

Stressed Sebastes: A Trait-Based Evaluation of Climate Risks to Rockfishes of the Northeastern Pacific Using the Coastal Biogeographic Risk Analysis Tool (CBRAT)

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The EPA and USGS have developed a framework to evaluate the relative vulnerability of near-coastal species to impacts of climate change. This framework was implemented in a web-based tool, the Coastal Biogeographic Risk Analysis Tool (CBRAT). We evaluated the vulnerability of the 74 rockfish (*Sebastes* spp.) that are currently known to occur in 12 MEOW (Marine Ecoregions of the World) northeastern Pacific ecoregions from the Beaufort Sea down to the Gulf of California. Using traits such as relative abundance at an ecoregion scale, growth, productivity, and habitat preferences, we assigned a high vulnerability score to 39 of the 74 species of northeast Pacific *Sebastes* in one or more ecoregions. Sixteen of the 30 (53%) rockfish species occurring within the Puget Sound ecoregion were given a high vulnerability, and 20 of the 52 (38%) rockfish species were given a high vulnerability in the Oregon, Washington Outer Coast ecoregion. Current population decline (largely from over fishing coupled with projected additional stresses from climate change) was the single most important trait, accounting for 38% of the high vulnerability classifications. The second most important trait, accounting for 31% of the high vulnerability classifications, was rarity in the southernmost ecoregion of a species' range, which presumably reflects a vulnerability to climate warming. Greater detail regarding the process of assigning vulnerability scores, as well as an analysis of vulnerability by ecoregion will be presented.