



Interactions of Wild and Hatchery Pink Salmon and Chum Salmon in Prince William Sound and Chum Salmon in Southeast Alaska 2013-2015 Progress

Prince William Sound Science Center

together with

Sitka Sound Science Center

For

Alaska Department of Fish and Game

Ocean Sampling

Objective: Unbiased Estimates of the Hatchery Fraction of Run Sizes of Pink and Chum Salmon in PWS during 2015 (with some comparisons to previous years)

Ocean Sampling

Sampling Hierarchy – Fish within Trips within Stations within PWS

Basic Sampling Units – Salmon of the target species

Recorded Attributes – Catch statistics (including CPUE), Sex, Origin

Sample Selection:

- Nine fishing stations were systematically spaced at near equal distances across the two entrances to PWS.
- Trips to fish at each station were systematically scheduled two days apart.
- A subset of catches of the target species (if caught) were sampled during each trip

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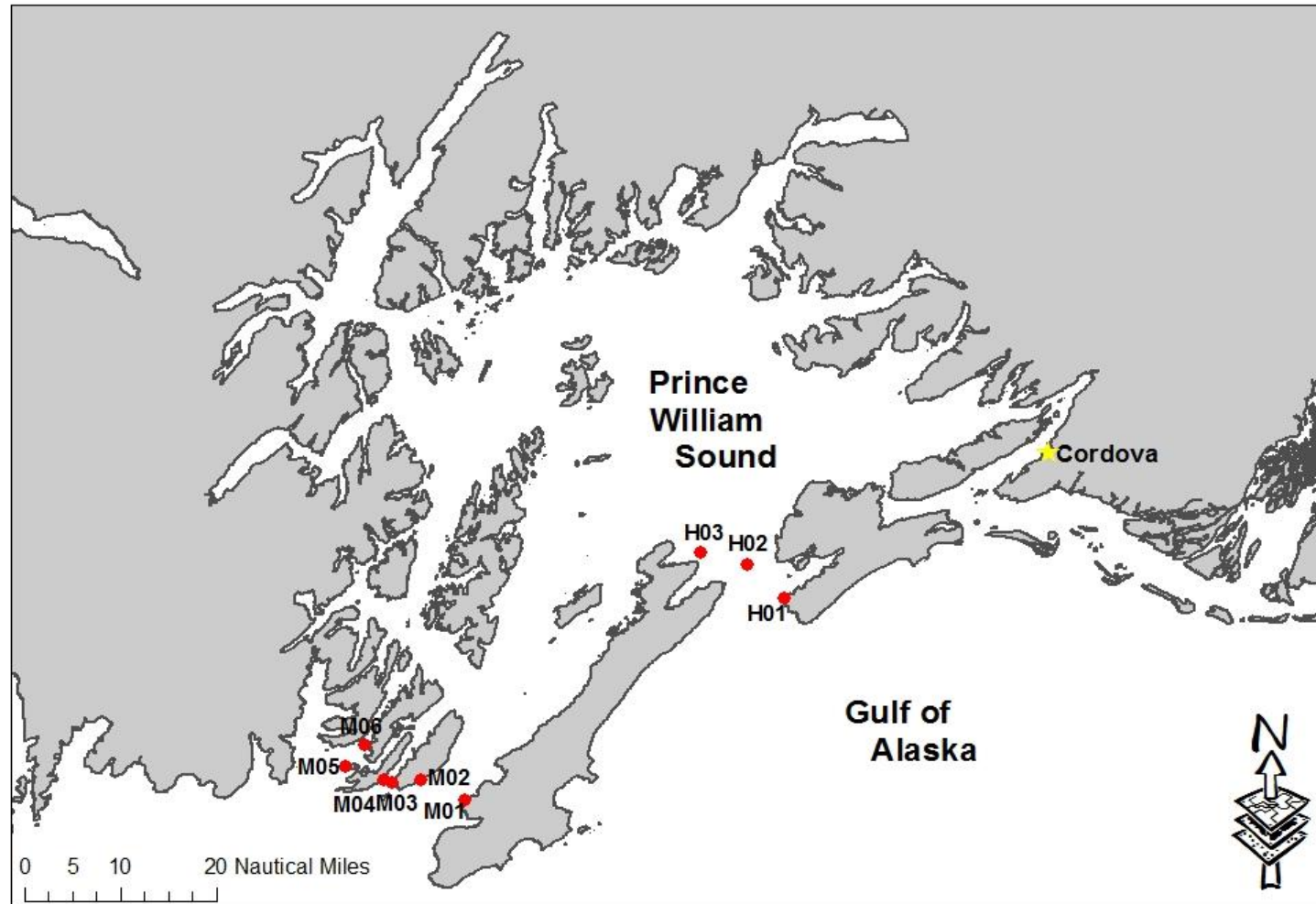
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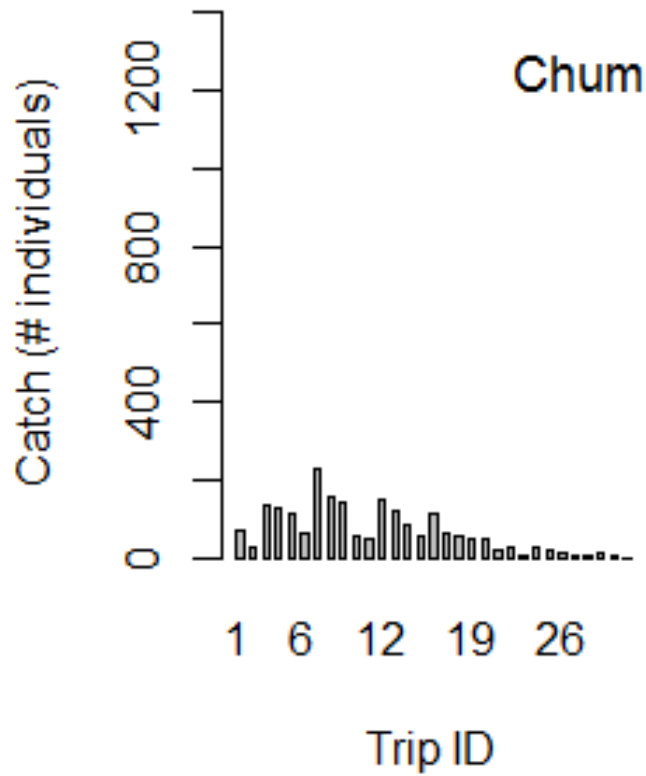
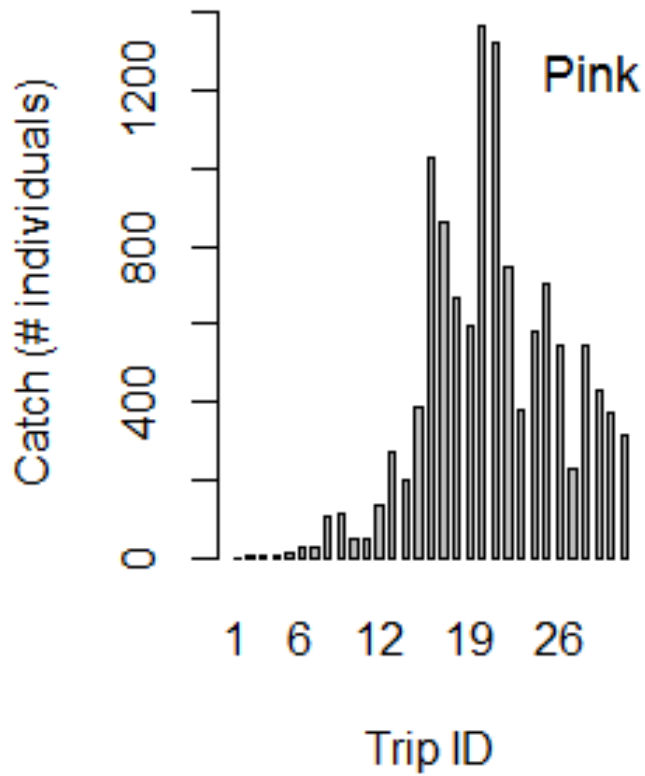
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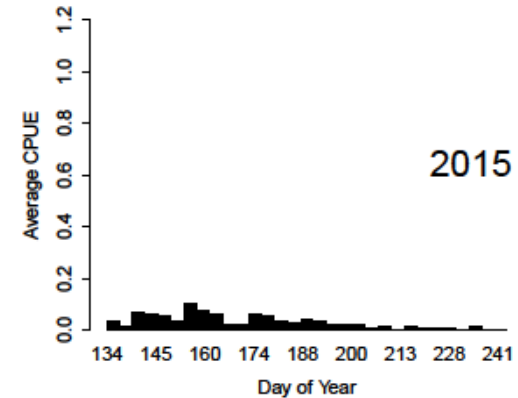
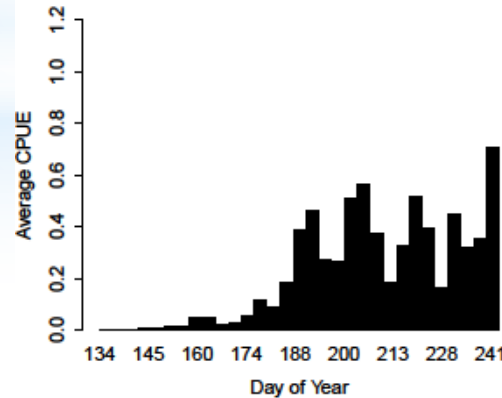
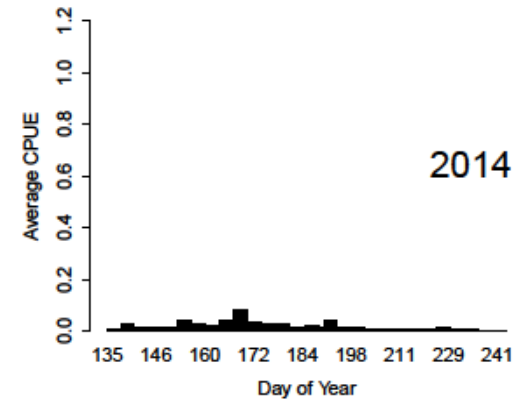
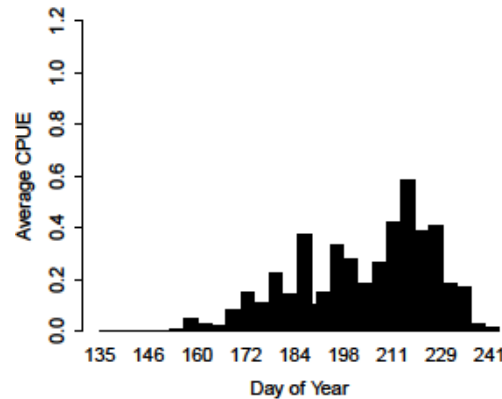
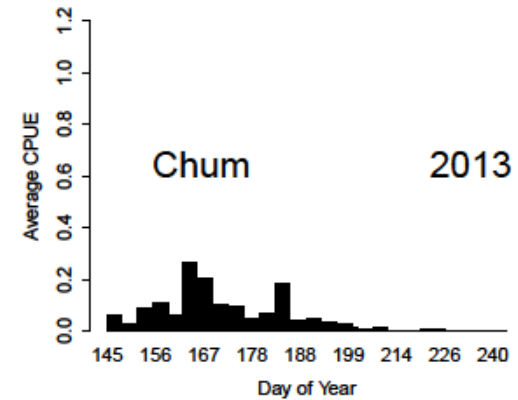
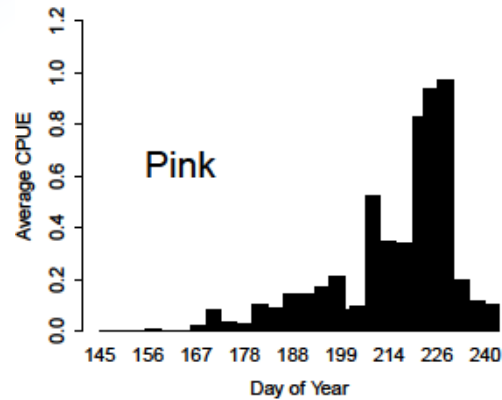
2015 Results



