

Information Sheet on Ramsar Wetlands (RIS) – 2006-2008 version



Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX.22 of the 9th Conference of the Contracting Parties (2005).

Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

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

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

12TH April 2006

3. Country:

The Gambia

4. Name of the Ramsar site:

Tanbi Wetlands Complex

5. Designation of new Ramsar site or update of existing site:

This RIS is for (tick one box only):

- a) Designation of a new Ramsar site ; or
b) Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

- i) the boundary has been delineated more accurately ; or
ii) the boundary has been extended ; or
iii) the boundary has been restricted**

and/or

If the site area has changed:

- i) the area has been measured more accurately ; or
ii) the area has been extended ; or
iii) the area has been reduced**

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site:

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

a) A map of the site, with clearly delineated boundaries, is included as:

- i) a hard copy (required for inclusion of site in the Ramsar List): ;
ii) an electronic format (e.g. a JPEG or ArcView image) ;
iii) a GIS file providing geo-referenced site boundary vectors and attribute tables .

b) Describe briefly the type of boundary delineation applied:

The Wetland area fronts the ocean to the north and the Gambia River to the east. The greater Banjul human settlement surrounds TWC to the south and east. Madinari, Lamin and Abko towns are bordering TWC to the south. To the west Fagikunda, Taliding, Ebotown and Jeshewan towns limit TWC; Banjul is at the north-eastern border while Bakau Town is at the north-west of TWC.

8. Geographical coordinates (latitude/longitude, in degrees and minutes):

Central coordinates: 13°26' North and 16°38' West.

9. General location:

The Tanbi Wetland Complex is located on the southern shore of the river Gambia and includes the area between the island of Banjul and Cap Point and extends to Lamin and Mandinari point in the south. The area is bordered by sixteen villages. All are on the periphery, Kerewan being the greatest distance from the Lamin Bolong at 2Km. The area includes some part of the Banjul City area, some part of the Kanifing Municipality and some area of the Brikama area council.

10. Elevation: (in metres: average and/or maximum & minimum)

The mean altitude is 1m, with a maximum of around 16m.

11. Area: 6,304 hectares

12. General overview of the site:

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

The Tanbi Wetland Complex (TWC) is located at the mouth of the River Gambia, occupying the southern portion of its estuary. It has developed through the combination of deposition of fluvial and marine sediments. It is an Estuarine and Intertidal forested wetland primarily of low mangrove forest, with a complex of vegetation types on its northern boundary and along the mangrove fringing the mainland. The TWC functions include coastal stabilisation, fish breeding and recreation.

13. Ramsar Criteria:

Tick the box under 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). All Criteria which apply should be ticked.

1	•	2	•	3	•	4	•	5	•	6	•	7	•	8	•	9
√		√		√		√		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		√		<input type="checkbox"/>

14. Justification for the application of each Criterion listed in 13 above:

Tanbi Wetlands Complex is part of the Western Africa Marine ecoregion. TWC is at the mouth of the River Gambia delta. The Tanbi wetland Reserve meets many criteria of a Wetland of International Importance. In particular, it meets criteria 1, 2, 3, 4 and 8

Criterion 1

The hydrological importance of TWC, in particular in the wake of the rising sea level and other effects of climate change meets criterion 1 for its designation as a Ramsar site.

More than 80% of the TWC is a mangrove swamp which is under daily tidal scheme. It has all the ecological characteristics of a mangrove swamp:

- The mangrove mud, rich in organic matter, has the capacity to retain until 100 times its weight. TWC plays a key hydrological role in the greater Banjul area. The Island of Banjul is only one meter above sea level. The great Banjul area

receives around 850 mm of rain. Tanbi Wetland Complex catches most of the water coming from all Kombo higher land.

- The drainage water as well as tidal are stored and released steadily in the Tanbi swamp. TWC is a hydrological buffer zone, preventing floods in the Banjul area. This hydrological importance is enhanced by the threat of climate change and rising sea level.
- TWC is at the mouth of the Gambia River which has its source 1200 km upstream, an area with high rainfall pattern. The water coming from the delta deposits organic matter to the ocean, providing basic nutrients of the ecosystem food chain. TWC plays a role in receiving upland input and releasing it in a regular manner into the sea. Thus it is a source of nutrients and a cement to hold the consistency of the river mouth.

