

# **Temporal and spatial variation in settlement of the gastropod *Concholepas concholepas* in natural and artificial substrata**

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## **Abstract**

Settlement of *Concholepas concholepas* (Gastropoda: Muricidae) on natural and artificial substrata was studied between April 1999 and March 2001 at two sites in central Chile; the Las Cruces Marine Reserve and El Quisco Management and Exploited Area. Four different artificial materials were tested in the low intertidal zone during 1999 settlement season to determine their properties as settlement and microhabitat substrata for competent *Concholepas* larvae. Globular pads made of plastic filaments were identified as the best artificial collectors, exhibiting overall higher settlement rates than rock plots and lower variability among replicates within a given site. Thus, subsequent monitoring of settlement used only these globular pads that were replaced twice monthly. The temporal pattern of settlement was remarkably similar from year to year, starting at the end of austral winter (August–September) and ending in summer (December–January), defining a temporally restricted settlement season. Settlement at two sites within the Marine Reserve of Las Cruces was significantly higher than at sites in El Quisco. However, during the second settlement season, an additional site at El Quisco exhibited settlement rates comparable to those observed at Las Cruces. The results show that *Concholepas* settlement varies significantly over scales of several hundreds of metres as well as tens of kilometres, probably due to differences in coastal oceanographic conditions.