

# 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:

*Pulau Kukup*

---

## 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° 18-20' N, 103° 25-26' 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 – KukupTown which is located 1 km inshore from Pulau Kukup. Pulau Kukup falls under the administrative jurisdiction of the Pontian District, state of Johor.*

---

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

*Sea level*

---

## 9. Area: (in hectares)

*647.2 hectares*

---

## 10. Overview:

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

*Uninhabited mangrove island located 1 km offshore from the south-western tip of the state of Johor, Peninsular Malaysia. It is a small mangrove island (647.2 ha) surrounded by mudflats (800 ha) with mature mangrove in the interior, rapidly accreting zones on the west coast, eroding*

along the south-east coast. Extensive intertidal mudflats, particularly on the north-west coast. The globally vulnerable Lesser Adjutant stork (*Leptoptilos javanicus*) population is commonly sighted feeding on the mudflats surrounding the island and local reports suggest that this bird may be breeding on the mangrove island.

### 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 1:** *Pulau Kukup is unique example of an intact mangrove island which is a rarity in Malaysia. In South-east Asia, mangrove islands have disappeared more frequently in the name of development as compared to coastal or riverine mangroves. Globally under the Ramsar Lists mangrove ecosystem is as much poorly represented (only 4 Ramsar Listed mangroves sites occur in Asia).*

**Criterion 2:** *In Malaysia, it has been observed that mangrove islands are threatened ecological community. More efforts are required to encourage protection of such fragile ecosystem and where appropriate given international recognition since such ecosystems are very few and far between nationally and regionally.*

*In addition, Pulau Kukup wetlands support some globally relevant species such as the Flying Fox (*Pteropus vampyrus*) which is listed in Appendix II under CITES; Smooth Otter (*Lutra perspicillata*) which is listed as Vulnerable under the IUCN Red Data List and listed in Appendix II under CITES; Bearded Pig (*Sus barbatus*) which is listed as Near-threatened under IUCN Red Data List; Long-tailed Macaque (*Macaca fascicularis*) which is listed as Vulnerable under IUCN Red List and listed in Appendix II under CITES; Lesser Adjutant (*Leptoptilos javanicus*) stork which is listed as Vulnerable under the IUCN Red List Data and in the World List of Threatened Birds.*

**Criterion 3:** *The Pulau Kukup mangrove forest is home to about 18 'true' mangrove plant species which represents a very rich species diversity if compared to other far larger mangrove areas in Peninsular Malaysia. Larut Matang Mangroves for example, occupying an area of 40,000 over hectares has only 21 true mangrove species. Given the smaller size of Pulau Kukup (647.2 ha) it great contributes to the biological diversity of the region.*

*Mangroves comprise a very special flora of species adapted to the hostile marine conditions. Only relatively small plant species number is able to grow under these harsh conditions.*

*The Lesser Adjutant population has been constantly sighted feeding in the mudflats off Kukup Island. Unofficial reports have indicated there is breeding colony within the islands' forest. Recent surveys (1999) have shown consistent numbers of waders and shorebirds birds within the vicinity which may represent 20% of the Peninsular Malaysia's population. The fact that it is a sanctuary for the globally vulnerable Lesser Adjutant (with possible breeding colony) makes it an area of globally relevant conservation concern.*

*Pulau Kukup has been identified as one of the many Important Bird Area (IBA) for Malaysia, namely as a stop-over for migratory birds coming from North Asia and Russia.*

### 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.

*The geology of Pulau Kukup is typified by the clayey alluvial soil or mud (readily erodible clay and silt) which has a high nutrient content and retaining capacity with sulfidic and sulfuric horizon. Small areas of coarse shell grit also exist in the island.*

*Pulau Kukup is a natural mangrove island with six small creeks dissecting the islands in various places. It experiences a humid tropical climate with rain from both the North-east and South-west monsoons. Average rainfall ranges from 2,000 – 2,500 mm with an even distribution throughout the year. The island experiences semi-diurnal tidal exposure with 2 high tides and low tides in a day. Tidal range in Pulau Kukup can rise as high as 3.7 m. The interior of the island is largely dry during normal tides. However, the island is completely flooded during spring tides. The mudflats are rapidly accreting on the west coast while eroding along the south-east coast.*

