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SEASONALITY CAN LOWER BIOTIC RESISTANCE TO ASCIDIAN INVASION IN SUBTROPICAL MARINE FOULING COMMUNITIES

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Environmental conditions determine the performance of marine species. Seasonal variation of physicochemical conditions in the environment can modify the intensity of biological interactions within communities, especially in regions with strong seasonality. However, the implications of seasonality for biotic resistance by predation are poorly understood. Here, through the use of experimental recruitment panels and predation exclusion cages, we examine 1) whether the antagonistic subtropical seasonality (tropical and temperate conditions) in Hong Kong can affect the abundance of the non-native ascidia *Ciona intestinalis* and other common ascidians (invasive elsewhere) in fouling communities, 2) whether the seasonality can affect predation on the ascidians, and 3) additionally, whether human disturbances in environmental conditions (i.e., habitat alteration and low seawater quality) can affect predation and invasion. The results of our experiments indicate that the seasonality has a strong influence in the recruitment and abundance of species in the communities which are also influenced by high predation in the wet season. The non-native ascidia *C. intestinalis*, with temperate life-history characteristics, benefits from a temporal niche opportunity under cold temperate conditions in the dry-winter season and becomes common within the subtropical communities during this time. Predation also had little impact on ascidian abundance during the dry-winter season. *C. intestinalis* benefits from disturbed environments where it monopolizes the community, though the mechanism behind this remains unclear. We argue that the seasonality, as an important ecological factor for community ecology dynamics, must also be considered in the context of biological invasion. Seasonality may play a key role in regulating and possibly facilitating the invasion of non-native species into marine communities.