

ANALYSES OF THE MANGROVE'S REHABILITATION PROCESS IN ABANDONED SALTWORK AREA, IN THE CEARÁ RIVER, NORTHEAST BRAZIL

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ABSTRACT

The mangroves are among the most productive and biologically important ecosystems in the world supplying unique conditions and services to all tropical coastal system. The vulnerability of the coastal environments is frequently emphasized to the anthropogenic impacts. In the Ceará River, Northeast Brazil, during the last century, mangrove ecosystems lost extensive areas, due the exploitation of saltworks. Right behind the decline of this economic activity, the saltwork structures have been abandoned, and mangroves recovered part of these areas. The current study is focus on the mangrove rehabilitation process in abandoned saltwork area. It was considered different spatial-temporal scales in the Ceará river estuary system, in the period of 1968, 1997 and 2009, using remote sensing techniques and the software QGIS 1.7[®]. These data fomented the elaboration of thematic maps, showing the evolutionary mangrove rehabilitation area and the saltwork area. In the period of 41 years analyzed the mangrove area from the Ceará river estuary increase 165%, reaching 1006.6 ha in 2009. The saltwork area have decreased from 621,9 ha to 226.9 ha. The natural mangrove rehabilitation in saltwork areas covered 395 ha of the abandoned territory in four decades, but there still are 34% of abandoned saltwork areas that need to be restored. The conceptual analysis of the mangrove dynamics show the importance of the climate, the natural recruitment of mangrove trees, the soil quality and the range and time of inundation to enhance the rehabilitation process of abandoned saltworks. The expansion zones of the mangrove forest has described the presence of the mangrove-associated plant *Beldroega marítima* and *Laguncularia racemosa*. Management mangroves areas in estuary regions depend on effective actions of monitoring the forests development and understand the different interactions with the entire environmental system.

KEYWORDS: Anthropogenic Impacts, Remote Sensing, Coastal Management, Estuarine System