



# Proposed genetic analysis of Northern Bering Sea Pacific cod

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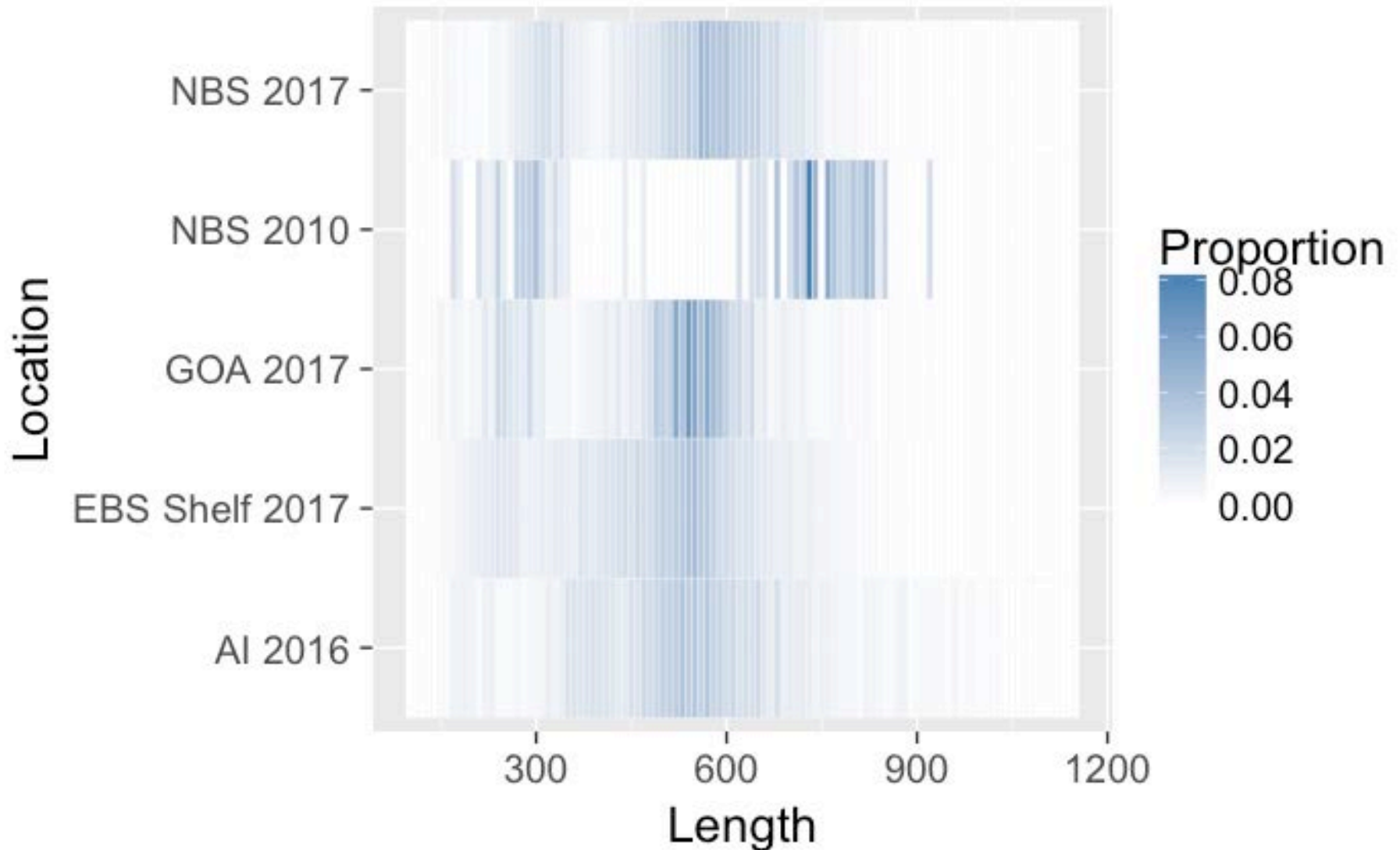
**MISSING**



