

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Bureau. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:

*Sivanesam Pillai
Conservation and Environmental Management Division
Ministry of Science Technology and the Environment
Level 5, Block c5
Precinct 1
62662 Putrajaya
Malaysia
Tel: 603-88858030
Fax: 603- 8889 2973
E-mail: pillai@moste.gov.my*

FOR OFFICE USE ONLY.

DD MM YY

--	--	--

Designation date

--	--	--	--	--	--	--

Site Reference Number

2. Date this sheet was completed/updated:

13 January 2003

3. Country:

Malaysia

4. Name of the Ramsar site:

Tanjung Piai

5. Map of site included:

Refer to Annex III of the *Explanatory Note and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): *yes* -or- *no*

b) digital (electronic) format (optional): *yes* -or- *no*

6. Geographical coordinates (latitude/longitude):

1° 16.00' N, 103° 30.91' E

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

*Nearest town – Pekan Kukup which is about 30km from Tanjung Piai
Administrative region under District of Pontian*

8. Elevation: (average and/or max. & min.)

Sea level

9. Area: (in hectares)

526 hectares

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Consists of a 8 km strip of coastline of coastal mangroves and intertidal mudflats with the southern-most tip of continental Asia at one end. Important for the protection from sea-water intrusion and coastal erosion.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1 • 2 • 3 • 4 • 5 • 6 • 7 • 8

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Criterion 2: *In Tanjung Piai, the wetlands support many threatened and vulnerable species, which are listed in tables of the report (Wetlands International 2001). To summarize, 3 wetland-dependent birds are near threatened (Mangrove Pitta, Mangrove Blue Flycatcher, Mangrove Whistler) and 2 primates (Long-tailed Macaque, Pig-tailed Macaque) whereas the Scaly Anteater; Common Porcupine; Smooth Otter and Bearded Pig are either classified as vulnerable or near threatened. From this information and perspective Tanjung Piai Mangroves should be considered internationally important wetlands.*

*Long-tailed Macaque is a near threatened species and the Pig-tailed Macaque is listed as Vulnerable (IUCN 2000). The Lesser Adjutant *Leptoptilos javanicus*, a threatened species of stork was observed in the vicinity of Tanjung Piai and areas stretching towards the West Coast of the Johor. Over 50 individuals were recorded (DANCED Project Document 4 (1998), and this is significant as it represents more than 1% of the estimated world population.*

Criterion 8: *Juvenile fish dominate the catch in 4 main rivers that traverse Tanjung Piai, but there are also adults of some commercially valuable species such as the Sea Bass *Lates calcarifer*; Snappers *Lutjanus argentimaculatus* and *L. johni*; Threadfins *Polynemus indicus* and *Eleutheronema tetradactylum*; Tarpon *Megalops cyprinoides*; White Pomphret *Pampus argenteus* and Head Grunter *Pomadasyus hasta*. Other common fish species include the Catfish *Arius* spp., Catfish Eel *Plotosus* spp., Mulletts *Liza* spp. and Jewfish/sciaenids. The most abundant fish were the Clupeids (*Anodontostoma chacunda* and *Ilisha megaloptera*), Ambassids, Engraulids (*Stolephorus* and *Thryssa*; Anchovies) and Leiognatids. These are not commercially valuable fish, but serve as food for large carnivores such as Sea Basses and Snappers (DANCED Project Document No. 9, 1999).*

The presence of many species of fish and prawns provides excellent information both on the importance of Tanjung Piai and feeding and nursery grounds for marine life in the Straits of Melaka. The harvest of fish and prawns in the estuary is not significant, however, the small estuaries is a storehouse of juvenile fish and penaeid prawns, which migrate to inshore, and offshore waters and provide for the existence of fisheries.

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

b) biogeographic regionalisation scheme (include reference citation):

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Climate: Equatorial with rain from both northeast monsoon, November to March and the southwest monsoon from around March to August.

Rainfall is common throughout the years and averages about 2,400mm for the site.

Tides: Along the shores of Tanjung Piai, tides are mixed semi –diurnal meaning they have two highs and two lows each day but of unequal elevation and time of high water. The tide fluctuates from 3.4 to 1.8m and maximums during spring tide.

Natural type of wetland with mangrove forests and associated mudflats

Geology-Mrine clay and silt found throughout the coastline and along the rivers.

Soil- Recent alluvial type soils

Water quality is generally fair and along the manmade canals that store surface water and storm water which was created to prevent flooding and tidal gates control the release of water to the sea.

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The mangroves along Tanjung Piai prevents excessive sediments from entering the water ways so sediment trapping is one of the most significant roles of the mangroves.

The presence of man made canals and tidal gates help to regulate flow in to the wetland which assists in flood control. The 50-100 m strip of mangroves surrounding Tanjung Piai is a buffer which helps to stabilize the shoreline against huge tidal waves.

17. Wetland Types

a) presence:

Circle or underline the applicable codes for the wetland types of the Ramsar “Classification System for Wetland Type” present in the Ramsar site. Descriptions of each wetland type code are provided in Annex I of the *Explanatory Notes & Guidelines*.

