PHYSICOCHEMICAL FACTORS AFFECTING MANGROVE DISTRIBUTION AND OCCURRENCE IN SELECTED SITES IN THE PROVINCE OF ANTIQUE

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Mangrove forests are unique inter-tidal ecosystems comprised of taxonomically diverse, salt-tolerant tree and other plant species that are primarily found on relatively sheltered coastlines, deltas, estuaries and lagoons in tropical and subtropical regions of the world. The objective of this study is to generally determine the physicochemical factors influencing the distribution and occurrence of mangroves in selected sites in the Province of Antique and to specifically measure selected physicochemical factors influencing the distribution and occurrence per species per municipality and correlate selected physicochemical factors like soil and water salinity, soil and water pH, and soil and water temperature influencing the distribution and occurrence per species per municipality using Pearson Correlation Coefficient. There were 224 plots established in 11 municipalities in the province of Antique. Twenty-five plots were established in Anini-y, 44 in Hamtic, 11 in San Jose, 5 in Belison, 18 in Patnongon, 23 in Bugasong, 11 in Barbaza, 9 in Tibiao, 26 in Culasi, 23 in Pandan, and 29 in Semirara. A total of 27 true mangrove species belonging to 12 families were found in the 11 municipalities of Antique. The 12 families are Family Avicenniaceae represented by *Avicennia alba , Avicennia marina, Avicennia officinales*, and *Avicennia rumphiana*; Family Combretaceae represented by *Lumnitzera racemosa and Lumnitzera littorea;* Family Euphorbiaceae represented by *Excoecaria agallocha*; Family Lythraceae represented by *Pemphis acidula*; Family Meliaceae represented by *Xylocarpus granatum* and *Xylocarpus moluccensis*; Family Myrsinaceae represented by *Aegiceras coniculatum* and *Aegiceras floridum*; Family Myrtaceae represented by *Osbornia octodonta*; Family Arecaeae (Palmae) represented by *Nypa fruticans*; Family Rhizophoraceae represented by *Bruguiera cylindrica, Bruguiera gymnorrhiza, Bruguiera sexangula, Ceriops decandra, Ceriops tagal, Rhizophora apiculata, Rhizophora mucronata,* and *Rhizophora stylosa;* Family Rubiaceae represented by *Scyphiphora hydrophyllacea;* Family Sonneratiaceae presented by *Sonneratia alba, Sonneratia caseolaris, Sonneratia ovata;* and Family Sterculiaceae represented by *Heritiera littoralis*. For Soil pH, the highest value of 8.87 was observed in the municipality of Hamtic and the lowest at 6.32 in the municipality of Semirara. Overall mean soil pH was 7.31. For Water pH, the highest value of 8.96 was observed in the municipality of San Jose and the lowest value of 6.29 in the municipality of Tibiao. Overall mean water pH was 7.23. For salinity, it ranged from 3.1 ppt (Tibiao) to 27.47 (Semirara) and the overall mean was 13.37 ppt. For Water Temperature, the highest value of 29.48 ^{0}C was observed in Anini-y & the lowest value of 24.74 ^{0}C in the municipality of Semirara with an overall mean of 27.40 ^{0}C. For Soil Temperature, the highest value of 30.2 ^{0}C was observed in the municipality of Belison & the lowest value of 24.97 ^{0}C in the municipality of Semirara with an overall mean of 27.50 ^{0}C. Among the species present, *Aegiceras floridum* showed significant correlation with Soil pH (favor low soil pH), water pH (favor low water pH), salinity (favor high salinity), soil temperature (favor high soil temperature) and water temperature (low water temperature), *A. rumphiana* showed significant correlation with water pH (favor low water pH) and soil temperature (favor low soil temperature), *B. cylindrica* showed significant correlation with soil pH (favor high soil pH), *C. decandra* showed significant correlation with water pH (favor low water pH) and salinity (favor high salinity), *L. littorea* showed significant correlation with soil pH (favor high soil pH), water pH (favor high water pH), salinity (favor high salinity), soil temperature (favor high soil temperature) and water temperature (favor high water temperature), *O. octodonta* showed significant correlation with soil pH (favor high soil pH), water pH (favor low water pH), salinity (favor low salinity), soil temperature (favor high soil temperature) and water temperature (favor low water temperature), *S. caseolaris* showed significant correlation with water pH (favor low water pH), salinity (favor low salinity), soil temperature (favor low soil temperature) and water temperature (favor low water temperature) and *S. ovata* showed significant correlation with soil pH (low soil pH), salinity (favor low salinity) and water temperature (favor low water temperature). Species like *A. corniculatum, A. alba, A. marina, B. sexxangula, E. agallocha, H. littoralis, L. racemosa, N. fruticans, R. apiculata, R. mucronata, R. stylosa, S. alba, X. granatum* and *X. moluccencis* showed wide tolerance (no correlation) in all physicochemical factors (Soil Salinity, Water pH, Soil pH, Soil Temperature and Water Temperature).