Fitness Studies – SEAK Chum Salmon Pedigree analyses and remaining work

Kyle Shedd, E. Lescak, H. Hoyt, C. Habicht

Alaska Department of Fish and Game Gene Conservation Lab

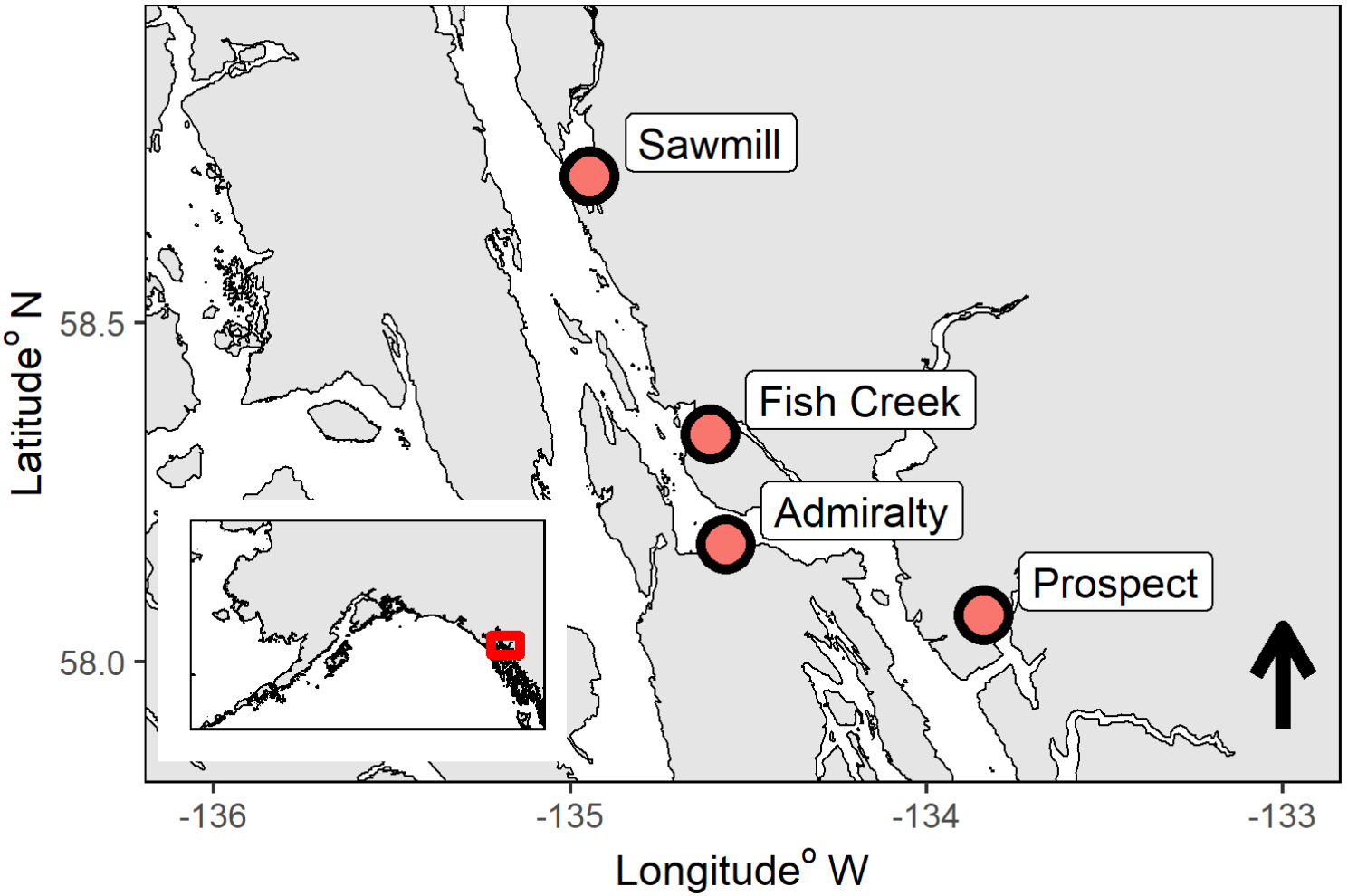
Alaska Hatchery Research Program Informational Meeting

