Factors determining the distribution and abundance of the abalone *Haliotis cyclobates* Péron, 1816, at Edithburgh, South Australia.

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ABSTRACT

At Edithburgh, South Australia, the abalone *Haliotis cyclobates* occurs on patches of hard substrata in seagrass meadows, although high densities of abalone occasionally occur in open areas. I investigated the role of predation, food abundance and accessibility, and the behaviour during early life history (ELH) of *H. cyclobates*, in determining its local distribution and abundance. Access to an abundant supply of food, and recruitment patterns established during the ELH, best explain the observed patterns. Larvae apparently settle predominantly on seagrass blades, establishing high densities of recruits in seagrass areas. Older juveniles and adults were found to move regularly between substrata if food was absent, but not if an abundant food supply was present. Seagrass meadows were the most likely source of abundant food, hence the predominant occurrence of abalone in them. An open area that naturally supported a high density of abalone was found to be frequently covered by large mats of drift-weed, which would provide the necessary source of abundant food. Predation was found to have no effect on the distribution and abundance of *H. cyclobates*. Further work is suggested in several areas, particularly on the role of drift algae in determining local distributions, and the settlement cues for this species.

STATEMENT OF AUTHENTICITY

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other teritiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text.

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