

**INFORMATION SHEET ON RAMSAR WETLANDS
KAPER ESTUARY – LAEMSON MARINE NATIONAL PARK –
KRABURI ESTUARY**

1. DATE THIS SHEET WAS COMPLETED / UPDATED:

14 August 2002

2. COUNTRY:

Thailand

3. NAME OF WETLAND:

Kaper Estuary – Laemson Marine National Park – Kraburi Estuary

4. GEOGRAPHICAL COORDINATES:

Latitude 9° 16' – 9° 57' N

Longitude 98° 31' – 98° 39' E

5. ELEVATION:

0 – 630 meters

6. AREA:

122,046 ha

7. OVERVIEW:

Kaper Estuary – Laemson National Park – Kraburi Estuary incooperates a large proportion of Ranong's mangrove forests, which grow in the soft muddy soils. Ranong's mangrove forests are the largest concentration remaining in Thailand and one of the most extensive in the Indo-Pacific region.

8. WETLAND TYPE:

Marine – coastal: (A) (B) (C) (D) (E) (F) G H (I) J K 2k (a)

Please now rank these wetland types by listing them from the most to the least dominant: I F B D E A C

9. RAMSAR CRITERIA:

(1) (2) (3) 4 5 6 7 (8)

Please specify the most significant criteria applicable to the site: Criteria 1

10. MAP OF SITE INCLUDED:

Yes.

11. NAME AND ADDRESS OF THE COMPILER OF THIS FORM:

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12. JUSTIFICATION OF THE CRITERIA SELECTED UNDER POINT 9 :

Criteria 1: Kaper Estuary – Laemson Marine National Park – Kraburi Estuary comprises of many wetland types such as mangrove forests, nypa forests, mud flats, sand beaches, coral reefs, and seagrass bed. This is the only place in this region that primary mangrove and undisturbed mangrove still exist in Had Sai Khao. We can find a very large *Rhizophora apiculata* that are more than 300 years old. It is an example of a specific type of wetland ecosystem.

Criteria 2: It supports critically endangered, vulnerable and near threatened species as follows:

- critical endangered species: Chinese Egret (*Egretta eulophotes*)
- vulnerable species: There are several vulnerable species such as Brown-winged King Fisher (*Halcyon amanoptera*), Ruddy King Fisher (*H. coromanda*), White-backed Woodpecker (*Dryocopus javensis*), Mangrove pitta (*Pitta megarhyncha*), White-chested Babbler (*Trichastoma rostratum*) and Mangrove Blue Flycatcher (*Cyornis rufigastra*).
- near threatened species: Brahminy Kite (*Haliastur indus*), Grey-faced Buzzard (*Butastur indicus*), Cotton Pygmy-goose (*Nettapus coromandelianus*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), Oriental Hobby (*Falco severus*) and Great Slaty Woodpecker (*Muelleripicus pulverulentus*), Masked Finfoot (*Heliopais personata*) and Malaysian Plover (*Charadrius peronii*). Masked Finfoot (*Heliopais personata*) and Malaysian Plover (*Charadrius peronii*) are also the endangered species of Thailand.

Criteria 3: Kaper Estuary – Laemson Marine National Park – Kraburi Estuary supports many kinds of plant and animal species such as *Avicennia-Sonneratia* communities and the “mixed” *Rhizophora-Bruguera-Xylocarpus* community. Seagrass beds are also found at Ban Bang Chak and Ban Hat Sai Dam. They include *Enhalus acoroides*, *Halophila ovalis*, *Halodule uninervis* and *Cymodocea serrulata*. Epifaunal and infauna represent of 77 species within 31 families, comprising of crustaceans, gastropod, bivalves, polychaetes, oligochaetes, sipunculid and platyhelminthes, such as *Uca forcipata*, *U. coartata*, *U. rosea*, *Metaplex elegans*, *Sesarma versicolor*, *Wolffogobia* spp., *Acetes* spp., *Clorida* spp., *Limulus* sp., *Ostrea edulis*, *Crassostrea becheeri*, *Meritrix* sp., *Nerita* spp. *Telescopium telescopium* and *Cerithidae* spp. At least 50 species of birds have been found in mangrove forests and mud flats, including at least 20 waterfowl and shorebird species.

