

Evolutionary patterns in the Western Indian Ocean

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Genetic data reveals ancient secrets when interpreted from an evolutionary perspective. The rates at which substitutions are fixed in the genomes of marine organisms depend on the life history and genes of the organism analysed. This allows for interpretation of contemporary genetic diversity, and reasonable confidence in predicting historical demographic patterns. In this regional overview multiple marine organisms and their genetic data are compared across the Western Indian Ocean. This comparison includes vertebrates and invertebrates, both sessile and motile, as afforded by multiple studies in the region. Genetic differentiation amongst populations is explained in terms of contemporary drivers within the framework of ancient seascapes. We reveal evidence of gene flow within and between Madagascar and South Africa and discuss the implications to local marine life. Further, we examine patterns of genetic diversity in multiple species in terms of their evolutionary history.