

Mangrove forest at the Pranburi estuary.

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At the estuary of the Pranburi river (fig. 1), 20 minutes south of Hua Hin, a nice patch of mangrove forest is present with a comfortable Mangrove Nature Trail (fig. 5). The Pranburi river runs from the Bilauk Taung range at the Myanmar border to the Gulf of Thailand. At Pranburi a mangrove forest is formed in the intertidal zone.

What are mangroves?

Mangroves are tropical trees found in coastal and riverine intertidal habitats. The term 'mangal' refers to the community of plants in which mangroves occur, also called a Mangrove Forest. Mangroves are usually present on muddy shores and estuarine shores, but can also be found on sand, peat and coral. The complex and dense root system encourages sedimentation and development of a mud substrate, so the mangroves can spread and expand their range. The mangal community is important, complex and generally limited to the subtropics/tropics. Although generally found in saline water habitats, many are not obligate halophytes.



Fig. 1. Map of the surroundings of Pranburi. At the 'Check Point' the trail starts. North at the Jao Tao reservoir a large Buddha is situated at the summit near 'Wat Tham Khao Tao'.

The importance of mangrove forests

Mangroves are both ecologically and economically important. Mangrove areas are thought to be highly productive communities, sometimes being important primary producers in the estuarine food chain, leading to commercial fish and shellfish. The ecological role of mangroves is varied. Mangroves are important nursery, breeding, feeding and spawning grounds for some economically important bivalves, shrimps, crabs and fishes. Their role as nursery and feeding grounds for finfish and shellfish is well documented in the Indo-pacific region. Nearshore shrimp/fish catch and areal cover of mangroves are positively correlated.

Fishes that occur in mangrove forrestwaters are:

- * Freshwater fishes that occasionally enter brackish water,
- * truly estuarine species that spend their entire lives in estuaries,
- * estuarine-marine species that use the estuary primarily as a nursery ground, usually spawning and spending much of their adult life at sea, but often returning seasonally to estuaries,
- * marine species that pay regular seasonal visits to estuaries, usually as adults searching for food,
- * marine species that live in the sea and breed in fresh water,
- * species that live in fresh water and breed in the sea,
- * species in transit and occasional visitors that appear irregularly and apparently accidentally.

So mangals are commercially important in terms of aquatic food species such as penaid shrimps and fish, the