Marine/coastal: A • B • C • D • E • F • G • H • I • J • K • Zk(a)

Inland: L • M • N • O • P • Q • R • Sp • Ss • Tp Ts • U • Va •
Vt • W • Xf • Xp • Y • Zg • Zk(b)

Human-made: 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9 • Zk(c)

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

I, G

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Main habitats: coastal mangrove and 400 hectare of mudflats with 5 small rivers dissecting through the mangroves at various points.

Tanjung Piai shows a relatively clear zonation pattern which has changed due to the oil pollution. Typically, there is an Avicennia-Sonneratia community on the seaward sediments where there is soft, deep mud, though Rhizophora-Bruguiera forest is often the most dominant as the soils become firmer.

3 species of raptors namely Brahminy Kite, Osprey and the Crested Serpent-eagle were observed. The other birds observed are 8 species of common waders and shore birds.

A total of 20 ‘true’ mangrove species and 9 mangrove-associated species are found here.

Some of the mangrove dependent commercial fish species found are listed in the table here:

Anodontosoma spp.

Lates calcarifer

Arius spp.

Siganus spp.
Johnius/Sciaena spp.
Pomadasys spp.
Lutjanus spp.
Pampus chinensis
Liza spp.
Eleutheronema spp.
Stolephorus spp.
Megalops cyprinoides

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The mangrove species are all noteworthy because for a relatively small area like as in the case of Tanjung Piai. The species diversity and abundance is quite high.

Mangrove vegetation of Tanjung Piai State Park

Species	Vernacular name	Life-form
True Mangrove species		
Family Rhizophoraceae		
<i>Rhizophora apiculata</i>	Bakau minyak	T
<i>Rhizophora mucronata</i>	Bakau kurap	T
<i>Bruguiera gymnorrhiza</i>	Tumu merah	T
<i>Bruguiera parviflora</i>	Lenggadai	T
<i>Bruguiera cylindrica</i>	Berus	T
<i>Ceriops tagal</i>	Tengar	T
Family Avicenniaceae		
<i>Avicennia alba</i>	Api-api	T
<i>Avicennia marina</i>	Api-api jambu	T
Family Sonneratiaceae		
<i>Sonneratia alba</i>	Perepat	T
<i>Sonneratia ovata</i>	Gedabu	T
<i>Sonneratia caseolaris</i>	Berembang	T
Family Meliaceae		
<i>Xylocarpus granatum</i>	Nyireh bunga	T
<i>Xylocarpus moluccensis</i>	Nyireh batu	T
Family Rubiaceae		
<i>Scyphiphora hydrophyllacea</i>	Chigam	S
Family Combretaceae		
<i>Lumnitzera littorea</i>	Terumtum merah	T
Family Euphorbiaceae		
<i>Excoecaria agallocha</i>	Buta-buta	T
Family Meliaceae		
<i>Nypa fruticans</i>	Nipah	P
Family Pilyodiaceae		
<i>Acrostichum aureum</i>	Piai raya	F
<i>Acrostichum speciosum</i>	Piai lasa	F
<i>Acanthus illicifolius</i>	Jeruju hitam	S
TOTAL = 20 TRUE MANGROVE SPECIES		
<i>Derris uliginosa</i>	Setui	C
<i>Hibiscus tiliaceus</i>	Bebaru	T
<i>Barringtonia asiatica</i>	Putat laut	S
<i>Pandanus odoratissimus</i>	Pandan	H
<i>Oncosperma tigillarum</i>	Nibong	P
<i>Calamus erinaceus</i>	Rotan bakau	R
<i>Morinda citrifolia</i>	Mengkudu	S

<i>Ipomoea pres-caprae</i>	Kangkung	H
<i>Passiflora foetida</i>	Gegambo	
TOTAL = 9 MANGROVE ASSOCIATED SPECIES		

Notes: T – Tree; S – Shrub; C – Climber; P – Palm; H – Herb; R – Rattan and F – Fern

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g., which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

*Lesser adjutant stork and other rare/uncommon species including the Malaysian plover, spotted green shank, asian dowitcher, spoon-billed sandpiper and Chinese crested tern. Four species of mammals present in the site are included in the CITES list (IUCN 2000) consisting of dusky leaf monkey (*Presbytis obscura*), long tailed macaque (*Macaca fascicularis*), pig-tailed macaque (*Macaca nemestrina*) and the smooth otter (*Lutra perspicillata*). No count data of birds.*

21. Social and cultural values:

e.g., fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Around 6 villages which are located at the fringe of Tanjung Piai i.e. Belukang Village, Perepat Punggor village, Perpat Pasir village, Serong Laut village, Chokoh Kecil Village and Chokoh Besar village, which are assumed to have a high dependence on mangrove resources, namely fisheries. Tourism is the other income earning activity at these villages. However, people in these villages mainly engage in farming activity as the hinterlands of Tanjung Piai have extensive farmlands.

The fish catch from the mangroves of Tanjung Piai is not so significant in terms of tonnage, however, it is an important resource for artisanal fisheries. Fishing jetties exist in River Belukang, river Perepat Pasir, river Perepat Punggor and river Chokoh Besar.