Criterion 2

The Tanbi Wetland Complex is harbouring vulnerable species such as African manatees (*Trichechus senegalensis*) and African Clawless otter (*Aonyx capensis*). The former is considered vulnerable by IUCN Red List book and the second an endangered species by 2002 Gambia Wildlife Act and it is listed on CITES App. II. Bell's hinged Tortoise *Kinixys belliana* (CITES App. II) has been recorded on the coastal strip, as well as the Nile crocodile *Crocodylus niloticus* (CITES App. II). African Rock Python *Python sebae* and Royal Python *P. regius* (both on CITES App. II), as well as the Western Red Colobus *Piliocolobus badius temminckii* (EN according to IUCN Red List) occur at the site too.

Criterion 3

The 1997 ecological survey revealed 362 species from 66 families of birds. During the last December perimeter survey of Tanbi Wetland 85 species of birds and more than 7800 individual birds were counted. The species list is in the annex. More birds are sighted inside the Wetlands but not counted yet.

The African Marsh Owl *Asio capensis* dwells in the TWC during wet-season: that is its only known habitats in the Gambia.

Criterion 4

The TWC is a pathway for fish, birds and dolphin species. Atlantic Hump-backed Dolphins *Sousa teuszii*, and Bottle-nosed Dolphins *Tursiops truncatus* are reliant at some level upon the fish that have their nurseries amongst the mangroves of Tanbi.

The site harbours a mixture of Ethiopian and Eurasian species. The latter winter in the area and the mudflat is crucial for their feeding before returning to reproduce. In the neighbouring site, The Saloum Delta biosphere reserve (Senegal) which is a known Ramsar site, bird species regularly found in TWC as well as in Saloum, are identified as migrating from 12 European countries.

During the onset of the rains a considerable movement of Africa species occurs with many species utilizing the wetland areas for breeding and feeding purposes. In the early autumn the Palearctic migration gets underway and a large diversity and abundance of

species accumulate in the Tanbi wetlands. Many of these birds will stop off to build up fat reserves after their migration, before dispersing further into the continent. The Tanbi Wetland complex thus acts as one of the main staging posts on the Palearctic migration being located as it is at the mouth of the River Gambia. The river is apparently used as a corridor to the inland areas of the continent as well as providing extensive wintering grounds for many species. By the time the spring migration north commences, much of the TWC has dried and its feeding value for waders and waterfowl is reduced. Nonetheless, it still holds valuable feeding and roosting conditions for gulls, terns and certain species.

Criterion 8

- The shadow of the mangrove trees is a resting ground for many marine and coastal species. Juvenile species nurse at the edge of mangrove shaded waters. In particular, critical stages of the shrimp species *Panaeus notialis* development occur in the area (eggs coming with tidal waves from the ocean are kept in the mud to become larvae and stay in swamps all over the juvenile stage.). The Gambia River delta is among key recruitment site of this shrimp species in the Western Africa Marine Ecoregion.
- One of the two important food chains in the eco-region starts with mangrove ecosystems. Mangrove leaves are cut by crabs and mixed with mud to produce rich organic matter, which is used then by herbivores such as Tilapia (*Tilapia spp.*) and mullet (*Mugil spp.*), shrimps and zooplanktons. Primary carnivores and up to the top of the food chain rely heavily or partly on it.
- Researches in the neighbouring Saloum Delta site have proven that more than 80 marine and deltaic fish species spawn or nurse in the mangrove swamps. It is believed that TWC plays a similar role.

15. 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:** Senegal-Gambia Catchments Freshwater Eco-region

b) **biogeographic regionalisation scheme** (include reference citation): WWF Freshwater Ecoregions of Africa

16. Physical features of the site:

Geology

The Tanbi Wetland Complex is situated on the Holocene fluvial sequence that has arisen from a combination of marine and fluvial currents that produce a characteristic sediment type (Russel and Whyte, 1988). The sediments are generally fine textured sand, silts and clay and may include peat deposits (found at Lamin). This sequence overlies Pleistocene alluvium that consists of unconsolidated sediments (Ibid). Towards the north, the Banjul spit is considered to be a post-Nouakchottian feature, with the upper 4m predominately

made up of sand with isolated bands of clay. At 4m depth, a compact fine sand occurs which is underlain by clay below 7 to 8m (Ramsar Wetland Study The Gambia, 1997).

