

Evaluation of the function of seagrass to stabilize sediments

*Yoshiyuki TANAKA¹, Takashi Nakamura², Masaya Yoshikai², Toshihiro Miyajima³, Kazuo Nadaoka², Atsushi Watanabe², Fernando Siringan⁴, Masahiro Nakaoka⁵, Rempei Suwa⁶, Miguel Fortes⁴

1. Center for Liberal Arts and Science, Hachinohe Institute of Technology,, 2. Department of Transdisciplinary Science and Engineering, School of Environment and Society, Tokyo Institute of Technology,, 3. Marine Biogeochemistry Group, Atmosphere and Ocean Research Institute, The University of Tokyo,, 4. Marine Science Institute, University of the Philippines, 5. Hokkaido University, 6. Forestry and Forest Products Research Institute

Seagrass rhizome and root systems trap organic matter, thereby stabilizing the sediments. Research on the strength of seagrass body against external forces in the laboratory has been carried out so far. However, the measurement *in situ* have not been conducted to the best of our knowledge. This study compared the resistance *in situ* against pulling up forces among four seagrass species, *Halophila ovalis*, *Cymodocea rotundata*, *Thalassia hemprichii* and *Enhalus acoroides*. Experiments were conducted at Tandangon Island, Busuanga, the Philippines from 13 to 14 September 2017. Dual steel wires (diameter, 1.5mm) were inserted below the rhizome and connected to Digital hanging scale by polyethylene line. After setting the wire the scale was pulled up and force (kg) for the rhizomes to be lifted up or broken were recorded. The largest species, *Enhalus acoroides*, showed the highest resistance with the values diminishing as plant size decreased. The results have some significant implications to the plants' ability to stabilize sediments, store blue carbon and resist the impacts of strong waves brought about by climate change. Additional survey to evaluate the relationship between the resistance of each species and sediment grain size are scheduled. The biomass and reached depth of below ground part of each species would be also measured.

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