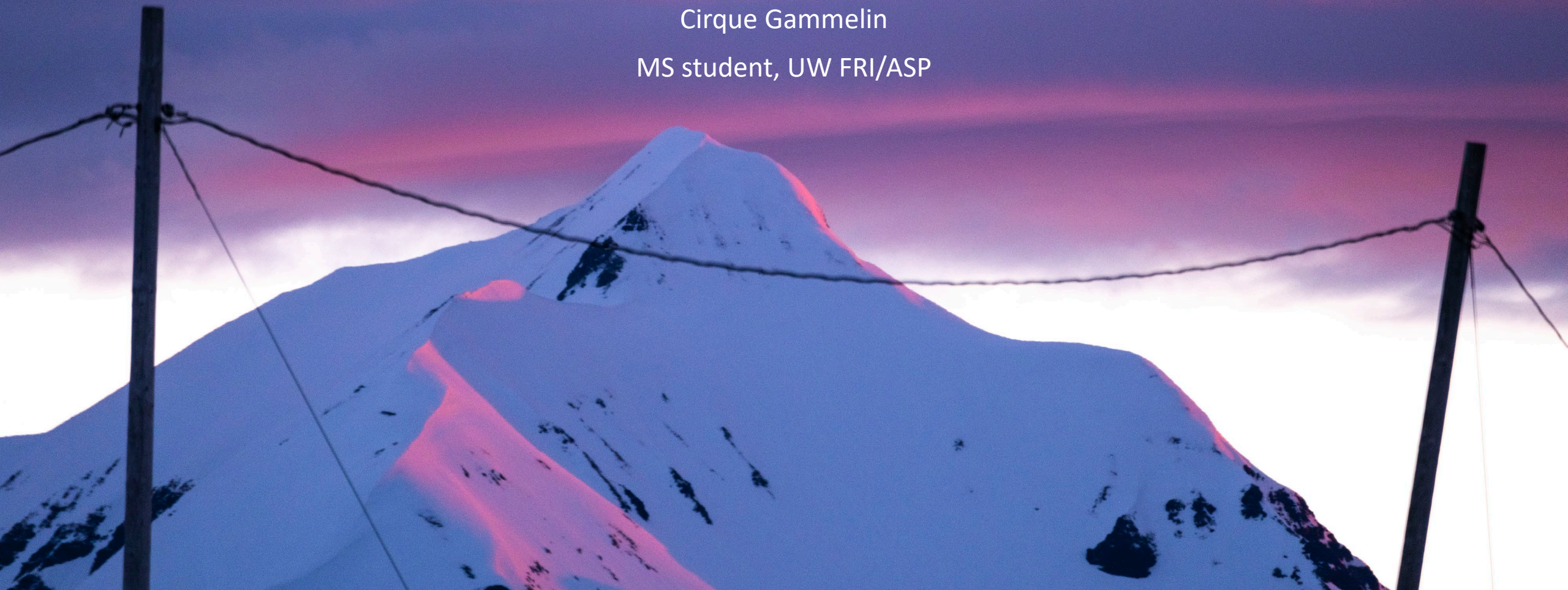
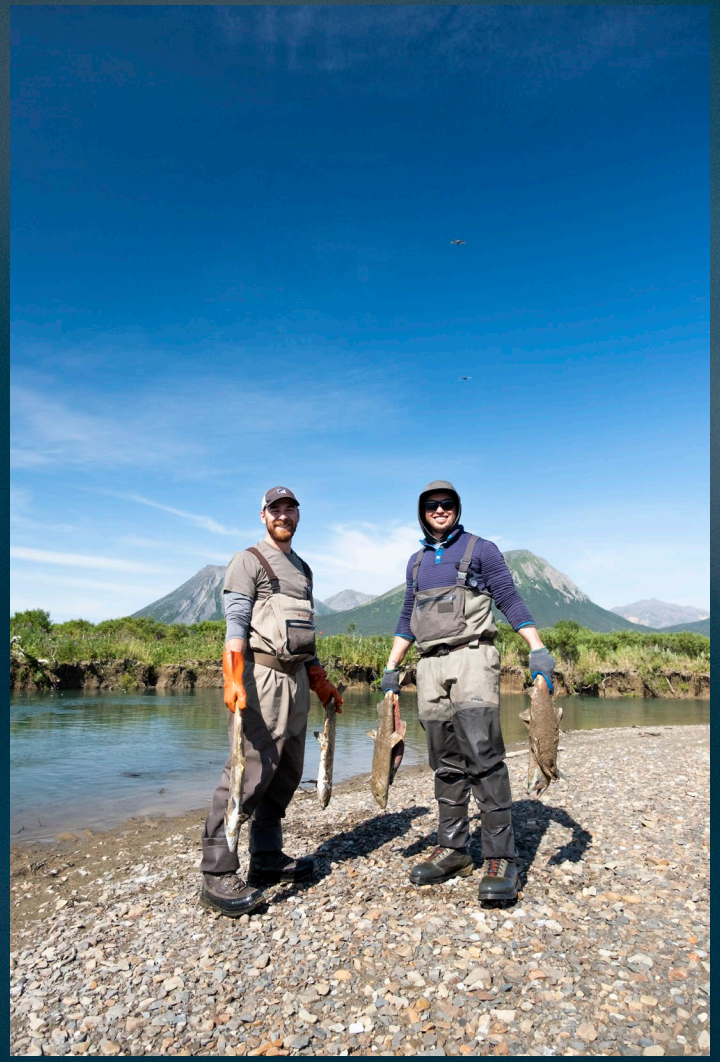
Juvenile Sockeye Competition Within Chignik Lake