Soils

The soils found in the Tanbi Wetland complex range from pure sand on the northern spit to hydromorphic clays on the mainland fringes of the wetland. The coastal sands are subject to considerable movements with littoral drift estimated at 200,000 to 300,000m³ per annum (ICAM, 1996). Backing the sand spit and lagoons of the seaward shore the soil are fine textured clays and silts. Towards the fringes of the mangrove existing and potential acid-sulphate soils occur, which are unsuitable for agriculture. These acid-sulphate soils are often devoid of vegetation and are referred to as bare tannes. Where the acidity is moderate, halophytic vegetation occurs. On the seasonally flooded periphery of the wetland, hydromorphic clays and silts occur, which often have a sandy substratum 10-30cm below the surface (FAO 1993). During the rainy season these soils are untilled for rice cultivation while during the dry season certain areas as at Bakau are intensively cultivated for horticultural production using hand irrigation from shallow hand-dug wells (Ramsar Wetland Study, the Gambia, 1997).

The entire strip between Cape Point and Banjul is sand beach that is currently undergoing considerable alterations due to patterns of erosion and deposition, most probably assisted by anthropogenic factors. A spit of c.600m to the east of Cape Point has entirely disappeared over the two years period to 1997, and the entire strip up to Banjul is being rapidly cut back.

Hydrology

The Gambia coast is subject to a prevailing NW swell that induces a major southward sediment drift. The east-west orientation of the coast between Cape Point Banjul however, receives an eastward littoral drift (ICAM, 1996). The estuary acts as a sink since it is essentially a real (drowned river valley). Still in the process of being filled in (Ibid). Sediment deposition in the mouth of the River Gambia is thus centered on the south bank due to a combination of currents and the Coriolis effect. Resultantly the waters to the east of the wetland are shallow and extensive Intertidal mudflats occur, most notably along Maidenhair Flats and in the area to the south of the Bund Road. These flats are utilized by water birds for feeding and in addition, the old ship, which are a feature of Bund Road area, act as a roost. The mudflats have no associated vegetation though the slow advancement of mangrove vegetation is an ongoing process.

The tidal range at Banjul is 1.6m during spring tides and 0.7m at neap tides (Ramsar Wetland Study The Gambia 1997).

The area is characterized by a network of channels that dissect the mangrove forest and the coastal strip on the northern fringe. The entire complex is essentially estuarine in nature, though it is subjected to full salinities on the northern fringe during floor tides, and there are numerous freshwater flushes around the periphery during the rainy season. Hyper saline conditions can develop in some of the coastal lagoons and in the upper reaches of the bolons. The fringe of the wetland is seasonally flooded through rainfall and runoff which affects the salinity regime within the mangrove and lagoon complex. Freshwater is found at approximately 2m depth in this fringe and during the dry season.

A chain of lagoon runs between Cape Creek and Oyster Creek bridge and a single lagoon occurs on the east of Toll point lagoons, which are subject to limited tidal inundation through narrow channels. This is a dynamic and ever-changing stretch of coast-line with extensive erosion and deposition occurring. This being so, there is a risk that the lagoons may be breached in several new places in the near future.

Climate

The Gambia is in the intertropical and its climate is generally described as Sudano-Saharan. Rainfall concentrates between the months of June to October with a country average of 850mm per annum (Report of the ANR Working Group, 1996). The rainfall is generally less in the northern half of the country and greatest in the southwest. There has been a 25-30% decrease in annual average rainfall over the period 1950 to 1990s (Ibid).

17. Physical features of the catchment area:

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

See section 16.

18. Hydrological values:

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

The hydrological values of the wetland are one of the major reasons to classify TWC as a Ramsar site. The hydrological values are explained in section 14. They include

- flood control,
- groundwater replenishment,
- shoreline stabilization,
- sediment and nutrient retention and export,

19. 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*.

TWC is a marine/coastal wetland with five major wetland types:.

