## Information Sheet on Ramsar Wetlands

Categories approved by Rec.C.4.7 of the Conference of the Contracting Parties, Montreux, Switzerland - July 1990

NOTE: Please read the accompanying guidelines before attempting this form. Use properly labelled extra paper if any space on this form is too small to accommodate the existing information. Completed sheets should be returned to: Scott Frazier, Ramsar Database, IWRB, Slimbridge, Gloucestershire, GL2 7BX, England.

**1. Country:** Indonesia **2. Date:3. Ref:** Office use only

**4. Name of wetland:** Danau Sentarum Wildlife reserve

**5. Ramsar Criteria:** (state and justify which Ramsar Criteria - as adopted by Rec. C.4.15 of the Montreux Conference are applicable)

- *Criteria for representative or unique wetlands.* Danau Sentarum is a unique and unusual ecosystem consisting of an inland in-filling basin. A few hills occur within the plain. The plain consists of numerous lakes of various sizes and many interconnecting watercourses. The lakes are shallow and ephemeral and are best seen as extensive flood plains (Silvius *et al.*, 1987).
- *It supports an appreciable assemblage of rare, vulnerable ar endangered species of plants or animals or apprecieble number of individuals of any one or more of these species.* The following IUCN Red Data List (1994) and/or CITES listed (1994) species were recorded by Silvius *et al.*, (1987):

Endangered:

Orang Utan (*Pongo pygmaeus*)

False Ghavial (*Tomistoma schlegelii*)

Vulnerable:

Malayan Sunbear (*Helarctos malayanus*)

Proboscis Monkey (*Nasalis larvatus*)

Estuarine Crocodile (*Crocodylus porosus*)

Rare:

Storm's Stork (*Ciconia stormi*)

Insufficiently known:

Oriental Small-clawed Otter (*Aonyx cinerea*)

Burmese Brown Tortoise (*Manouria emys*)

Asian Arowana (*Scleropages formosus*)

Appendix II CITES:

Brahminy Kite (*Haliastur indus*)

Lesser Fish-eagle (*Ichthyophaga humilis*)

Grey-headed Fish-eagle (*Ichthyophaga ichthyaetus*)

Buffy Fish-owl (*Ketupa ketupu*)

Bornean Gibbon (*Hylobates muelleri*)

Long-tailed Macaque (*Macaca fascicularis*)

Water Monitor (*Varanus salvator*)

SEE "COVER" IN 2ID001

- *It is of special value for maintaining the genetic and ecological diversity of the region because of the quality and peculiarities of its flora and fauna.* There is a marked seasonal migration of fish to and from the Kapuas river, and an annual cycle in relative abundance of herbaceous and predatory fish (Silvius *et al.*, 1987).
- *It is of special value for one or more endemic plants or animal species or communities.*
- *It regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity.*

**6. Wetland types:**

- Dryland forested habitat
- Forested hillocks
- Dryland forest in association with inland wetland
- Vegetated hillocks in association with inland wetland
- Forested hillocks in association with inland wetland
- Dryland lowland forest (including Kerangas)
- Lake
- Floodplain lake
- Forest along shoreline of seasonal floodplain lake
- Shrubland along shoreline of seasonal floodplain lake
- Oxbow lake
- Dystrophic lake
- Riverine
- Aquatic vegetation on riverine
- Perennial riverine
- Forest along flowing perennial riverine
- Flowing, upper perennial riverine
- Aquatic vegetation on freshwater swamp
- Cultivated perennial crops on freshwater swampland
- Cultivated annual crops on freshwater swampland
- Freshwater swamp forest
- Seasonally flooded freshwater swamp
- Aquatic vegetation on non-peat swamp
- Seasonally flooded non-peat swamp forest
- Seasonally flooded non-peat swamp shrubland
- Peat swamp forest

**7. Date of Ramsar designation:**

**8. Geographical coordinates:**

Latitude: 0$ 51' 0" N

Longitude: 112$ 6' 0" E

**9. Altitude:**

Elevation from 0 to 35 m

**10. Areas: (in hectares)**

125000 [ha], Wetlands: 80000 [ha]

**11. General Location:**

400 km from Pontianak is the district center Sintang. Buses leave for Sintang from Pontianak bus terminal from early morning onwards. The terminal is located north of the Kapuas (take the ferry across river to Siantan, from there take a Daihatsu for the additional 5 km to the terminal). Pontianak-Sintang takes about 7-8 hours by bus. The terminal is located well outside Sintang and you will have to take a Daihatsu into town. You can fly to Sintang with DAS or Deraya (about Rp. 90,000.-), daily at 07.00. Speedboats (PT. DAS) leave daily from Sintang to Putussibau at 08.00 (price 40,000.-). Get off at Suhaid (after 4-6 hours), which is a large fishing town along the Kapuas river located at the mouth of the Tawang river. The Tawang is the main entry point to the reserve. At Suhaid hire a boat (+boatman) to take you to Bukit Tekenang, where the field centre is located.