Cirque Gammelin

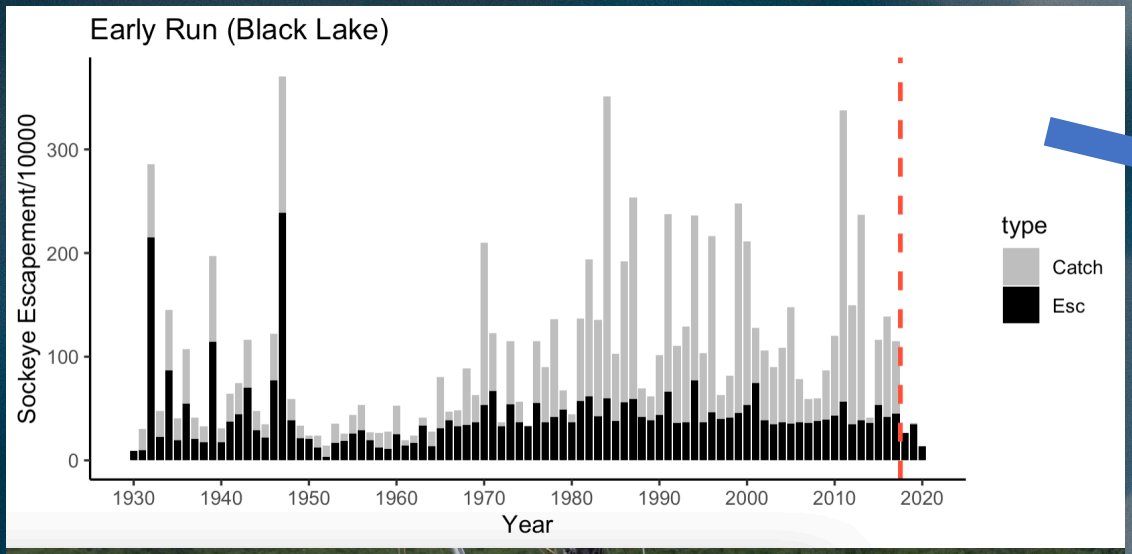
MS student, UW FRI/ASP

