

AFSC/ABL: Rockfish allozyme species identification (*Sebastes aleutianus* and *borealis*)

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Rougeye rockfish (*Sebastes aleutianus*) and shortraker rockfish (*Sebastes borealis*) were collected from the Washington coast, the Gulf of Alaska, the southern Bering Sea, and the eastern Kamchatka coast of Russia (areas encompassing most of their geographic distribution) for population genetic analyses. Using starch gel electrophoresis, we analyzed 1027 rougeye rockfish and 615 shortraker rockfish for variation at 29 protein coding loci. No genetic heterogeneity was found among shortraker rockfish throughout the sampled regions, although shortraker in the Aleutian Islands region, captured at deeper depths, were found to be significantly smaller in size than the shortraker caught in shallower waters from Southeast Alaska. Genetic analysis of the rougeye rockfish revealed two evolutionary lineages that exist in sympatry with little or no gene flow between them. When analyzed as two distinct species, neither lineage exhibited heterogeneity among regions. *Sebastes aleutianus* seems to inhabit waters throughout the Gulf of Alaska and more southern waters, whereas *S. sp. cf. aleutianus* inhabits waters throughout the Gulf of Alaska, Aleutian Islands, and Asia. The distribution of the two rougeye rockfish lineages may be related to depth where they are sympatric. The paler color morph, *S. aleutianus*, is found more abundantly in shallower waters and the darker color morph, *Sebastes sp. cf. aleutianus*, inhabits deeper waters. *Sebastes sp. cf. aleutianus*, also exhibited a significantly higher prevalence of two parasites, *N. robusta* and *T. trituba*, than did *Sebastes aleutianus*, in the 2001 samples, indicating a possible difference in habitat and (or) resource use between the two lineages.