Life history trait variation among Atlantic herring populations

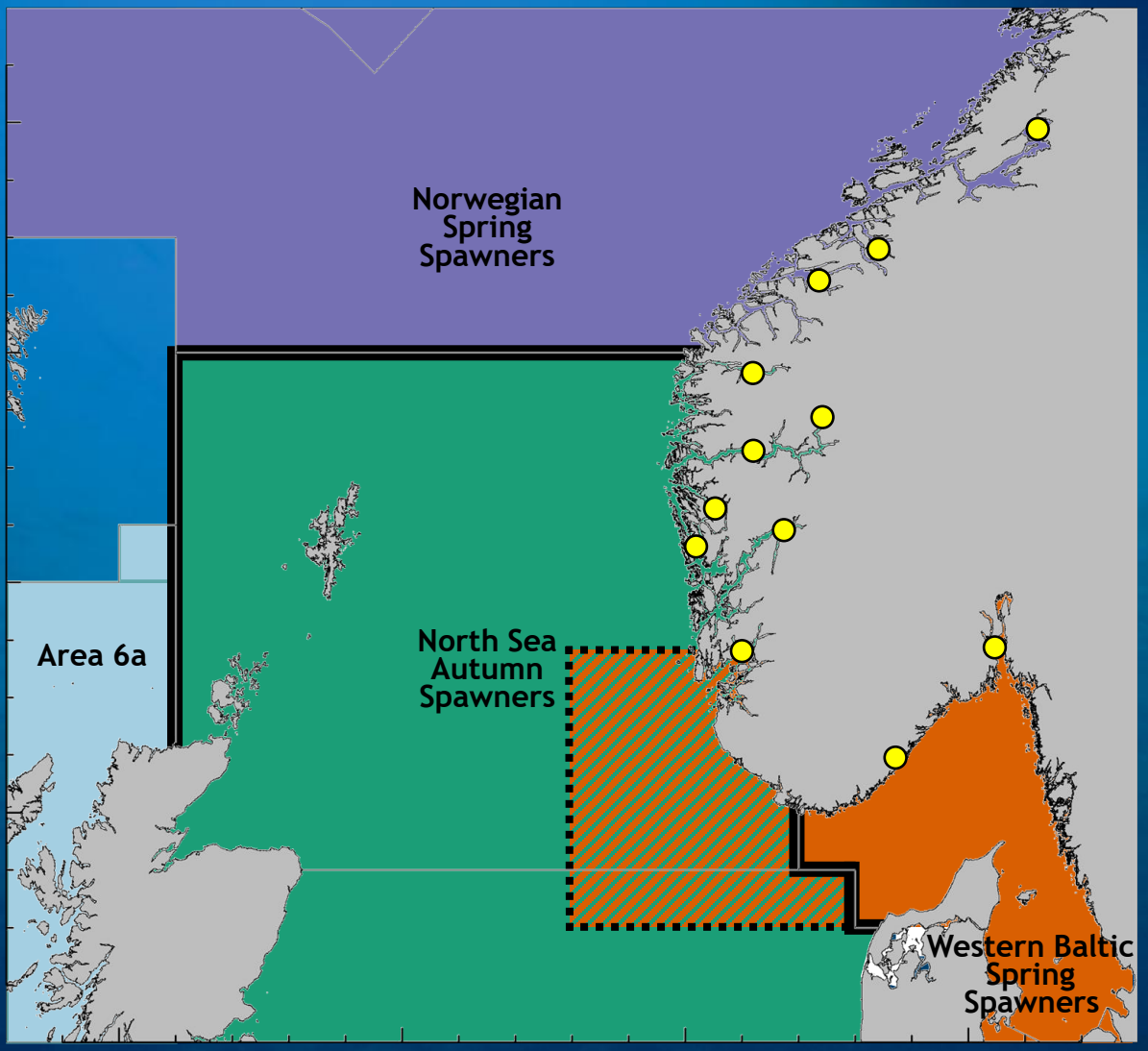
SPF Symposium 2026

7. May

Florian Berg

florian.berg@hi.no

Can genetics help stock assessment?



Not, yet!!!

- Assessment replies on time series!
- How to allocate “none existing” stocks

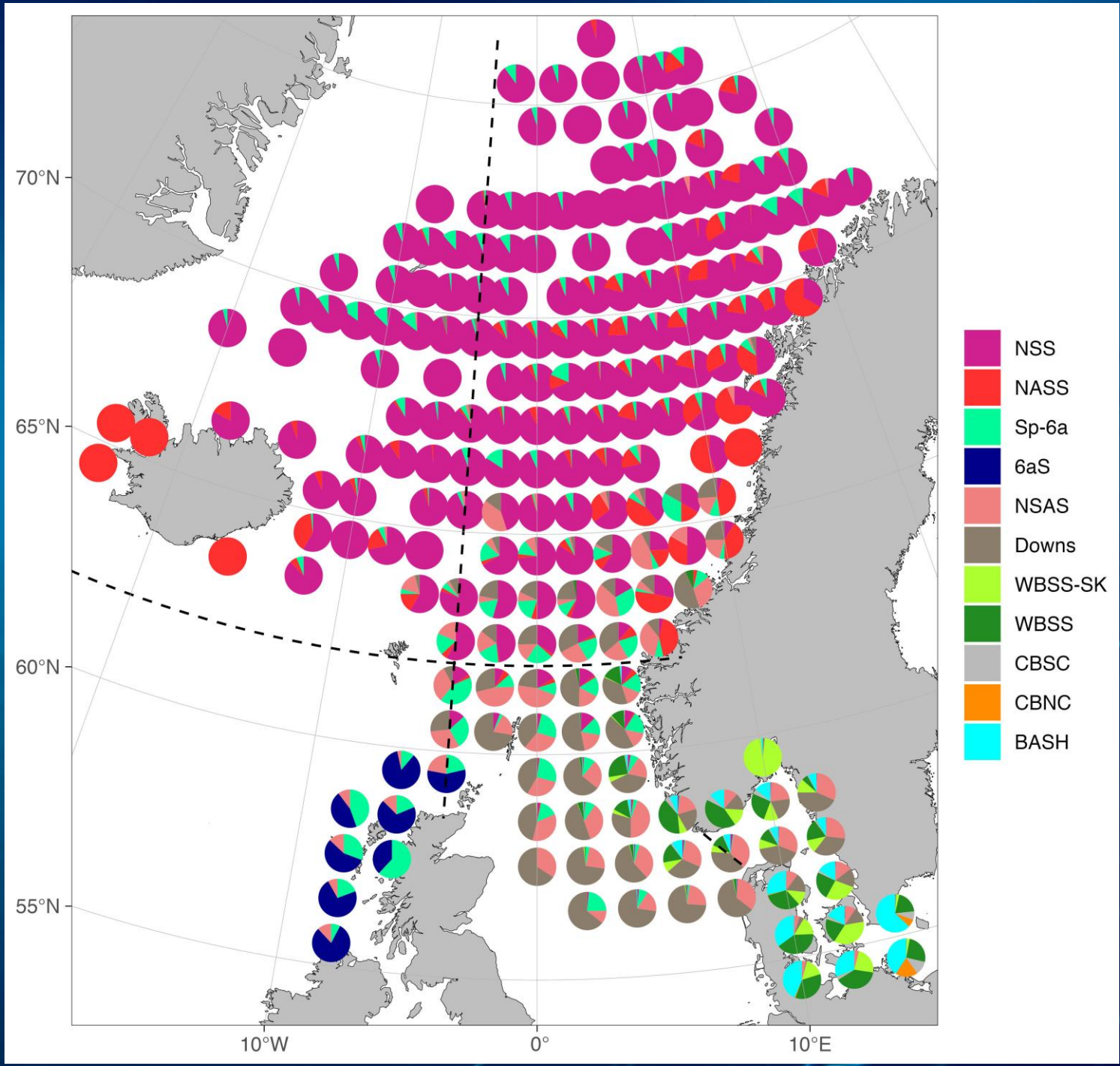
But,

- much better biological knowledge
- redefine stock borders → dynamic?

