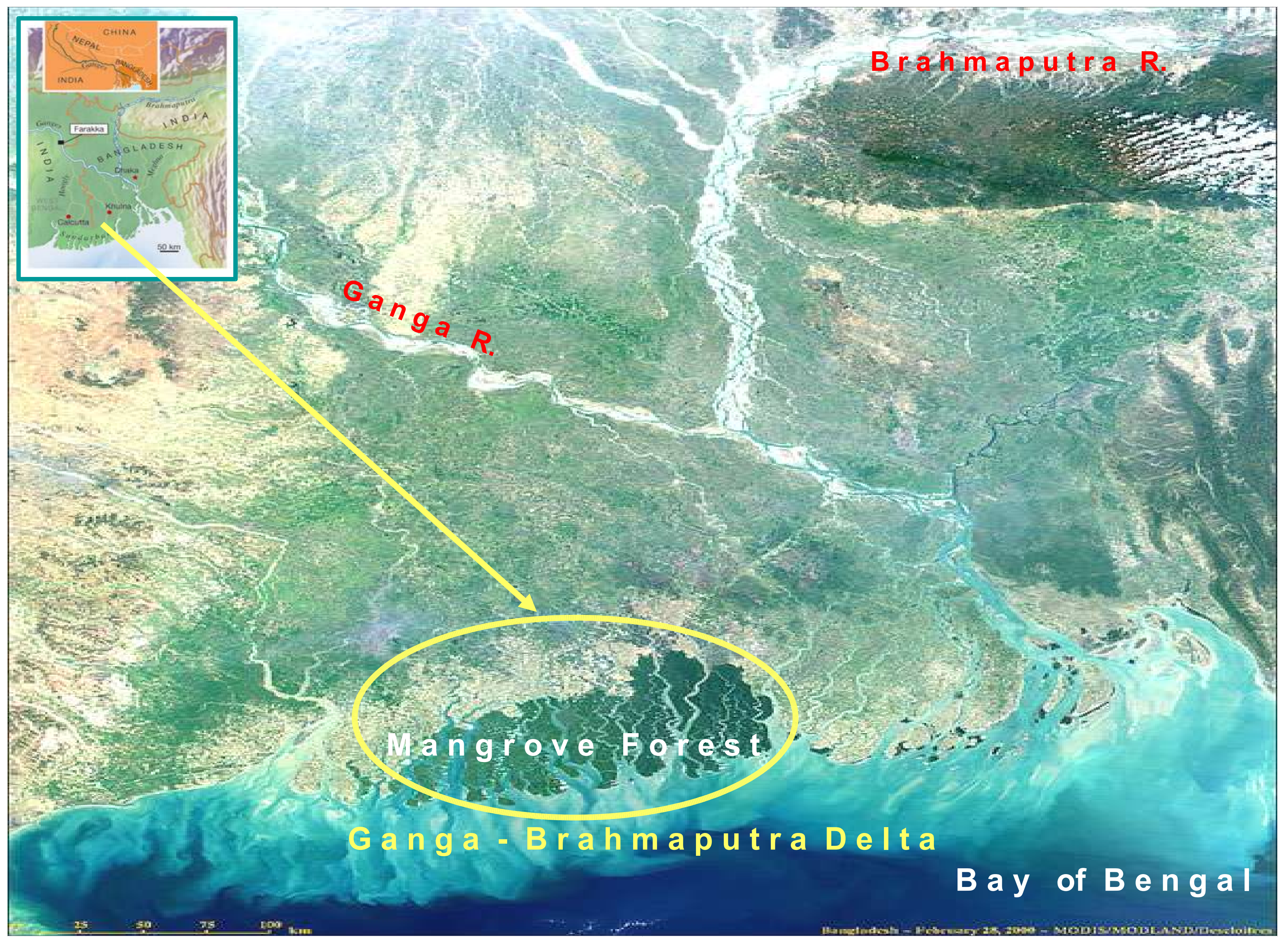


Responses of Mangrove to Holocene Environmental Change, Western Ganga – Brahmaputra Delta, India