- F: Estuarine waters;
- G: Intertidal mud, sand or salt flats.
- H: Intertidal marshes;
- I: Intertidal forested wetlands; includes mangrove swamps which dominate the area with 4800 ha out of 6300 ha.
- J: Coastal brackish/saline lagoons

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:

1. I: Intertidal forested wetlands; includes mangrove swamps which dominate the area with 4800 ha out of 6304 ha
2. F: Estuarine waters;
3. H: Intertidal marshes;
4. J: Coastal brackish/saline lagoons
5. G: Intertidal mud, sand or salt flats.

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

Mangrove forest dominates the Tanbi Wetland south of the Banjul Highway and covers approximately 4,800ha. The typical halophytic herbs growing on the inland edges of the forest include Beach Morning-glory, *Philoxerus vermicularis* *Ipomea pes caprae*, *Sesuvium portulacastrum*, *Vernonia chlorati* and *Blumea aurita* are shrubs also found growing in this location. The community types present (according to the classification proposed by Lugo and Snedaker, 1974) include fringe forest and scrub forest.

The numerous bolons, which dissect the mangrove, form a mosaic of islands up to 800 hectares in size. Mangrove community along the channels reflects slight variation in soil levels, with sections of fringe forest interspersed with over wash forest. The extent to which these communities extend from the bolons is variable and often difficult to determine due to the thicket of branches and prop roots of these low forest. The mean height of the *Rhizophora* spp. forest from soil level is 6-7m. At the head of many bolons however, individual trees of up to 10m occur, which may be a result of localized freshwater flushes reducing the osmotic pressure of particular trees.

In the slightly elevated interiors of the island and on the mainland fringe, scrub forest occurs in either pure stands of *Avicennia africana* up to 1.5m in height, or in association with *Rhizophora* spp. and *Laguncularia racemosa*. These areas are generally interspersed with salt marsh and bare tannes.

There are extensive areas of tannes (seasonal saline flats) on the periphery of the Tanbi Wetlands that are subjected to seasonal flooding and subsequent drying following the rains. The associated vegetation varies with the degree of salinity. It ranges from bare tannes to halophytic dominated vegetation including Seaside Purslane, Beach Morning-glory and *Philoxerus vermicularis*, merging into grassland dominated by *Sporobolus spicatus*, *Phragmites australis* and *Paspalum vaginatum*. As the dry season progresses the vegetation of the seasonal saline flats dies back.

The seaward side of the lagoons has a sandy substrate with West Indian Alder and occasional *Avicennia africana* occurring on the beach or sand dune, along with typical zerophytic-halophytic herbs such as Seaside purslane and Beach morning –glory. On the landward side of the lagoons the substrate is of finer silts and clays with a shrub mangrove community dominated by *A. africana* with varying amounts of *Rhizophora* spp. and *Laguncularia racemosa*. Towards Oyster Creek and backing the lagoon at Toll

point the substrate is again sandy in nature and a water-demanding savanna type of vegetation occurs, characterized by Baobab *Adansonia digitata*, Swamp Date Palm *Phoenix reclinata*, African Nettle tree *Celtis integrifolia*, *Crateva religiosa*, *Strophantus sarmentosus* and *Hibiscus tiliaceus*. The introduced neem *Azadirachta indica* has colonized extensively in this belt to the East of Toll Point and poses a threat to the natural vegetation as it is fast growing and very drought tolerant.

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 14, 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 swamps that consolidate the wetland are considered as noteworthy. The main species are *Rhizophora mangle*, *R. harrisoni*, *R. racemosa*, *Avicennia africana*, *Laguncularia racemosa*, *Annona glabra* and West Indian Alder *Conocarpus erectus*. Their conservation is fundamental for the conservation of TWC.

Intertidal salt marshes with a typical halophytic assemblage of species are common in the fringe of the mangrove complex and in the upper reaches of some of the bolons including Cape Creek. These areas may be flooded only in the spring tides but nonetheless contain the typical halophytic assemblage of species associated with both permanent and seasonal salt marsh in The Gambia. In the summer of 1999, these areas were also flooded due to the high level of rain that was experienced. Seaside Purslane *Sesuvium portulacastrum*, Beach morning-glory *Ipomoea pes-caprae*, and *Philoxerus vermicularis* typically dominate along with the grasses *Paspalum sp.*, *Leptochloa* and *Sporobolus spicatus*.