Can genetics become a GAME CHANGER?

Genetically identified populations

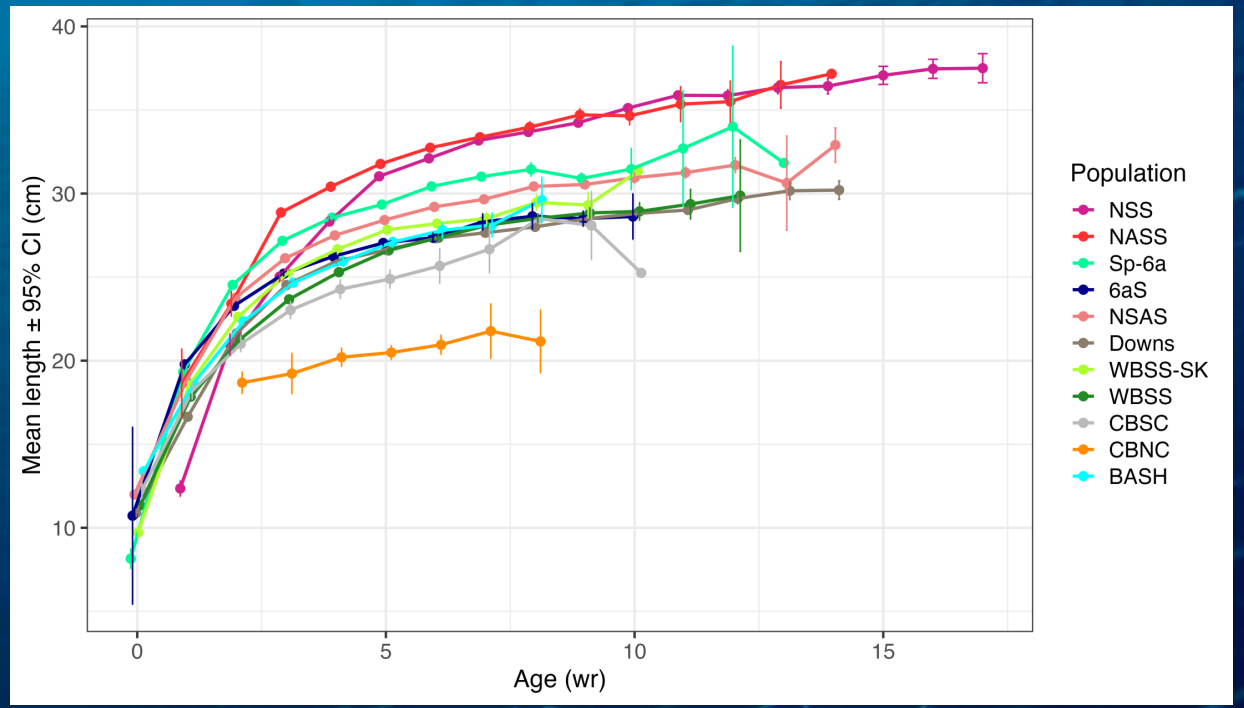
- **38,000 individuals genotyped**



Life history traits

Conclusion

- Enhance our understanding of life-history variability among populations
- Support interpretation of phenotypic diversity in mixed samples
- Inform a more accurate assessment, effective management, and conservation

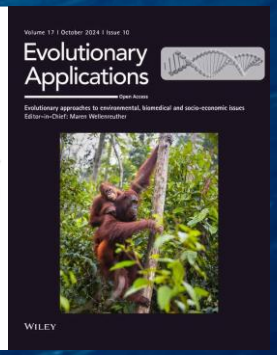


Genetic framework

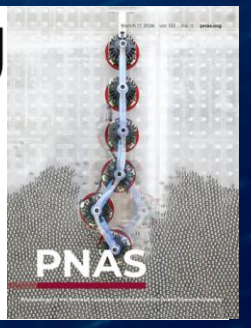
Genetic adaptions underlying population structure in herring, *Clupea harengus* (GENSINC)

Mixed-stock analysis of Atlantic herring (*Clupea harengus*): a tool for identifying management units and complex migration dynamics

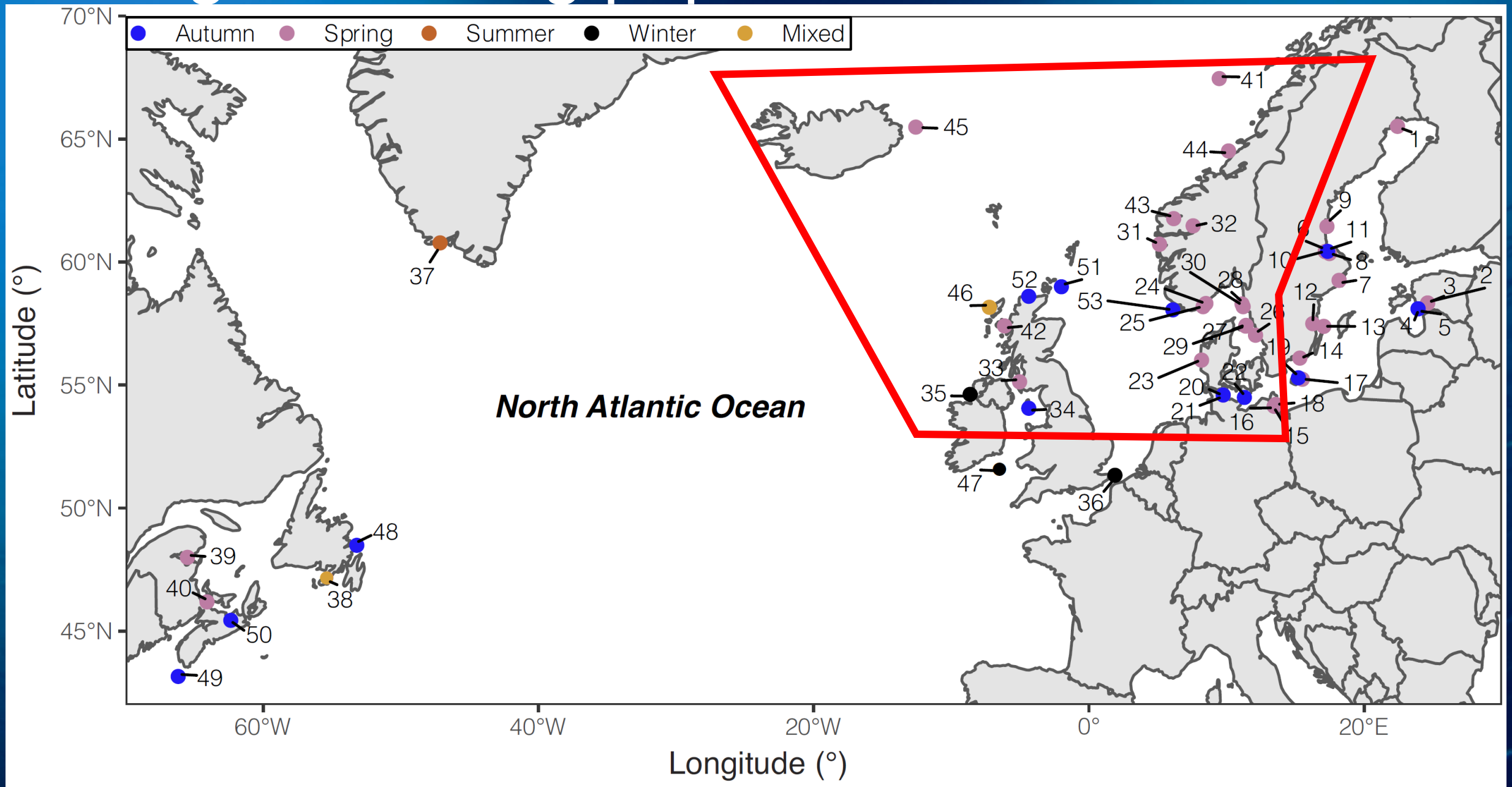
Genetic Stock Identification Reveals Mismatches Between Management Areas and Population Genetic Structure in a Migratory Pelagic Fish



