

Abstract**Historical Development, Present Status and Management
Guidelines for the Port Royal Mangal, Jamaica.**

With many mangrove systems under pressure from development, conflict arises between socio-economic demands and conservation needs. It becomes necessary that a compromise be reached where diversity and ecological processes are maintained while sustainable yields of resources are obtained. In the decision making process, it is necessary that appropriate management guidelines be followed, which have been based on the historical trends, present conditions and the resources within the systems. It was the objective of the present study to inventory the Port Royal mangrove area by documenting its historical development and present status and derive management guidelines based on the data generated.

Historically, the mangal is a stable environment established on ancient erosional limestone residuals; there has been little horizontal expansion of the forested areas over the last 200 years because of existing geomorphological and geophysical conditions. However changes have been taking place within the forested areas by the development and expansion of denuded areas resulting from the dieback of the mangroves which may be the maturation of the system or the response to sea level changes. The mangal is periodically impacted by episodic events such as hurricanes and extreme flood events together with man-made events such as oil spills. The impact of episodic events limits the development of the system in attaining maximum biomass and structure.

Primary productivity of the system is low ($1.14 \text{ g.m}^{-2}.\text{day}^{-1}$) compared to other regional mangals.

Decomposition of leaf material is slow on the forest floor (Avicennia: 0.38% dry wt loss.day⁻¹; Rhizophora: 0.28% dry wt. loss.day⁻¹) for a major part of the year (February - August) because of reduced duration of inundation, but increases rapidly during the winter months. For the first time all existing information on the Port Royal mangrove area is drawn together and reviewed. It is shown that the lagoons of the swamp maintain a thriving floral and faunal community, including some commercially important fish, crustaceans and molluscs.

The area shows that it has been moderately modified by human impact through land reclamation for the development of real estate. Therefore there is the immediate need to attempt management through preservation while allowing some use of resources before additional impacts cause any further deterioration of conditions in the area. Guidelines are provided for this.

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