Criteria 8: The Ranong mangroves are important nursery grounds for juvenile fishes and shrimps of many commercial species. The mangrove fish community of Ranong mangroves, despite heavy fishing pressure, is both abundant and diverse. More than 82 species were recorded, the major ones being Gobidae, Clupeidae and Engraulidae.

13. GENERAL LOCATION:

Kaper Estuary–Laemson National Park–Kraburi Estuary is located on Andaman coastline of Southern Thailand, Ranong Province 650 km southwest of Bangkok.

14. PHYSICAL FEATURES:

The mangrove ecosystem of the Ranong Province forms the border between Thailand and Myanmar along the coastlines of Andaman Sea. Many rivers and Klong drain into the Andaman Sea on the western side of Ranong Province. The Kra Buri has an extensive deltaic plain, which tapers off to the south and is largely colonized by mangroves. The mangrove vegetation is widely disturbed but represents one of the most well-developed mangrove systems in Thailand. A significant feature of the Ranong mangroves is many interconnecting water ways, one of which is Klong Ngao, a large shallow tidal creek draining 11.5 km² of mangrove wetlands and an additional 18.8 km² of adjacent hilly terrain.

That area is characterized by two monsoon seasons. The dry season is during the northeast monsoon which normally begins in November and ends in February. Southeast monsoon is usually well established in May and ends in September. Highest temperatures occur from February to May when the maximum air temperature reaches 34°C. The lowest temperatures occur from November to January. The highest rainfall generally occurs from May to October, with August being the wettest month (808mm) The lowest rainfall is recorded from December to March with February being the driest month (23 mm) The mean annual relative humidity measures 83%.

Geologically of the mangrove forest land in Ranong is in the recent estuary complex of tidal flats where fine sediments are deposited. There are isolated hills of biotite-hornblende granite that have medium to coarse or porphyritic texture and metamorphic rocks of quartzite and metamorphosed rock materials, The tidal flats, subject to seawater flooding twice a day, is topographically flat. Tin ore mining activities in the transition zone had been abandoned for many years and forests are now recovered.

The lowland area is under mangrove forest, whereas the hills are under hill ever-green forest. The undulating terrace is under agriculture crops.

The dominant soils found in the tidal flats are in the Hydraquents and Sulfaquent great groups. The soil surface, 0-30 cm A-horizon, is a dark grayish-brown color, with many brown mottles and a clay texture. Below the A-horizon is the C-horizon, 30-150 cm deep, which has a gray color, clay texture and an unripe condition. In certain areas, soil contains sulfidic materials within 50 cm of the mineral soil surface. The soil surface layer has been disturbed by marine animals. The natural soil condition is very soft and a low-bulk density. The clay fraction consist mostly of kaolinite and illite, where quartz dominates in the silt and sand fractions. The soil has a high organic matter content throughout the profile, medium to high bases and electric conductivity. The mangrove soils are potentially acid sulfate, hence should not be left under a long oxidation period.

The upland soils, Paleudults great group, are deep and have dark brown color and clay loam texture in the surface overlaying yellowish red clay, argillic horizon. They are well drained, react to acid and have a low-nutrient status.

15. HYDROLOGICAL VALUES:

The principal values of Kaper Estuary–Laemson National Park–Kraburi Estuary are quite different in wet season from the dry season. In the dry season the mangrove wetland behave in some respects like an evaporation pond. Salt and water are trapped upstream. In the wet season the mangrove wetland is flooded both by runoff from the local stream and from Kra Buri river plane Short-lived local current generates strong salinity stratification and flush the estuary episodically. Measurements of nutrient budgets also suggest significant outselling in the wet season. An outselling of mangrove litter and of local organic carbon throughout the year are probable, as is trapping of land-derived sediment in the wet season.

16. ECOLOGICAL FEATURES:

There is a continuum of habitats ranging from mountain ranges to coastal ecosystem such as mangroves, coastal, hill forest, coral reef and seagrass beds. The mangrove habitats

vary from relatively undisturbed forests to highly degraded forests. An interesting old-growth forest exists in Had Sai Khao where a grove of large *Rhizophora apiculata* tree occur. Trees exceeding 30 m. in height and 80 cm in diameter are found.

Seagrass beds are also found at Ban Bang Chak and Ban Hat Sai Dam.