- 15,761 salmon were caught in the ocean test fishery.
- Pink Salmon (12,060)
- Chum (2,022)

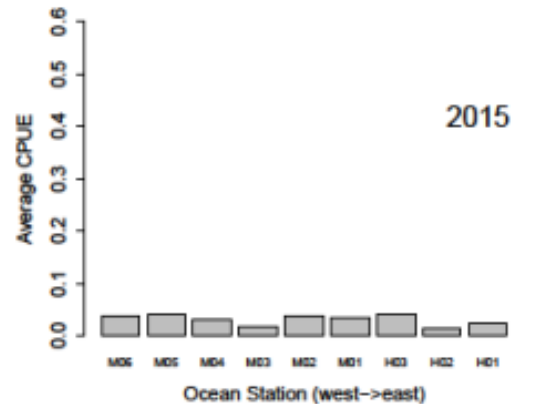
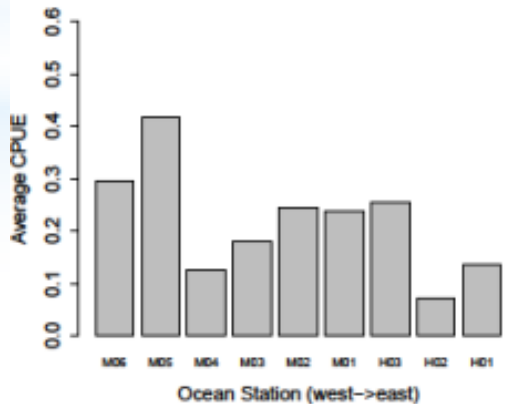
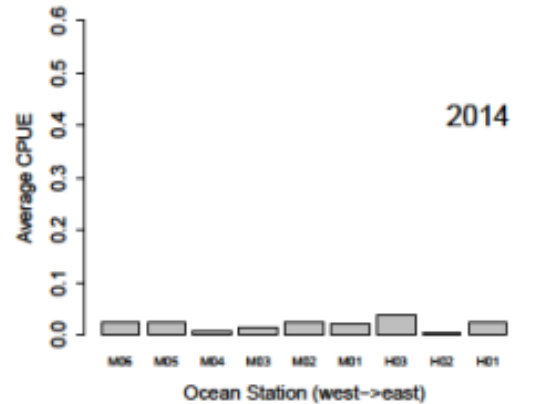
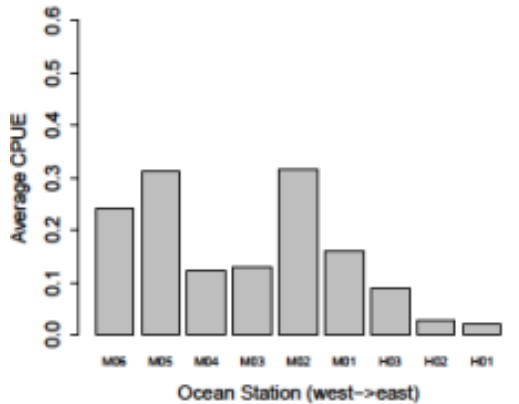
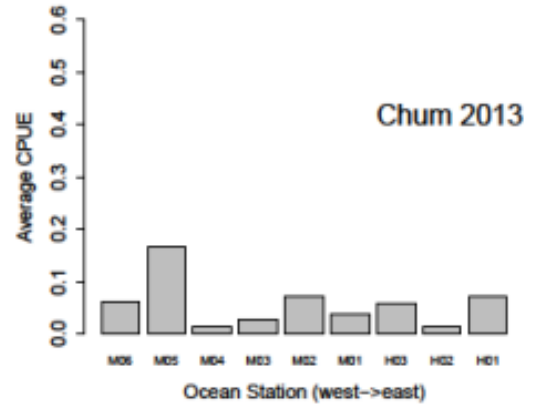
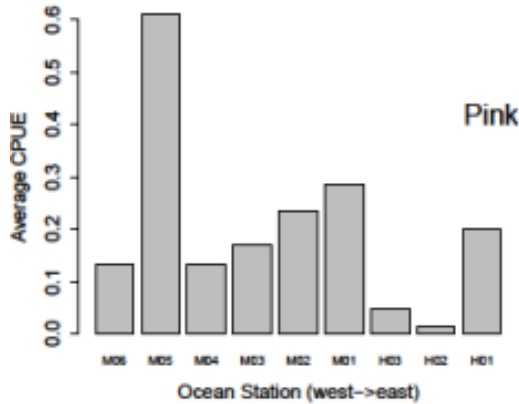
CPUE during 2013-2015

- Season of returns of Pink Salmon was more protracted in 2015 compared to previous years
- Mean CPUE of Chum Salmon was much lower than Pink Salmon for all years.