March 7, 2019

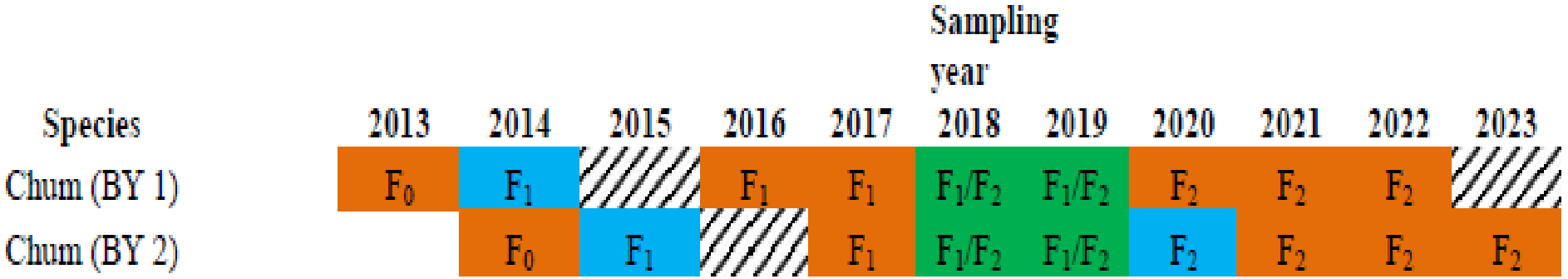
Alaska Hatchery Research Program

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?