The dune front fringing the sea forms a pioneer zone with a zerophytic-halophytic community binding the sand against wave and wind action. The outer fringe tends to be dominated by a sparse covering of Seaside purslane which merges with Beach Morning-glory further back. The community diversifies in the lee of the fringe dune to include *Ipomoea stolonifera*, *Philoxerus vermicularis*, Seaside Sword Bean *Carnivalia rosea*, *Leptadenia hastata*, *Alternanthera maritima*, *Pergularia daemia*, *Merremia tridentate* and the monocots *Cenchrus biflorus*, *Sporobolus spicatus* and *Cyperus maritimus*. The dune belt in places extends inland for up to 400m and behind the shelter of the fringe *Dodonaea viscosa*, *Maytenus senegalensis*, *Scaevola plumeri*, Tamarisk *Tamarix senegalensis* and *Thespesia populnea* form a shrubby mosaic with accessional small trees of *Calotropis procera*, Thirsty Thorn *Acacia seyal* and Winter Thorn *A. albida*. The herb-layer consists mainly of species such as River Bean *Sesbania bispinosa*, *Ipomoea heterotrichia*, *Ruspolia hypocrateriformis*, *Amorphophallus aphyllus*.

Where the dune backs on to a lagoon West Indian Alder dominates the vegetation with occasional *Avicennia africana* on the lagoon margin.

22. 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.

The greatest variation in biodiversity is found within the invertebrate fauna and the avifauna.

Aquatic invertebrates

The aquatic invertebrate fauna is composed predominantly of crustaceans and mollusks. Very abundant species include shrimps (*Panaeus notialis*), crabs and mangrove oysters *Crassostrea tulipa* (Ramsar wetland study, the Gambia, 1997)

Vertebrates

Fish

Fishes belonging to at least 15 families have been recorded in the Tanbi Wetland Complex.

The most abundant of these species are *Tilapia spp.* Followed closely by Mulletts *Mugil spp.*, although Atlantic Mudskippers *Periophthalmus papilio*, are also present in large numbers and are very widespread. The fish fauna is comprised mainly of pelagic or demersal species in the fry, juvenile or sub-adult stages (Ramsar wetland study, the Gambia, 1997).

Reptiles

Nile crocodiles *Crocodylus niloticus*, appear to inhabit the Tanbi Wetland Complex in low numbers (Ramsar wetland study, the Gambia, 1997), as there are two sites on the wetland fringe, Katchikally sacred pool, in Bakau, and Abuko Nature Reserve, that certainly contain crocodiles and which probably allow some movement of animals into the wetland.

Green Turtles *Chelonia mydas* are likely to occur on the coastline of Tanbi, where they probably feed on the offshore seagrass beds. It is possible that they use the beaches between Cape Point and Banjul as breeding sites (in 1999 two nests of this species were located on the beach at Bakau, just to the west of the Tanbi coastline). The leatherback Turtle *Dermochelys coriacea* may also be found offshore, as a recently dead carcass of an individual of this species was washed up in March 1999 on the beach at Bakau. Bell's hinged Tortoise *Kinixys belliana* has been recorded from the coastal strip (Ramsar wetland study, the Gambia, 1997). Marsh Terrapin *Pelomedusa subrufa*, and Pan Hinded Terrapin *Pelusios subniger*, are likely to occur in the freshwater fringes of Tanbi as both have been recorded close to the edges of the wetland complex.

Lizards known to occur in the Tanbi Wetland Complex, include the *Agama agama*, Brook's house Gecko *Hemidactylus brooki angulatus*, Fig-tree Gecko *Tarentola ephippiata*, Orange-sided Skink *Mabuya perrotetii*, Orange-throated Skink *M. affinis* and the Nile Monitor *Varanus niloticus*. All of these species are relatively common, especially the smaller species. The Nile Monitor is still found in good numbers and large specimens are regularly encountered. A total of four specimens of this species have been collected, three before 1922 around Cape Point, and one in 1990 at Serrekunda. At this time almost nothing is known of the ecology or the preferred habitats of this species.

