



Predictability in the California Current Coastal Ecosystem

The California Current Ecosystem (CCE) is a highly productive eastern boundary upwelling system, in which seasonal upwelling fuels primary production that supports a thriving marine ecosystem and socioeconomically valuable services including fisheries and tourism. The CCE and its resources are strongly driven by changes in the physical and biogeochemical environment, both of which experience considerable variability on timescales ranging from days to centuries. Prognostic information on this variability is therefore highly desirable for marine resource users, for example managers of fisheries whose target populations are sensitive to variations in the climate system. Here we present recent and ongoing efforts to explore the predictability and forecast skill of physical and biogeochemical properties in the CCE on seasonal-to-interannual (~1-24 months), decadal (~5-20 years) and long-term (~50-100 years) timescales. We describe, when known, the physical mechanisms driving predictability in that range of timescales. Skillful forecasts and predictions of the physical and biogeochemical state in the CCE have the potential to provide actionable information to those managing the CC marine resources. We also discuss ways to facilitate knowledge and capacity sharing on marine predictability through Ocean Decade Programmes such as SUPREME and SmartNet.

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