

European green crab distribution as an effect of eutrophication in an estuarine system

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ABSTRACT: The European green crab (*Carcinus maenas*) is a widely distributed invasive species throughout North American coastal ecosystems. In the Elkhorn Slough in California, *C. maenas* is a formidable competitor and predator that threatens native crab species. Another problem affecting numerous sites within the Elkhorn Slough is poor water quality due to eutrophication. This research determines if there is a relationship between areas of poor water quality and distribution of *C. maenas* biomass. Traps were deployed at several sites within the slough to estimate relative abundances of *C. maenas*. Trap data were compared with water quality data collected by the Elkhorn Slough National Estuarine Research Reserve. Data suggests that poor water quality favors *C. maenas*. By drawing a relationship between water quality and *C. maenas* distributions, policy makers can anticipate where efforts to control the invasive crab should be concentrated or identify areas of poor water quality, potentially at sites outside of the study system. A deeper understanding of the effect of water quality on non-native crab species in the Elkhorn Slough will aid in creating better management policies that can be applied at many estuaries.