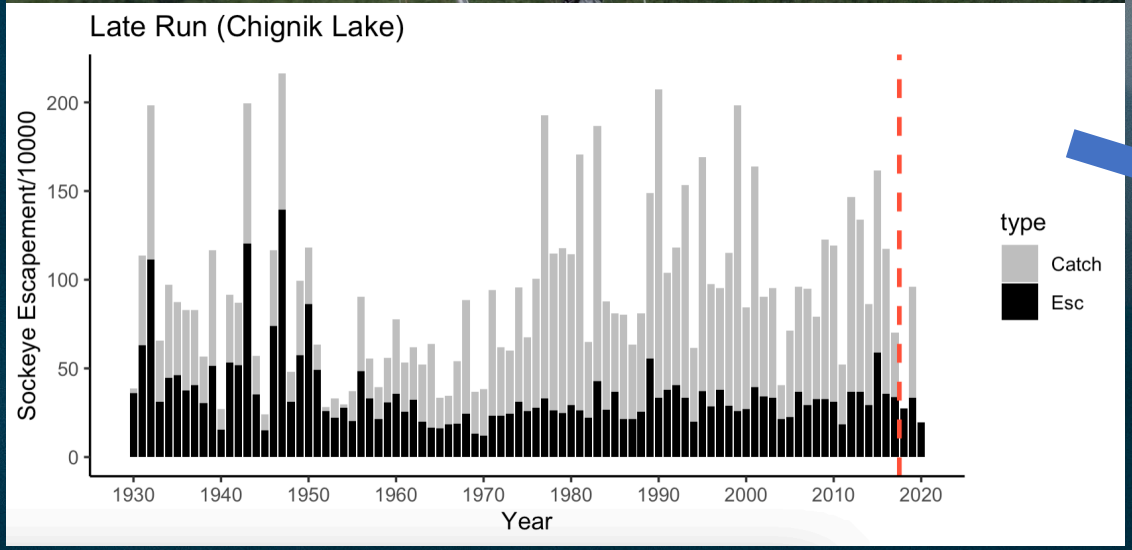


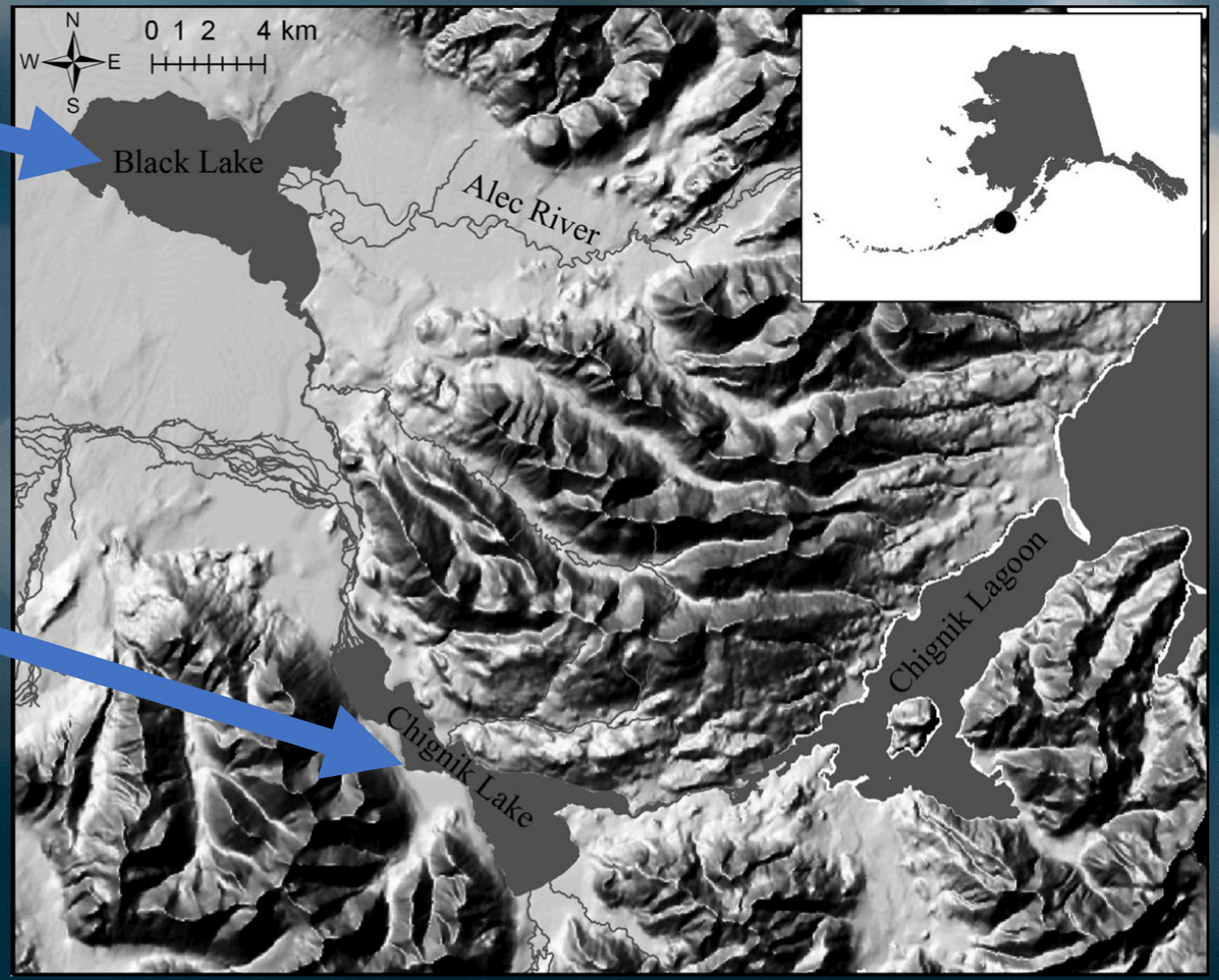
UW - Alaska Salmon Program (FRI)