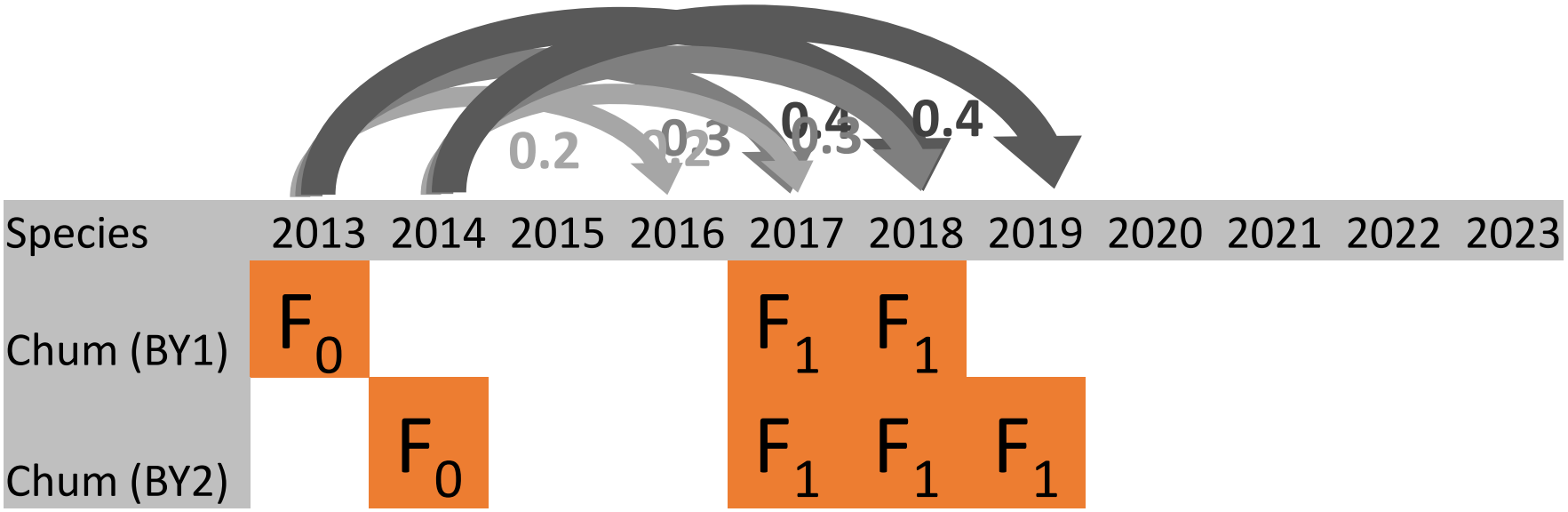
Map of SEAK Chum fitness streams



Original plan in RFP



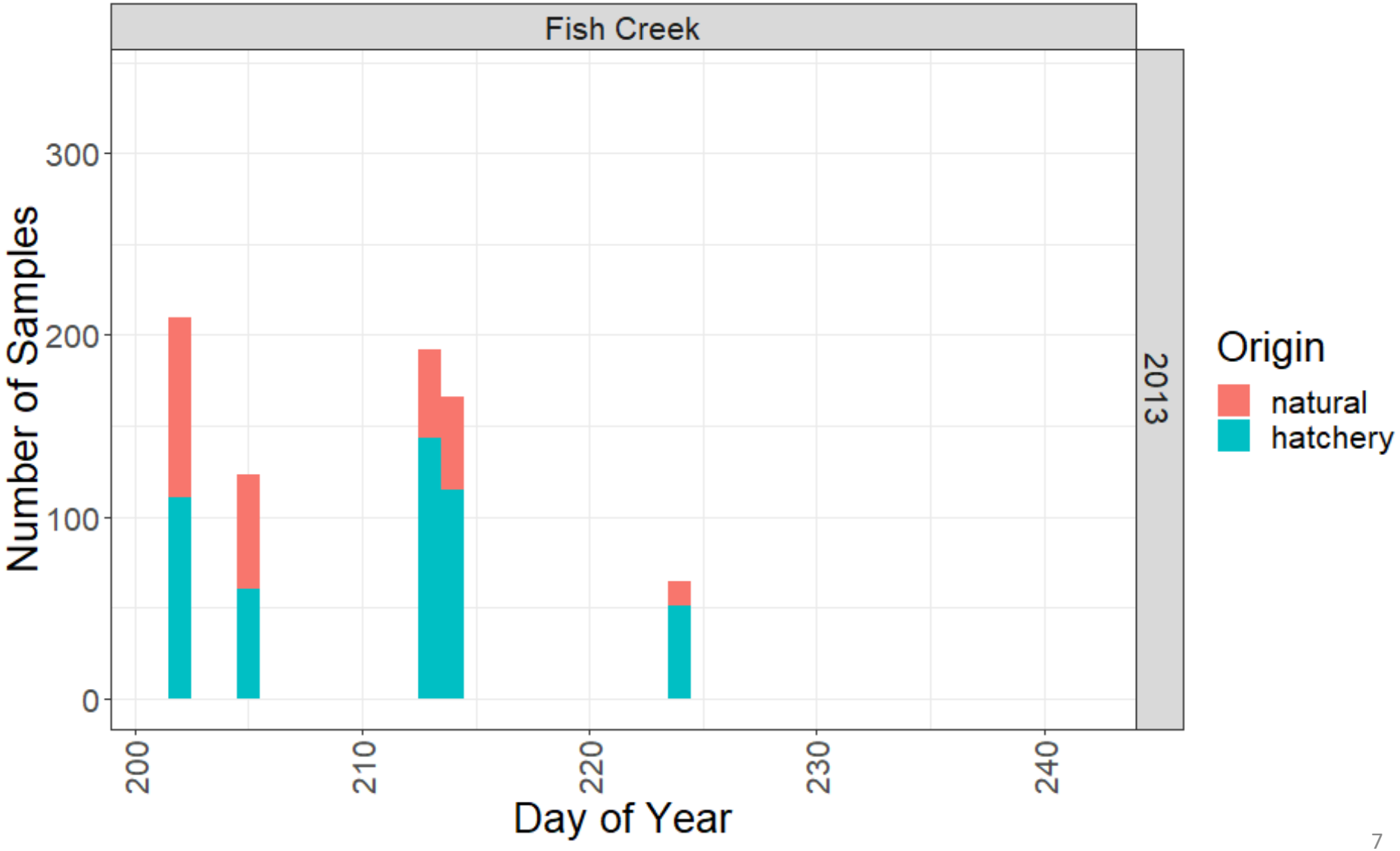