Snakes that have been recorded in Tanbi include African Rock Python *Python sebae*, Royal Python *P. regius*, Beauty Snake *Psammophis elegans*, Striped Beauty Snake *P. sibilans*, Olive Sand Snake *P. phillipsi*, Bush Snake *Philothamnus irregularis*, Black-necked Spitting Cobra *Naja nigricollis*, Forest Cobra, *N. melanoleuca* and Puff Adder

Bitis ariens. Snakes are generally killed on sight by Gambians, so very large specimens, especially of the Pythons and Cobras, are rarely seen. The Royal Python record comes from a single sighting near Old Jeshwang, but recently specimens have been found at Abuko Nature Reserve, so this species may be more common than was previously thought.

Birds

The avifauna is composed of both resident and inter-African and Palearctic migratory species. The 1997 study records 362 bird species from 66 families for the Tanbi Wetland Complex (Ramsar wetland study, the Gambia, 1997). The perimeter survey carried out in December 2005 lists 7 859 individual and 122 species, the list is attached to the document.

Mammals

The mammalian fauna of the Tanbi Wetland Complex is inevitably restricted due to the proximity of the large urban areas around the periphery of the complex. Large mammals are unlikely to occur regularly except in the complex south of Talinding which may still harbour animals such as Bushbuck *Tragelaphus s.scriptus*, as this area is less disturbed. The mangrove area along the coast and around Mandinari Flats and Mandinari Point provides a possible corridor for the movement of such animals from the Tanbi Wetland to the Mandina wetlands to the south. Primates are still fairly well established in the Tanbi Wetlands, especially adjacent to Abuko Nature Reserve where large numbers of both Callithrix Monkeys *Cercopithecus sabaues*, and Western Red Colobus *Piliocolobus badius temminckii*, are protected, and venture out into the wider countryside from this secure base.

Aquatic mammals probably fare much better than those tied to the land. As Tanbi Wetland Complex consists in the main of aquatic habitats and human disturbance is much less in these areas. Both West African Manatee *Trichechus senegalensis*, and African clawless Otter *Aonyx capensis*, are known to occur in the bolons, though probably in low numbers. Both of these mammals may also use the River Gambia or the banks to travel between the Tanbi Wetlands and Mandina Complex to the south, Atlantic Hump-backed Dolphins *Sousa teuszii*, and Bottle-nosed Dolphins *Tursiops truncates*, are sighted frequently in the River Gambia to the east of Tanbi. Though they have not been recorded in the wetland Complex itself, it is possible that they do occasionally venture into the area along the largest bolons, and are certainly reliant at some level upon the fish that have their nurseries amongst the mangroves of Tanbi.

23. Social and cultural values:

a) Describe if the site has any general social and/or 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 very little recorded history of the values associated with the wetland. The main attraction to the wetland was primarily for fishing, since the many bolongs provided abundant fish.

Tourism is also a major activity in TWC, two major tourist sites are within TWC area at Sarraut and Lamin Lodge.

Oyster harvesting and mangrove harvesting for fuelwood and house roofing are the main activities around the Banjul complex and salt flats within the wetlands provided space for traditional wrestling competitions.

Around the Camalo end (NW) of the wetland is a Jola Shrine which is notable for the multitude of people who sought its help.

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning?

If Yes, tick the box and describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

a) within the Ramsar site: State owned land

b) in the surrounding area: community owned land

25. Current land (including water) use:

a) within the Ramsar site:

The wetland is located within an area of high population density being fringed by Banjul to the east, and Bakau, Jeshwang, Serekunda, Tallinding and Lamin to the west. The area is subject to considerable agricultural activity on its landward side and industrial development along Banjul Highway. The functions of the wetland include acting as a sewage sink for the urban areas, coastal stabilisation on its seaward fringe, fish breeding and nursery grounds and numerous recreational activities especially for tourists visiting the area.

Fishing within the area is widespread and conducted at a subsistence level by the local communities and for semi-commercial purposes at a number of locations. Oyster collection is widespread throughout the wetland and is mainly undertaken by women.

The shells are burnt for the production of lime. The entire oyster harvest is not sold but partially used for domestic consumption, therefore providing a valuable protein source for low-income families.

Agriculture and market gardening is carried out at various locations in the wetlands. Rice is cultivated over the rainy season and market gardening during the dry season. The most evident of these is the Bakau Horticultural Project located at Mile 7 where an area of approximately 5ha is under cultivation. There are also a large number of orchards in the Tanbi Wetland Complex which have appeared over recent years.

