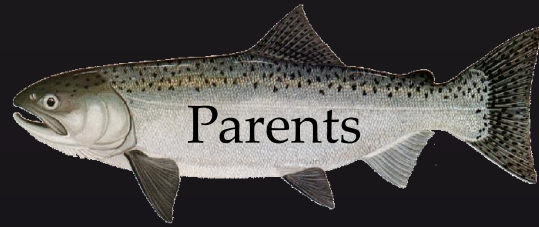


Stock Composition

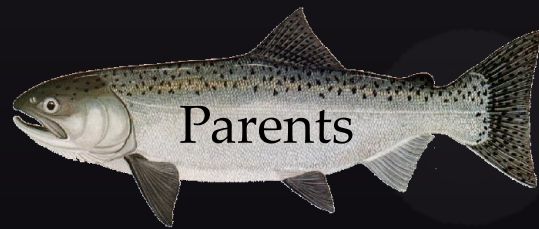
Juvenile Abundance By Year



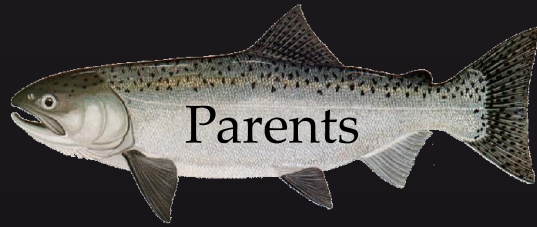
Spawners



Adult Returns



Spawners



3-7 years

Adult Returns

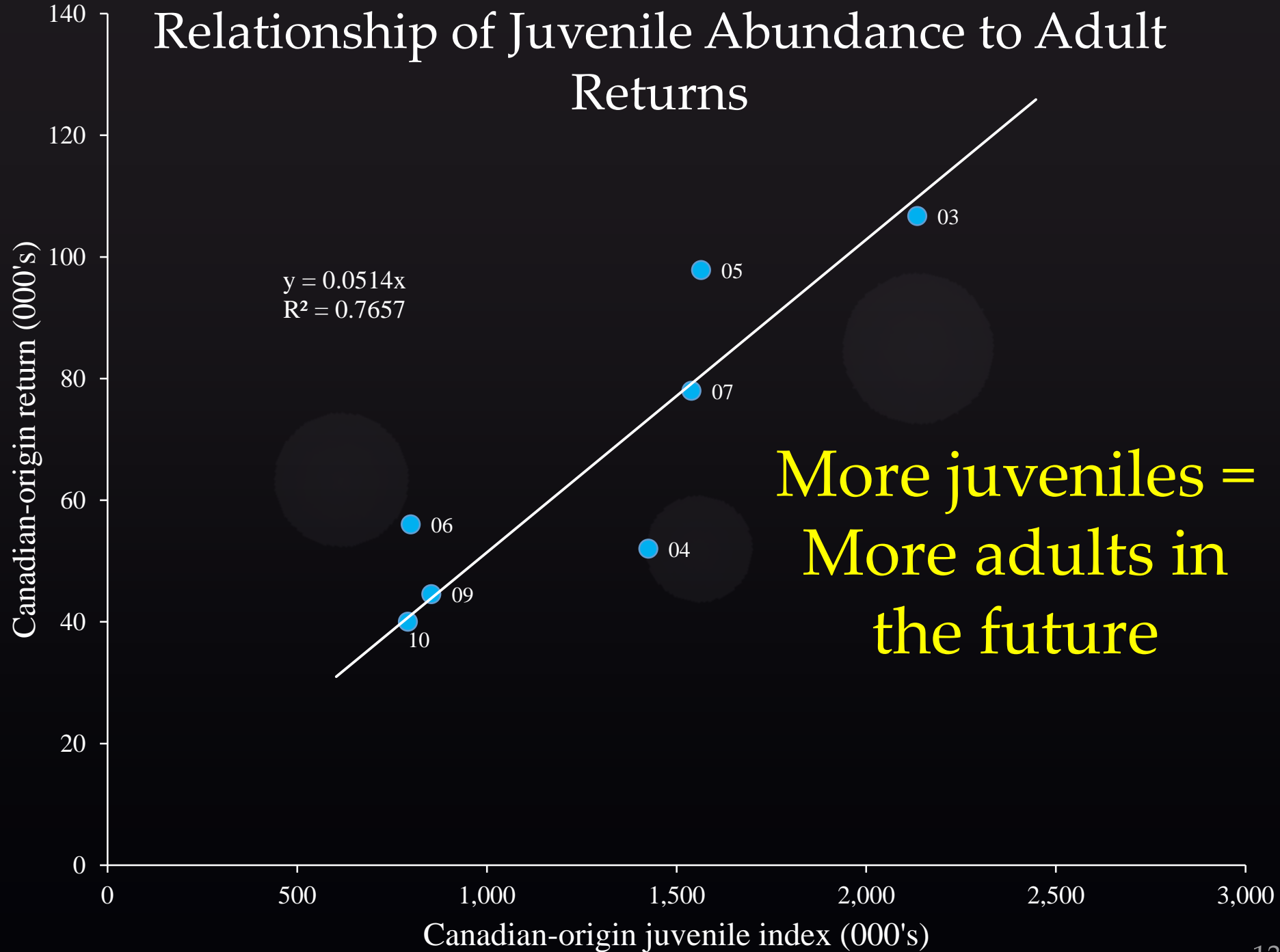


1-5
years

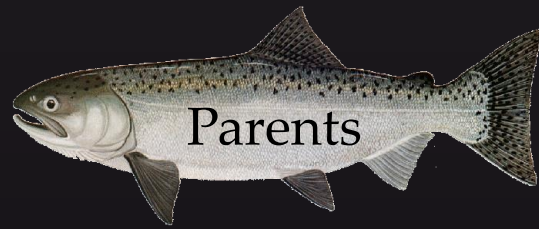


Marine Survival

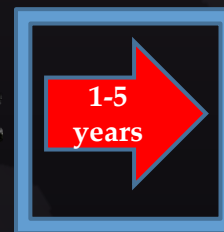
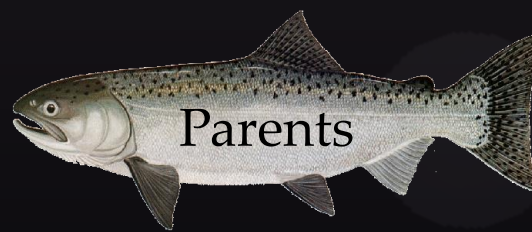
Relationship of Juvenile Abundance to Adult Returns



Spawners

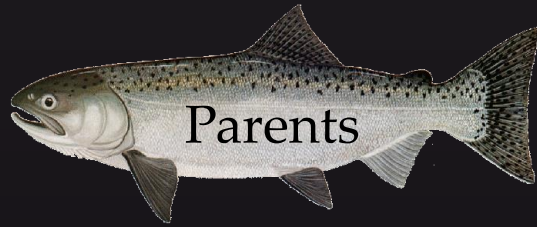


Adult Returns



- Marine survival stable after survey
- Cohort strength defined before survey

Spawners



Adult Returns



- Provides ability to forecast adult run size

Juvenile-Based Forecast Performance

Total Canadian-origin Chinook Run

- Actual Adult Run Size
- Forecasted Adult Run Size

Expect 2016 Age 5, 4,
and 3 proportions to be
above long term
historical averages

2013

2014

2015

2016

2017

2018

Run Year



Thank you

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