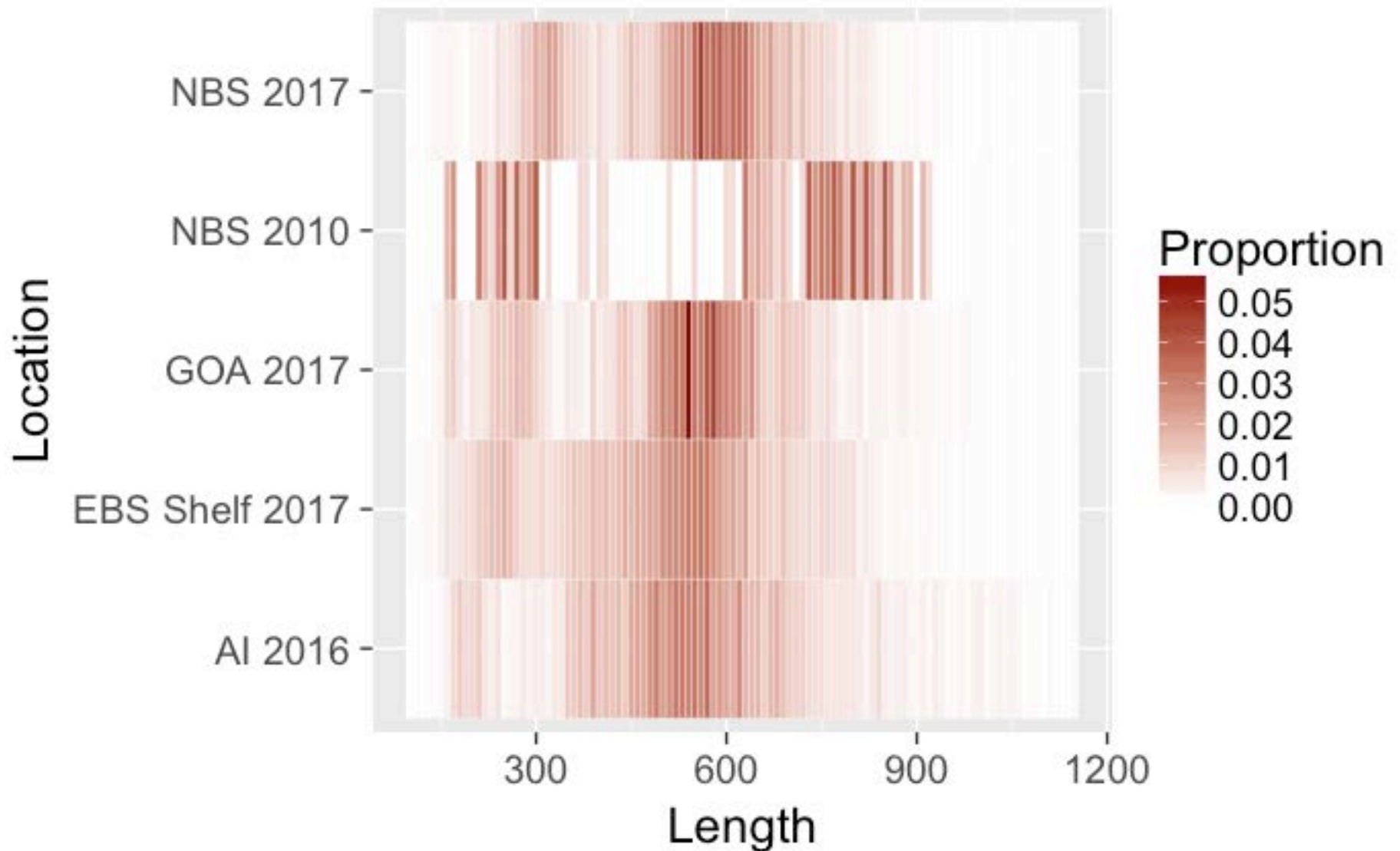
**Have you  
Seen me?**

Last seen in the  
Bering Sea and Gulf of  
Alaska - contact NMFS  
with any information.