Chignik Watershed







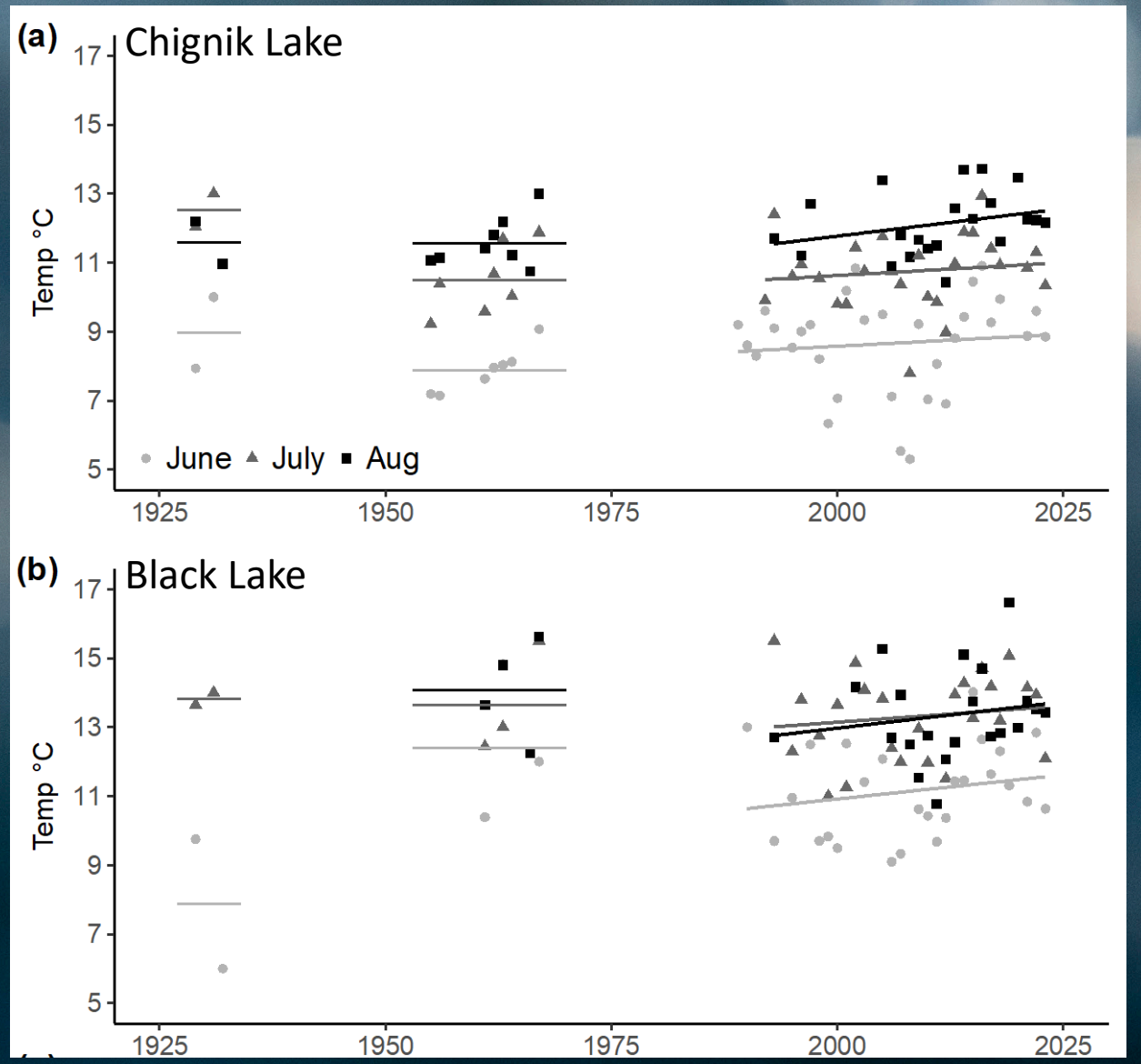
Walsworth et al. 2020

Black Lake (early run) fry emigration

- Black lake Juveniles migrate to Chignik lake at the end of the first summer of growth
- In Chignik lake, Black Lake emigrants are larger than their Chignik lake age class peers
- How do Black lake emigrants compete with Chignik lake resident fry?