Arghya K Hait¹ and Hermann Behling²

1. Department of Botany, City College, Calcutta – 700 009, India 2. Department of Geosciences, University of Bremen, 28334 Bremen, Germany



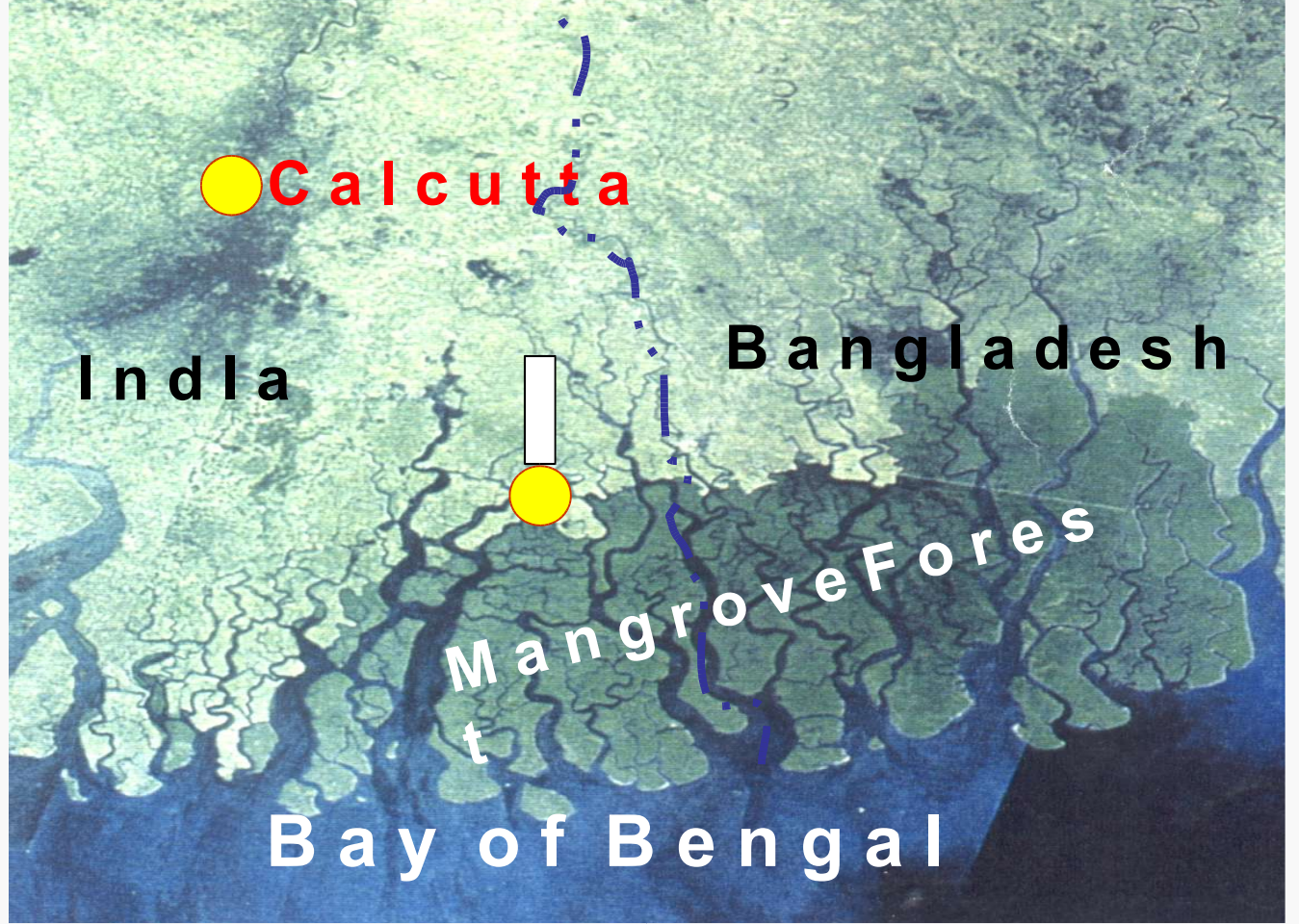
INTRODUCTION

The Coastal areas of the Ganga-Brahmaputra delta (India) is ecologically unique for its diverse mangrove habitats known as Sundarban Mangrove Forest and is internationally recognized as a "World Heritage Site". This ecosystem has immense economic, environmental and ecological implications for the rapidly growing population of the region. The present day distribution of mangrove is under pressure from land reclamation and decreased river flow influx. Protection of this ecosystem is essential and urgent.