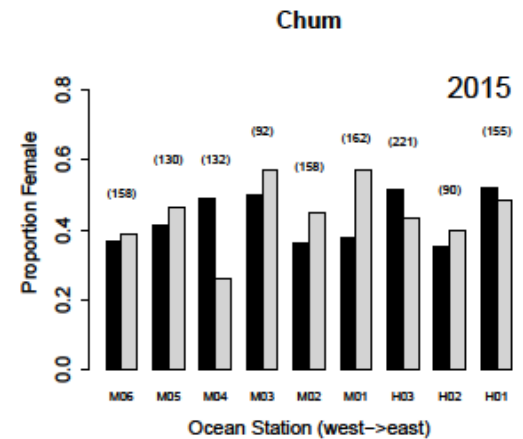
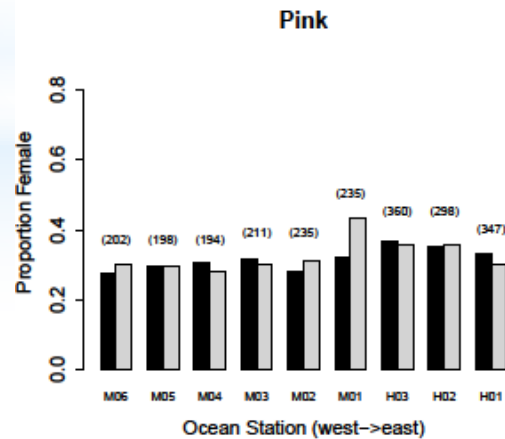
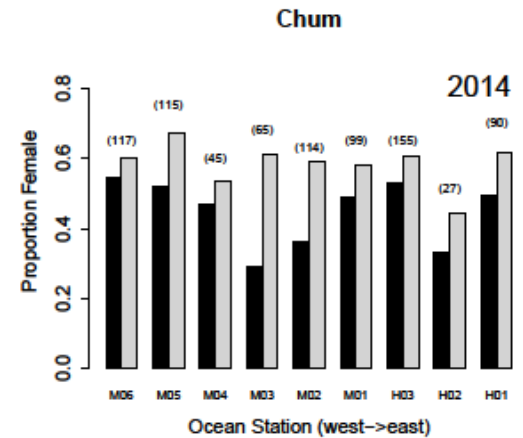
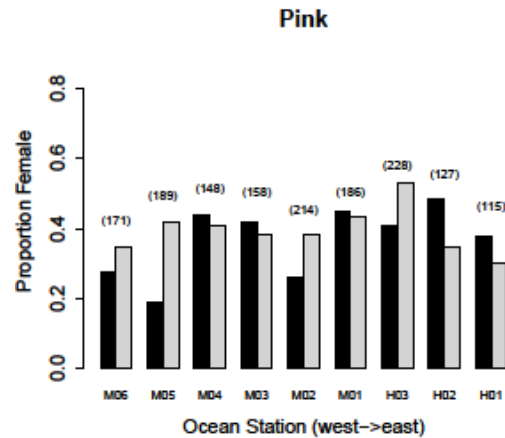
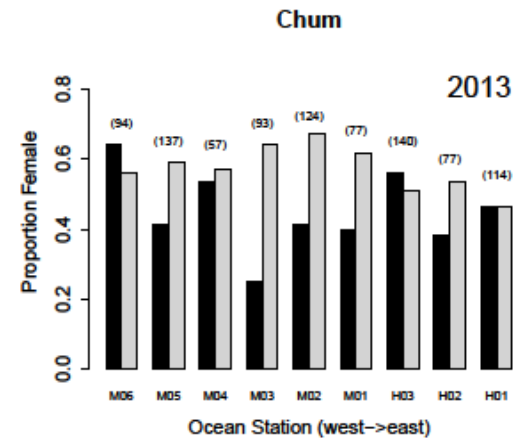
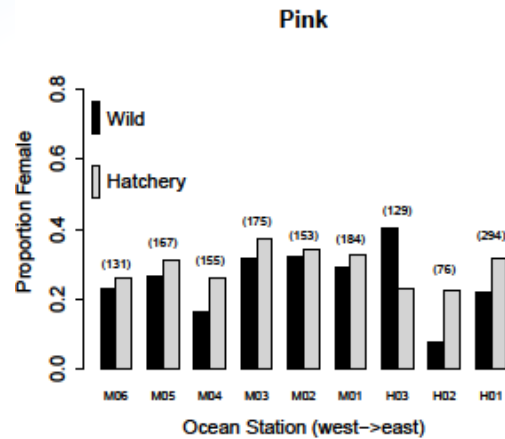
CPUE by Station

- The H02 Hinchinbrook station had consistently low CPUE over the study years, while M05 Montague station exhibited consistently high CPUE.
- CPUE was lower for chum salmon compared to pink salmon across all stations in 2015.