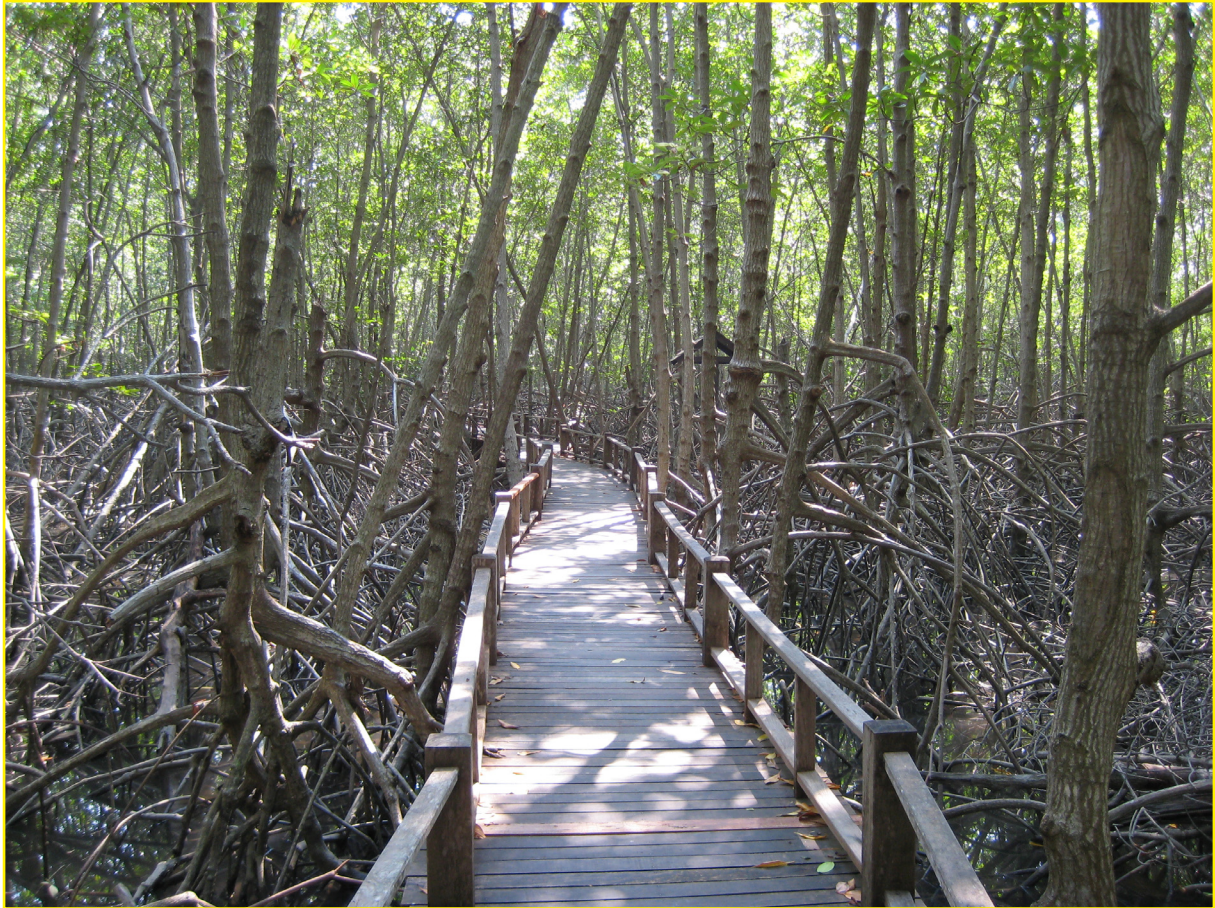


Fig. 2.
Trail through an older patch of mangrove forest. The stilt roots at the lower end of the stem stabilize the tree in the muddy soil.



Fig. 3. Flowers of a mangrove tree.



Fig. 4. Seedlings of a mangrove tree.



mangal is considered to be a nursery for the juvenile stages of such organisms.

Adaptations

Stilt roots (fig. 2) are characteristic of mangal tree species. They grow downwards from the trunk and branches, providing gas exchange in the exposed sections and water uptake in the sections below the sediment. They also provide support in older trees in the mud.

Mangrove forests literally live in two worlds at once, acting as the interface between land and sea. Mangroves help protect coastlines from erosion, storm damage, and wave action. The stability mangroves provide is of immense importance. They prevent shoreline erosion by acting as buffers and catch alluvial materials, thus stabilizing land elevation by sediment accretion that balances sediment loss.

A primary factor of the natural environment that affects mangroves over the long term is sea level and its fluctuations. Other shorter-term factors are air temperature, salinity, ocean currents, storms, shore slope, and soil substrate. If tidal conditions are optimal, mangroves can flourish far inland, along the upper reaches of coastal estuaries.

Certain mangrove tree species can propagate successfully in a marine environment because of special adaptations. Through “viviparity,” embryo germination begins on the tree itself; the tree later drops its developed embryos, called seedlings (fig. 4), which may take root in the soil beneath. Viviparity may have evolved as an adaptive mechanism to prepare the seedlings for long-distance dispersal, and survival and growth within a harsh saline environment.



Fig. 5.
The Pranburi Mangrove Nature Trail.
Above entrance, below wooden trail.

Fig. 6.
Boat pier halfway of the
trail for trips through the
creek and fisher harbour.



Fig. 7.
Fisherharbour of Bang Pak
Nam Pran.

During this viviparous development, the propagules are nourished on the parent tree, thus accumulating the carbohydrates and other compounds required for later autonomous growth. The structural complexity achieved by the seedlings at this early stage of plant development helps acclimate the seedlings to extreme physical conditions which otherwise might preclude normal seed germination.

The Pranbury Mangrove trail

In the Pranburi estuary a wooden trail has been constructed through the mangrove forest (fig. 2 and 5) In the Pranburi mangrove forest trail all mangrove tree stages can be observed as well as birds, crabs and fishes. The trail walk is comfortable and can be done by almost anyone. Halfway the trail boats can be hired (fig. 6) for trips through the creek and the fisher harbour (fig. 7) of Bang Pak Nam Pran.

Some kilometres north of Pranburi near the Khao Tao reservoir is the 'Wat Tham Khao Tao', with at the summit of a hill a large Buddha statue (fig. 8)



*Fig. 8.
Large Buddha statue at the 'Wat
Tham Khao Tao' near the Khao Tao
reservoir.*