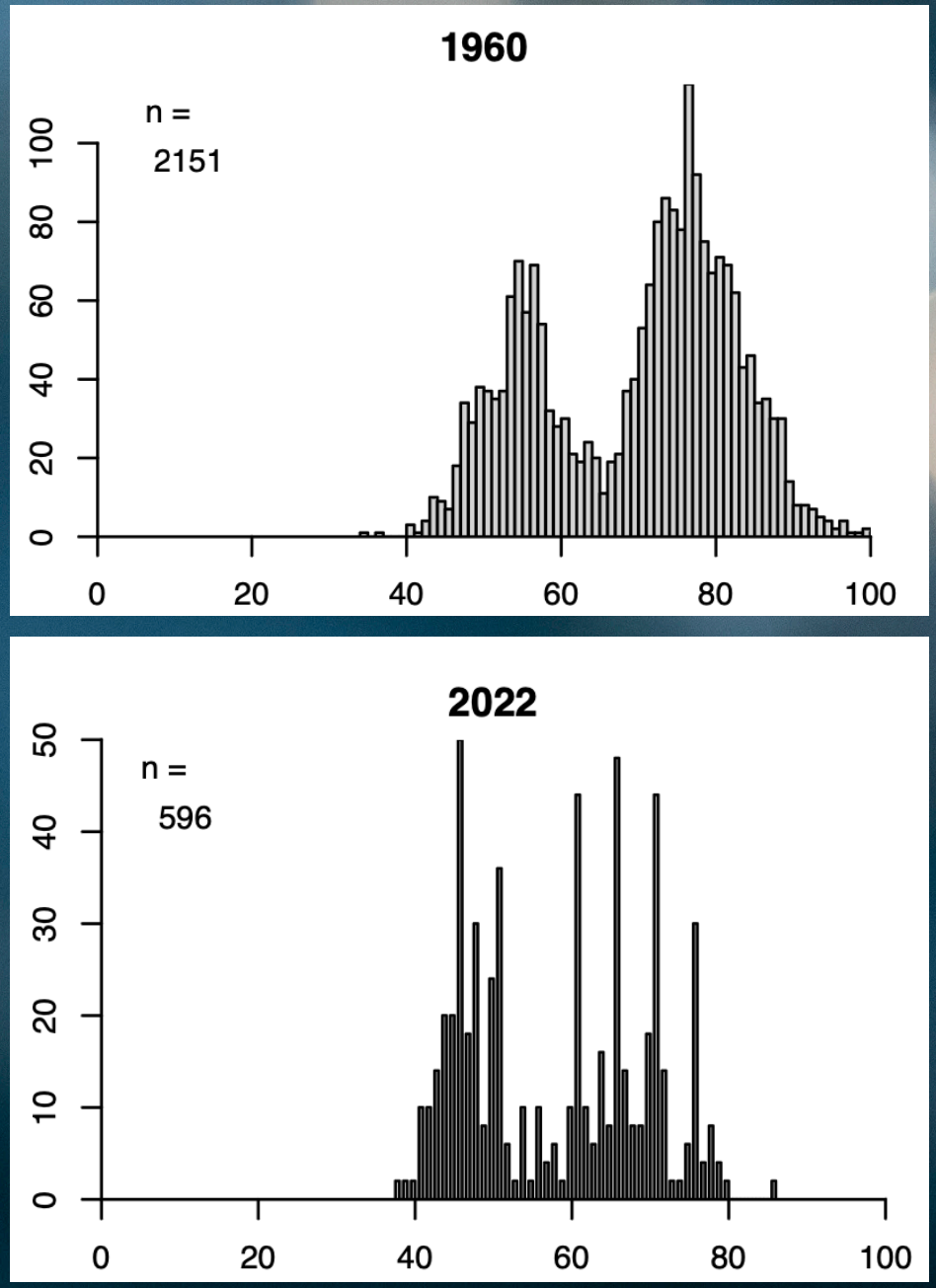
Climate Influences emigration

- Chignik and Black lakes are warming
- Black lake fish are emigrating earlier in the season
- How do Black lake emigrants compete with resident Chignik fry?
- Are Black lake emigrants at a competitive advantage?
- **Hypothesis:** Earlier Black lake emigration is increasing intraspecific competition within Chignik lake



