Thitima Niyomsilpchai 2010: Epiphytic Diatoms on Seagrass Blade at Ban Pa Khlok, Phuket Province. Master of Science (Marine Science), Major Field: Marine Science, Department of Marine Science. Thesis Advisor:
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Diversity of epiphytic diatoms on blades of different seagrass species, i.e., *Halophila ovalis, Cymodocea rotundata, Thalassia hemprichii* and *Enhalus acoroides,* was studied. Samples were collected in Ban Pa Khlok seagrass bed, Phuket Province, in October 2006 and March 2007. Identification on diatom specimens was done under a light microscope and with their photographs taken by a scanning electron microscope. Totally 75 species belonging to 39 genera were found out. There were differences in species richness on different seagrass species. All species were found on blades of *Enhalus acoroides*, while the lowest with 44 species of 22 genera was on blades of *Halophila ovalis*. On blades of middle-sized seagrass species namely, *Cymodocea rotundata* and *Thalassia hemprichii,* 63 species of 34 genera and 58 species of 32 genera, respectively were found. Forty-four species belonging to 22 genera occurred on blades of all seagrass species. Genus *Mastogloia* was the most diverse genus with 9 species while other genera such as *Diploneis*, *Amphora* and *Nitzschia* had less number of species with 6, 5 and 5 species. Mean densities of epiphytic diatoms were 1,702±321.37 - 2,338±211.13 cell.cm^{-2}, 2,072±215.64 - 2,409±352.63 cell.cm^{-2}, 2,339±264.38 - 3,007±157.33 cell.cm^{-2} and 4,953±573.24 - 6,089±591.69 cell.cm^{-2} on blades of *Halophila ovalis*, *Thalassia hemprichii, Cymodocea rotundata* and *Enhalus acoroides*, respectively. Based on their abundances, the significant genera of epiphytic diatoms were *Navicula, Amphora* and *Nitzschia*.

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