Timber is the main energy source for cooking purposes within the urban area. The high cost of firewood within the urban area has led to the use of mangrove as an alternative supply. There is evidence of excessive harvesting from some areas within the wetland complex and this appears to be carried out by communities that live outside the wetland. Other activities carried out in the area include the harvesting of wild fruits and other plant parts for consumption, medicinal purposes etc. This does not appear to be carried out on a commercial basis.

b) In the surroundings/catchment:

Human settlements,
Small agricultural schemes,
Horticulture
Some small industries.

26. 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:

The Wetland's proximity to the urban area and its bisection by the Banjul highway give the land a high potential value for development.

- i. The entire wetland fringe is subjected to increasing agricultural and horticultural expansion and intensification that is diminishing the diversity of habitat and associated fauna.
- ii. Coastal erosion is rapidly altering the morphology of the coastal strip and threatening both infrastructure and habitat. The multiple causative factors have not been adequately addressed to date.
- iii. The destructions to mangrove habitats being used as breeding and roosting sites by water birds are indications of the community's need for these resources, and thus present the need to control their over-exploitation.
- iv. Agriculture inorganic fertilizers, persistent pesticides and then domestic and commercial waste pollution of the water bodies are destructive to water quality, and ways of controlling these must be explored.
- v. No clear policy and institutional framework for the management of inland water systems.
- vi. Inadequate law enforcement on land use and environment issues.
- vii. Inadequate funding and capacity.

b) In the surrounding area:

TWC is in the greater Banjul area, thus human activities are threats in many aspects for the Wetland. The following threats are identified in TWC

1. Land reclamation
2. household waste dumping
3. Industry and corporate solid and oil dumping
4. mangrove cutting
5. illegal and unsustainable fishing

27. Conservation measures taken:

a) List national and/or international category and legal status of protected areas, including boundary relationships with the Ramsar site:

In particular, if the site is partly or wholly a World Heritage Site and/or a UNESCO Biosphere Reserve, please give the names of the site under these designations.

NA

b) If appropriate, list the IUCN (1994) protected areas category/ies which apply to the site (tick the box or boxes as appropriate):

Ia ; Ib ; II ; III ; IV ; V ; VI

c) Does an officially approved management plan exist; and is it being implemented?:

TWC has a draft management plan but the updating process is going on within the framework of the Integrated Coastal and Marine Biodiversity Management (ICAM) project implementation process. The process of updating involved the Participatory Rural Appraisal (PRA) approach

d) Describe any other current management practices:

Currently and since April 2005, TWC is managed by the Department of Parks and Wildlife Management (DPWM) with the backup of the ICAM project providing the staff, logistics and administrative facilities.

28. Conservation measures proposed but not yet implemented:

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

The Government of Gambia in partnership with the World Bank and WWF is implementing an Integrated Coastal and Marine Biodiversity (ICAM) project.

The ICAM project will embark on the preparation of an updated version of the existing management plan. The project intends also to build an educational building, ranger's posts, sign boards and equip local staff with vehicles for patrolling.

Through PRA, the ICAM project intends to identify sustainable activities and fund local communities for income generation purposes.

Management Plans for endangered species such as Manatees, Turtles and dolphins are expected to be designed and implemented through the ICAM project. Social, cultural and

economic rights of the local people to the wetland require that management seeks collaborative support to ensure the sustainability of wetland use.

29. Current scientific research and facilities:

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

An ecological survey and studies on vulnerable species will be carried out in the process of updating the management plan. ICAM project intends also to build a biodiversity monitoring system for the DPWM in which TWC is included.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

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

There is no facility of this nature but the ICAM project envisages building a resource centre for potential visitors and the procurement process is at an advanced stage. Nonetheless the ICAM project has been very active in the sensitization programme.

31. Current recreation and tourism:

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

Many foreign tourists visit TWC but there is no strong statistical system to estimate the rate of use.

32. Jurisdiction:

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

Department of Parks and Wildlife Management (DPWM) c/o Department of state for forestry and the environment, State House, Banjul.
The Director of parks is directly responsible.

33. 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.

The ICAM Project under the Department of Parks and Wildlife Management is funding local staff salary and providing resources to update the management plan and to implement it.