**12. Overview:**

From a conservation point of view, the Reserve is of tremendous value. It is the last vast area of primary freshwater swamp forest remaining in Kalimantan, and is possibly the last representative of this habitat for all of the Greater Sunda islands. Its flora is unique, and a number of type specimens collected in the area by Beccari in the 1860s are only known from this area. Its fish fauna is very rich, about 218 species have been recorded in the area, including the rare and valuable Asian Arowana (*Scleropages formosus*). Other important species include Proboscis Monkey (*Nasalis larvatus*), Orang-utan (*Pongo pygmaeus*), False Gavial (*Tomistoma schlegelii*), Estuarine Crocodile (*Crocodylus porosus*), deer, wild pigs and birds.

**13. Physical features:**

The Danau Sentarum Wildlife Reserve covers approximately 80,000 hectares and lies in the upper Kapuas River basin, some 700 kilometres upstream from the delta. The upper Kapuas River basin is surrounded by low mountain ranges and extends over about 6,500 square kilometres, with an average elevation of only 35-50 metres. Much of this basin is a vast floodplain, consisting of seasonal lakes (max. water depth 7-8 metres), freshwater swamp forest and peat swamp forest. The Reserve is located in the western part of this basin, where three-quarters of the seasonal lakes occur. Approximately half of the Reserve consists of lakes, while the other half consists of freshwater swamp forest. The lakes and swamp forests buffer the annual floods of the Kapuas River. Lake waters are black, coloured by tannic acids (pH = 4 - 5.5) and are very deficient in minerals. The Kapuas basin lies virtually on the Equator and tropical climate influence the area. Total annual rainfall in the upper Kapuas floodplain varies between 3500mm in the west to 4400mm in the east. The average annual rainfall in the reserve is estimated to be about 3600mm (Giesen, 1987).

**14. Ecological features:**

The western part of the upper Kapuas floodplain is inhabited by almost 20,000 people (8.5 per square kilometre), 88 percent of which are Melayu fishermen. About 3,000 people live in about 20 village enclaves within the Reserve. Most Melayu are dependent on fisheries for their livelihood, while cultivation, logging, trade and construction are of marginal importance. The floodplain fishery of the upper Kapuas Basin is highly productive, accounting for two-thirds of the freshwater fishery of the entire province, and amounting to 10,000 wet tons annually for 1975-85. The fishery of the Reserve provides about 30 percent of that of the entire upper Kapuas basin.

Principal vegetation:

- Aquatic herb vegetation: *Eichhornia crassipes* and *Polygonum* spp.
- Short herb vegetation: Cyperaceae and Poaceae
- Tall perennial herb vegetation:

  A: near the Kapuas River: *Calophyllum* spp.

  B: differs from A in characteristic species: *Fragraea fragrans, Fragraea fagrans, Fragraea spp, Mallotus* spp. and *Shorea balangeran.*

- Peatswamp : main species are *Callophyllum* spp., *Dryobalanops abnormis, Eugenia* spp. and *Shorea seminis.*

  For a detailed species list see Giesen (1987).

  Peat: present; Thickness of layer: 1.0 metres

  Months with flooding: JAN, FEB, MAR, APR, MAY, OCT, NOV, DEC

**15. Land tenure/ownership of:** Government of Indonesia, PHPA

**16. Conservation measures taken:**

The present status, 'Suaka Margasatwa', offers enough protection for this particular system; its size and the presence of an intensive fishing industry rule out 'Cagar Alam' (Strict Nature Reserve) or National Park status. The Suaka Margasatwa status was granted in 1982 (SK no. 757/Kpts/Um/10/1982), and further ratified by the provincial governor and the ministers of Forestry, Agricultural and the Interior in 1985. The reserve is also included in the "Corbett Action Plan for Protected Areas of the Indomalayan Realm" (IUCN Commission on National Parks + Protected Areas, 1985), as a high priority area requiring an adequate conservation status for biological communities. At present, the status is adequate but protection is lacking (Giesen, 1987).

**17. Conservation measures proposed but not yet implemented:**

**18. Current land use:**

**19. Disturbances/threats, including changes in landuse and major development projects:**

(a)at the site:

Constraints on Development:

- Logging and shifting cultivation are prohibited within the reserve (Giesen 1987).
- Luttrell (1994) reported that forest burning occurs in Danau Sentarum, and this is an important factor in ecology and economy of this lake region. It is estimated that over 30% of the forest in the area has been affected by fire during the last twenty years.

(b) in the surroundings/catchment:

**20. Hydrological and biophysical values:**

Sentarum wetlands are able to absorb up to 25% of the peak flows of Kapuas river, while in dry season, up to 50% of the river discharge downstream originates from the wetlands. In this way, the wetlands diminish peak flows and increase low flows (KLEPPER, 1994).