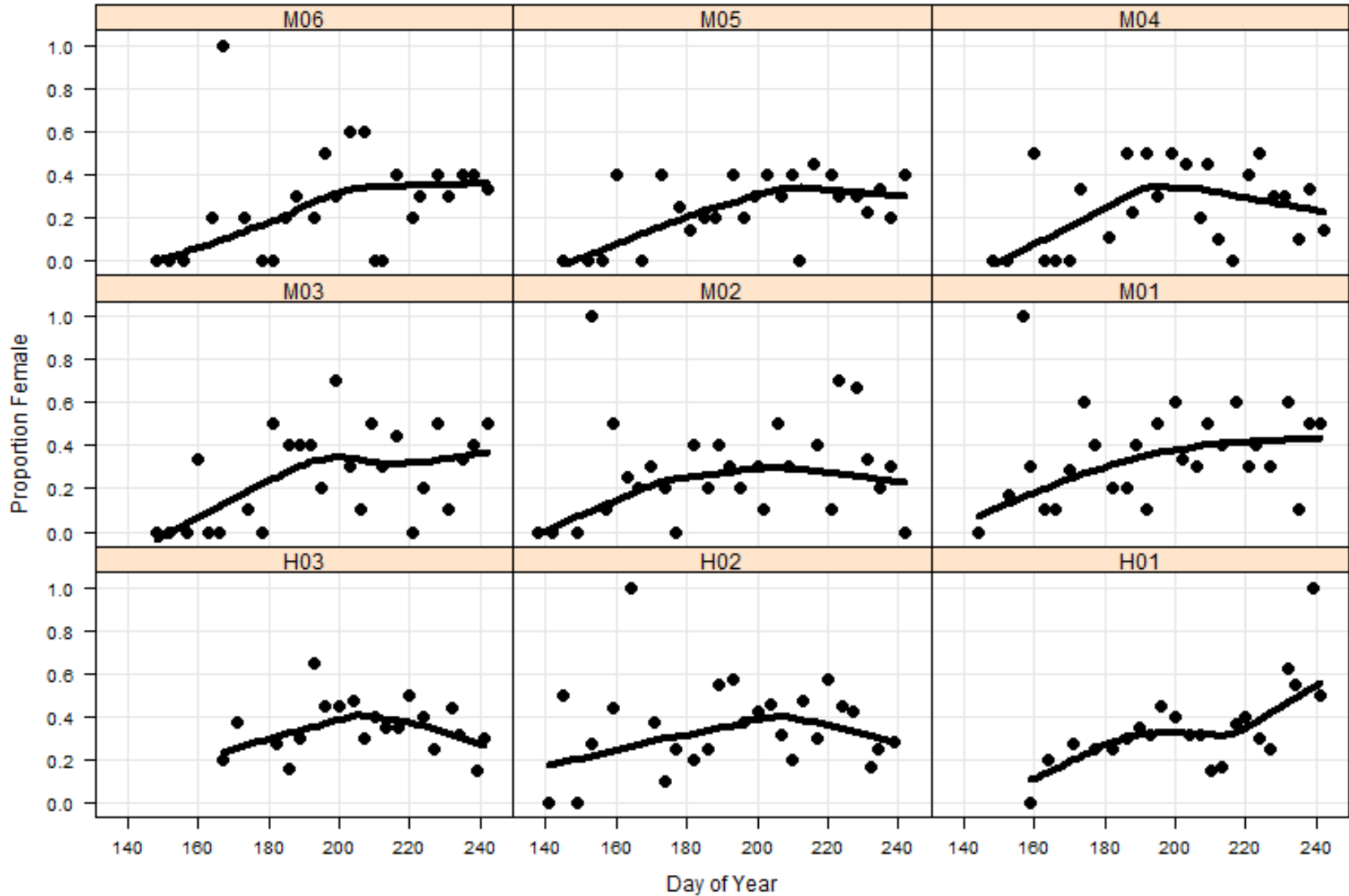


Sex Ratios

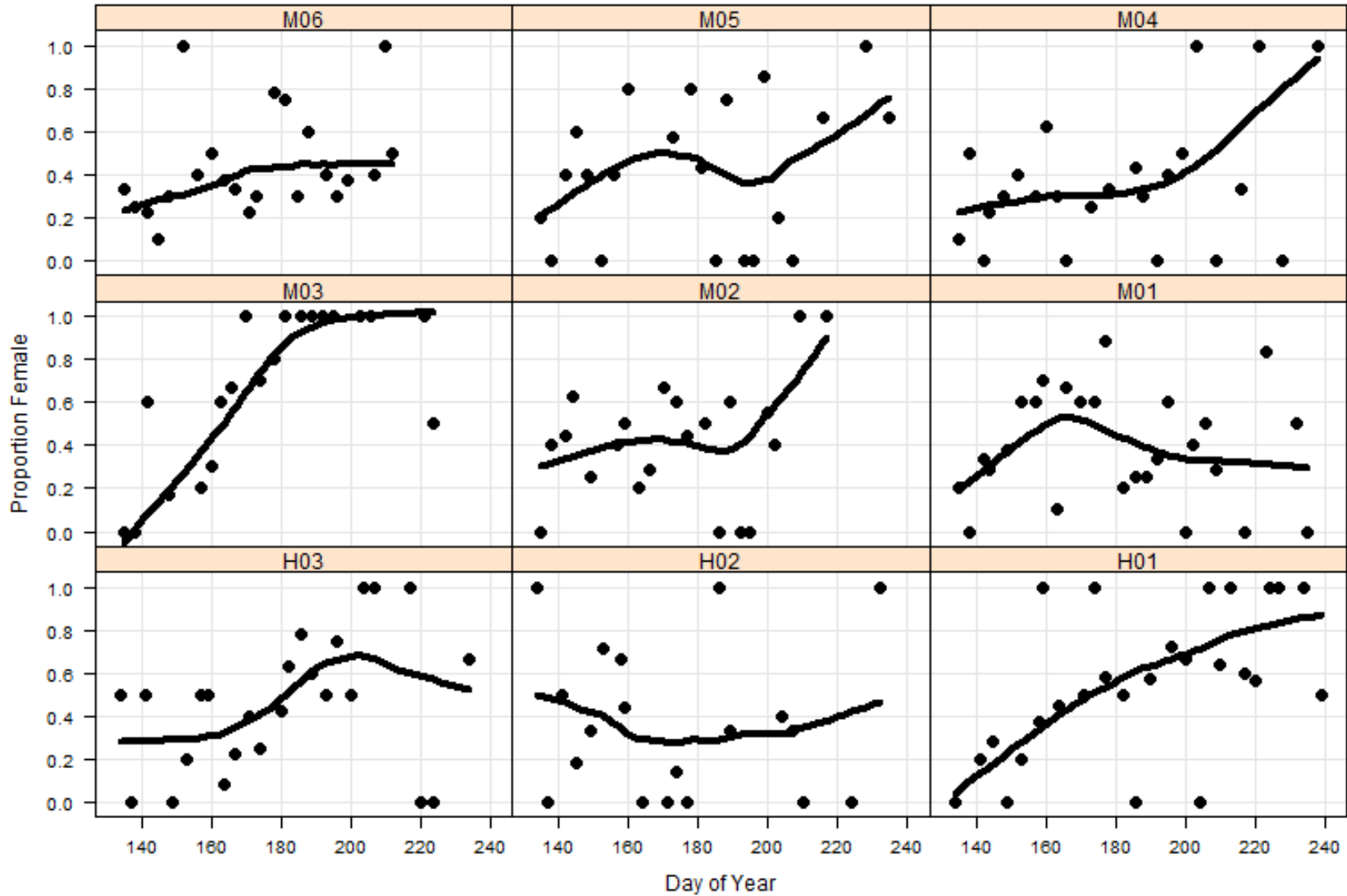
- In 2015, 3,716 salmon processed for weight-length measurements and otoliths extracted. Pink Salmon (2,278), Chum (1,296).
- Male bias is consistent across years in the pink salmon run.
- Chum salmon ratio closer to 50:50, but more variable across stations, and differ by origin in some cases.