17. NOTEWORTHY FLORA:

Two sub-types of mangroves have been identified in Ranong Province. They include the *Avicennia-Sonneratia* communities and the “mixed” *Rhizophora-Bruguiera-Xylocarpus* communitie. The main species occurring in the *Avicennia - Sonneratia* communities are *Avicennia alba*, *Avicennia officinallis* and *Sonneratia alba*. At a few localities, the rarer species of *Avicennia marina* and *Sonneratia griffithii* are also found. In the mixed *Rhizophora - Bruguiera-Xylocarpus* communities, tree species diversity is rich with dominance of species such as *Rhizophora apiculata*, *Rhizophora mucronata*, *Bruguiera cylindrica*, *Bruguiera pariflora*, *Bruguiera gymnorrhiza*, *Xylocarpus granatum*, *Ceriops tagal* and *Ceriops decandra*. In the more elevated inland areas, dryland species occur intemittently. They include *Excoecaria agallocha*, *Heritiera littoralis*, *Acrostichum aureum* and *Phoenix paludosa*.

Mangrove waterways are of immense and traditional importance for fisheries. They provide food and shelter for many species and particular serve as nursery areas for juvenile fish and shrimps. Niche partitioning in the mangrove forests include nutrient richness, the roles in the marine food chains and the habitat heterogeneity leading to various degree of specialization in aquatic organism; are the major factors maintaining biodiversity in the mangrove forests. The Ranong mangroves are important nursery grounds for juvenile fishes and shrimps of many commercial species.

Seagrass bed species include *Enhalus acoroides*, *Halophila ovalis*, *Halodule uninervis* and *Cymodocea serrulata*.

18. NOTEWORTHY FAUNA:

The mangrove fish community of Ranong mangroves, despite heavy fishing pressure, is both abundant and diverse. More than 82 species were recorded, the major ones being Gobidae, Clupeidae and Engraulidae.

Epifaunal and infauna represent of 77 species within 31 families, comprising of crustaceans, gastropod, bivalves, polychaetes, oligochaetes, sipunculid and platyhelminthes, such as *Uca forcipata*, *U. coartata*, *U. rosea*, *Metaplax elegan*, *Sesarma versicolor*, *Wolffogobia* spp., *Acetes* spp., *Clorida* spp., *Liminlus* sp., *Ostrea edulis*, *Crassotrea becheeri*, *Meritrix* sp., *Nerita* spp. *Telescopium telescopium* and *Cerithidae* spp.

At least 50 species of birds have been found in mangrove forests and mud flats, including at least 20 waterfowl and shorebird species. Of these, 38 are residential species like of lesser Whistling-duck (*Dendrocygna javanica*) Brahming Kite (*Haliastur indus*), Pink-necked Pigeon (*Treron vernans*), Flyeater (*Gerygone sulphurea*) and Mangrove Whistler (*Pachycephala grisola*), 7 are non-breeding migratory species which are Little Egret (*Egretta garzetta*), Masked Finfoot (*Heliopais Personata*), Eurasian Curlew (*Numenius arquata*), Common Sandpiper (*Actitis hypoleucos*), Common King Fisher (*Alcedo atthis*), Swallow (*Hirundo rustica*), Blue Rock-thrush (*Monticola solitarins*). The globally threatened species of the area are Malaysian Plover (*Charadrius peronii*), Masked Finfoot (*Heliopais personata*), which are also the endangered species of Thailand. There are several vulnerable species such as Brown-winged King Fisher (*Halcyon amanroptera*), Ruddy King Fisher (*H. coromanda*), White-backed Woodpecker (*Dryocopus javensis*), Mangrove Pitta (*Pitta megarhyncha*), White-chested Babbler (*Trichastoma rostratum*) and Mangrove Blue Flycatcher (*Cyornis rufigastra*), while the near threatened species reported are Cotton

Pygmy-goose (*Nettapus coromandelianus*), White-billied Sea-eagle (*Haliaeetus leucogaster*), Oriental Hobby (*Falco severus*) and Great Slaty Woodpecker (*Muelleripicus pulverulentus*).

19. SOCIAL AND CULTURAL VALUES:

There are heterogeneous groups of local people living in the mangrove communities in the proposed Ramsar Sites. These groups of people have different cultures and ways of life, so the Ranong Mangrove forest reflects a typical diversify of human cultures. For instance, there is a unique mangrove community of Chao Lae (Sea Gypsy) who are animists at Ko Lao island. Chao Lae has no religion but they have their own sea spirits. Moreover, Buddhist and Moslem communities are found in Ko Lao Island. The existence of Buddhist and Moslem communities show how people of different religious background may live together in harmony.