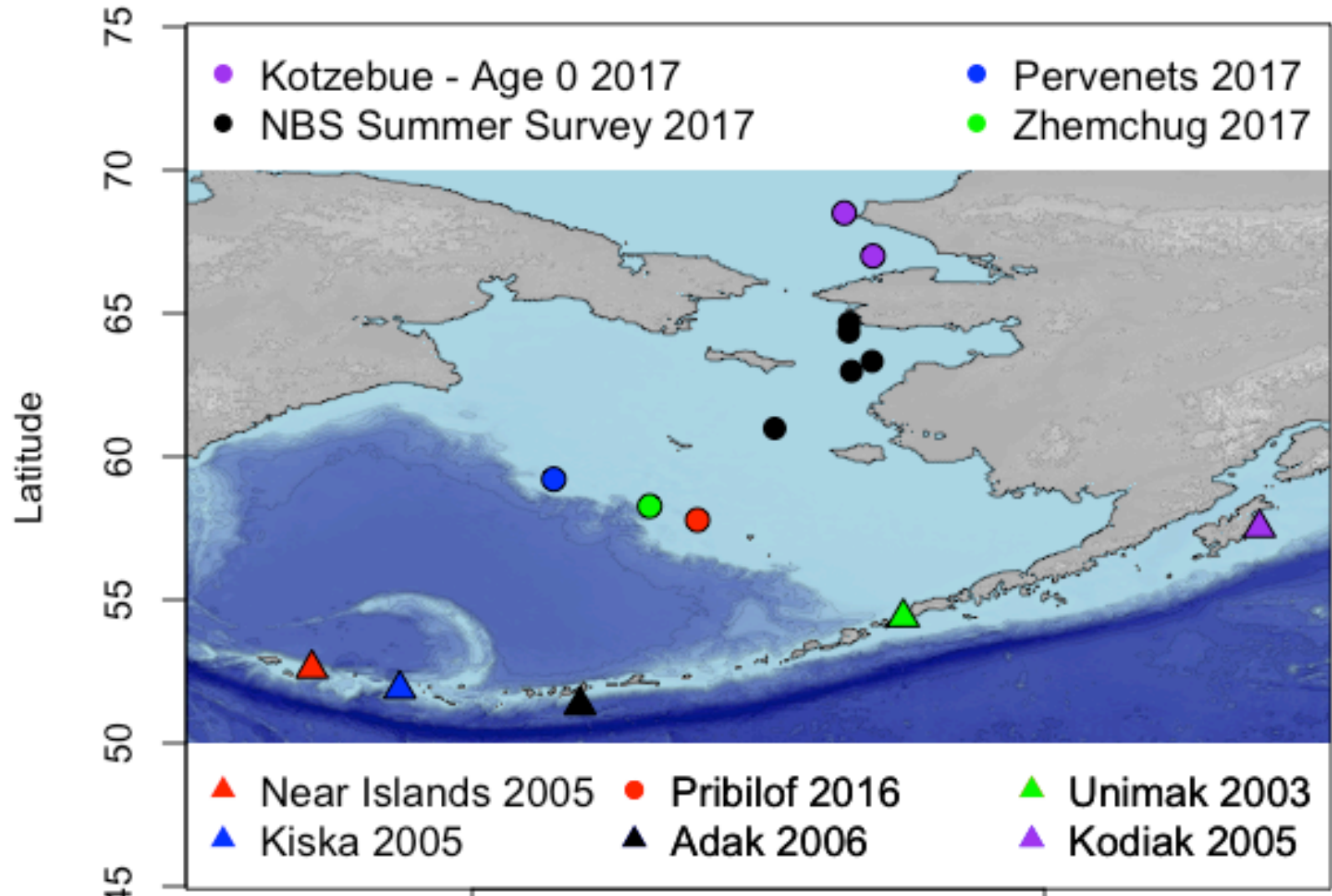
# Length frequencies for Pacific cod in Alaska (males)



