

George, M., Bell, C., Ammann, K. and Raimondi, P. 2009. Assessing the amount of suitable habitat and the population size of black abalone from Half Moon Bay to Point Conception

The black abalone (*Haliotis cracherodii*) has experienced mass mortalities along the coast of California since the mid-1980s and is now listed under the USA Endangered Species Act. Mortality is due to poaching and a fatal wasting disease called “withering syndrome”. Working with MARINE (Multi-Agency Rocky Intertidal Network) and PISCO (Partnership for Interdisciplinary Studies of Coastal Oceans) monitoring groups we have documented their decline along the California coast. We currently sample abalone populations at 26 sites from Point Conception to Halfmoon Bay. The last extant large and healthy populations exist in the Monterey Bay National Marine Sanctuary- *their area of ecological viability*. To assess change in populations and size structure we initially established sites where abalone occurred in relatively high densities. However, this design is unsuitable for estimating population size. To rectify this we designed a study to estimate the population size and to determine the amount of suitable habitat available to black abalone in their area of ecological viability. We sampled areas for black abalone and also characterized the quality of habitat suitable for abalone occupation. Additionally, we used a gradient of sample areas away from an area of known suitable habitat (a current sampling site – was the center of the gradient) and found that suitable habitat is not spatially clustered. We also found strong correlation between the quality of habitat and the density of abalone. Our data can be applied to further studies that will aim to estimate the entire population and aid in the recovery of black abalone.