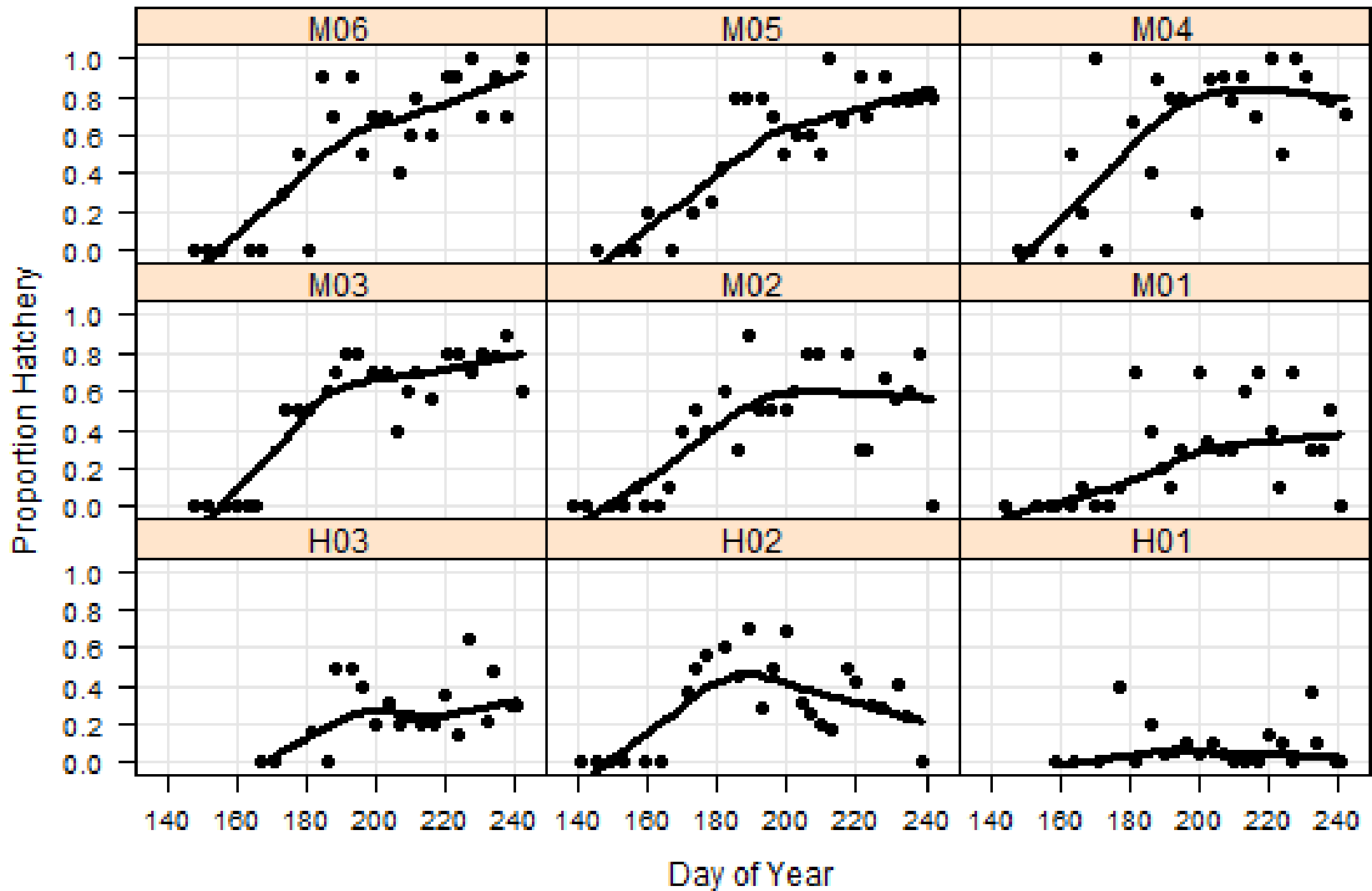
Male Pink Salmon Arrive Earlier - 2015



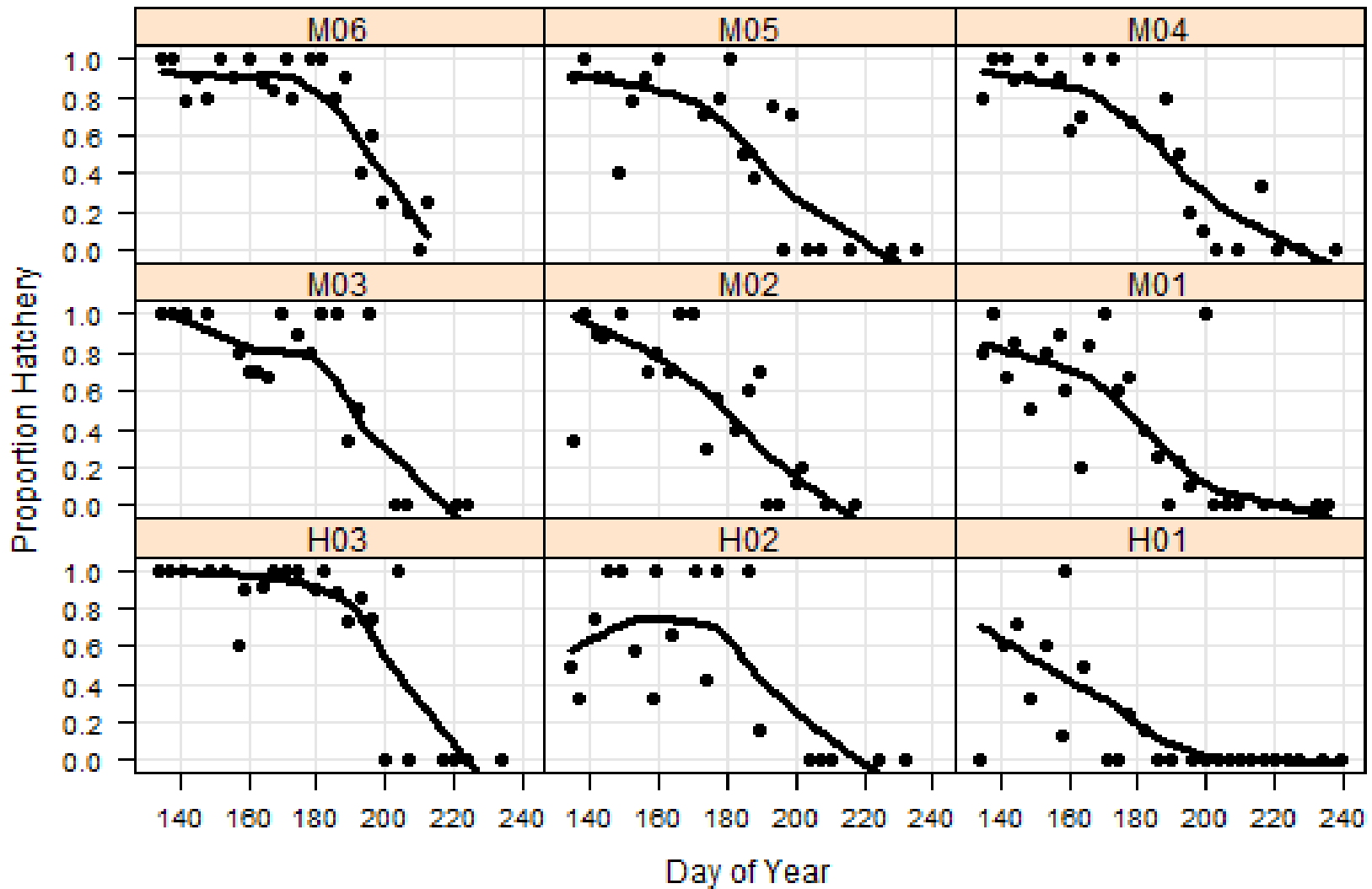
Male Chum Salmon Arrive Earlier - 2015



Hatchery Pink Salmon Arrive Later: 2015

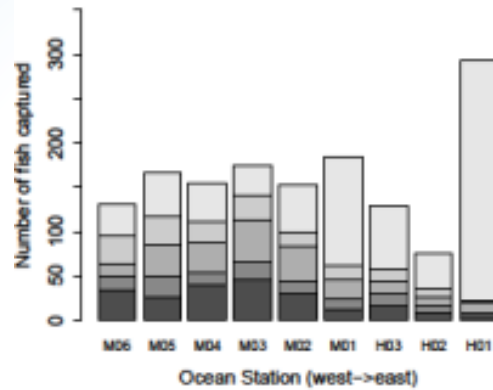


Hatchery Chum Salmon Arrive Earlier - 2015

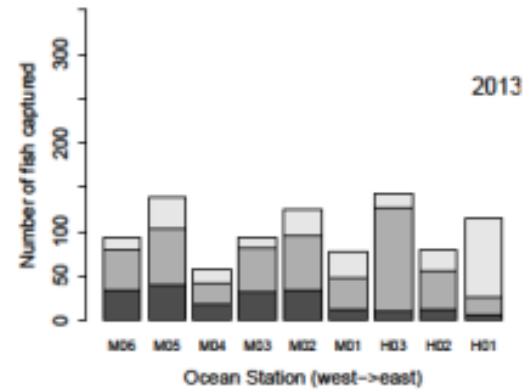


Origins

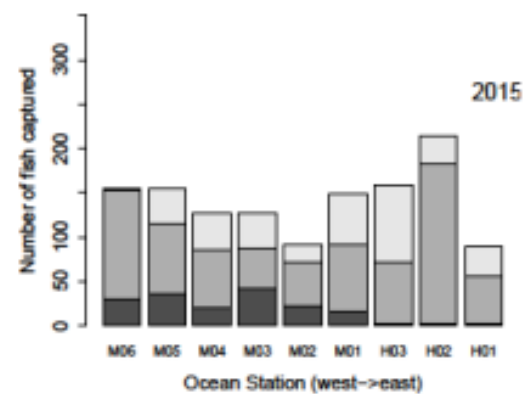