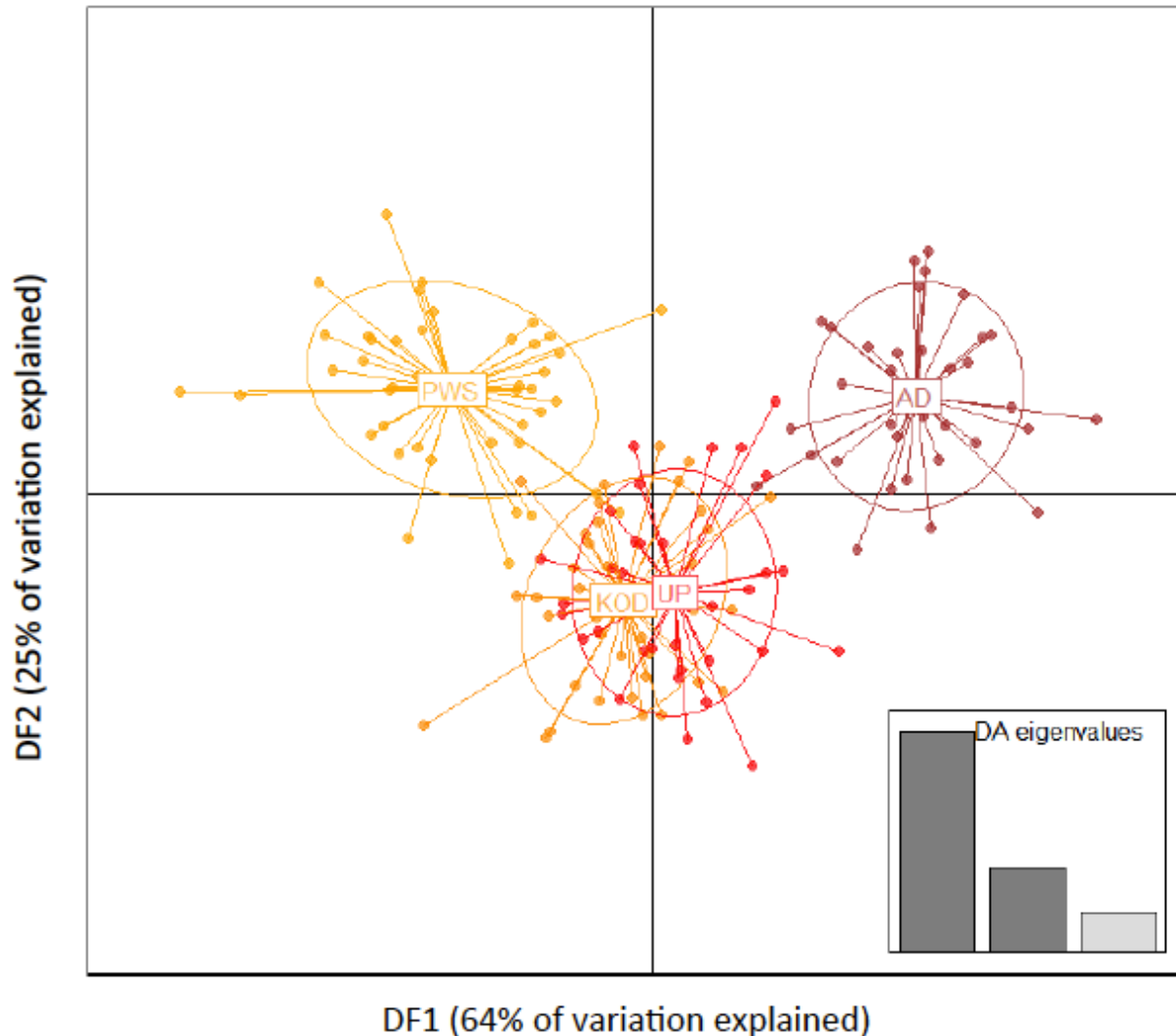
# Length frequencies for Pacific cod in Alaska (females)



Pacific cod samples exist that can be used to examine: Where did all the NBS P.cod come from?

