

Scallop population genetics

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The utilization of indigenous fauna and flora, with the aim of expanding the bio-economy, is a national imperative. Nonetheless many species remain uncharacterized. One such organism, the South African scallop *Pecten sulcicostatus*, has been identified to have potential commercial value as a species for aquaculture. Initial life history characteristics and growth rate studies seem promising. However, little is known of the genetic constitution of these mollusc populations around the South African coast; furthermore no genetic resources are available for this species. Understanding the population dynamics and the distribution of genetic diversity within- and between populations is important for formulating effective strategies for genetic resource management and sustainable utilization of the species. Therefore this project will endeavor to develop genetic/genomic resources, in particular the isolation of microsatellite markers, for the South African scallop using the latest genome technologies. Molecular marker data will then be applied to elucidate population genetic structure and to evaluate the extent of intra- and interpopulation genetic diversity. A standardized molecular toolkit will be developed for *Pecten sulcicostatus* that could also be continuously used to monitor genetic diversity as the species is subject to aquaculture. Furthermore the knowledge generated by this research will aid the establishment of aquaculture facilities centered on scallop culture in South Africa that in turn will provide opportunities for employment and socio-economic development.