

ABSTRACT

The Community of Sponges (Porifera) on Prop Roots of *Rhizophora mangle* in the Port Royal Mangrove Lagoons

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The prop root habitat of the red mangrove, *Rhizophora mangle* supports a diverse population of sessile invertebrates, sponges being the most conspicuous. The factors, which determine the species composition and distribution in the Port Royal mangroves, are virtually unknown and since sponges must require special conditions for optimal growth, their abundance and distribution could indicate ecological conditions throughout the lagoons.

The first objective of this particular study was to properly identify the range of sponges found on the prop roots. Therefore the different species of sponge collected from the nine sampling stations were classified and their diagnostic features including colour, shape, consistency, skeletal architecture, spicule type and size were documented.

Thirty species of sponge were identified throughout the area and the sites showed varying differences in species composition and distribution. Using Ward's cluster analysis the sites were grouped according to similarities.

Goodbody's Channel had the largest number of species, while Rose's Hole, the Yacht Club and Plumb Point north had the three smallest numbers.

The principal factors that affect the spatial distribution of sponges within the Port Royal mangrove are depth, light availability and total suspended solids. These three factors account for 76.90 % of the variability in species number. All temporal factors investigated, varied significantly indicating possible seasonal changes in species composition. Other limiting factors are overgrowth by algae, surface area of prop root available and the intensity of certain stochastic events such as major influx of fresh water due to unusually heavy rainfall and oil spills. In addition to the above mentioned factors it is important that there is constant and moderate current within the lagoon as this influences the ability to flush out waste as well as import nutrients and assist in distribution of larvae.

Keywords: Celia Patricia Jackson; Sponges (Porifera); Prop root habitat; Red mangrove, *Rhizophora mangle*; Port Royal mangrove lagoons, Jamaica.