**POSTER**

# On the margins of their existence: Identifying the evolutionary history and patterns of species level genetic diversity of high latitude scleractinia (hard corals) of the South Western Indian Ocean region

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The reef-building coral fauna of the Western Indian Ocean (WIO) is one of the least studied globally. Dedicated taxonomic and diversity studies are spread over a broad period of time and have tended to be geographically constrained (Obura, 2010). In South Africa, the Sodwana Bay reef complexes represent the southern range extent of coral reefs in the WIO region, and are some of the highest latitude reefs globally. A number of scleractinian species checklists have been developed for the reef complexes (Riegl 1996, Celliers and Schleyer 2002) In South Africa however, a full taxonomic investigation using genetics has yet to be completed. Globally, recent study by Huang et al. (2004, 2008, 2009, 2014) and Fukami et al. (2004a, 2004b, 2008) have used genetic techniques to understand coral phylogeny and evolution, especially in polyphyletic taxa within the robust coral clade. New species designations, such as in the Faviidae, Merulinidae, Pectiniidae and Trachyphylliidae (Huang et al. 2009, 2011) are under consideration, and will be important for future species and community study. This has implications for scleractinian taxonomy locally, where species designations may have to be revised and compared to global congeners based on genetic data. Thus, this project aims to identify South African scleractinian diversity using genetic and morphological data. These data will be used for a comparisons based taxonomic study of regional and global congeners, and will allow for accurate estimation of species diversity, evolutionary history, reticulation, and hybridisation (with special interest in robust corals and two prominent species families, the Acroporidae and Pocilloporidae). This presentation will present the most recent phylogenetic information of this on-going project and results of a brief scleractinian species checklist of the Sodwana bay reef complex.