

**Colonization of an artificial reef at Geraldton, Western Australia,
by western rock lobsters, *Panulirus cygnus*.**

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ABSTRACT

A chain of artificial reefs was created off the Geraldton coast during the Geraldton Port Enhancement Project, with the aim of increasing biological productivity, and improving the catch of western rock lobster in the region. The use of artificial reefs in fisheries enhancement is, however, controversial, as there is an ongoing debate as to whether artificial reefs increase productivity or simply aggregate already present individuals.

The aims of this project were to examine whether rock lobsters were colonising one of the artificial reefs, to determine whether colonisation was predominantly a result of recruitment by juveniles or relocation of larger animals from surrounding areas, and to compare the catch rate of the artificial reef with that of the Geraldton commercial fishery. These aims were addressed by examining video footage of the artificial reef, gathering data during monthly sampling trips using lobster pots, and investigating historic fishery data for the Geraldton region.

Video footage revealed that the reef habitat was not suitable for rock lobster colonization, as there were few crevices present. Over the study period pre-adult rock lobsters (approximately three to five years old) were caught on the reef, but it is not possible to conclude whether they were resident on the reef or were visiting on nocturnal foraging trips. The age of the rock lobsters would suggest that the reef is attracting lobsters from surrounding areas, rather than increasing productivity. When compared to the local fishery, the catch rates on the artificial reef were very low, with a catch per unit effort approximately one tenth that of the commercial fishery. Over time the reef may increase rock lobster productivity, and therefore catch rates, through increased growth (provision of food), survival rates, and puerulus settlement.