Hog Island Oyster Company may be the key to eelgrass restoration; a study betweenaquaculture and eelgrass growth

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Eelgrass (*Zostera marina*) is a species of seagrass that grows in abundance throughout the North American coast. The eelgrass root, or rhizome, allows it to keep mud and slit down at the seabed, creating suitable conditions for a vast array of aquatic life to settle and thrive in shallow waters. Eelgrass beds have been recorded to be declining in great numbers as a result of poor water conditions generated by aquaculture. Both eutrophication and direct physical damage have been linked to high aquaculture productivity and have devastated whole communities of eelgrass. However, recent observations made in Tomales Bay, CA have revealed an unexpected trend linking expansion of eelgrass beds to the installation of shellfish aquaculture. Our study takes this observation and seeks to understand how eelgrass beds may respond to aquaculture activities under different sets of conditions . We worked in close partnership with the Hog Island Oyster Company in Tomales Bay to explore the annual trends in eelgrass growth, analyzing data collected to fit seasonal and yearly fluctuations. We sampled eelgrass densities from four sites spread throughout the bay while simultaneously gathering data on water pH, eelgrass Leaf Area Index (LAI), and biomass. If we are to demonstrate through our research that aquaculture has the potential to support eelgrass growth, we can manage industries to operate their business in a manner that may restore the health of eelgrass beds and all of the life that depends on it.

(left to right): Jhosselyn is a Biology major from Los Angeles, California and Maddy is a Marine Biology and Environmental Studies major from Wilmington, California.