

Abstract analysis

- A. In modular species, indeterminate growth by module addition allows recovery from colony damage through disturbance, and the number of modules – colony size – is a good predictor of colony success.
- B. We tested whether the age structure of modules altered the recovery capacity of colonies of the encrusting bryozoans *Parasmittina delicatula* at two sites in South-eastern Australia that differed in their levels of cover by competing sessile invertebrates.
- C. Colonies that were overgrown once or more had lower growth rates and lower numbers of embryos at the final census than those that were never overgrown.
- D. These results imply that the importance of the age structure of modules to a colony's recovery rate is reduced in the presence of natural competition, and that these factors need to be considered when predicting the responses of modular animals to disturbance.
- E. A growing body of evidence suggests that the recovery capacity of a modular animal is related not only to its size, an important indicator of likely survivorship and reproductive potential, but also to the age structure of its component modules.
- F. Disturbance is a ubiquitous feature of ecosystems, and the ability of a species to persist in a habitat with frequent disturbance is largely determined by the ways in which individual organisms respond.
- G. Damage incurred at different colony regions had a negligible effect on the subsequent growth of colonies at both sites, but for different reasons. At one site, where competition from neighbouring sessile invertebrates was low, growth rates were very similar across colonies, regardless of colony size and amount of damage to the colony edge. At the second site, neighbouring sessile invertebrates were abundant, and competitive interactions were more important in determining a colony's success than any history of damage.