Implemented plan



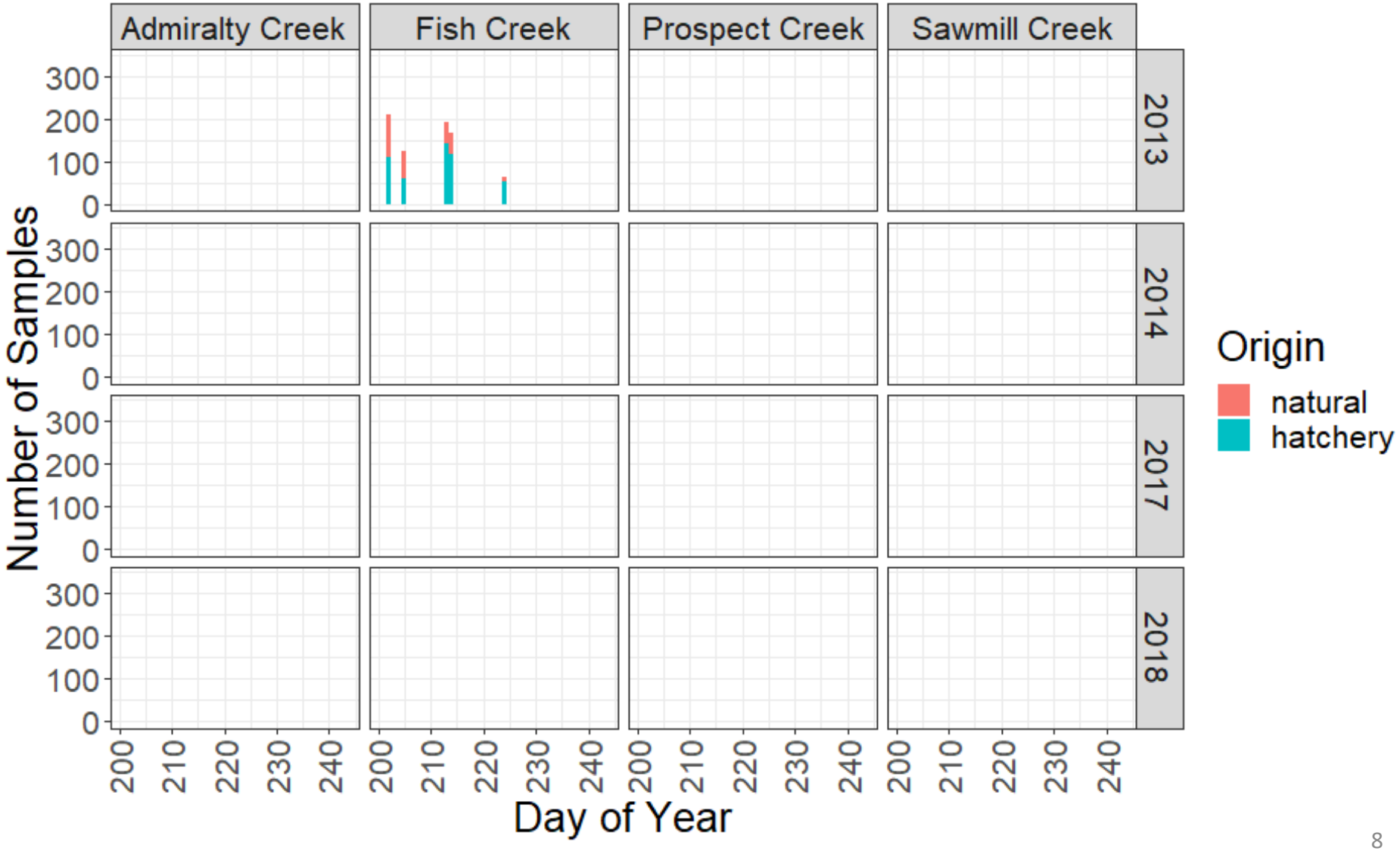
Statistical power of RRS

- 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?

