

Title: **The Effect of the Environment on California's Commercial Fisheries**

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Abstract: Long-term, naturally occurring cycles can cause significant shifts in marine ecosystems referred to as regime shifts. While the new regime can be as diverse and ecologically acceptable as that which it replaced, individual species may completely disappear or be greatly depressed when a regime shift occurs. In this work we examine an 80 year time series of California commercial fishery landings during which time the California current has been observed to shift from a warm to a cold then back to a warm regime. This period also captures the heyday of the U.S. Pacific sardine fishery in the 1930s, its collapse and its subsequent reemergence in the 1990s. We observe major changes in the species composition of commercial landings over this period and relate these changes to changes in the environment as expressed through changes in the forage base. Our initial findings suggest that while aggregate biomass may not be greatly affected by a regime shift, there can be significant changes in the operations of fisheries and in the economic value they generate.