# Chum Salmon pedigree analyses and remaining work

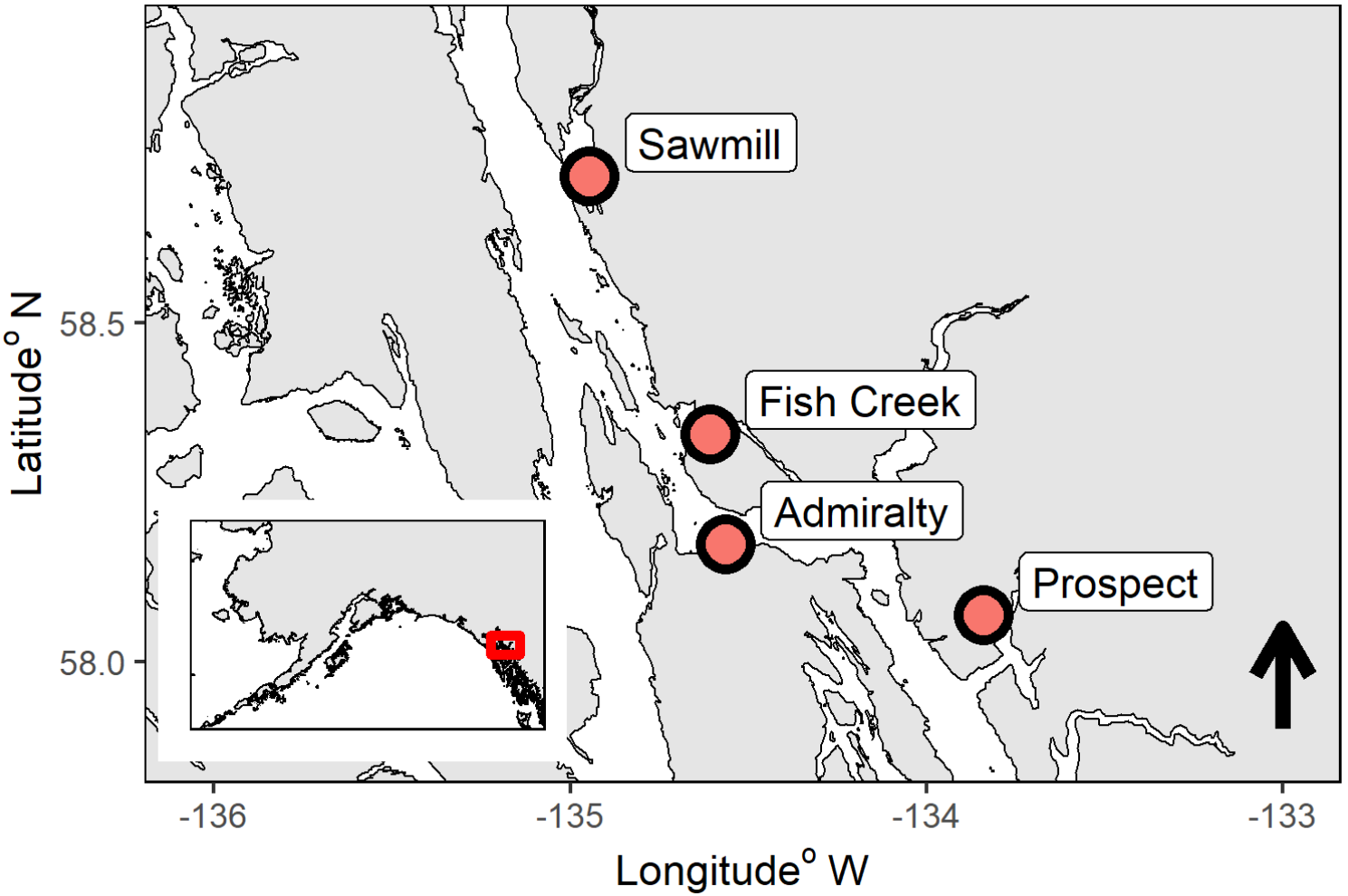
Kyle Shedd
Gene Conservation Laboratory
Alaska Department of Fish and Game
AHRP Informational Meeting
March 6, 2020

