

Changes in Prop Roots and Pneumatophores of Selected Oiled Mangrove Trees
In selected areas of TINMAR, Nueva Valencia, Guimaras

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By

Maria Francesca D. Alvarez

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Abstract of Special Problem titled “Changes in Prop Roots and Pneumatophores of Selected Oiled Mangrove Trees in selected areas of TINMAR, Nueva Valencia, Guimaras” by Maria Francesca D.L. Alvarez.

On August 11, 2006, the oil tanker M/T Solar I, carrying more than two million liters of bunker fuel, sank at the Guimaras Strait off the coast of the Guimaras and Negros Occidental provinces, causing some 500,000 liters of oil to pour into the strait. This resulted to the oiling of surrounding marine habitats including the mangroves in Taklong Island National Marine Reserve (TINMAR). The present paper reports on the monthly monitoring of changes exhibited by the prop roots and pneumatophores of four mangrove species, *Rhizophora mucronata*, *Rhizophora apiculata*, *Rhizophora stylosa*, and *Sonneratia alba*, in selected oiled and unoiled areas of TINMAR due to the oil spill. This study aimed to analyze changes in the physical appearance or abnormalities obtained by mangrove aerial root structures affected by the oil spill and the survival rate and different stress responses of prop roots and pneumatophores after an oil spill covering a six month period which started August 2007 until February 2008. Specifically, the number of prop roots and pneumatophores, adventitious aerial roots, abnormal branching of prop root tips, fissuring or peeling of periderm, death of prop root tips, twisted or curling of pneumatophores, adventitious pneumatophores, and abnormal pneumatophores. Changes in the said parameters may indicate stress caused by oil. Generally, the oiled mangroves showed a higher percentage of changes in terms of the number of adventitious, abnormal branching and dead prop root tips as compared to the unoiled control site which exhibited a very small or no change in the growth of prop roots. Fissuring of periderm for both *Rhizophora stylosa* and *Rhizophora mucronata* was observed only in the oiled sites. There was a minimal difference in the percentage of abnormal, adventitious, and twisting or curling of pneumatophores in oiled and unoiled sites whereas a higher percentage was exhibited in Taklong oiled site. The physical and morphological changes exhibited by the prop roots and pneumatophores as a result of a mangrove’s adaptive mechanism due to stress caused by oil are useful indicators for long term monitoring.