**21. Social and Cultural values:**

Wetland Values of the site:

At least 3,000 to 4,000 fishermen are active in the lakes in the reserve. Assuming 6 individuals to a family, about 600 families are active. Each family produces about one ton of dried and salted fish a year (0.5-2.0 tons). The total market is thus estimated at about 1,200 tons of wet fish. Including the 300 tons. caught for local consumption, the total is 1,500 tons annually. The total fishery production of the Kapuas lakes is about 11,000 tons annually. Giesen (1987) investigated 207 plant species and found that only 27 (=13%) had no apparent use (Silvius *et al.*, 1987).

**22. Noteworthy fauna:**

The following IUCN Red Data List (1990) and CITES Checklist (1992) species were listed by Silvius *et al.*, (1987): (see No. 5 on Ramsar Criteria)

**23. Noteworthy flora:**

**24. Current Scientific research and facilities:**

**25. Current conservation education:**

**26.Current recreation and tourism:**

**27.Management authority:**

**28. Jurisdiction:**

**29. Bibliographical references:**


- Giesen, W., 1987. Danau Sentarum Wildlife Reserve (Inventory, Ecology and Management Guidelines). A World Wildlife Fund report, for the Directorate of Forest Protection and Nature Conservation (PHPA), Bogor, Indonesia, 1987. WWF.
- Silvius, M.J., Djuharsa E., A.W. Taufik, A.P.J.M. Steeman and E.T. Berczy, 1987. The Indonesian Wetland Inventory. A Preliminary Compilation of Information on Wetlands of Indonesia. Vol. II. PHPA-AWB/INTERWADER & EDWIN, Bogor, Indonesia.
- Hood, I., 1993. Reconnaissance Survey of the fauna of Danau Sentarum Wildlife Reserve, Kalimantan Barat. Internal Office Report. PHPA/AWB, Bogor, Indonesia.
- Sebastian, A.C., 1993. A Preliminary investigation of the Proboscis Monkey population in Danau Sentarum Wildlife Reserve. PHPA - Indonesia and Asian Wetland Bureau.
- Balen, S van. and R. Jensen, 1994. The ornithological importance of the Danau Sentarum Nature Reserve.
- Frazier, S., 1994. A preliminary dry season crocodile survey of Suaka Margasatwa Danau Sentarum (Lake Sentarum Wildlife Reserve) in Kalimantan Barat, Indonesia. UK - Indonesia Tropical Forest Management Project.
- Luttrell, C., 1994. Forest Burning in Danau Sentarum. Preliminary report for AWB/PHPA. AWB/PHPA.
- Klepper, O., 1994. A Hydrological Model of Upper Kapuas River and The Lake Sentarum Wildlife Reserve. AWB/PHPA. Bogor.


**30.Name and address of compiler:**

**31.Map of site included? yes or no? .....**

2ID002

**Additional information for site 2ID002, Danau Sentarum Wildlife Reserve, Indonesia**
copied from a fax from the Director General of Forest Protection and Nature Conservation to Jocelyn Bowden of the Ramsar Convention Bureau

07. Danau Sentarum was established as the second Indonesian Ramsar site by the Ramsar Bureau, in April 1994.

17. The management Plan for Danau Sentarum is still being developed.

22. Noteworthy fauna:
* A number of surveys has been done through activities on project Indonesia - ODA Uk TFMP, on fish diversity which reveal some new species. Some of the species noted from the area are: *Osteochilus artilineatus*, *Parachlea cyanea*, *Puntlop lifes* sp., *Gymnochandra* sp., *Pseudogobiopis* sp., *Rasbora spec. nov.* and *Nomacheilus spec. nov.*
* Some endangered vulnerable bird species are: *Anhinga melanogaster*, *Ciconia stormii* and *Aviceda jerdoni*.
* The endangered mammals in this area are: Oran Utan (*Pongo pygmaeus*), Sun Bear (*Helarctus malayanus*), Clouded Leopard (*Neofelis nebulosa*). Leopard Cat (*Felis bengalensis*), Proboscis monkey (*Nasalis larvafus*), Pangolin (*Manis javanica*), Beroneon Gibbon (*Hylobates muelleri*) and Maroon langur (*Presbytis rubicunda*).

24. There are already modest facilities for visitors to conduct research at Danau Sentarum Wildlife Reserve

25. Current conservation education is conducted by PHPA, Indonesia-ODA, UKMTFP and Wetlands International.

27. The management authority is:
Sub office of Nature Resource Conservation - Pontianak
Under the Directorate General of PHPA
Ministry of Forestry
Mangghala Wanabaki Building, 8th Floor, Blok 1
Jl. Gatot Subroto
Jakarta 10270
Indonesia

28. Jurisdiction: this area is managed by the Ministry of Forestry, Ditjen PHPA Ministry Forestry

30. Bibliography:
Jeans, Kevin, 1997. Executive summary: review of catchment; Boundary and Buffer zone of Danau Sentarum, Indonesia. UK Tropical Forest Management Programme, PHPA-ODA UK TFMP and Wetlands International. Pontianak.