The population structure in the Baltic herring reflects natural selection and local adaptation



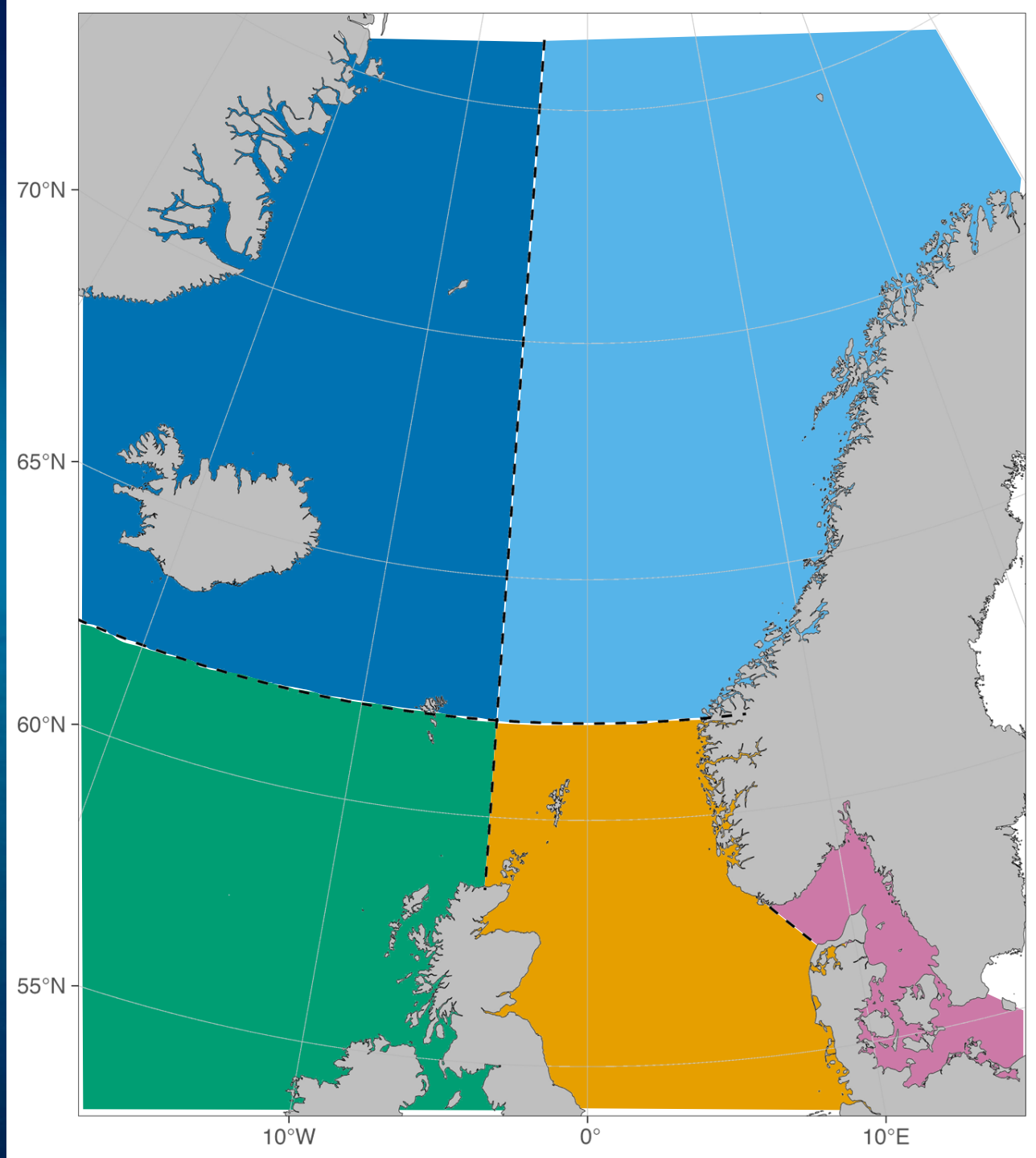
Original herring populations



Study area

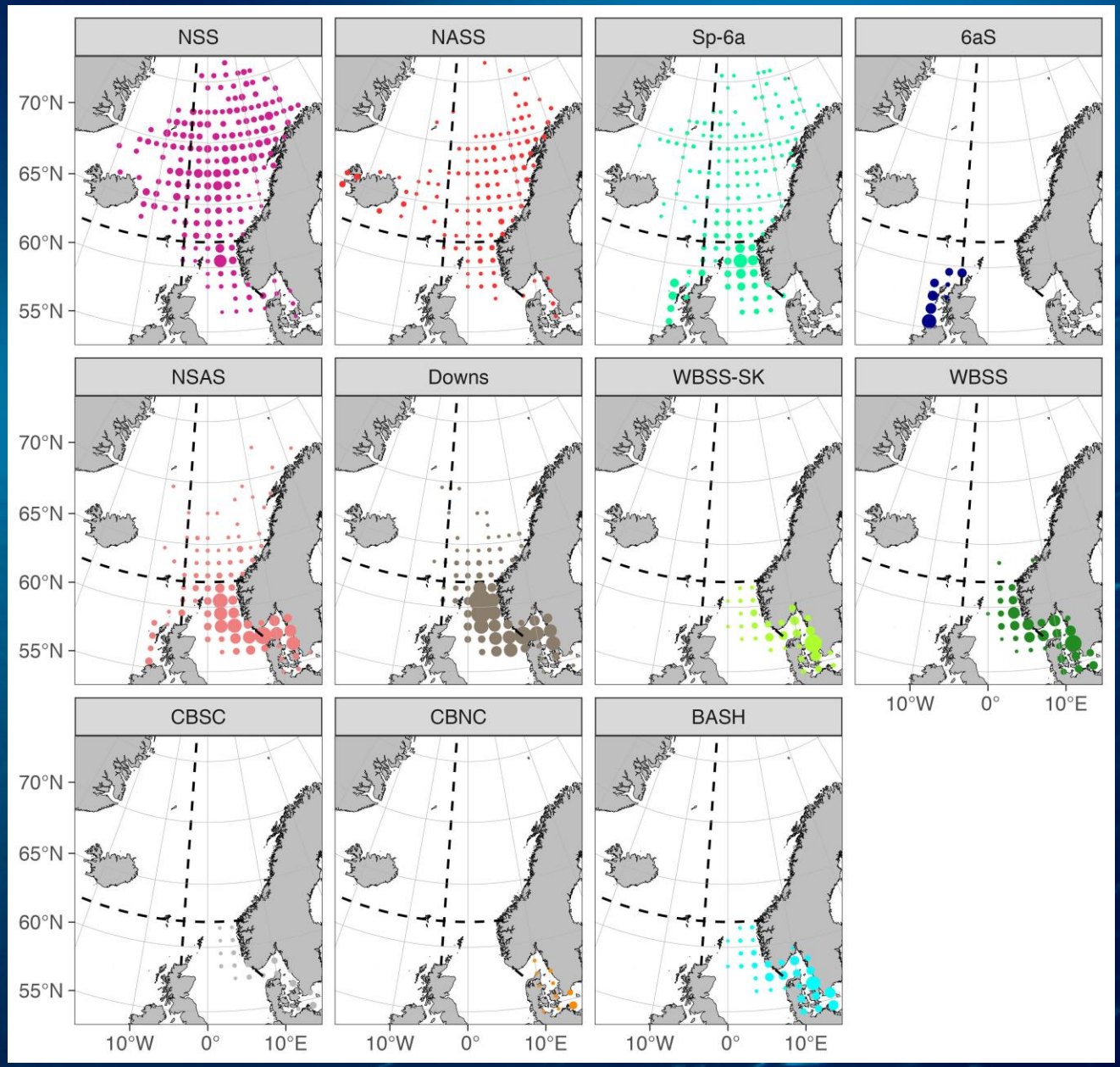
- **Northeastern Atlantic**

- **5 major regions**
  - **Icelandic Sea**
  - **Norwegian Sea**
  - **Celtic Seas**
  - **North Sea**
  - **Western Baltic Sea**