#### 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.

*Pulau Kukup is important for flood control, physical protection e.g. wind-breaker and shoreline stabilization as it shelters the mainland town from severe storm events. It decreases the wave energy reaching the Kukup Town thus reducing the impacts of coastal erosion.*

*The island mangroves trap sediments arising from the estuaries feeding into the coastal areas.*

#### 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.

**G,I**

#### 18. General ecological features:

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

*Mangroves, creeks and intertidal mudflats are the main habitats that occur in Pulau Kukup. Pulau Kukup wetlands can be grouped into 8 vegetation zonation:*

*Zone 1: Rhizophora apiculata-Brugueira cilindrica dominated*

*Zone 2: Mixed forest of Avicennia alba-Sonneratia alba*

*Zone 3: A rich diverse area with mature mangrove trees dominated by Rhizophora-Brugueira-Avicennia*

*Zone 4: Mixed forest dominated by Rhizophora apiculata in presence of Brugueira-Avicennia marina*

*Zone 5: Mixed forest dominated by Rhizophora mucronata in presence of Brugueira parviflora-Rhizophora apiculata-Xylocarpus granatum*

*Zone 6: A rich diverse area dominated by Rhizophora apiculata*

*Zone 7: An area of mature tall trees mixed with Rhizophora-Brugueira-Avicennia-Xylocarpus granatum-Ceriops tagal*

*Zone 8: Unvegetated Intertidal mudflat area.*

*The mangrove area does not undergo any significant seasonal variation; however the island is rapidly accreting on the west coast. As far as the records are concerned, no plant species has been introduced or deemed as invasive has been noted. The mangroves play a significant role in the food chain as they are stores as feed for marine life, namely fish species. In addition, mangroves are nurseries for marine life and provide food for migrating species including waterbirds.*

*The coastal straits between Pulau Kukup and the mainland are thriving industry for marine cage culture. The mudflats are rich with shellfish and provide food and income via collection to local people.*

---

### **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.*

*Intact island plant mangrove community is unique and highly threatened in Malaysia and the region. The Pulau Kukup mangrove forest is home to about 18 'true' mangrove plant species which represents a very rich species diversity if compared to other far larger mangrove areas in Peninsular Malaysia. Larut Matang Mangroves for example, occupying an area of 40,000 over hectares has only 21 true mangrove species. Given the smaller size of Pulau Kukup (647.2 ha) it great contributes to the biological diversity of the region.*

*Mangroves comprise a very special flora of species adapted to the hostile marine conditions. Only relatively small plant species number is able to grow under these harsh conditions.*

---

### **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.*

*Pulau Kukup wetlands support some globally relevant species such as the Flying Fox (Pteropus vampyrus) which is listed in Appendix II under CITES; Smooth Otter (Lutra perspicillata) which is listed as Vulnerable under the IUCN Red Data List and listed in Appendix II under CITES; Bearded Pig (Sus barbatus) which is listed as Near-threatened under IUCN Red Data List; Long-tailed Macaque (Macaca fascicularis) which is listed as Vulnerable under IUCN Red List and listed in Appendix II under CITES; Lesser Adjutant (Leptoptilos javanicus) stork which is listed as Vulnerable under the IUCN Red List Data and in the World List of Threatened Birds.*

*The Lesser Adjutant population has been constantly sighted feeding in the mudflats off Kukup Island. Unofficial reports have indicated there is breeding colony within the islands' forest. Recent surveys (1999) have shown consistent numbers of waders and shorebirds within the vicinity which may represent 20% of the Peninsular Malaysia's population. The fact that it is a sanctuary for the globally vulnerable Lesser Adjutant (with possible breeding colony) makes it an area of globally relevant conservation concern.*

---

### **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.

*There is currently no human habitation or man-made structures on Pulau Kukup. Socially the island is important for local subsistence in terms fishing and shellfish harvest. The thriving cage culture industry depends very much on the ecological integrity of the island as it provides natural shelter. However, the adjacent mainland town is benefiting from the existence of Pulau Kukup. Tourism provides large revenue to the people living in the town in the form of tourists patronising the seafood restaurants, chalets, souvenir shops, boat tours, ferry rides etc.*

*The state government is also looking into possibilities of promoting complementary eco-tourism activities in direct relation with Pulau Kukup.*

---

**22. Land tenure/ownership:**

(a) within the Ramsar site:

*Ownership of the protected mangrove island – Johor State Government  
Managers of the island – Johor State Park Corporation*

(b) in the surrounding area:

*Ownership of the surrounding waters including the mudflats – Johor State Government*

---

**23. Current land (including water) use:**

(a) within the Ramsar site:

*Pulau Kukup – Gazetted as a State Park, therefore is a totally protected area. However, low impact fishing and tourism activities are encouraged within the island reserve.*

(b) in the surroundings/catchment: *(including the town)*

*Cage culture (fish) in channel separating island from mainland*

*Harvest of shell fish in the interconnected mudflat areas*

*Ship navigation*

*Marine fisheries*

*Residential areas within the town and the outskirts*

*Agricultural activities in town outskirt*

*Tourism activities operated from the town*

---

**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:

*Past*

- *Mangrove trees in island harvested for commercial purpose previously.*
- *Hunting for wild birds*

*Present*

- *Illegal tree harvest for subsistence by locals*
- *Over-exploitation of fauna resources within the reserve by locals*

*Potential*

- *Illegal harvest of resources continuing*
  - *Unregulated tourism activities in the island*
- High impact tourism development on the island*

(b) in the surrounding area:

*Past*

- *Oil spill incidents*

*Present*

- *Oil spill incidents*
- *Marine pollution arising from the mainland*
- *Unregulated harvest of resources in the mudflats and adjacent coastal waters*
- *Use of chemicals in the cage culture industry*

*Potential*

- *Marine pollution arising from the mainland*
- *Unregulated harvest of resources in the mudflats and adjacent coastal waters*
- *Unregulated tourism activities from the mainland*
- *Unregulated use of chemicals in the cage culture industry*
- *Oil spill incidents*
- *Reclamation of coastal areas*
- *Expansion/intensification of mariculture industry*

---

**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.

*Pulau Kukup is a legally gazetted State Park under the Johor State Park Corporation Enactment since 27 March 1997. A total area of 647.2 ha of the mangrove island was gazetted in the process. It is managed by a state owned authority called Johor State Park Corporation.*

*Pulau Kukup State Park does not have an official management plan yet. It is being managed on a pretext of a general management practices for conservation areas available in Malaysia. However, the Government of Malaysia through MoSTE and the Johor State Government in principal have agreed to develop a management plan for the park in light of the new development of the site 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.

*Pulau Kukup will be conserved and protected as a Ramsar Site, primarily for scientific research, and conservation and wise use of marine biodiversity and resources.*

---

**27. Current scientific research and facilities:**

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

- *The site is frequented by local universities to conduct research on mangrove ecosystem and its dependent biodiversity*
- *Local NGOs frequent the site to do annual migratory waterbird counts*

*However, the development of the impending management plan for the site will address the issue of promoting and targeting research in the site as well as provision of research facilities.*

---

**28. Current conservation education:**

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

*In the past and currently, conservation education on the site is carried out ad hoc by tourist guides or organized trips operated by NGOs/ schools/universities. This is based on local knowledge.*

*The visitor centre available at Tanjung Piai State Park complements the conservation education at Pulau Kukup. However, the development of the impending management plan for the site will address the issue of promoting and targeting environmental education in the site as well as provision for nature interpretation facilities.*

---

**29. Current recreation and tourism:**

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

*Current recreation and tourism in Pulau Kukup are operated by local tour operators from Kukup Town. A package is offered via boat rides, while a large number of tourists, namely from Singapore visit the coastal town only to savor the seafood.*

*Much of these tours do not promote the values of Pulau Kukup or in most cases their values are not stressed appropriately. Statistics on tourist arrival to Pulau Kukup is not available.*

*However, with the development of the impending management plan for the site will address the issue of promoting and targeting eco-tourism in the site as well as organizing and providing new facilities for the purpose.*

---

**30. Jurisdiction:**

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

*Johor State Park Corporation, 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 2237472  
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. 1999. Ecological Assessment of Pulau Kukup, Johor: To determine its status as a wetland of international Importance.*

*Department of Wildlife and National Parks Peninsular Malaysia. 1987. Malaysian Wetland Directory.*

*Johor State Forestry Dept. & DANCED. 1999. Management Plan for the Mangroves of Johor (2000-2009).*

---

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](mailto:ramsar@ramsar.org)