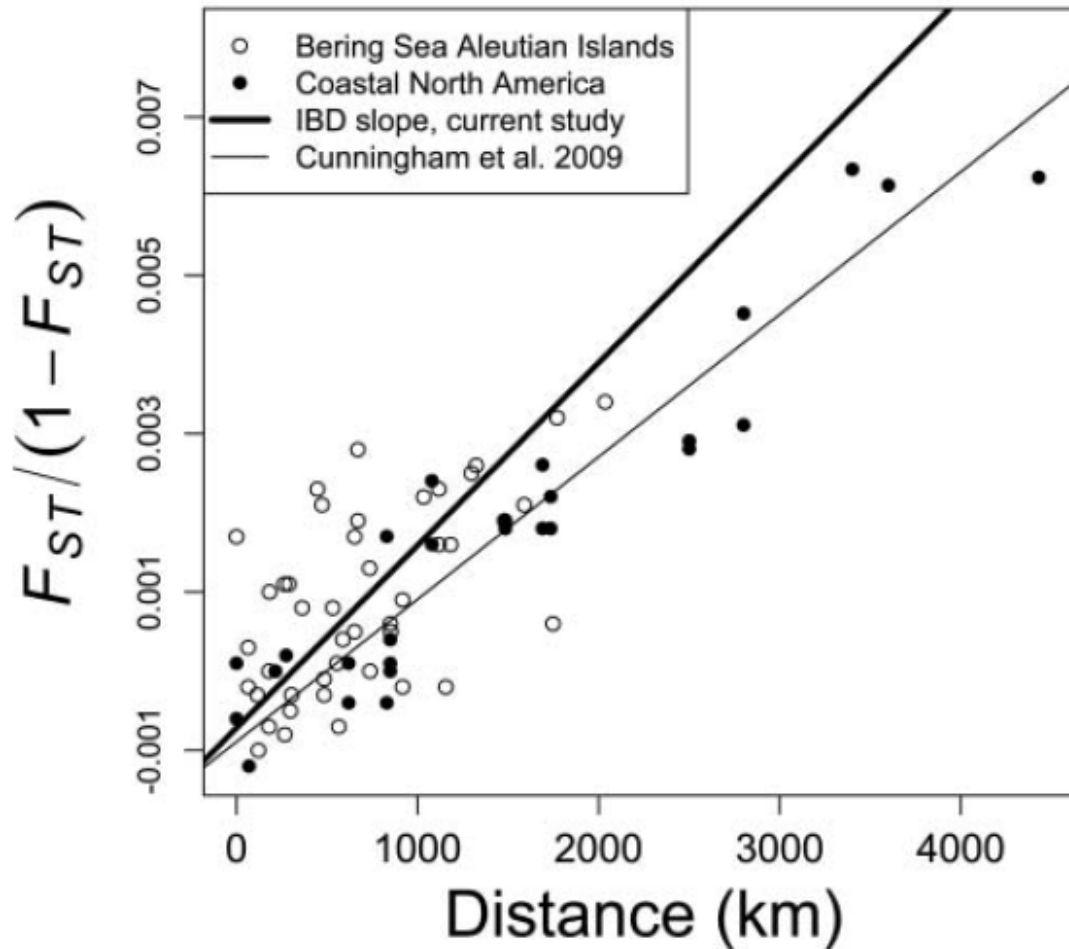


Loci have been found which can discriminate distinct spawning populations of Pacific cod in Alaska.