# Alaska Hatchery Research Program

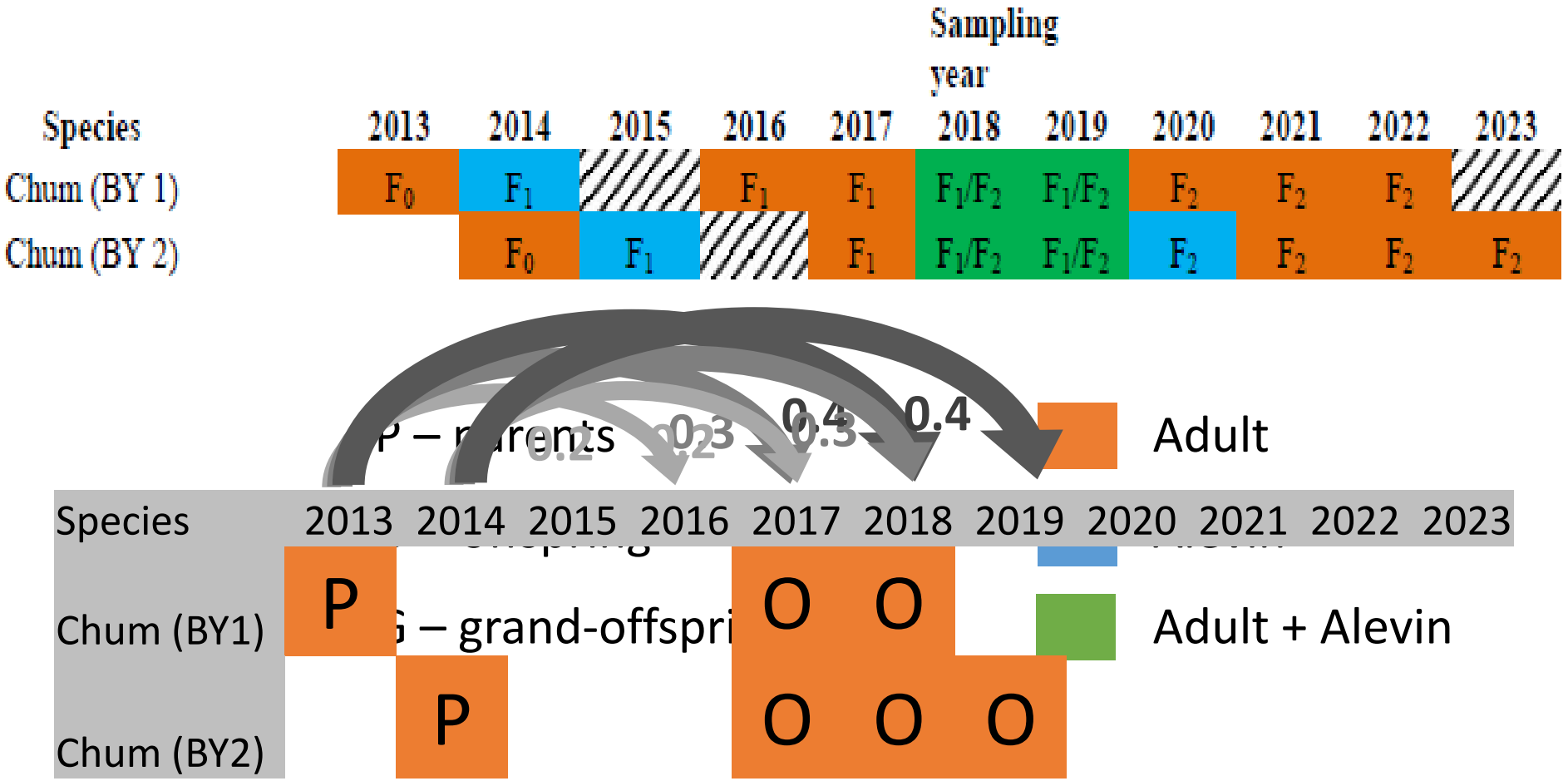
1) What is the genetic structure of pink and chum in PWS and SEAK?
2) What is the extent and annual variability of straying?
3) What is the impact on fitness (productivity) of natural pink and chum stocks due to straying hatchery pink and chum salmon?

