



Recruitment of intertidal invertebrates and oceanographic variability at Santa Cruz Island, California

Broitman, Bernardo R., Carol A. Blanchette, Steven D. Gaines

Limnol. Oceanogr., 50(5), 2005, 1473-1479 | DOI: 10.4319/lo.2005.50.5.1473

ABSTRACT: To examine geographical variation in oceanographic forcing on larval delivery, we studied spatial and temporal variability in larval recruitment of mussels and barnacles in a key oceanographic region around Santa Cruz Island, California. Larval recruitment patterns differed among sites located on the eastern and western shores of the island associated with differences in oceanographic regimes. Western sites had low but variable sea surface temperatures, whereas eastern sites were warmer (1-1.5° C higher) and less variable. Larval arrival was extremely low at western sites relative to eastern sites. Mussels and barnacles differed in the duration and seasonality of larval recruitment. Mussel recruitment occurred over a long period between winter and summer, whereas barnacle recruitment occurred in pulses in spring-summer. Mussel recruitment was not correlated with sea surface temperature anomalies, whereas barnacle recruitment was significantly and positively correlated with temperature anomalies, with time lags ranging from 0 to 3 months across all sites. Oceanographic and larval recruitment patterns suggest that western sites are dominated by an energetic flux of cold, recently upwelled water depleted of larvae, whereas eastern sites receive high numbers of larvae associated with the influx of warmer surface water, likely originating outside the Santa Barbara Channel.

Article Links

[Download Full-text PDF](#)

[Return to Table of Contents](#)

Please Note

Articles in L&O appear in PDF format. Open access articles may be freely downloaded by anyone. Other articles are available for download to subscribers only, or may be purchased for \$10 per article. All L&O articles are moved into Open Access after three years.