

A LOCAL COMPARISON OF SEA MUSSEL, *MYTILUS CALIFORNIANUS* (CONRAD) GROWTH RATES ON THE CENTRAL COAST OF CALIFORNIA

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The rocky intertidal community is naturally dynamic. Abundance, diversity, and growth rates can significantly vary through time over large and small spatial scales. There is a need to better understand how basic oceanographic and benthic processes construct disparate ecological communities. Additionally, human-mediated impacts create differences between intertidal communities. Marine scientists, managers, policymakers and other stakeholders have difficulty distinguishing between variation due to natural phenomena and variation from anthropogenic disturbances. Multi-year, regional studies of intertidal organisms can provide insight to this problem. The north Pacific coastline from Alaska to Baja California is dominated by the marine mussel, *Mytilus californianus*. This organism can be used as a test system for investigating natural and human-caused community variation. In this study, data were collected from 2001 to 2006 at four central California sites and analyzed to determine if there were spatial and temporal differences in growth rates of *M. californianus*. Significant differences were found in mussel growth between sites, but not between years of study. To further explore how basic processes cause variation in intertidal communities, the next steps include data collection to establish any existing associations between differential growth and natural processes at each of the observed sites. This baseline understanding of natural variation is important for attributing intertidal community differences (e.g. in abundance, diversity, and growth) to human-related impacts such as those resulting from visitation, pollution, coastal development and arguably global climate change.