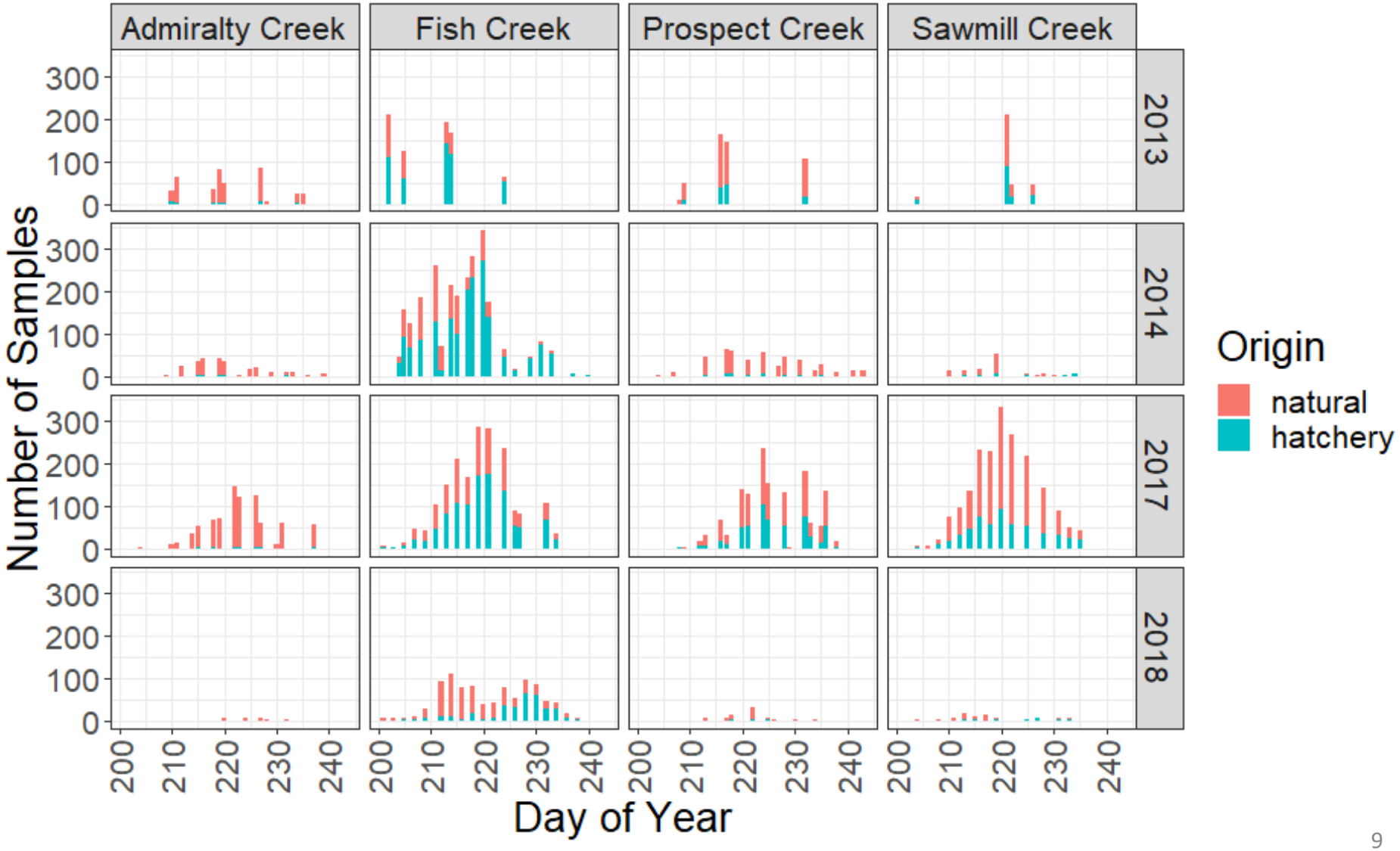
Samples by origin, stream, and year



Samples by origin, stream, and year



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?