

Swept by Heat: Comparative Insights into Marine Heatwave Effects on Kelp Coverage Across Chile, New Zealand, and California.

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The phenomenon of Marine Heatwaves (MHW) are here to stay, every year they're stronger and longer and pose a threat towards marine ecosystems. Kelp (*Macrocystis pyrifera*) forests form unique ecosystems, providing food and shelter to thousands of fish, invertebrates and marine mammal species. The devastating effects of Marine Heatwaves have already been seen in seagrass and other species of macroalgae, with MHWs affecting the thermal physiology of *Macrocystis pyrifera*. This research project investigates the varying impacts of MHWs on kelp ecosystems in three geographically distinct regions: Chile, New Zealand, and California, by analyzing satellite images over 8 years to assess temporal changes in abundance and distribution of surface canopies of kelp. The analysis of the surface canopy cover of *Macrocystis* in association with sea surface temperature and detected MHW events showed a reduced kelp cover across all locations in the three different continents. Results indicate that negative effects occurred over the kelp patches putting in danger habitat-forming foundation species and show the importance of studying the effects of MHWs over ecosystems.