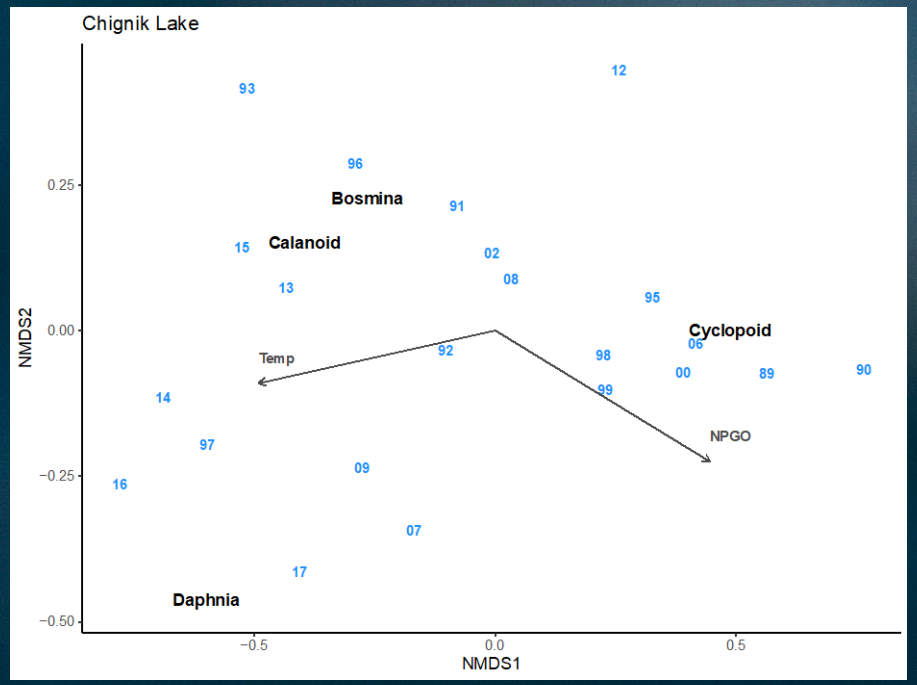
Study Design

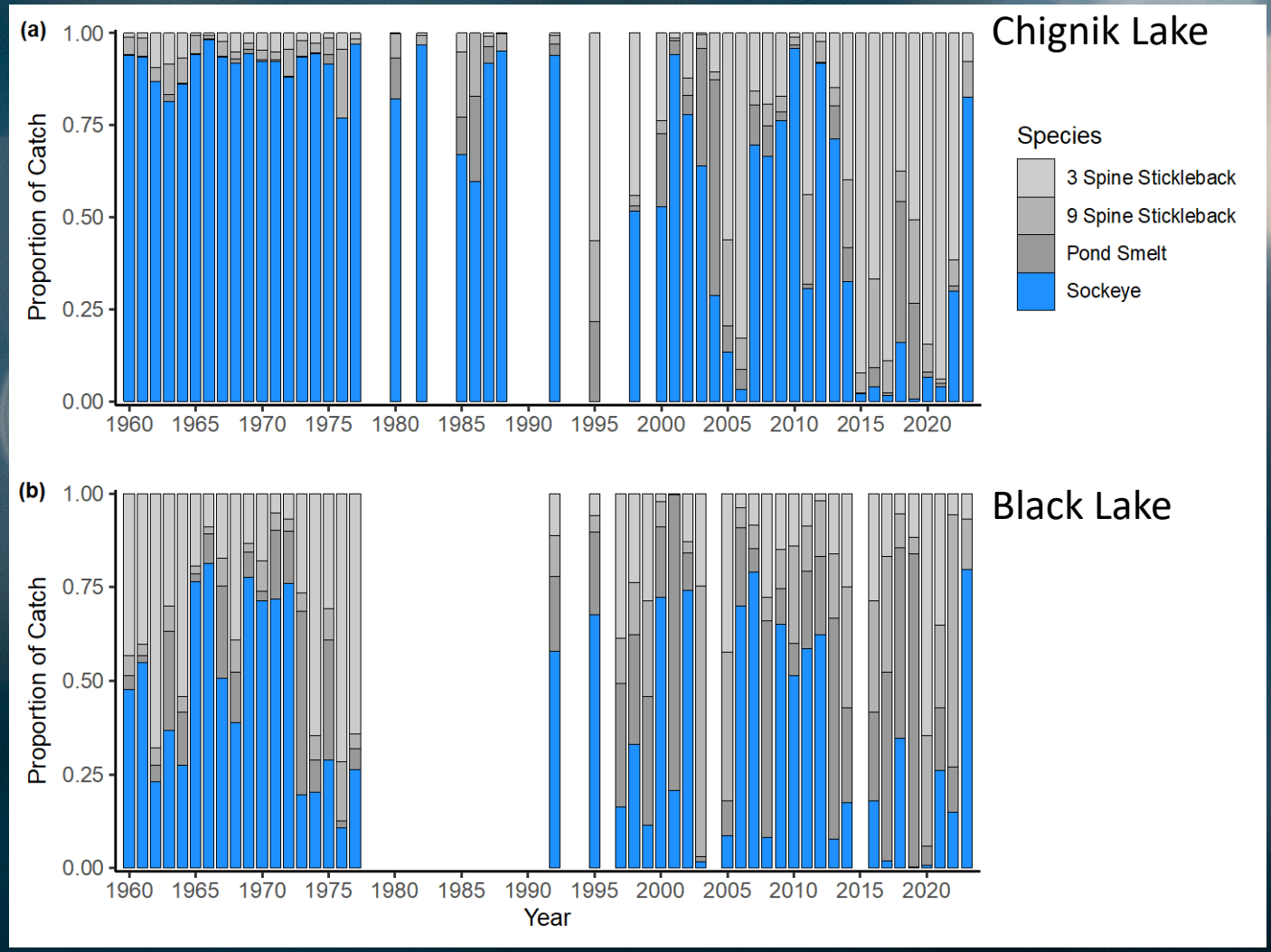
- **Data**
  - Long term Chignik lake townet dataset
  - Genetics from Chignik Lake from 2019-2024
- Mixed distribution model to identify stock of origin
- Look at long term trends in stock composition and stock specific growth performance in Chignik Lake



Other factors impacting freshwater growth

- Changing zooplankton communities
- Interspecific competition from smelt/sticklebacks





Questions?