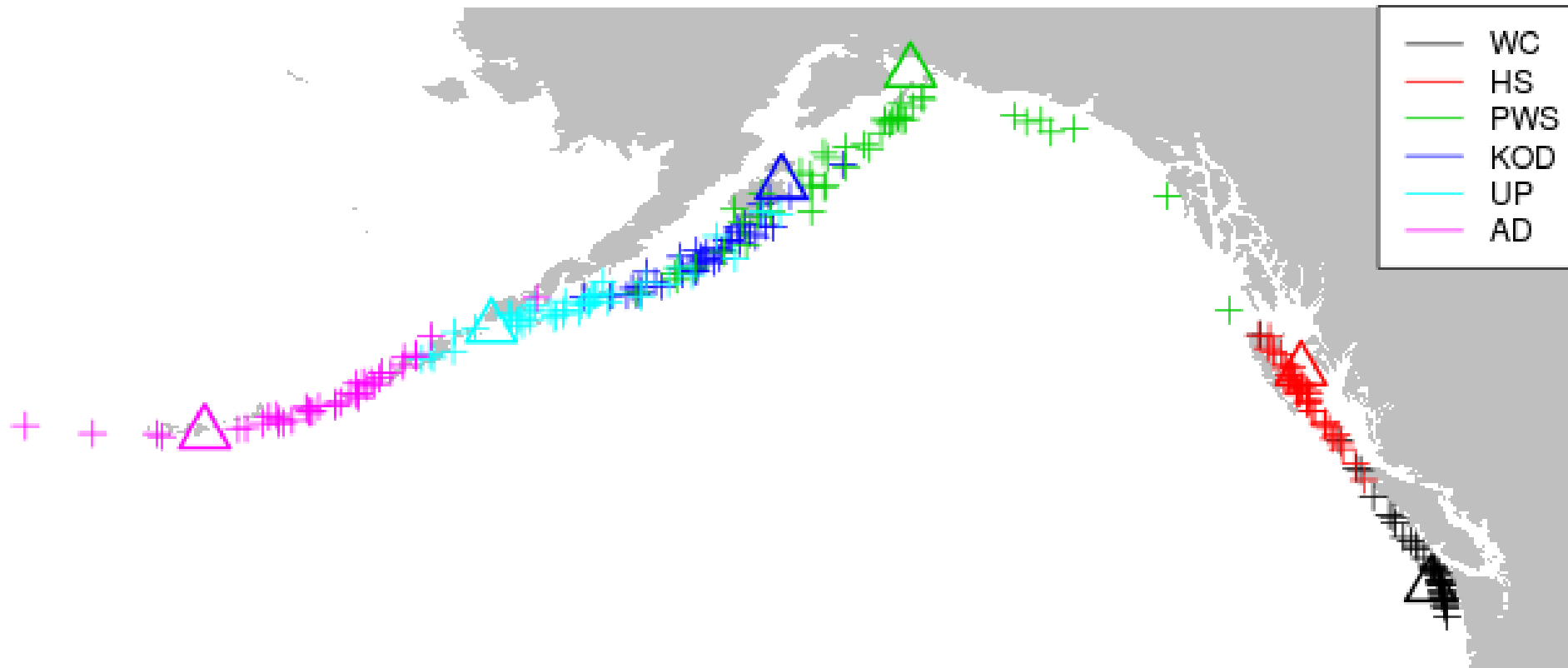


# Isolation by distance pattern has been observed in Pacific cod

## Genetic vs. Geographic distance

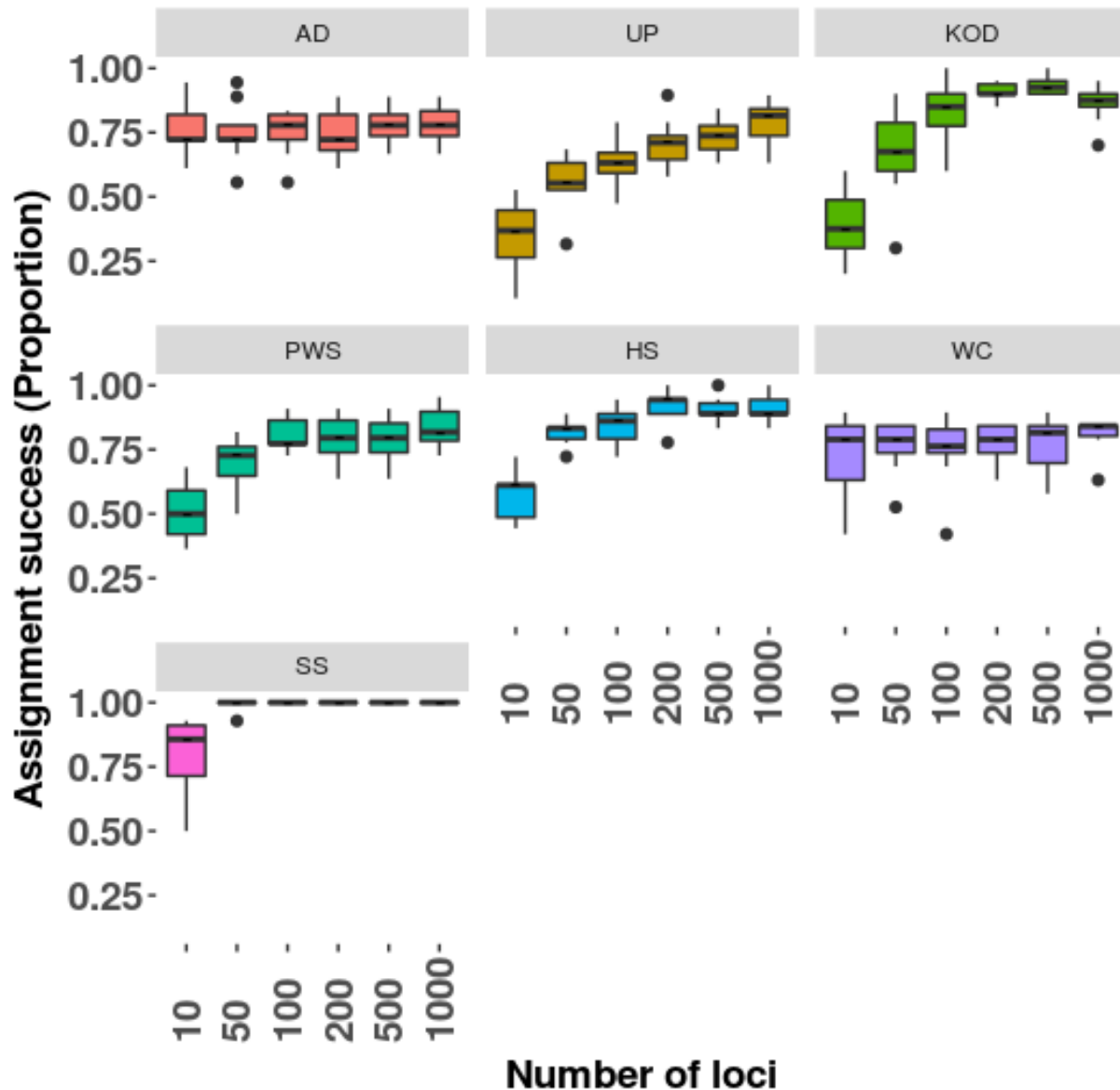


Genetic techniques have been developed to assign *P. cod* to their population of origin.