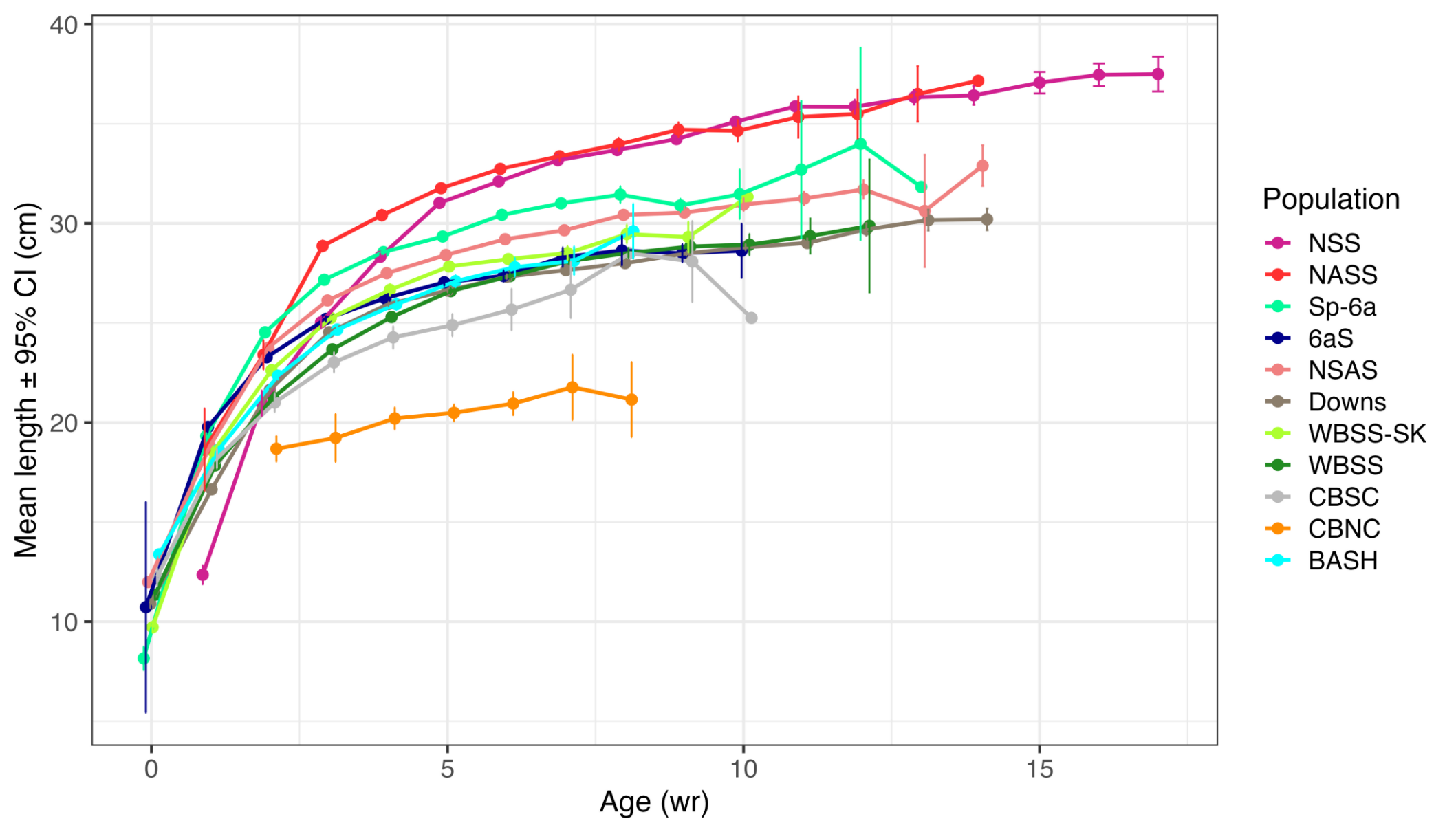


Genetically identified populations

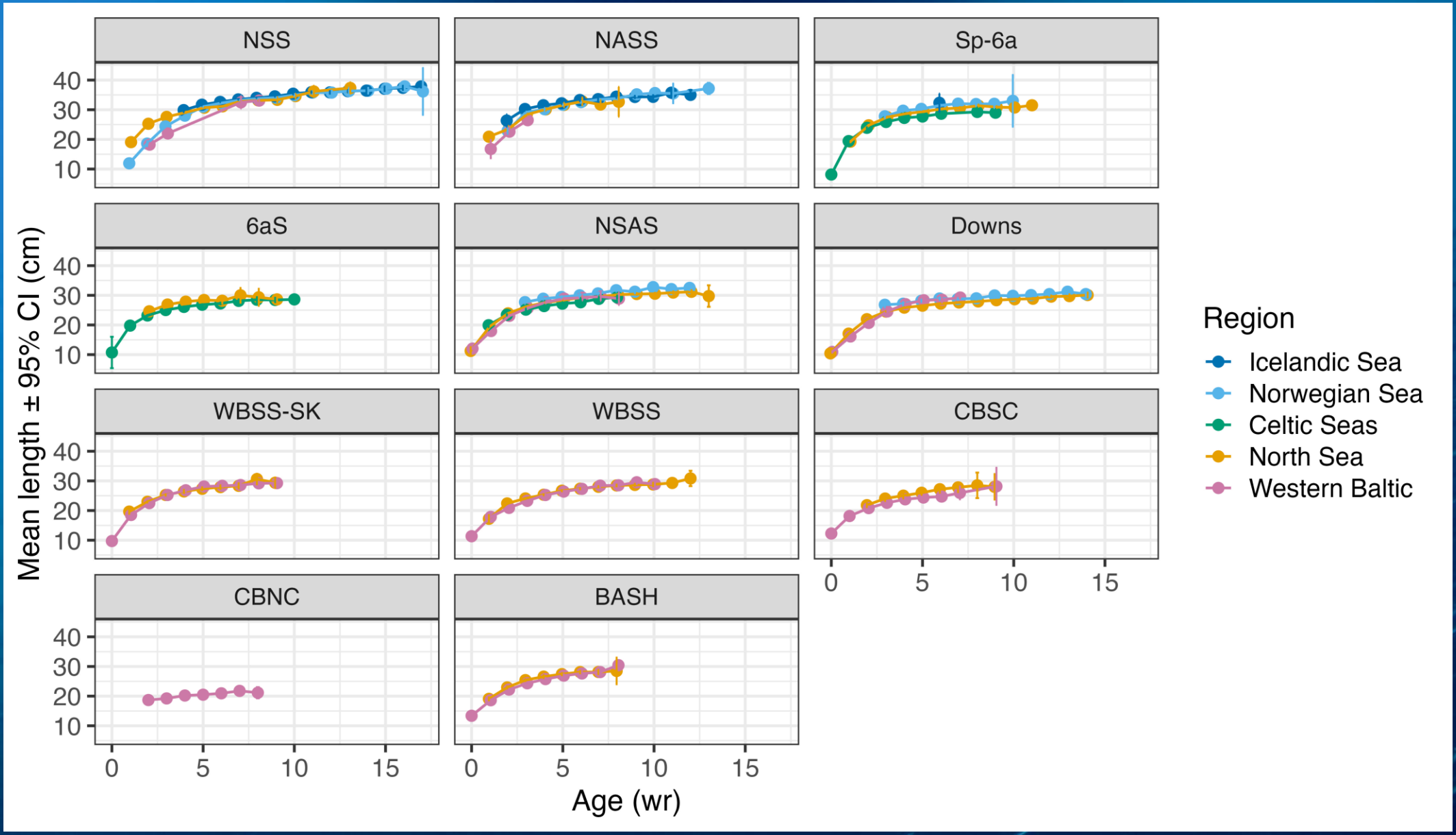
- **38,000 individuals genotyped**
- **Since 2019 – 2025**
- **13 genetically distinct populations**
- **Both from scientific surveys and commercial catches**



