

MANGROVE COMMUNITY STRUCTURE IN MAKATO RIVER, MAKATO ,AKLAN

LIZA MARIE P. BEJEMINO

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Submitted by

Liza Marie P. Bejemino

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University of the Philippines in the Visayas

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Mangroves are plants that thrive in habitats with very limited conditions for plant life. They are usually found in intertidal zones and along tropical and subtropical coasts. A lot of mangrove forests were destroyed due to overexploitation mainly by human activities. This study was the first to be conducted to provide the community structure of mangroves in Makato River. This study will establish the importance of mangrove communities as well as provide necessary information for the proper management of the mangrove community. The study aims to assess the community structure of mangroves in Makato River, Makato, Aklan. It specifically aims the following: (1) determine selected physical and chemical factors; (2) identify and classify true mangrove species present in the area; and (3) describe the community structure in terms of Stand Basal Area, Stems per Hectare, Relative Density, Relative frequency, Relative Dominance, Importance value, Shannon Index of Diversity, Zonation Pattern and Seedling and Sapling Density. There was a total of 22 true mangrove species belonging to nine families found in the study conducted in the mangrove community in Makato River, of the municipality of Makato, in the province of Aklan. The nine families are Family Avicenniaceae which is represented by *Avicennia alba*, *Avicennia marina*, *Avicennia rumphiana* and *Avicennia officinalis*; Family Rhizophoraceae which is represented by *Bruguiera cylindrica*, *Bruguiera gymnorhiza*, *Bruguiera parviflora*, *Bruguiera sexangula*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Rhizophora stylosa* and *Ceriops decandra*; Family Sonneratiaceae which is represented by *Sonneratia alba* and *Sonneratia caseolaris*; Family Meliaceae which is represented by *Xylocarpus granatum* and *Xylocarpus moluccensis*; Family Myrsinaceae represented by *Aegiceras corniculatum*; Family Euphorbiaceae represented by *Exoecaria agallocha*; Family Sterculiaceae represented by *Heritiera littoralis*; Family Palmae represented by *Nypa fruticans*; and Family Rubiaceae represented by *Scyphiphora hydrophyllacea*. The salinity in the area ranges from 0 – 35 ppt. Water and soil temperature ranges from 24 C to 27 C while the water and soil pH is relatively neutral ranging from 6.81 to 7.04. The stand basal area for the whole sampling area is 1370.838 m²/ha². *Avicennia officinalis* has the highest basal area with 235.896. *Nypa fruticans* has the highest stems per hectare in the whole sampling area with 12500. There is an average of 6472.727 stems per hectare. *Nypa fruticans* has the most number of individuals having the highest relative density of 27.572. *Heritiera littoralis* is considered to be the least dense species with only 0.074. The frequently encountered species in the sampling site in Makato River is *Nypa fruticans* with 11.36%. *Heritiera littoralis* is the least occurring species with 0.67 %. The most dominant species found in the sampling site in Makato River is *Nypa fruticans* with 17.989. *Bruguiera gymnorhiza* is the least dominant species with 0.009. The most important species in the mangrove community in Makato River is *Nypa fruticans* having an importance value of 56.923. The least important species is *Heritiera littoralis* with an importance value of only 0.916. The mangrove community in Makato River, Makato, Aklan is considered to be a diverse area having an index of diversity of 0.999. The zonation pattern is distinct in the three stations with station 1 as the freshwater zone dominated by *Nypa fruticans* and species which prefer low salinity such as *Xylocarpus spp.*, *Exoecaria agallocha* and *Heritiera littoralis*. Station 2 which is considered as the middle zone is dominated by *Avicennia sp.*, *Bruguiera gymnorhiza*, *Bruguiera parviflora*, *Aegiceras corniculatum* which prefer moderate salinity. Station 3 or the seaward zone is dominated by species that prefer high salinity such as *S. caseolaris*, *A. marina* and *R. stylosa*. The species with the most number of seedlings is *Avicennia marina* with 0.2777 while the species with the least number is *Xylocarpus muloccensis* with 0.0016. *Avicennia officinalis* has the highest number of saplings with a density of 0.4092 while the least are *Sonneratia alba*, *Bruguiera parviflora* and *Aegiceras corniculatum* with a density of 0.0032 each.