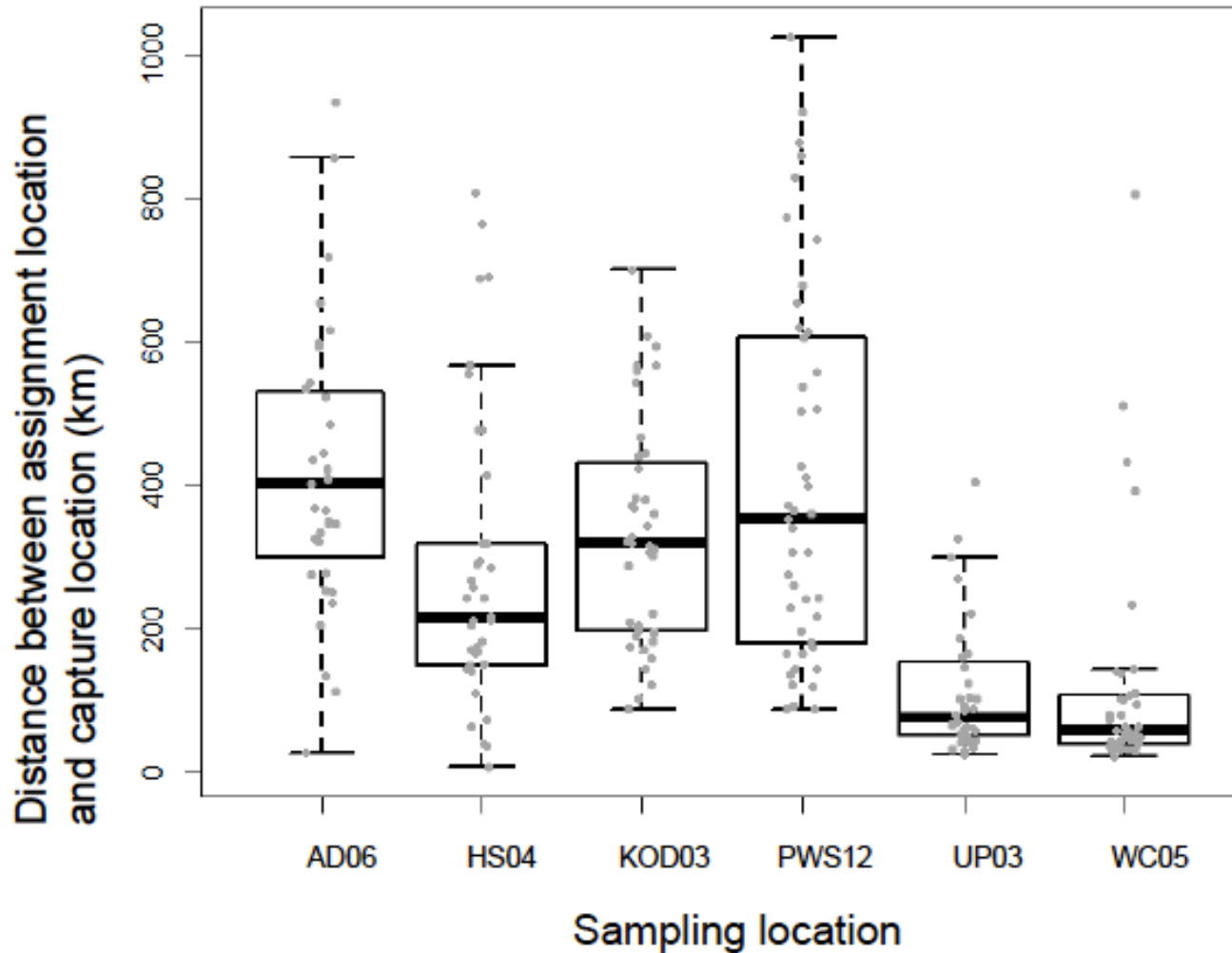




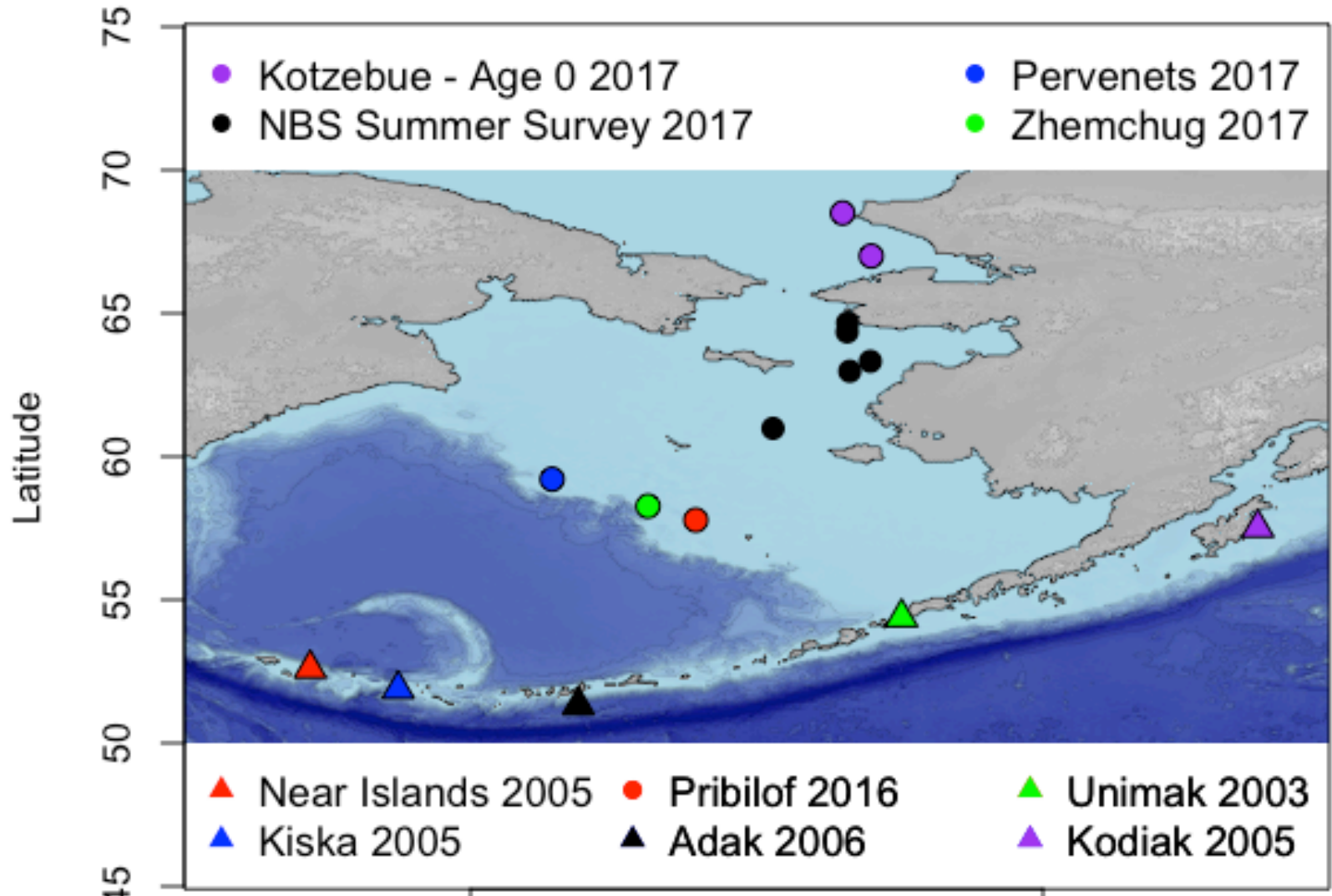
# Assignment success depends on number of loci



# Misassignment distance $\sim 400\text{km}$ or less



# Distance from Unimak Pass to Northern Bering Sea is ~1,000 km



# Research questions relevant to management

- If NBS cod assign to stocks elsewhere, would they move back to those spawning areas in the winter?
- Have the cod in the Northern Bering Sea originated there?