

KELP HOLDFAST COMMUNITIES AS SENTINELS OF ENVIRONMENTAL CHANGE IN THE SUBANTARCTICSDA Smith*University of New England, NSW, Australia*

Holdfasts of the kelp (*Durvillaea antarctica*) provide a sheltered habitat for a diverse and abundant invertebrate assemblage on the lower shores of subantarctic islands. Results from quantitative sampling at Macquarie Island, over a 16 year period (1988-2004), indicate that the holdfast community is sensitive to the effects of a range of anthropogenic and natural disturbances. For example, the impacts of an oil spill following the grounding of the *Nella Dan* in 1987 were much more evident in the holdfast community than in assemblages associated with any other intertidal habitat. Similarly, holdfast assemblages showed much greater differences across a wave-exposure gradient (western and eastern coasts) than assemblages inhabiting other intertidal zones. Long-term trends in community structure indicate that communities are naturally dynamic, even within a single site, and that some of this dynamism is associated with sediment regime. Nevertheless, the demonstrated ability of holdfast communities to measurably and predictably respond to environmental changes suggests that this habitat is an extremely useful one to incorporate into long-term monitoring programmes.