

## **REVISITING THE GENESIS OF TROPICAL PEAT DEPOSIT AT MUTHURAJAWELA, WESTERN SRI LANKA**

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Muthurajawela wetland is one of the greatest peatland in Tropical Sri Lanka. Tropical peatlands at the coast have been resulted by sea level changes. Hence the peat formed at coast are chemically characterized. The study is to characterize the peat deposit of Muthurajawela, hence to re-confirm the genesis. While dozens of peat samples were collected at the field, the observations were made to understand the geography of Muthurajawela peatland. The geography of the study area was spatially correlated by Digital Elevation Model (DEM). Elemental analysis was done by performing X ray Fluorescence (XRF) to know the chemistry of the collected peat samples. The shell samples collected with peat soils were identified using the physical characteristics. In addition, some borehole records were also studied to understand the distribution of the peat at the study area. The peatland has been geographically restricted to the coast evidencing the influence of the Holocene Sea level fluctuations. The borehole records indicate the shirking of thickness of the peat layer towards landward. Twelve marine shells such as *Melampus* sp, *Bullia Vittata*, *Palanaxis sulcatus*, *Morula granulate*, *Thais bufo*, *Clypeomorous batillariaeformls*, *Donax deltodes*, *Perna perna*, *Brachiodontes* sp, *Metrix* sp, *Saccostrea cucullata* and *chama reflexa* were identified indicating the coastal origin. The elemental analysis confirms the domination of silicon (37.97%), Aluminum (20.117%), Iron (9.28), Phosphorous (0.09%), Sodium (1.15%), Potassium (1.098%) and Sulphur (0.59%). The higher concentration of silica in peat soil further confirms the coastal origin. The plant debris and Sulfur recorded n peat soil indicate the involvement of vegetation in peat genesis. Fianally, it can be concluded that origin of peat at Muthurajawela could be resulted by burying of vegetation (forest) at a coastal lagoon in between Colombo and Negambo.

**Keywords:** Muthurajawela, Tropical Petland, Silica, Shells, Coastal region

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