

SPECIES BOUNDARIES IN SCLERACTINIAN CORALS.

Wolstenholme, Jackie*, *Dept of Marine Biology and Aquaculture, James Cook University, Townsville Qld 4811 Australia. Email: jackie.wolstenholme@jcu.edu.au

Accurate definition of species and species boundaries is critical for correctly interpreting evolutionary processes. However, definition of boundaries between many species of scleractinian corals remains unresolved because of merging or overlapping skeletal characters between morphologically similar species. Molecular evidence suggests that this apparent morphological continuum between some species of corals is due to hybridisation, and may be indicative of a reticulate rather than divergent evolutionary history. Detailed morphological analysis, using both descriptive and morphometric characters of all morphs of the *Acropora humilis* species complex, indicates that the five species present in American Samoa correspond with seven field-recognisable morphs. Three of the morphs have overlapping morphological boundaries while the other four morphs have distinct boundaries. Two of the distinct morphs are from a single species, *A. monticulosa*. One morph with indistinct boundaries and one morph with distinct boundaries are from the species *A. gemmifera*. Molecular data, for the same colonies used in the morphological analysis, compare the occurrence and frequency of interbreeding between morphs with overlapping and distinct morphological boundaries. Techniques established in this project will be used to analyse samples collected from the same species complex from six other Pacific locations to assess biogeographic variation. The combined results will be used to reconstruct the phylogenetic history, including zones of hybridisation, of this species complex.