Connectivity of stony corals in Spermonde Archipelago, South Sulawesi, Indonesia

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Due to increasing changes of environmental conditions and over-exploitation of coastal habitats, many species inhabiting coral reefs suffer depletion of populations, which may lead to local extinctions. The change of species composition may have an influence on the resilience of the whole ecosystem to disturbances and changing environmental conditions. Important factors for an assessment of the status and chance for recovery and adaptation of exploited and disturbed populations are the genetic diversity and connectivity to other populations. This research aims to investigate the genetic diversity and genetic population structures of stony corals in Indonesia, especially in Spermonde, South Sulawesi. Several potential model taxa were sampled, but genetic analyses will focus on two species, depending on abundance at the different sample sites. In order to investigate the influence of early life history stages on connectivity, one species will be a broadcast spawner with pelagic eggs (*Acropora tenuis, A. millepora)*, while the other species will have brooded eggs (*Pocillopora damicornis, Seriatopora hystrix*). Sampling was done on September 2012 from nine locations in Spermonde Archipelago, South Sulawesi, Indonesia. The genetic population structure will be analysed by utilising nuclear microsatellites, which will be amplified by PCR. An Analysis of Molecular Variances (AMOVA) will be done to test for population structures with the programme Arlequin (ver. 3.5, Excoffier & Lischer, 2010). In order to reveal detailed patterns of genetic divergences, pairwise F-statistics will be calculated with the same program, and a hierarchical AMOVA will be conducted to test spatial groupings of populations. In addition, a Bayesian analysis as implemented in the software STRUCTURE (ver. 2.3.3, Hubisz *et al.*, 2009) will be performed, testing for different numbers of clusters in the dataset and giving the corresponding probabilities. The findings of the ongoing study will be provided for a synergetic assessment of the sustainable use of coral reef resources and their conservation.

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