

# A preliminary study: Population connectivity of *Halophila ovalis* in the West Pacific

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## Abstract

Seagrass, as marine angiosperms, plays an important role in coastal ecosystems. There are around 60 seagrass species known all over the world, of which, Hydrocharitaceae *Halophila ovalis* is widely distributed in the Indo-Pacific. It produces recruits through both asexual reproduction and sexual reproduction. The former uses rhizomatous ramets to disperse, the latter that use seeds to achieve the purpose of dispersal. Since its fruits and seeds have negative buoyance and the seeds of *H. ovalis* could pass through the digestive tract of waterfowls and lead to higher germination rates than uningested controls. Their long distance dispersal may contribute by biotic vector (i.e. migratory birds) instead of drifting. In this study, we collected 255 samples from 12 locations across 5 countries including Taiwan, Singapore, Hong Kong, Indonesia and Malaysia to test whether the connectivity in north-south direction is stronger than west-east direction. ITS and microsatellite loci were used to barcode and reveal the population connectivity pattern, respectively. While comparing the ITS sequences with published reference sequences of *H. ovalis* and other sibling species. Samples from WKT (Wakatobi National Park, Indonesia) and Malaysia (A and B) were *H. major* instead of *H. ovalis*. We will exclude samples from WKT, A, B for further genotyping.

Keywords: *Halophila ovalis*, population connectivity, microsatellite loci