

## Macroalgae associated with Tanjung Adang Laut seagrass meadow, Sungai Pulai estuary, Johor, Malaysia, from 2015 to 2017

### ABSTRACT

The seagrass meadow in Tanjung Adang Laut shoal in Johor, Malaysia, harbors a diverse macroalgal species assemblage with a wide range of forms from the simple crustose, foliose and filamentous to complex structures. Their co-existence with seagrasses contributes significantly to the structure and function of the ecosystem. A monthly survey of macroalgae using quadrats at 10 m intervals along two fixed-line transects and random quadrat samplings around the shoal was conducted from 2015 to 2017, during land reclamation in a nearby area, to assess their species diversity, life forms, and coverage. A total of 38 species of macroalgae comprising 16 Chlorophyta, 7 Ochrophyta, and 15 Rhodophyta were present with the majority of macroalgae being epipellic. In 2015 and 2016, the macroalgae attained maximum coverage from February to May with 94–100% and 88–100% coverage, respectively, and declined in June. In 2017, the macroalgae massively proliferated from February to April with 83–100% coverage and declined in May. *Amphiroa fragilissima* was the dominant species followed by *Hydropuntia edulis*, *Gracilaria salicornia*, *Styopodium zonale* and *Avrainvillea erecta* in both quadrats along the line transects and random quadrats. In Tanjung Adang Laut shoal there were a temporary shift of plant population from a decline in seagrass to an increase or mass proliferation of specific macroalgae species, e.g., *A. fragilissima*, *H. edulis* and *G. salicornia*, which suggests the influence of increased development pressures and environmental disturbance in the nearby area.

**Keyword:** Composition; Diversity; Life forms; Macroalgae; Sungai Pulai estuary