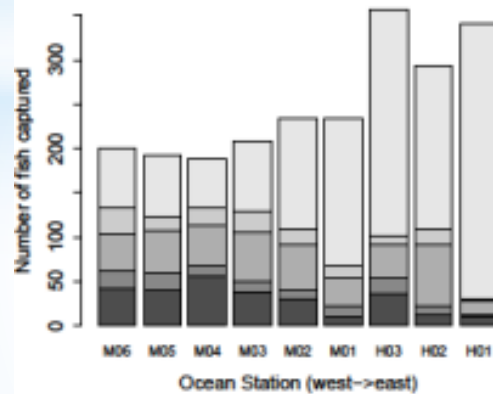
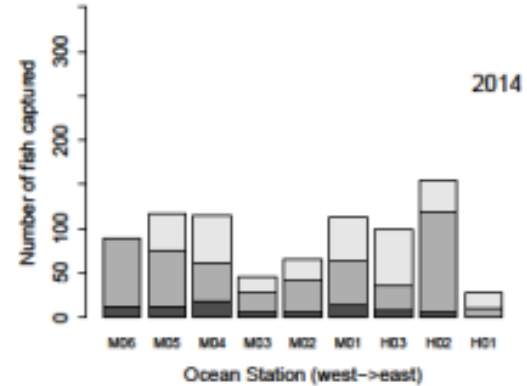
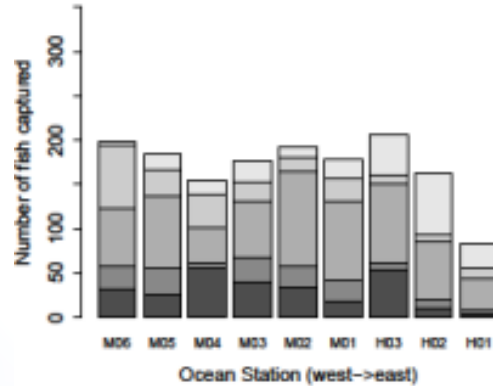
Pink



Chum

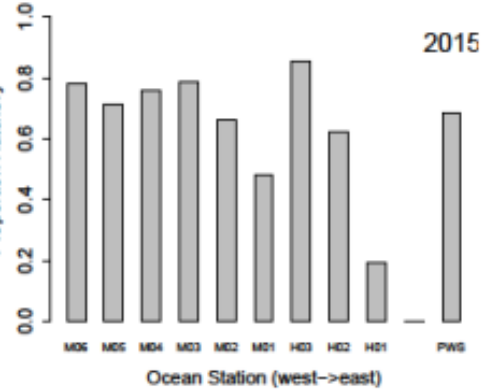
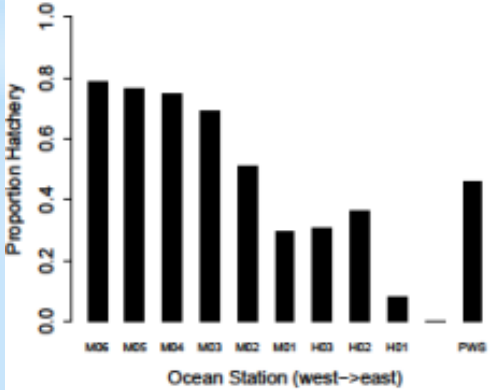
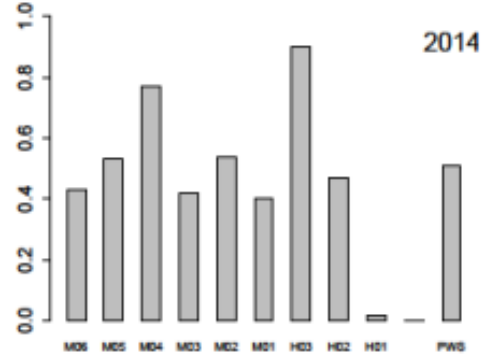
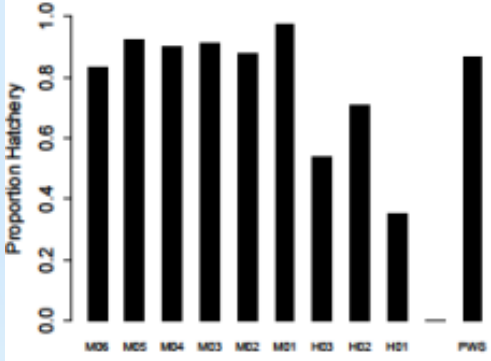
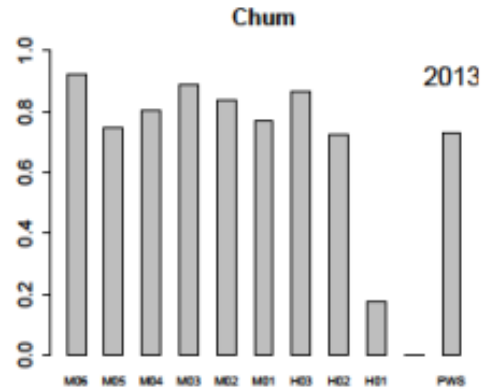
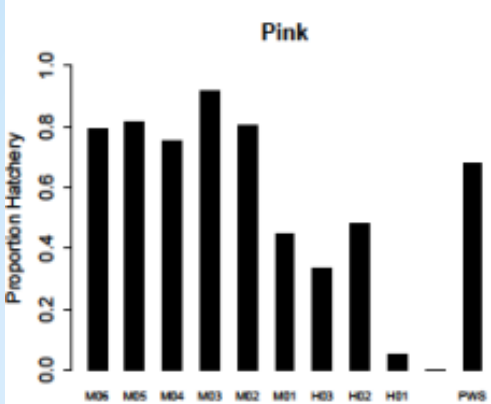


- WILD
- WALLY NOERENBERG
- SOLOMON GULCH
- CANNERY CREEK
- A F KOERNIG



Weighted Hatchery Proportions

The weighted hatchery proportions calculated for Pink Salmon and Chum Salmon for Prince William Sound entrances combined were 0.55 (SE = 0.004) and 0.69 (SE = 0.015), respectively.



Aggregate hatchery proportion by species and by year

