

EMBATTLED BIVALVES: BIOGEOGRAPHIC DISTRIBUTIONS AND ABUNDANCES FROM THE BEAUFORT SEA TO THE GULF OF CALIFORNIA.

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As part of an EPA/USGS project to predict the relative vulnerability of near-coastal species to climate change, we have synthesized in a web-based tool, the Coastal Biogeographic Risk Analysis Tool (CBRAT), the biogeographic distributions and abundances of bivalves, found in depths ≤ 200 m, by twelve MEOW (Marine Ecoregions of the World) ecoregions, ranging from the Beaufort Sea to the Gulf of California (GOC). A total of 883 species have been reported over this domain, with the GOC having the greatest species richness (629) and the Beaufort the lowest (67). There are 29 endemic bivalves with the GOC having the majority (19) and Southern California the next highest concentration (5). Of the 72 families present, Veneridae is the most speciose with 85 species, while 11 families are only represented by a single species, of which 3 are considered nonindigenous. As a key trait to predicting climate vulnerability, we are presently assigning relative abundances to each species in each Ecoregion. The most progress has been made in the area between Southern California and Canada, where over 95% of the species have an assigned abundance. After further abundances are assigned, in combination with their other traits, the climate vulnerability of each species will be assessed. For instance, *Nuttallia obscurata*, a nonindigenous species with an increasing population, has a lower vulnerability than *Neaeromya compressa*, a commensal with relatively rare populations everywhere.