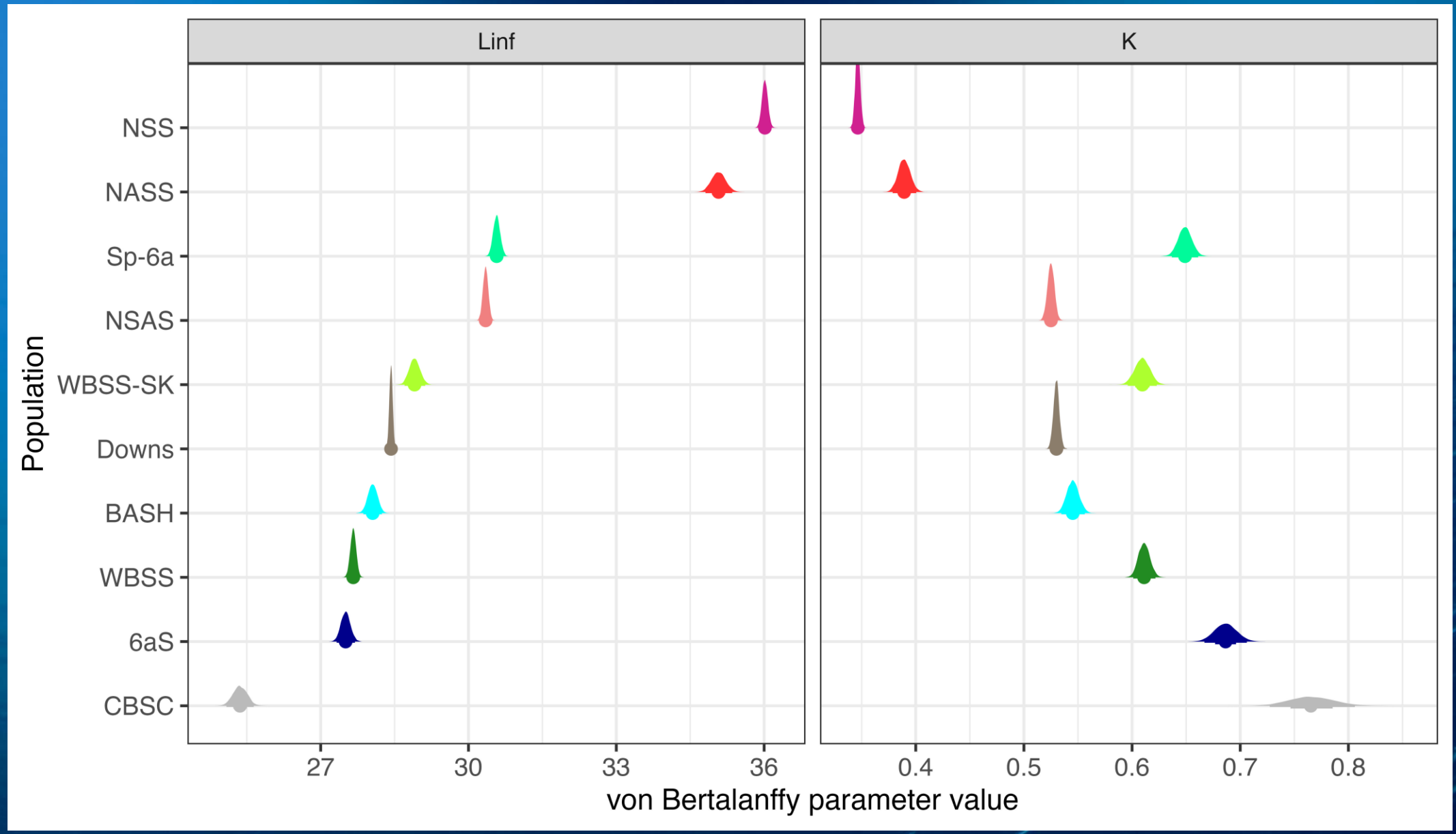
Length-at-age



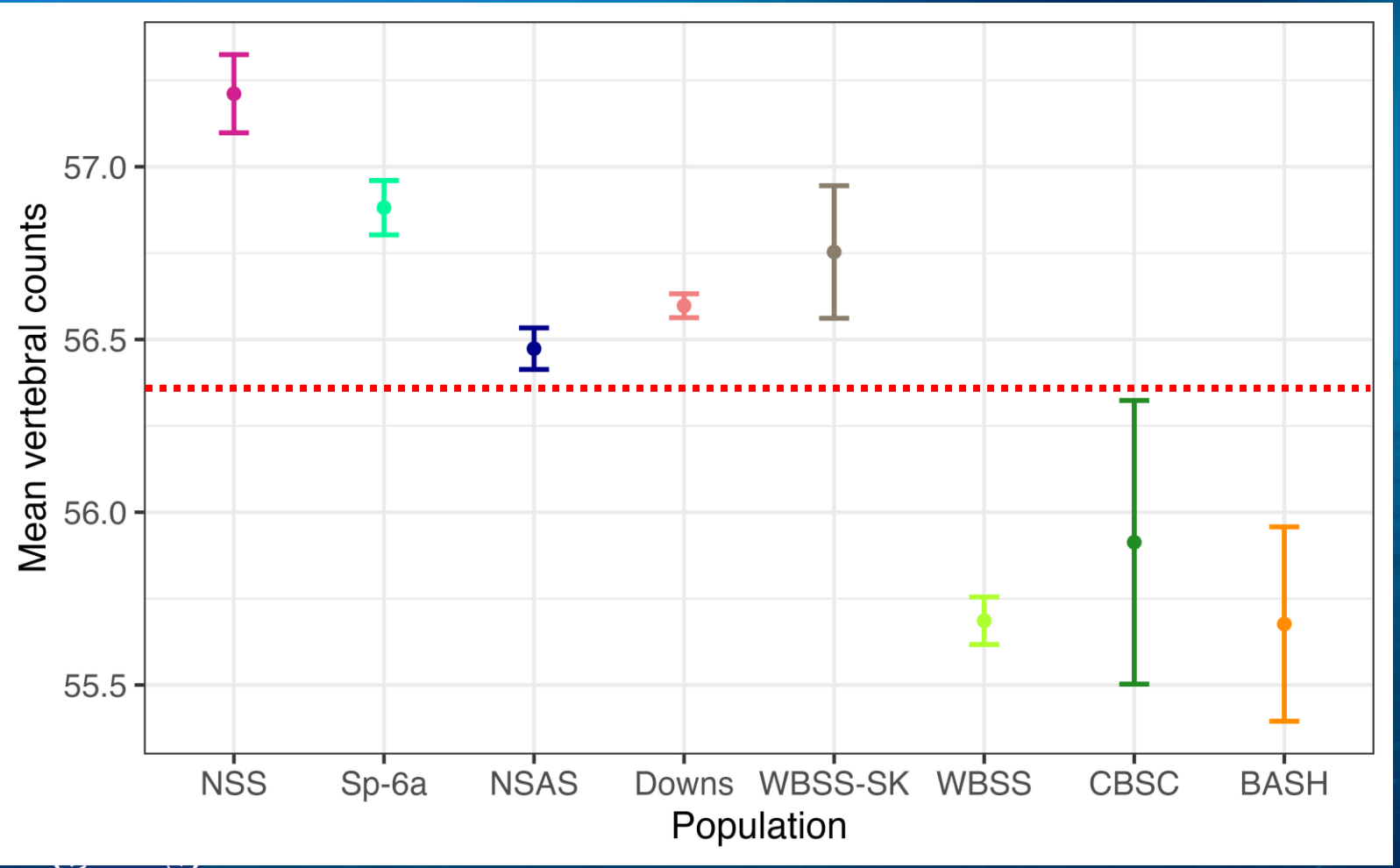
Length-at-age per region

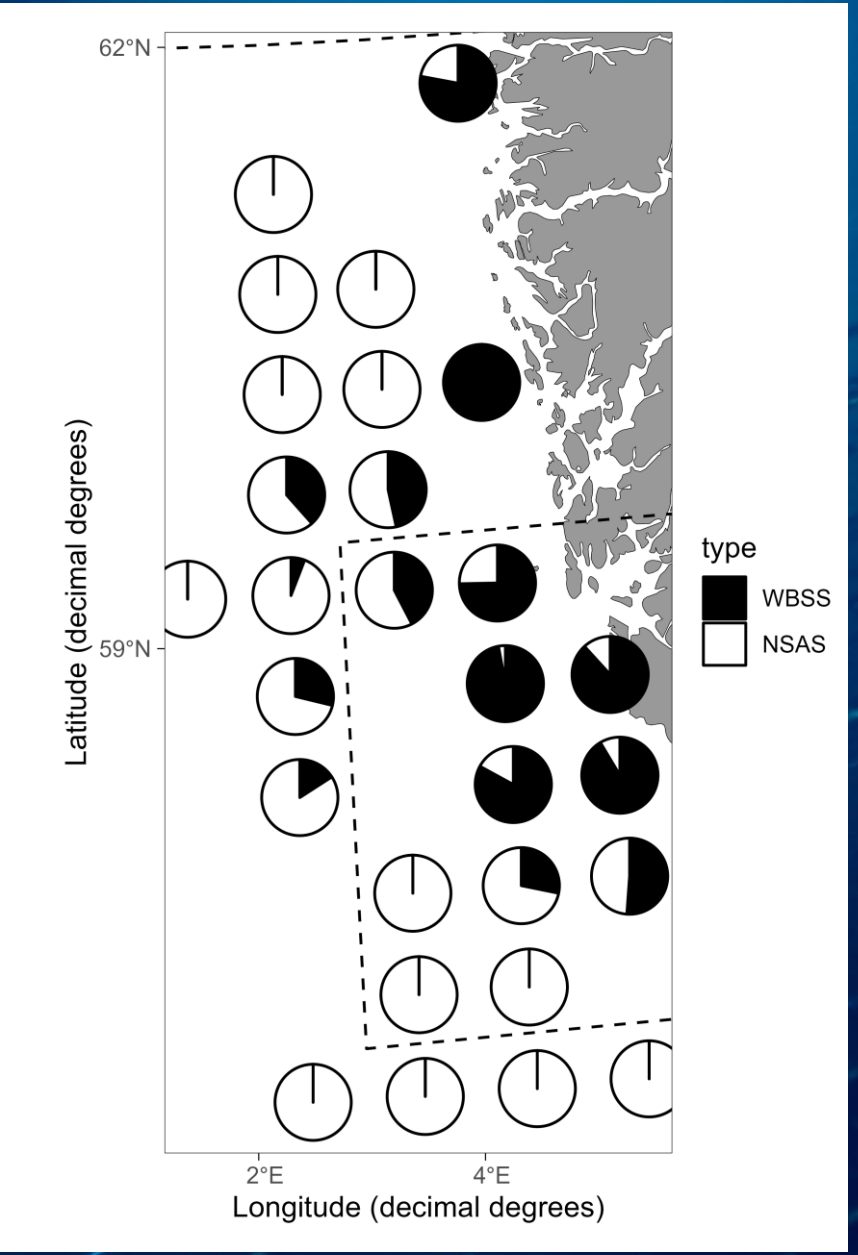


