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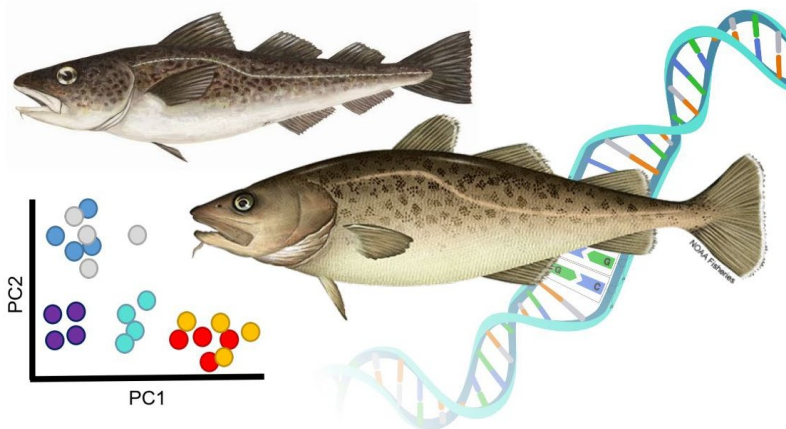
National Marine Fisheries Service
Alaska Fisheries Science Center

2023 AFSC Seminar Series

Sara Schaal, NOAA AFSC Genetics Program
Tuesday, April 25th @ 10 am Pacific

Comparative Genomics of Pacific Cod and Walleye Pollock

Understanding genomic differentiation between populations of economic and ecological concern can aid researchers and managers in setting biologically relevant management boundaries. In addition, by taking a genomics approach, we can evaluate how species and populations within species are adapting to their environment. Pacific cod and walleye pollock are two commercially important species that have similar population distributions, but vary in their life-history characteristics. Using whole genome low-coverage



sequencing, we take a comparative approach to understand and evaluate the population genetic structure of these two species. We show variation between species in both the adaptive landscape and the locations of the dominating population genetic breaks. These results suggest variation in gene flow and/or the strength of divergent selection between the species.

Performing whole genome sequencing on many samples is cost prohibitive and therefore, another aspect of our work is the development and implementation of a panel of markers (GT-seq panel) that can differentiate between the major reporting groups identified with the initial whole genome data. This panel can then be used on thousands of samples to answer a sweet of other research questions. We present the initial panel that we developed for Pacific cod and the ways that we've used it to explore the genetic stock of samples caught outside of the spawning season.

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