NATURE AND ORIGINS OF UNIQUE HIGH DIVERSITY REEF FAUNAS IN THE BAY OF TOMINI, CENTRAL SULAWESI: THE ULTIMATE "CENTRE OF DIVERSITY"?

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The staghorn corals (*Acropora spp.*) of the Bay of Tomini in eastern Central Sulawesi may typify the maximal marine biodiversity associated with the idea of a "centre of diversity" in the central Indo-Pacific: other faunal groups have variable diversity, but unexpected species composition. Faunal assemblages from several phyla in this bay were assessed against phylogenetic and biogeographic data and biotic and environmental parameters in order to compare several hypotheses about the origins of the unusual species composition. It was found that the Togian Islands within the bay support a fauna with strong affinities to sites in the western equatorial Pacific, in all the studied groups except Stomatopoda. Both species composition and distribution of ecological functional groups is influenced by unusually calm and oligotrophic conditions in the islands and populations within the islands have various levels of genetic connectively to populations in other parts of Sulawesi, including complete isolation of some populations. It is proposed that these islands represent lagoonal refugia from Pleistocene lowstands, with affinities to similar refugia in the western Pacific. Additionally, the bay is possibly influenced by larval distributions from the Pacific through-flow current and there is little or no influence from the Indian Ocean.