Von Bertalanffy parameters

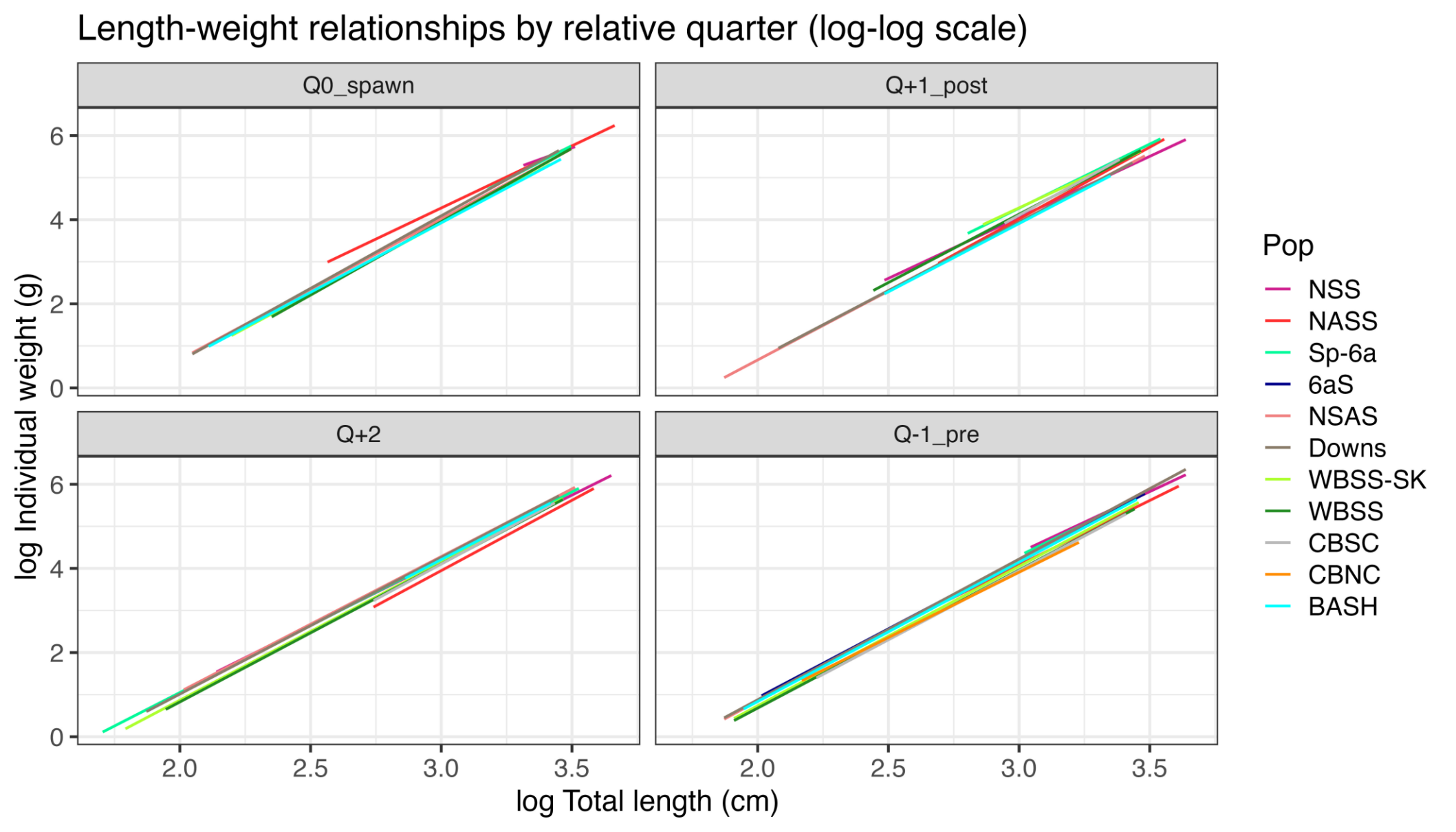


Mean vertebrae counts



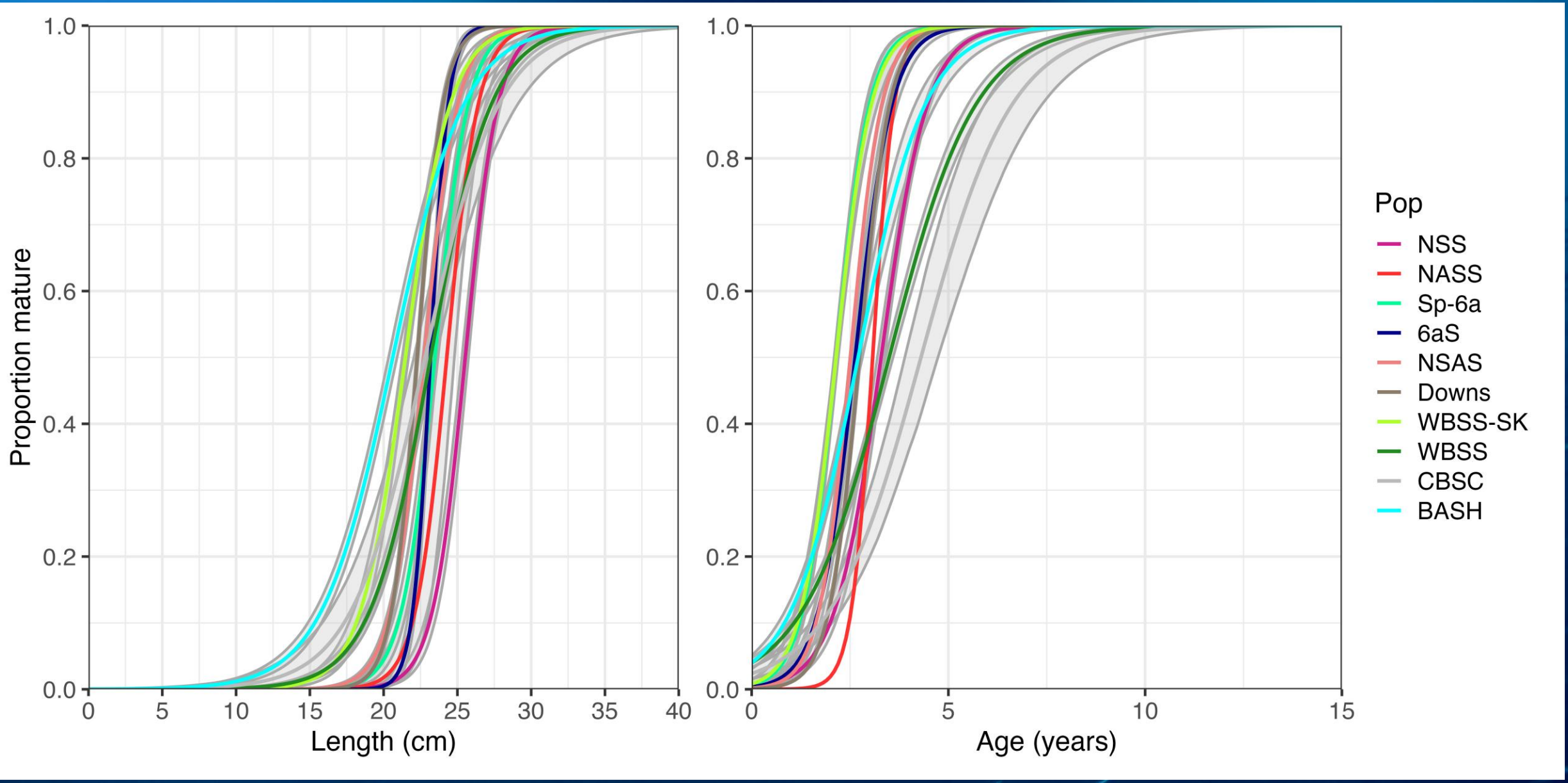


Weight-at-length

