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Abstract: The ochre seastar (*Pisaster ochraceus*) is a common inhabitant of rocky intertidal shores from Alaska to Baja. It is the quintessential “keystone” predator, and it has been shown to have an inordinately large influence on the diversity and structure of rocky shore communities. For this reason, it has been a focal species in the monitoring programs of the Channel Islands National Park, the Channel Islands Research Program and the Partnership for Interdisciplinary Studies of Coastal Oceans. Here we combine data from these monitoring programs to evaluate the time series of abundance of this predator at several rocky, intertidal sites around the northern Channel Islands. Densities of seastars were lowest at all sites in 1997/1998 coincident with a moderately strong El Niño period and an outbreak of wasting disease affecting multiple seastar species. Sharp population increases have occurred at many island sites (particularly the south-facing sites) beginning in 1999 and in most cases are continuing to increase at present. Here we correlate seastar abundances over time at the Channel island sites with temperature data from a 7-year time series of satellite-based sea surface temperature to evaluate one of the major bio-physical drivers affecting population abundance. We also present pre- and post-population boom data on the vertical zonation of mussels (the primary prey of the seastar) at three sites on Santa Cruz Island to evaluate the potentially large effects of these population booms on the structure of these rocky intertidal communities.