CHAPTER 10

Summary
10. SUMMARY

The present study primarily deals with the distribution of mangroves inside the Sundarban Biosphere Reserve and their ecological conditions. In this context, an eco-floristic account has been presented on the 20 blocks of Indian Sundarbans. The geography, geology, climatology along with the factors affecting mangrove distribution have been discussed.

During the study period seasonal floristic studies (both qualitative and quantitative) have been undertaken and the findings have been highlighted under the heads of results and discussion. Spatial distribution pattern of plants inside and outside the Sundarban Tiger Reserve have been compared. Studies have also been conducted in two Wildlife Sanctuaries- Lothian Island and Sajinakhaloi located inside the Indian Sundarbans. Comparative analysis of species composition among the different blocks and sanctuaries has also been made.

Morpho-taxonomical features and vernacular names of the mangroves have been presented along with their flowering and fruiting seasons. Based on field observations, ecological notes are given with species description. Diversity of mangroves in different forest blocks are calculated and presented in this treatise.

During the quadrate studies it has been noted that about 20 angiospermic plant species are present both inside the Sundarban Tiger Reserve and outside in the reserved forest area. It has been found that some blocks are characterized by some unique features, like-
- *Acanthus volubilis* has been found only in 2 blocks, Matla and Gosaba.

- *Brownlowia tersa* has been found only in Arbesi block, compartment number 1, at the proximal zone of Jhora khal (22°09'41"N latitude and 89°02'27"E longitude)

- The *Jhora khal* in Arbesi block has exhibited different species composition on its two sides; at one side there was pure *Rhizophora* community, while the other side is marked by a mixed vegetation of *Ceriops decandra*, *Excoecaria agallocha*, *Xylocarpus granatum* and *Brownlowia tersa*.

For studying the ecology of Sundarban Biosphere Reserve, the following course of programmes were undertaken, viz., soil texture, soil salinity, soil pH, water pH, water salinity, electric conductivity, total dissolved solids, turbidity, transparency and absorbance. Comparison of soil texture, salinity and pH values between different blocks have been presented. Water quality parameters have also been compared between the main rivers inside the study area. Out of the 20 rivers surveyed it has been found that Pirkhali, Mayadwip, and Chandkhali river water is more saline (more than 20 ppt.) than those of the others. Block in fresh water supply in these 3 rivers has led to this higher salinity.

Finally, effort has been made to determine the correlation coefficient between soil salinity and species composition. This study is positively fruitful for future mangrove research in the following ways-

1. It has provided a useful database for future taxonomic and ecological studies on mangroves.
2. It has great impact on biodiversity relationship of conservation.
3. This study will be helpful for selection of suitable species for plantation in new ‘char lands’.
4. These data will be helpful in the regeneration program in mangrove reclaimed areas.
5. Studied data also promote us to reach to the degraded mangrove areas.