

Oral presentation

~~DNA BARCODING OF ATLANTIC CYSTOSEIRA SENSU LATO SUPPORTS TAXONOMIC RE-ARRANGEMENTS AND REVEALS NOVEL BIOGEOGRAPHIC INSIGHTS~~

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~~NE Atlantic endemic *Cystoseira* s.l. marine forests are extremely diverse when compared to other foundation seaweeds, such as *Fucus* and *Laminaria*, but their systematics and biogeography remain far less well understood. *Cystoseira* are easy to recognize but challenging to identify due to high morphological plasticity and convergence, plus many regional floras remain insufficiently investigated. Consequently, species boundaries and geographical ranges remain imprecise for many taxa. Molecular approaches are less confounded by intra-specific plasticity and taxonomic expertise and can help overcome persisting taxonomic difficulties. Recent studies demonstrated the polyphyly of *Cystoseira* (presently divided into *Treptacantha*, *Carpodesmia* and *Cystoseira* s.s.) but at species level have been limited by low marker resolution and narrow taxonomic/geographic scope. We sequenced a diverse collection of *Cystoseira* s.l. for a standard barcode marker to delimit (and tentatively map) major genetic entities, their appropriate genus, and identify major conflicts with current (largely) morphology-based taxonomic and biogeographical literature. Barcode/phylogeographic data recovered at least 27 operational taxonomic units (OTUs, as proxies for species) and pinpointed multiple instances of overlooked cryptic diversity and over-splitting, but more frequently mis-identification/classification, with interesting taxonomic, biogeographical and evolutionary implications. Several species were re-instated or redefined, with endemism apparent in many regions. Inter-specific divergence was very variable and particularly low in some *Treptacantha* complexes, but in general a barcode gap was observed. Intra-specific diversity within some *Carpodesmia* and *Cystoseira* s.s. revealed substantial phylogeographic signal. Representative samples of each OTU were sequenced for additional markers to investigate with greater resolution diversification within each genus.~~

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Keywords: *Cystoseira*, barcoding

E-Poster

~~DNA BARCODING OF CERAMIALES (RHODOPHYTA) AROUND THE MALTESE ISLANDS REVEALS HIDDEN BIODIVERSITY IN THE CENTRAL MEDITERRANEAN~~

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The genetic biodiversity of Mediterranean macroalgae is generally understudied, a fact which is especially important in the case of morphologically cryptic taxa. As a result, it is often challenging to compare DNA barcodes from Mediterranean samples to references in online databases since, very often, no close hits are available. At a regional scale, of around 1124 records of algae in the Mediterranean Sea, only 114 species have been barcoded. This makes it difficult to discuss the biogeography of algae from the central Mediterranean, especially in the case of morphologically cryptic species. Malta's macroalgal species checklist, based on morphological data spanning the last 23 years, contains 339 species, of which 204 belong to the Rhodophyta: 194 Florideophyceae, 4 Bangiophyceae, 3 Compsopogonophyceae and 3 Stylonematophyceae. Our study aims to barcode red algae from 5 sites in the North of the Maltese islands. Different samples were taken, both from the substratum and also of mature algal specimens. Substratum samples were processed via the germling emergence method, with subsequent culturing *in vitro*. Segments of the thallus of mature red algae were dried to be preserved in an herbarium that was documented photographically. DNA extraction and barcoding of both types of sample via COI biomarkers confirmed the presence of *Laurencia* and *Palisada* spp. The study aims to contribute to macroalgal genetic data from the central Mediterranean and provides new records of Ceramiales (Florideophyceae) for this region. *Palisada tenerrima* is recorded from the Maltese islands for the first time.

Keywords: Algae, Rhodophyta, Florideophyceae

E-Poster

~~WHERE INDIGENOUS KNOWLEDGE AND TAXONOMY MEET: DISCOVERING, DOCUMENTING AND NAMING RIMURIMU/SEAWEEDS IN NEW ZEALAND~~

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~~Ngāti Kuri are descended from the original inhabitants of the northernmost peninsula of Aotearoa/New Zealand. The tribal lands of Ngāti Kuri hold high biodiversity and endemism, in particular the islands of Manawatāwhi/Three Kings Islands and Rangitāhua/Kermadec Islands. As kaitiaki (guardians/stewards), Ngāti Kuri seek to understand and protect the biota dwelling on land and waters around these islands, regarding the biota as taonga (treasures) and tūpuna~~