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Recruitment potential and recruitment survival as a function of habitat degrada-
dation

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Management of target species and conservation of reef ecosystems would benefit from an understanding of the re-
cruitment potential, as well as post-recruitment survival, between different reef habitats. Many coral reefs have been
subjected to, and continue to suffer from, habitat degradation due to both natural and anthropogenic stress. However,
the effects of habitat degradation on larval recruitment potential and on the survival of settled recruits are not currently
known. An ANR and CRISP funded project aimed to distinguish between these two processes by simultaneously
measuring survival and recruitment of bivalve larvae, in particular Pinctada margaritifera, on Rangiroa atoll in French
Polynesia over two spatial scales of degradation. On a large scale, non-degraded and degraded sites were chosen with
41\% and 30\% live coral cover respectively. On a smaller scale, three sites: live coral, dead coral and a sand control
had 55\%, 16\% and 0\% live coral cover respectively. Neither survival nor growth of P. margaritifera differed with
habitat degradation, therefore post-recruitment traits are not affected by habitat. However, higher bivalve recruitment
was observed on degraded reefs and on live and dead coral sites. Invertebrate recruitment potential is clearly affected
by habitat and larval sensory cues are likely to be sensitive to habitat degradation. We also aimed to determine whether
the presence of adult conspecifics affected the recruitment potential of P. margaritifera on Takapoto atoll. Higher re-
cruitment of pearl oyster larvae was observed on dead coral sites where adult conspecifics were present, and larval
recruitment increased with the proximity to adult conspecifics. In conclusion, sensory cues are clearly important for
black pearl oyster larvae settlement, and larvae use the presence of adult conspecifics and habitat quality to locate
suitable settlement sites.

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