75th Annual Meeting of the Phycological Society of America

July 13-22, 2021
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surrounded by a thick multi-layered cell wall. Transmission electron micrographs showed a three-layered architecture of the zygospore wall, consisting of a polysaccharide rich endo- and exospore, interrupted by a massive electron dense mesospore. An additional layer with a lipid-like appearance was observed between the two inner layers, possibly resembling a precursor of the mesospore. Raman imaging detected carbohydrates in the endo- and exospore, while an enrichment of lipids and an aromate-rich layer were found in the mesospore, likely containing sporopollenin-like components. Overall, a major reorganization of the zygospore wall during maturation, leading to a resistant and protective structure, was shown. It is likely that *Mougeotia* is able to survive unfavourable conditions by the formation of a water-proof layer in the zygospore wall.

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UNDERSTOREY CHANGES COMPOSITION AFTER TEMPERATE KELP FOREST COLLAPSE BUT KEEPS RICHNESS AND DIVERSITY

Kelps are foundation species that provide important ecosystem services in temperate rocky shores worldwide. Similarly to terrestrial forests, healthy kelp forests are structurally complex as they are often arranged as patches composed by a multi-layered understorey of algae aggregations with different canopy adaptations. Over the last decades, several studies have reported a global kelp forest degradation, turning seascapes dominated by complex forest into structurally simpler mats of low-laying seaweeds. In NW Spain, golden kelp (*Laminaria ochroleuca)* canopy forests have recently receded within the limits of a MPA. This paradoxical loss inside a MPA allowed us to investigate the consequences of kelp forest collapse for other members of the biotic community, using nearby healthy kelp forest outside the MPA as a control. To assess these changes, four degraded sites within the MPA and four healthy kelp forest in nearby areas were sampled year round to assess the seasonal dynamics of understorey algae. Healthy and degraded kelp reefs had significantly different understorey assemblage compositions. However, unlike our expectations, these differences had little to none impact on the richness and diversity of the understorey assemblage. Moreover, understory differences were only perceptible when the assemblages were compared at the lowest taxonomic resolution (species). Unlike other studies, comparisons based on functional groups (canopy, sub-canopy, turf and crust) failed to detect any significant difference between healthy and degraded kelp forest.

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RELYING ON LIGHT IN A LIGHT-LIMITED ENVIRONMENT: CHLOROPHYLL BIOSYNTHESIS IN THE ANTARCTIC PSYCHROPHILE *CHLAMYDOMONAS* SP. UWO241