

DNA barcoding of South Africa's linefishes

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Marine linefishes represent an important natural resource in South Africa that is necessary to conserve and manage. To achieve this goal, valid fish species identification plays a central role in providing the foundations for both research and appropriate fisheries management. In the past, multiple contributions have collated and published scientific information on the diverse Southern African linefishes which played a significant role in the conservation and management of the resource. Increasingly, biodiversity assessments have benefitted from the development of DNA barcoding approaches which use short, standardized nucleotide sequences for rapid species identification. Despite several South African initiatives based on DNA barcoding, such data on marine fishes are still limited and fragmented. The aim of the project is to build on the past scientific contribution made on linefishes by establishing a reference multi-gene DNA barcode library that would include tissues, photographs and DNA sequences of specimen vouchers from reference collections for each of the 139 most important linefishes. The project involves a network of South African collaborators from different institutions including University of Pretoria, the Oceanographic Research Institute, the South African Institute for Aquatic Biology and the Department of Agriculture, Forestry and Fisheries. The outcomes of the project include the development of reference DNA barcodes for South African linefishes, a better understanding of their biodiversity around South Africa as well as the strengthening of the collaboration network between institutions. Scientific outputs include reports for national fisheries organizations, conference communications, and scientific articles in international peer-reviewed journals. The new knowledge gathered by the project will be made available on dedicated platforms (SANBI, BOLD, SASSI) to improve data dissemination and raise public awareness. The different outcomes will be crucial.