Accurate information about algal diversity and distribution patterns is relevant for a range of downstream applications. Nonetheless, our knowledge of the algal diversity in various ecosystems is usually far from complete. For example, diversity surveys done in LM or by eye cannot assess cryptic, hidden and rare diversity. Taxonomists try to fill the gaps, but progress is restricted because they themselves become an endangered taxon. Metabarcoding can overcome such issues but needs validated reference sequences to translate the metabarcodes into series of species. Therefore, this symposium invites contributions on novel developments in assessing diversity and biogeographic patterning. Topics could include, but are not restricted to, identifying, characterising and delineating species, inferring distribution patterns, tracking and modelling those patterns in space and time, and applying novel technologies to study of biodiversity. We also invite contributions on downstream applications of biodiversity data.