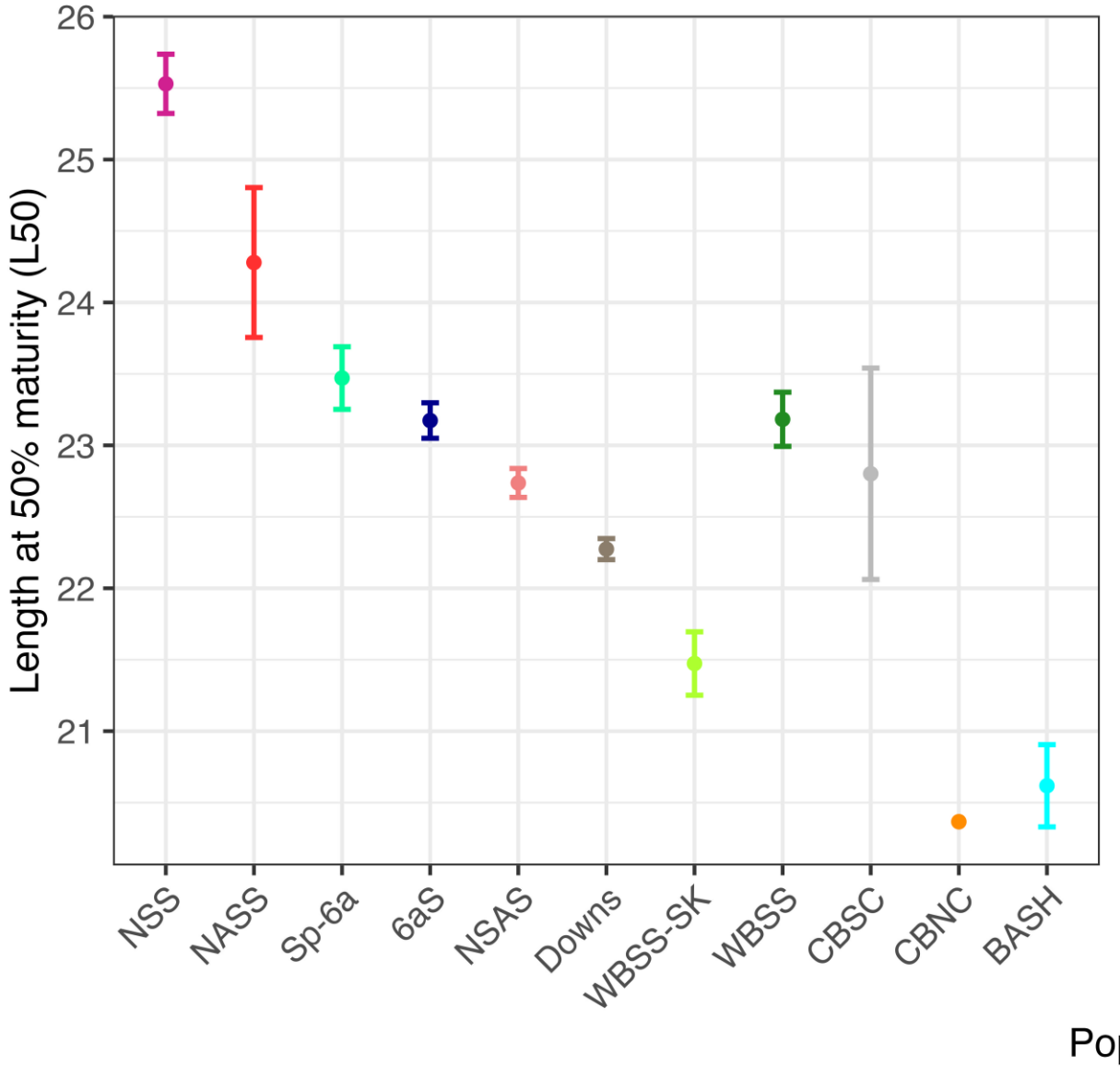


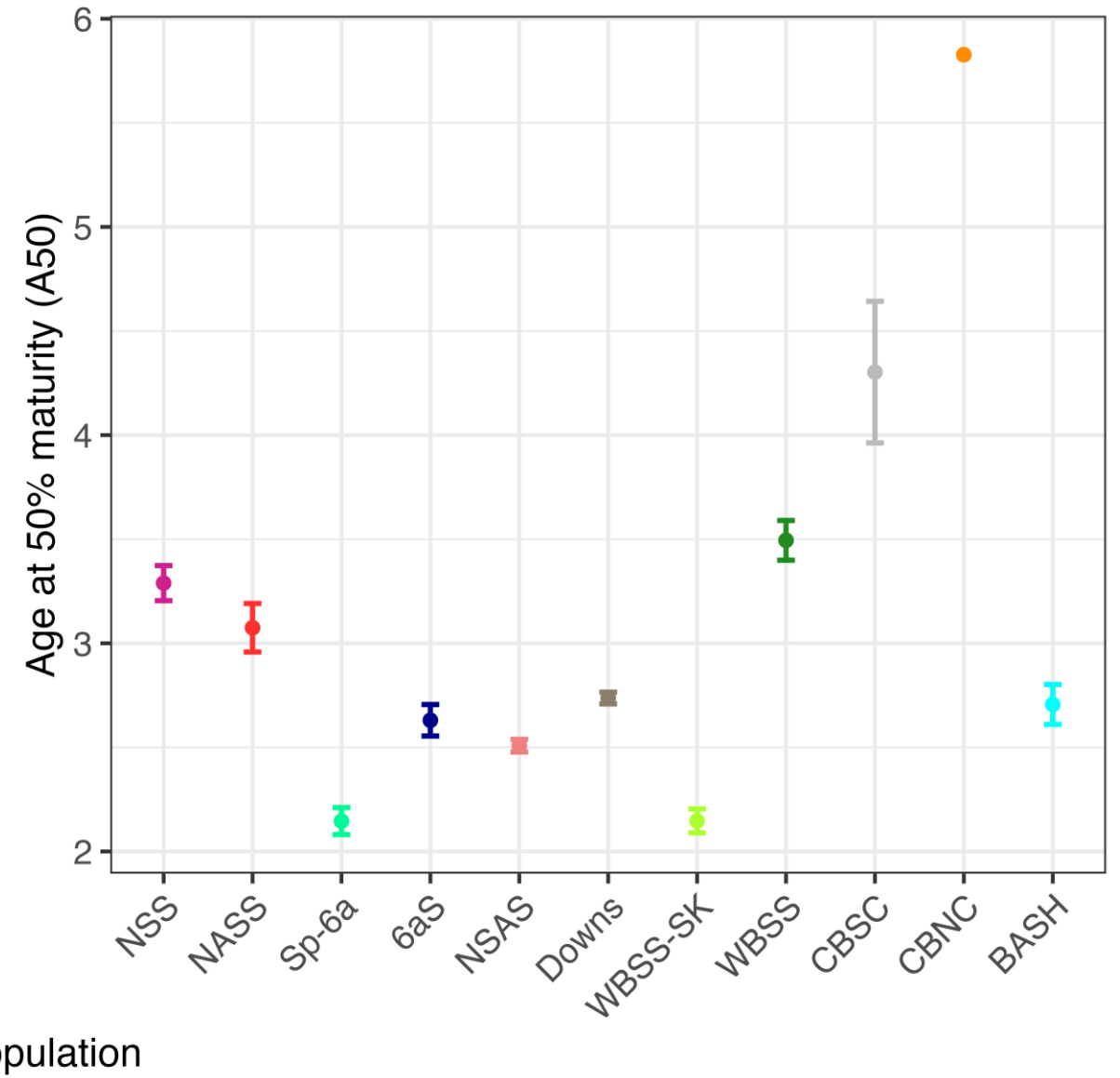
Weight-at-length

Length- and age-at-maturity



Length and age at 50% maturity