Two spirit houses at Hat Sai Khao village located on another island could be of cultural significance because it may serve a link with conservation measures of mangrove forest since the villagers believe that the forest is the place where super natural power resides. Therefore, there is a mix of cultures in local mangrove communities, for example, native dialects and languages, religions, believe, values of the villagers who have settled permanently in the biosphere reserve area.

In 1997, the United Nation Educational, Scientific and Cultural Organization (UNESCO) and the Thai Government, declared Ranong Mangrove Forest Research Center” as the Ranong Biosphere Reserve as the first of coastal MAB (Man and Biosphere Programme).

20. LAND TENURE/OWNERSHIP:

Most of the area proposed is state-owned mangrove forest, that has been operated by the Royal Forest Department with surrounding privately owned land mostly use either for agriculture, shimp farming and villages settlement.

21. CURRENT LAND USE:

Kaper Estuary–Laemson National Park–Kraburi Estuary is currently concentrate on research and training of environmental education groups in the core area, agricultues, shrimp farming and villages settlement in surrounding area.

22. FACTORS (PAST, PRESENT OR POTENTIAL) ADVERSELY AFFECTING THE SITE’S ECOLOGICAL CHARACTER, INCLUDING CHANGES IN LAND USE AND DEVELOPMENT PROJECT:

Community development has the potential to do great damage to these areas by an increase in shrimp-ponds and other aquaculture, further conservation of forests to agricultural lands and overharvest of natural forest products.

23. CONSERVATION MEASURES TAKEN:

The Ngao National Park happens to situate on the slope of the hill along the border of the Ranong Mangrove Forest has made this site more distinct from others. The most obvious advantage is that it provide a unique opportunity for environment protection with a continuum coverage of a wide range of habitat ranging from mountainous to coastal ones, which is very rare situation. The mangrove forest area in the biosphere reserve of about 2,000 hectares at Kraburi Estuary was established by the Royal Forest Department as “Ranong Mangrove Forest Research Center” in 1983. Not only to conduct research and support the research projects of other organization at home and abroad, but also to encourage mangrove forest conservation and disseminate information about mangrove ecology.

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24. CONSERVATION MEASURES PROPOSED BUT NOT YET IMPLEMENTED:

Conservation measures were approved by the National Environment Board since May 19, 2000 and management plan will be developed.

25. CURRENT SCIENTIFIC RESEARCH AND FACILITIES:

The Ranong Mangrove Forest Research Center conduct research and support the research projects of other organization and encourage mangrove forest conservation and disseminate information about mangrove ecology.

26. CURRENT CONSERVATION EDUCATION:

The Ranong Mangrove Forest Research Center disseminates information about mangrove ecology and acts as visit center for students in local area to study on mangrove ecosystem.

27. CURRENT RECREATION AND TOURISM:

The ecotourism promotion and promotion of good quality shrimp paste and local gifts and souvenirs in the proposed Ramsar Site is a significant activities for local communities.

28. JURISDICTION:

Most of the mangrove forest in Kraburi and Kapur estuary are declared as preservation forest that responsible by the Royal Forest Department. Laem Son Marine National Park was declared by the Section 135 of 100th issue of the Royal Decree on August 19, 1983 and responsible by the Royal Forest Department also.

29. MANAGEMENT AUTHORITY:

The Ranong Mangrove Forest Research Center,
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 Tel: 6677-848392 Fax: 6677-848391
 The Office of Laem Son Marine National Park
 Kapur District, Ranong 85120
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 The Office of Ranong Province.
 Luwang Road, Ranong 85000
 Tel: 6677-811123

30. BIBLIOGRAPHICAL REFERENCES:

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 National Inventory of Wetland of Thailand (The Southern). Submitted to the Office of
 Environmental Policy and Planning.
 Final Report: The Regional Seminar on Designing and Establishing an International Coastal
 and Marine Biosphere Reserve in Ranong , 4-7 November 1996.
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 Walter S. Kerry and Harriet J. Gillett, Red List of Threatened Plant, IUCN, 1998
 Hilton- Taylor Craig , List of Threatened Species, IUCN, 2000.