

## Predicting the impact of El Niño on seaweeds from Baja California, Mexico

El Niño events cause major disturbances to normal weather and oceanographic conditions on a global scale, resulting in unusually high seawater temperatures in the eastern central Pacific. Probably due to the great damage that many areas receive, a dominant idea in our society is that we are only subjected to negative effects. However, some organisms may actually benefit from El Niño. Such was the case, for example, for a seaweed from the Baja California peninsula (Mexico), *Caulerpa sertularioides* (Chlorophyta, Bryopsidales).

The Baja California peninsula extends for about 1300 km across the Pacific coast of Mexico. The northern half of the western coast of the peninsula is washed by temperate waters, whereas the southern part has subtropical characteristics. *Caulerpa sertularioides* is a tropical seaweed and Baja California represents the northern limit of its geographical distribution on the Pacific coast of America. The 1997–1998 El Niño event was the strongest in recorded history and, during the spring of 1998, I noted an unusually high abundance of this alga at Balandra Cove, on the southern part of the peninsula. Between the end of that El Niño event (about June 1998) and the summer of 2000, when my observations in the area concluded, *C. sertularioides* was much less abundant, being surprisingly absent in spring 1999 and 2000.

Seaweeds from Baja California with a



temperate biogeographic affinity respond differently to El Niño. For example, for the giant kelp, *Macrocystis pyrifera* (Phaeophyta, Laminariales), and for the agarophyte *Gelidium robustum* (Rhodophyta, Gelidiales), Baja California represents the southern limit of their distribution on the Pacific coast of North America and El Niño events were associated with sharp decreases of their population abundance in Baja California, according to other researchers. Thus, the biogeographic affinity of seaweeds could be used as a

tool to predict their changes in abundance when El Niño is known to be arriving. This could be useful to improve resource management for this region. Also, given that seaweeds are so important for marine coastal food webs, it could help efforts to predict possible community changes that result from global environmental change in this area.

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