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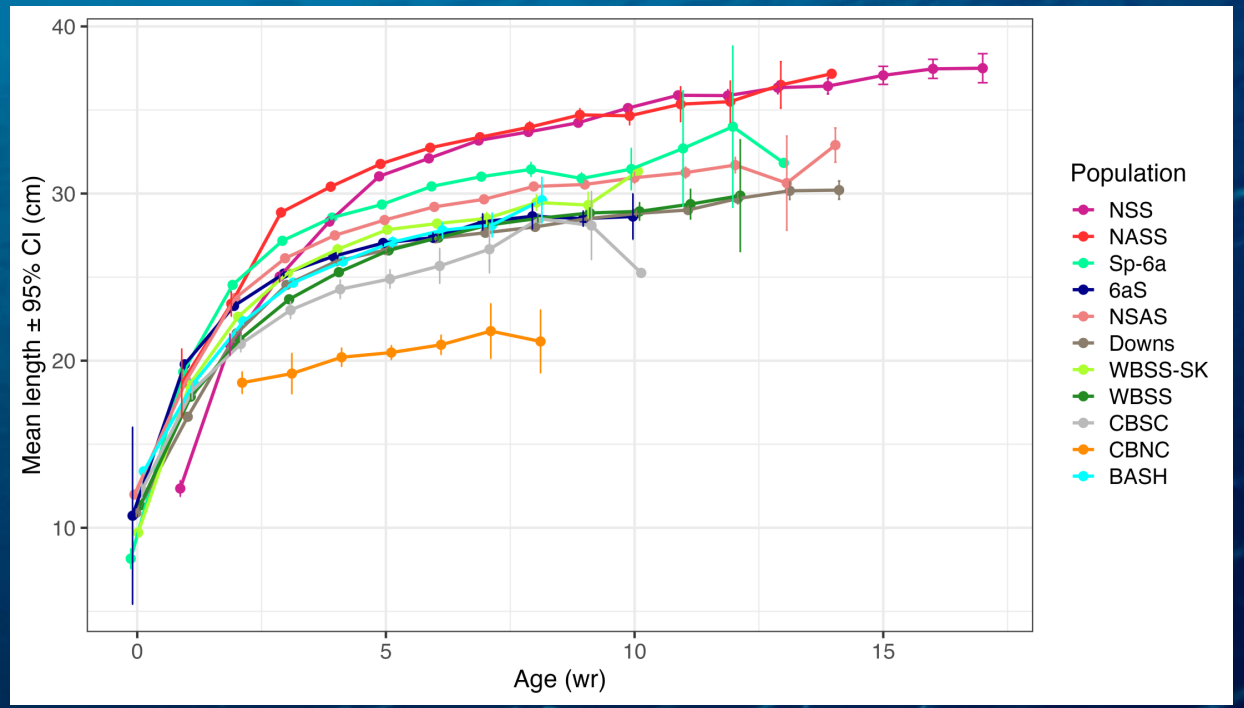

Questions

Please feel free to contact me:

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