

THE MANGROVES OF SRI LANKA - AN INITIAL STUDY

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Mangrove forests in Sri Lanka are confined to an extent of around 10,000 hectares mainly around lagoons and in the intertidal zones near the mouths of rivers. In Sri Lanka the tidal variation is only about 1 metre and hence the mangroves only form a thin belt. No detailed island-wide study of the distribution and extent and species composition of the mangroves has been undertaken as yet although for a long time mangroves have supplied Sri Lanka's coastal people living near mangrove areas with their requirements of fuelwood, poles and domestic timber. Mangroves have also yielded tannin extracts and dyes from their barks to meet part of the requirements of the small leather industry in the country. However, some studies on mangroves have been done by the Forest Department, the Universities and the Department of Wild Life Conservation.

The paucity of work on mangroves, and the absence of any definite management plans for such an important forest ecosystem is mainly because of the fact that except for mangrove areas in forest reserves and wild life national parks that abut on the sea coast, mangroves located in other areas of the coast have not been under the charge of any single technical state department. At one time these other areas were controlled by revenue officials of districts and by government agents, and more recently partly by the Department of Coast Conservation, partly by the Urban Development Authority and partly by government agents.

However, with the setting up of a UNESCO sponsored National Mangrove Committee for Sri Lanka, it has been advocated that all mangrove areas be brought under an appropriate form of management and protection. It has also been proposed that scientific research be carried out into the mangrove ecosystem encompassing the disciplines of forestry, fisheries and wildlife. Multiple control over such mangrove areas as in the past is not in the long term interests of the mangrove ecosystem and would not bring benefits to the coastal people living in and around the areas and to the country in general at a sustained level. Even though the extent of mangroves is small and diminishing compared to those of other countries in similar geographical regions, the value of the mangrove ecosystem is immense and should be protected, enriched, regenerated where depleted, and managed to provide sustained benefits to the people. Mangroves provide fuelwood, poles and timber to the coastal poor for their domestic needs. They improve the coastal micro climate, protect the land from erosion and cyclonic conditions, prevent sand dune formation and sedimentation, provide optimum conditions for breeding of fish, prawns, crabs, molluscs, etc., provide nesting places for aquatic birds and is the habitat for a varied fauna. Mangrove plant species and mangrove associate plant species are many forming a unique forest ecosystem.

However with economic development in areas such as the Mahaweli Scheme near estuaries, and

settlement of people in these areas, over cutting of mangroves will take place unless effective measures for protection and conservation are taken. Hence proposals were made in 1983 to make a start in the survey of management, regeneration and research into the mangrove ecosystem in Sri Lanka. These proposals although somewhat ambitious could be implemented by the Forest Department in collaboration with other line agencies and departments that also have an interest in the mangrove areas.

Viewed in the backdrop of this situation for Sri Lanka, the Regional Project RAS/79/002/E/01/13 developed by the UNDP/UNESCO for "Research and Training on Mangrove Ecosystems of Asia and Oceania" was most welcome and was strongly supported by the UNESCO National Committee for Sri Lanka.

Sri Lanka participated in the 1st and 2nd Task Force Meetings of this Regional Project on Research and Training on Mangrove Ecosystems in Asia and Oceania, in 1983 and 1984 and has been fortunate to be a recipient of funds from this project for mangrove development in the country. The funds are provided by UNDP/UNESCO to meet part of the costs of the initial Sri Lanka mangrove study "AN ASSESSMENT OF THE MANGROVE STATUS ALONG THE WEST COAST OF SRI LANKA PHASE I", which has just commenced.

The Forest Department Working Plans and Forest Inventory Branch, NARA the National Aquatic Resources Agency, the Botany Department of the University of Peradeniya, and the Zoology Department of the University of Colombo will cooperate under the guidance of the Sri Lanka NATMANCOM (National Mangrove Committee) to implement this project. The project area of this initial study will cover the west coast of Sri Lanka from Puttalam in the north to the Ginganga in the south.

The main objectives of this initial study are —

- (a) to provide information on the mangrove ecosystem and its structure in the project area,

- (b) to assess the socio-economic influences of mangroves in selected locations in the project area, and
- (c) to start a programme for research, rehabilitation and protection of the mangroves in the project area.

The project covers a one year period and the main activities of this project are —

- (1) Inventory and distribution of existing mangroves in the project area,
- (2) Socio-economic survey of selected locations in the project area, and
- (3) Studies on Mangrove Community Structure and Condition in selected locations in the project area.

Activity (1) is being carried out by the Working Plans and Forest Inventory Branch of the Forest Department, Activity (2) by NARA, and Activity (3) by the Botany Department of the University of Peradeniya, and the Zoology Department of the University of Colombo.

The Forest Department has already commenced a study of the mangrove forests along the country's coast line and mapping them using aerial photographs and landsat imagery. According to Land Use Maps prepared for different districts so far, the extents of mangrove forests in 6 districts are as follows :

1.	Batticaloa District	—	1,520 ha
2.	Amparai District	—	54 ha
3.	Colombo District	—	9 ha
4.	Gampaha District	—	723 ha
5.	Puttalam District	—	2,970 ha
6.	Trincomalee District	—	1,020 ha
Total			— 6,296 ha

Between Gintota and Aluthgama an acreage of 70 ha has been assessed so far, in addition to the above acreage for 6 districts.

On an all island basis, it may be estimated that the extent of mangrove forests is in the region of 10,000 ha.

Twenty three species of mangroves have been recorded for Sri Lanka, both true mangroves, and mangrove associates. Typical genera are mangroves *Rhizophora*, *Avicennia*, *Excoecaria*, *Lumnitzera* and *Aegiceras*, and mangrove associates *Tamarix*, *Acanthus*, *Sphaeranthus* and *Sonneratia*.

A list of species recorded is given below :

1. *Rhizophoraceae*
 1. *Rhizophora apiculata*
 2. *Rhizophora mucronata*
 3. *Bruguiera cylindrica*
 4. *Bruguiera gymnorrhiza*
 5. *Ceriops tagal*
2. *Verbanaceae*
 1. *Avicennia officinalis*
 2. *Avicennia marina*
 3. *Clerodendron inerme*
3. *Sonneratiaceae*
 1. *Sonneratia caseolaris*
4. *Meliaceae*
 1. *Xylocarpus granatum*
 2. *Xylocarpus moluccensis*
5. *Combretaceae*
 1. *Lumnitzera racemosa*
6. *Sterculiaceae*
 1. *Heritiera littoralis*
7. *Euphorbiaceae*
 1. *Excoecaria agallocha*
8. *Apocyanaceae*
 1. *Cerbera manghas*
9. *Myrsinaceae*
 1. *Aegiceras cerniculatus*
10. *Bignoniaceae*
 1. *Delichandrone spathacea*
11. *Palmae*
 1. *Nypa fruticans*
12. *Acanthaceae*
 1. *Acanthus ilicifolius*
13. *Lythraceae*
 1. *Pemphis acidula*
14. *Pteridaceae*
 1. *Acrostichum aureum*
15. *Tamaricaceae*
 1. *Tamarix gallica*
16. *Compositae*
 1. *Sphaeranthus indicus*

The map of Sri Lanka shows locations of the principle mangrove areas in the country.