South African red seaweed barcoding

Prof R. Roodt-Wilding, Stellenbosch University
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Red macro-algae (Rhodophyta) dominate the seaweed flora of South Africa and represent approximately two-thirds of the seaweed diversity. Marine macro-algae, especially the Rhodophyta, are however notoriously difficult to identify owing to simple morphology and anatomy, rampant convergence, remarkable degrees of phenotypic plasticity in response to environmental factors, and incompletely understood life histories with alternation of heteromorphic generations. It is thus not surprising that algal systematists have come to rely heavily on genetic tools for molecular assisted alpha taxonomy. DNA barcoding has proven a phenomenal tool that has aided in species identification, discovery of cryptic species, or new records for red, brown and green seaweeds globally. This approach will be used in the current study to increase foundational biodiversity knowledge in the form of DNA barcodes and species occurrence records for specifically red macro-algae occurring in the species-rich Port Alfred region on the south coast of South Africa. This region is central in warm temperate Southern Africa (Agulhas marine province), the only global marine province confined to this country. It has the highest seaweed species number, and highest numbers of species endemic to South Africa.