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Factors that determine population and distribution of mangrove ecosystem in the pacific coast of Guatemala.

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Natural site conditions, especially those of soil and water, were measured in areas with different patterns in vegetation cover, as well as the physiography, hydrography and the historic analysis of mangrove growth in the region as a tool for management in the pacific coast of Guatemala. Water-body salinities showed horizontal variations landward; interstitial salinity and that of the water bodies increased as rainfall decreased. The red mangrove (*Rhizophora mangle* L.) was found in the external zone, associated with the channel on deep soils of medium drainage, low interstitial salinity and high chemical dynamics (high values of organic materials, C:N and CEC). The white mangrove (*Laguncularia racemosa* Gaertn.) was found in areas of less tidal influence, on soils with a wide variety of physical and chemical conditions (from poor in organic material, CEC and C:N, up to soils with the highest values for these properties; from clay to sandy soils). The black mangrove (*Avicennia germinans* (L.)L.) was found in the internal margin of the forest on soils of high drainage and ventilation, but with little dynamic chemistry (low values in organic material, C:N). Mangrove loss between 1945 and 1999 was estimated at 737.5 hectares at a rate of 16.39 hectares per year, especially in nearly inhabited areas. This decrease is due to substitutive uses (agriculture and shrimp farming) and extractive uses (wood for domestic, agriculture and industrial purposes).