# AHRP Fitness Study: SEAK Chum Salmon

# Map of SEAK Chum fitness streams



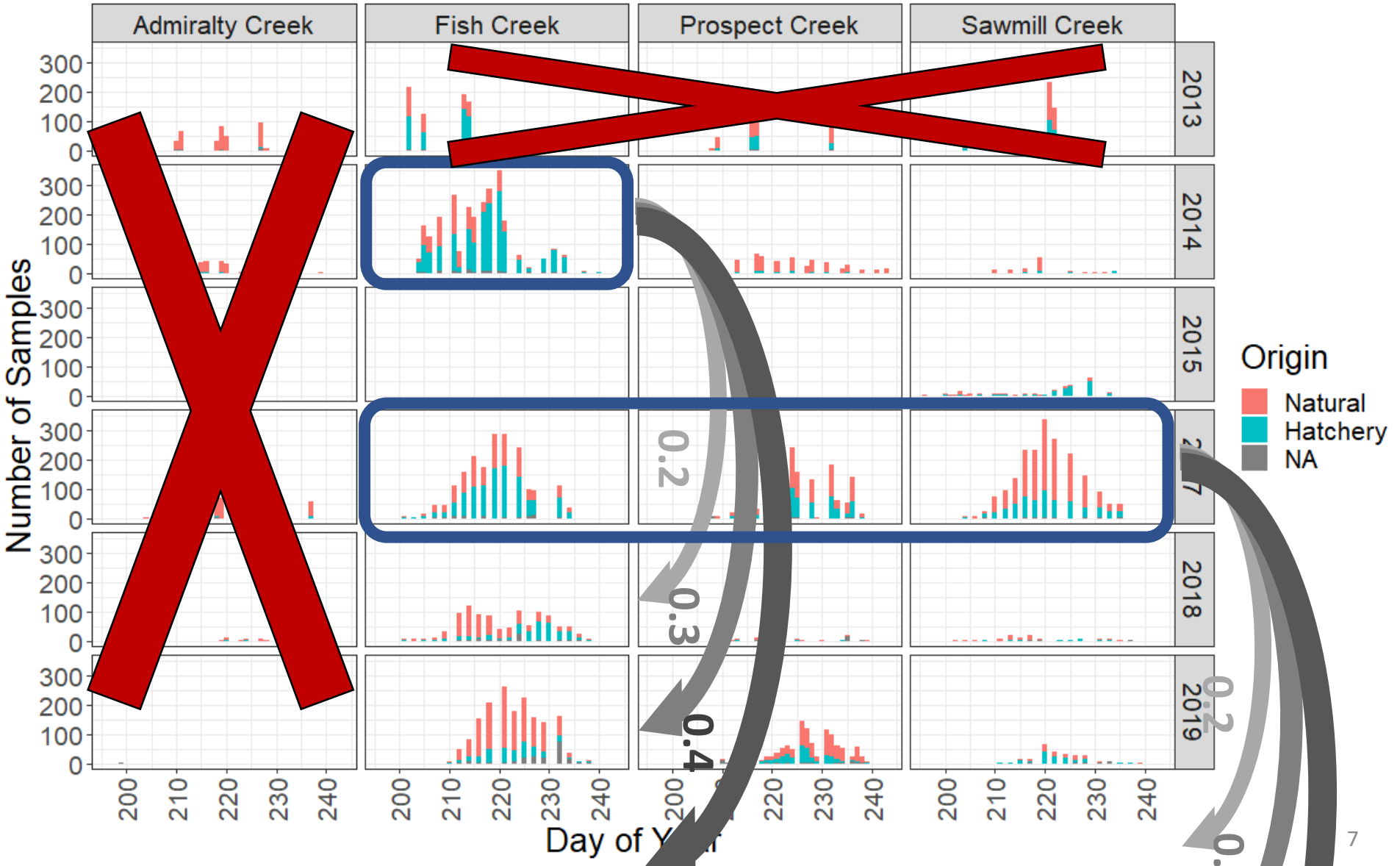
# Study plan


Sampling year
Species
2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Chum (BY 1)
F0 F1 F1 F1 F1/F2 F1/F2 F2 F2 F2
Chum (BY 2)
F0 F1 F1 F1/F2 F1/F2 F2 F2 F2 F2
0.2 0.3 0.3 0.4 0.4
Adult
Species
2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Chum (BY1)
P O O
– grand-offspri
Adult + Alevin
Chum (BY2)
P O O O

# Statistical power of study plan

- Need minimum ~100 parents of each sex/origin
- Ideally a high proportion of parents
  - Hogan Bay 2013/2015
    - Low sampling rate = few parent-offspring assignments
- Sample high proportion of offspring
  - Consistent proportion for all return years
  - Differences in age at return?

# Samples by origin, stream, and year



# Acknowledgements


- Alaska Hatchery Research Program
  - State of Alaska
  - Seafood industry
  - Private non-profit hatcheries
- Sitka Sound Science Center
  - Field collection
- ADF&G Mark, Tag and Age Lab
- ADF&G Gene Conservation Laboratory

# Questions?