

SPECIES BOUNDARIES IN SCLERACTINIAN CORALS: A MORPHOMETRIC ANALYSIS

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Accurate definition of species is critical to understanding ecological and evolutionary processes and correctly measuring biodiversity. Delimiting species boundaries in scleractinian corals is confounded by phenotypic plasticity of skeletal taxonomic characters. Recent molecular and breeding studies also indicate that morphological boundaries may not correspond with genetic and reproductive boundaries. Despite these complexities, morphological characters offer the only operational framework for recognising coral species. It is therefore essential that we determine the level of concordance between morphological boundaries and molecular and breeding boundaries in scleractinian corals. To achieve this, multifaceted approaches are necessary, combining morphometric, molecular and breeding studies that examine both sympatric and allopatric populations. Here I present the results of stage one of such a project: a morphometric analysis of fine-scale skeletal characters, using the *Acropora humilis* species group as a case study. This species group contains eight apparently closely related species that are not separated by discrete morphological characters, as currently described. Samples used in this analysis were collected from American Samoa. The taxonomic hypothesis stemming from these results will be interpreted for a number of allopatric populations, in conjunction with molecular and reproductive data, in future analyses.