*The Johor State Government earmarked and proposed the Tanjung Piai as a State Park for eco-tourism. A visitor centre with a 325m boardwalk is has been completed near the southern-most tip of this park. Small interpretative board walks about 300 m exist with 6 small chalet to stay built on the mangroves. Prior to that, there were already considerable eco-tourism activities at the proposed park area with the emergence of a resort called Tanjung Piai Resort which has been providing floating chalet services with seafood restaurants and boat rides to tourists. Home stay programmes were also organised by the Pontian Agriculture Department for visiting tourists. The occurrence of fire flies in the *Sonneratia* species have attracted visitors to the site.*

22. Land tenure/ownership:

(a) within the Ramsar site: *State Park under jurisdiction of State Parks Corporation of Johor*

(b) in the surrounding area: *Private land*

23. Current land (including water) use:

(a) within the Ramsar site: *eco-tourism activities, Piai mangroves are buffering the hinterland*

(b) in the surroundings/catchment: *agriculture and habitation*

24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

(a) within the Ramsar site:

At the site: Since it is a State park the only activity is tourism to visit the mangroves, have a boat ride and bird watching.

(b) in the surrounding area:

Around the site: Oil spills may kill off mangroves for up to 20 years and expose the shoreline to the forces of waves and currents. This can be seen on the western side of Tanjung Piai. If the soil in which the protective mangroves are growing erodes, the bunds will be subjected to direct wave attack

and this will result in farmlands behind the bund being damaged. Dynamic changes have also occurred at Tanjung Piai with the tip moving westward in the last 20 years and some 70 ha of the mangrove forest reserve have eroded due to natural erosion processes (MPMJ, 1999). In addition, the new port being established in the estuary of Sungai Pulai will likely lead to increased wave energy reaching the east shore of Tanjung Piai, thus accelerating coastal erosion and eventually threatening the bunds behind the mangroves.

Sea-based water pollution in the coastal areas of the park may arise from the development of the Tanjung Pelepas Port that will involve large dredging and reclamation works. These activities will directly impact the shores of Tanjung Piai. Siltation/erosion may occur due to sediment transport and water flow changes. Release of adsorbed heavy metals and toxic organics into the water phase may occur due to re-suspension of sea bed sediment during dredging operations, hence water quality is compromised and these substances will be introduced into the marine food web. This may impact fisheries at the park as well.

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

The Tanjung Piai Mangroves were previously protected under the National Forestry Act 1984 but in 2000- 2001 it became a State Park under the protection of the Johor State Parks Enactment. The Management practices will follow that as listed in the State Parks Act which is mainly for tourism and conservation purposes. No management plan exists but this will be done in the light that it is designated as a Ramsar site.

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

To be designated as a Ramsar Site and to add further tracts for conservation of mangroves in the western coast of the state.

27. Current scientific research and facilities:

e.g., details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

The visitor centre located at the site has facilities for researchers to stay overnight and conduct scientific studies. Not a proper field station. Bird watchers frequent the area.

28. Current conservation education:

e.g. visitors' centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

A wetland CEPA programme was held in conjunction with World Wetlands Day this year 2003. Interpretative exhibits exist in the centre which also has a small museum on mangroves and migratory birds. Dissemination materials have been prepared for the public. There are facilities for school visits as they can use the visitor center for talks and take the children through the guided walks.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Currently used mainly for tourism activities and fishing by local fishermen. Visitor numbers are not available at the time of compiling this information on Tanjung Piai. Recreational fishing is allowed. Bird watching, boat rides to the creek of the mangroves and guided walks are allowed.

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept of Agriculture/Dept. of Environment, etc.

Johor State Park Corporation for State Government of Johor

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

*Mr Mohamed Basir bin Mohamed Sali, Director
Perbadanan Taman Negara (Johor)
JKR 475, Bukit Timbalan*

80503 Johor Bahru
Johor
Malaysia
Tel: + 607 2237471 / 07 2242525
Fax: + 607 223 7472
E- Mail: johorpark@po.jaring.my

32. Bibliographical references:

scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

Wetlands International Malaysia Programme. 2001. Ecological Assessment of Sungai Pulai Mangrove Forest Reserve and Proposed Tanjung Piai State Park: To determine its status as wetlands of international importance (Ramsar Sites)

IUCN (2000). 2000 IUCN Red List of Threatened Species. IUCN-The World Conservation Union. Published by IUCN. Compiled by Craig Hilton-Taylor. 61 pp.

MPMJ (1999). Management Plan for the Mangroves of Johor 2000-2009. Forestry Department Peninsular Malaysia, Johor State and DANCED, 236 pp.

DANCED Project Document No. 9 (1999). Mangrove fisheries of the Sungai Pulai Estuarine System. Integrated Management Plan for Sustainable Use of the Johor Man DANCED Project Document No. 4 (1999). Bird survey of the Johor Mangroves. Integrated Management Plan for Sustainable Use of the Johor Mangrove Forests Technical Report Series. DANCED grove Forests Technical Report Series. DANCED.

Please return to: **Ramsar Convention Bureau, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • e-mail: ramsar@ramsar.org