

Dungeness crabs (*Metacarcinus magister*) are culturally and ecologically essential to Washington; they also constitute the most valuable state and tribal commercial fishery, making recent declines in adult crab catch in South Puget Sound especially worrisome. Previous research has shown larval abundance is a clear driver of adult yield in Oregon, but many research gaps remain regarding Washington population dynamics, sustainability, and the impact of shifting environmental conditions, such as heatwaves, which have been doubling over the last century. To address these gaps, a collective called the Pacific Northwest Crab Research Group (PCRG) was formed by the Swinomish Indian Tribal Community. As part of PCRG, UW Tacoma's Becker Lab deployed standardized light traps in South Puget Sound for two consecutive summers. In June 2021, the light trap network experienced a large pulse of Dungeness larvae after an extreme heat event, prompting the question of whether climate change is impacting Dungeness. To investigate the effect of heatwaves on Dungeness larvae, I performed analyses of carapace width, carapace height, and total height on preserved megalopae (n=50) from five PCRG sites. Linear regression for temperature and total height reflected a significant relationship ($p = 0.0226$), but ANOVA testing of site variability indicated significant difference between sites ($p = 0.0117$). Mixed effects modeling of temperature and total height with site variation included did not reflect a significant relationship ($p = 0.5327$). These findings indicate larval size varies in different temperature ranges and locations, but not whether either factor is the cause of this variation.