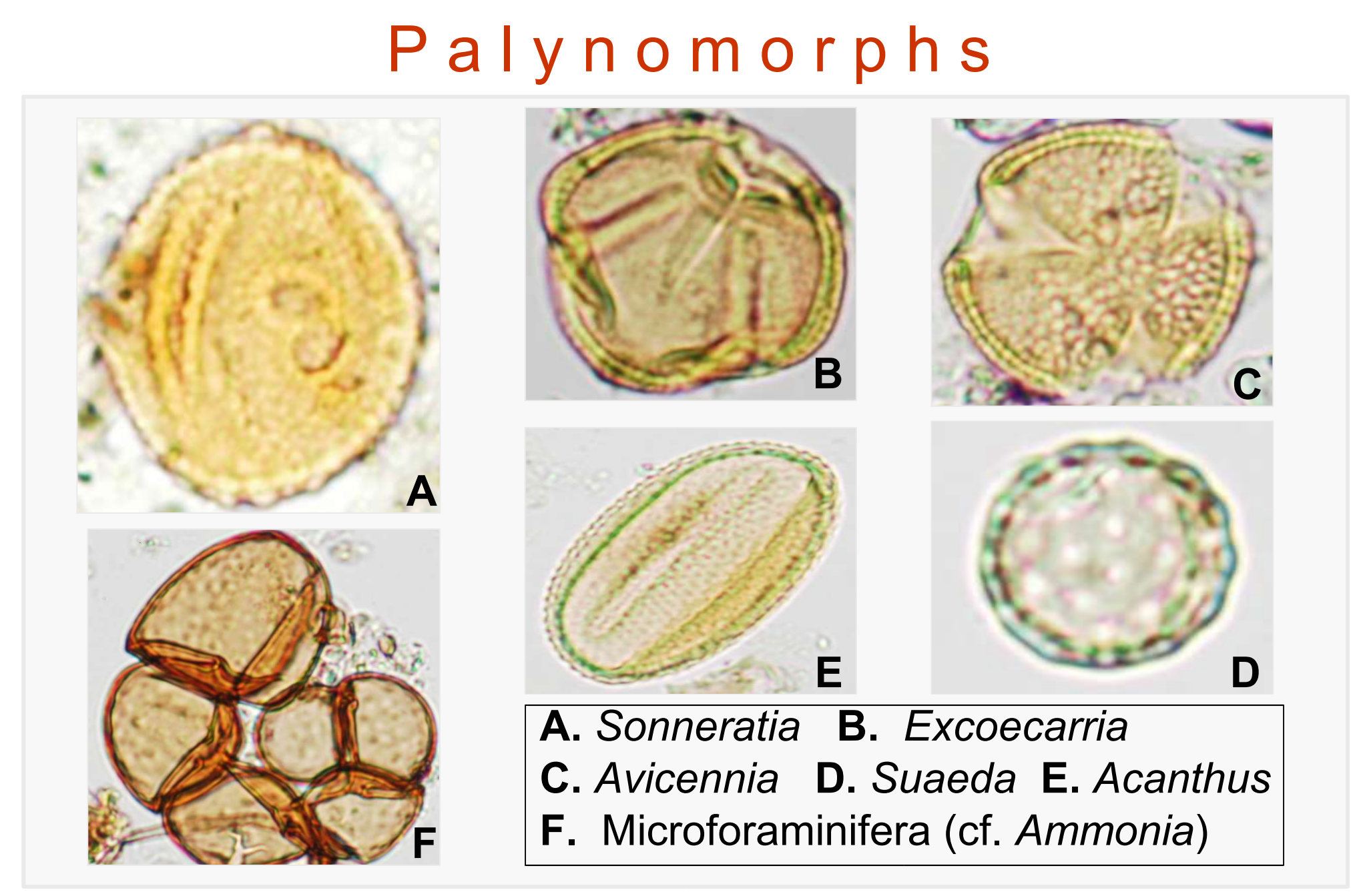
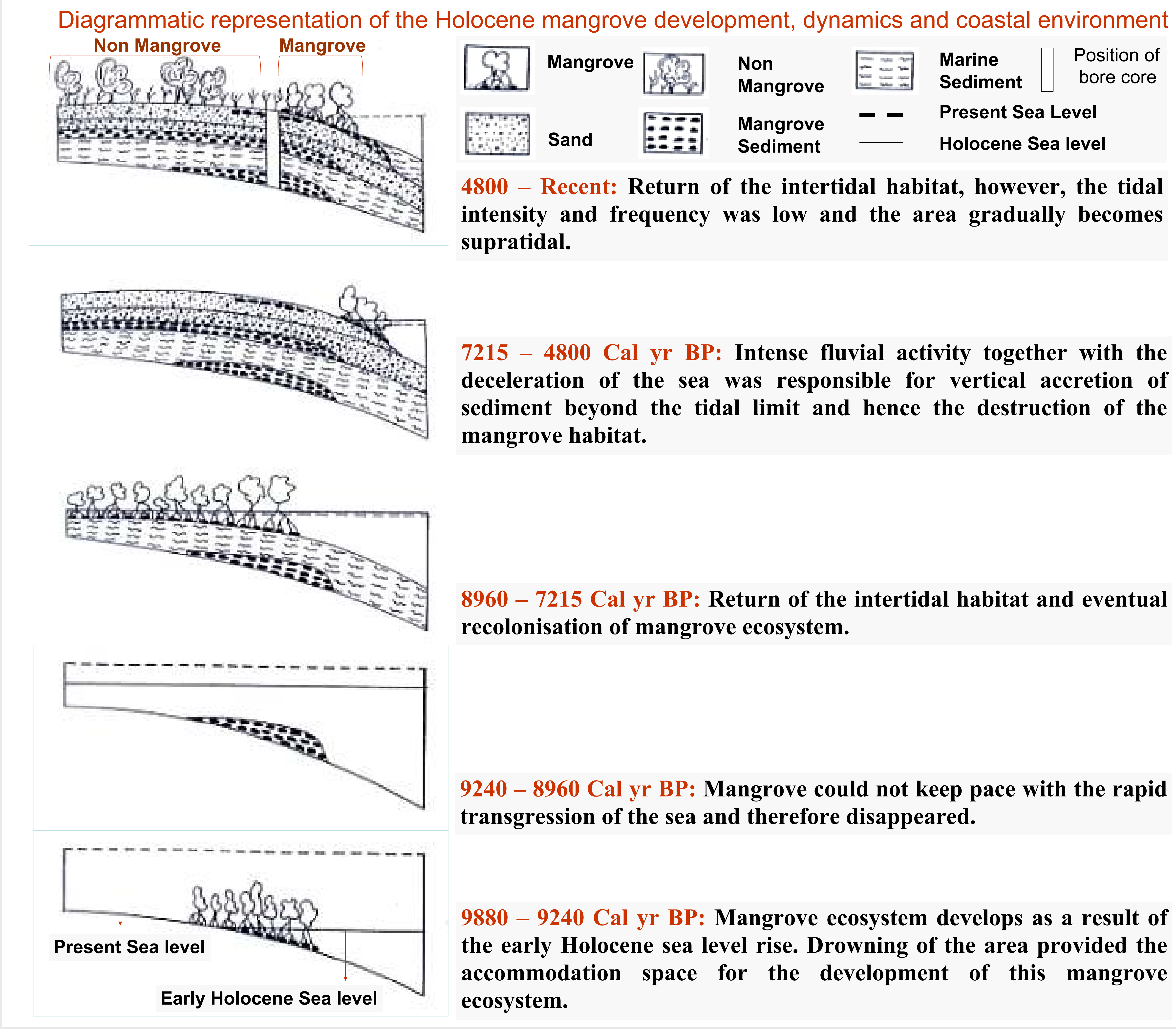
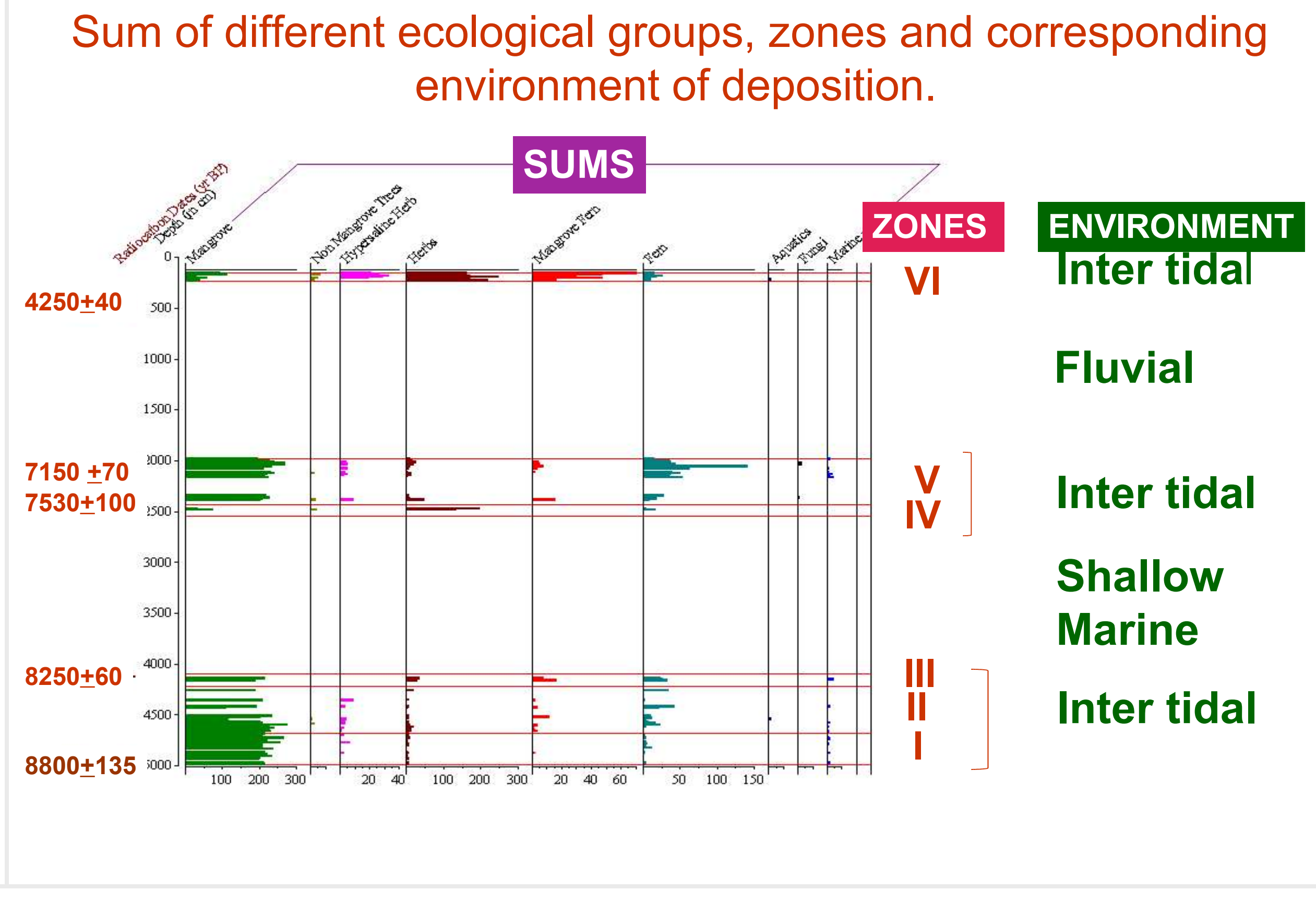
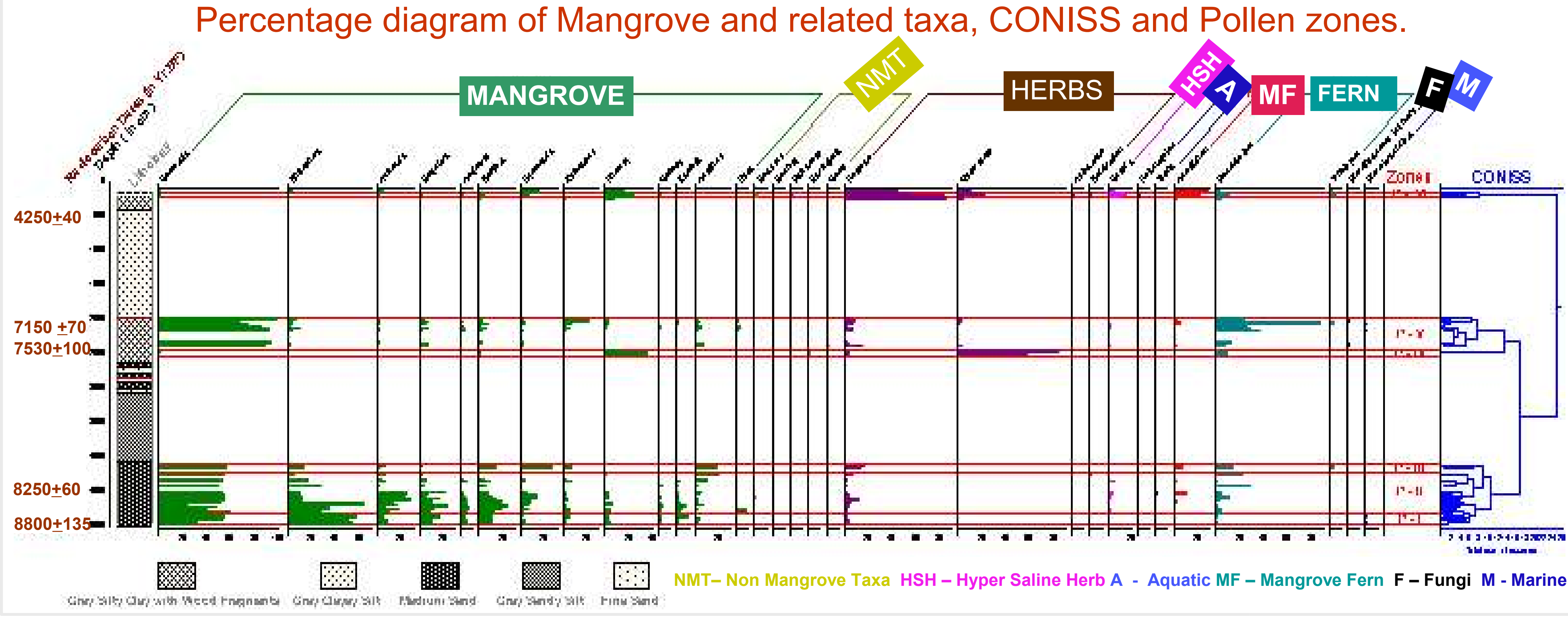
In order to properly manage this ecologically unique ecosystem and minimize further degradation, it is essential to understand how mangrove of this region have developed and changed in the past.

METHODS

The methods of palynology and sedimentology corroborated with radiocarbon dating is used to study the coastal environmental changes such as mangrove dynamics, sea level changes, sedimentary changes and influence of human in the coastal processes.



RESULTS



CONCLUSION

- Palynological analysis of a radiocarbon dated 50 m-long core provided the basis for reconstruction of vegetational and coastal environmental history in the western Ganga-Brahmaputra Delta.
- A diverse mangrove forest existed at the study site since the last 9880 cal yr BP and shifted landward and seaward in response to the relative sea level changes.
- Climate change in the highland areas indirectly affected the sedimentation process vis a vis mangrove development and dynamics in the study area.
- Currently, anthropogenic factors prevail over natural factors and the mangrove forest is being altered because of large-scale land reclamation and reduced fresh water inflow into the system.