

Spatial correlation between macro-fauna, vegetation structure and soil conditions in tropical coastal forest

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The structure of mangrove ecosystems is affected by various abiotic factors (temperature, salinity, nutrient availability, tidal range, topography, etc) and biotic factors (intra and inter-specific competition, fauna, anthropogenic pressure etc.) (Lee, 1999b). Faunal impact is largely due to the crab activities (Cannicci *et al.*, 2008). Some authors refer to 'crabs' as mangrove ecosystem keystone species (Smith III *et al.*, 1991; Schories *et al.*, 2003). They contribute actively to the forest structure through two activities: 'engineering' activity (Bartolini *et al.*, 2010) and herbivory behaviour (Schories *et al.*, 2003). Burrows and galleries in hypoxic or anoxic soils allow a better soil oxygenation and increase the bioavailability of nutrients such as nitrogen and phosphorus (Smith III *et al.*, 1991). In addition, some families of herbivorous crabs are known to be a threat to natural and artificial mangrove regeneration (Dahdouh-Guebas *et al.*, 1998) and a regulator of competition in high stand density areas (Bosire *et al.*, 2005), both through consumption of mangrove propagules and juveniles. We focus this ongoing study on the impact of herbivorous (Sesarmidae) and detritivorous crabs (Ocypodidae) on mangrove propagule establishment and growth in Gazi Bay, Kenya. To estimate this impact, we will first measure the correlation between floristic data (tree density, strata (canopy height) number, individual sylvimetric characteristics and specific composition), faunistic data (specific composition and density) and abiotic data (soil texture, oxygen level, acidity, nutrients bioavailability, organic matter and salinity) in contrasted areas.

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