The TWC is locally managed by staffs that comprised of a warden, an assistant warden, 4 rangers and 9 community wardens.

Department of Parks and Wildlife Management

Abuko Nature Reserve

C/o Department of State for Forestry and Environment

State House, Banjul The Gambia

Telephone: (220) 437 69 72/3;

Fax: (220) 437 69 73

Email: almamoc@hotmail.com, otouray2000@yahoo.com, matdia_2000@yahoo.fr

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

- Barbier, E.B., Acreman, M AND Knowler, D. (1997) Economic Valuation of Wetlands. A Guide for Policy Makers and Planners. Ramsar Convention Bureau, Gland, Switzerland.
- Barlow C.R. Wacher, T.J and Disley, A.S. (1997) A Field Guide to Birds of the Gambia and Senegal. Pica press.
- Collar, N.J. and Stuart, S.N. (1995) Threatened Birds of Africa and Related islands. Part 1 ICBP/UCN. Cambridge.
- Eckert, K.L, Bjorndal, K.A. Abreu – Grobois, F.A, and Donnelly, M. (1999) Research and Management Techniques for the Conservation of Marine Turtles. IUCN/SSN Marine Turtle Specialist Group. Publication No.4.
- Gambia, R.M. Moore, N.W, Hamalainen, M and Prendergast, E.D.V. (1995) Dragonflies Recorded from the Gambia. Notul. Odonatol, Vol4, No.6p93-108.
- Gambia, R.M. Moore, N.W Hamalainen, M and Prendergast, E.D.V. (1995) Dragonflies Recorded from The Gambia: An annotated list of Recorded up to the end of 1980. Odonatologica 27(1) p25-44.
- Gillies, M.T. (1982) Notes on the Skippers (Hesperiidae: Lepidopera) of the Gambia Bull. I.F.A.N. 44, A(1-2)p160-171.
- Jones, M. Flowering Plants of the Gambia (1994) A.A. Balkema/Rotterdam/Brookfield.
- Kasper, P. (1999) some Commoner Flora of The Gambia. Edited by stiftung Walderhaltung in Afrika and Bundesforschungsanstalt fur Forst – und Holzwirtschaft. Hamburg, Ferederal republic of Germany.
- Lykke, A.M (1994) The Vegetation of Delta du Saloum National Parks, Senegal. AUU Reports, 33. Aarhus University Press.
- Lykke (1996) Structure, Floristic Composition and Dynamics of woody vegetation – studies from Fathala Forest in Delta du Saloum National Park, Senegal. PHD Dissertation submitted to the Faculty of Science, University of Arrthus, Denmark.
- Newport, M.A. (1993) the other end of Africa. Metamorphosis. Vol4, no.4 p165-172.
- Prnedergast, E.D.V.(1998) The Gambia Additions to the list of Odonata, and further distribution records. International Journal of Odontology 1(2): 165-174.
- Ramsar Wetland Study. The Gambia (1997) Report produced by The Department of Parks and Wildlife Management under the Ministry of Fisheries and Natural Resources with The Ramsar Bureau.
- Van waerebeeke, K, Ndiaye, E, Djiba, A, Diallo, M, Murphy, P, Jallow, A, Ndiaye, P and Tous, P. (1999). A Survey of the Conservation Status of Cetaceans in Senegal, The Gambia and Guinea-Bissau. Report to Secretariat of the Convention of Migratory

LIST OF BIRDS IN TANBI WETLAND COMPLEX

Checklist of Birds in Tanbi Wetland Complex (April 2006)

<u>NAME OF BIRDS</u>	<u>SCIENTIFIC NAME</u>
PINK BACKED PELICAN	<i>Pelecanus rufescens</i>
HAMMERKOP	<i>Scopus umbretta</i>
LONG TAILED CORMORANT	<i>Phalacrocorax africanus</i>
CATTLE EGRET	<i>Bubulcus ibis</i>
SQUACCO HERON	<i>Ardeola ralloides</i>
BLACK EGRET	<i>Egretta ardesiaca</i>
WESTERN REEF HERON	<i>Egretta gularis</i>
LITTLE EGRET	<i>Egretta garzetta</i>
GREAT WHITE EGRET	<i>Egretta alba</i>
GREY HERON	<i>Ardea cinerea</i>
WHITE FACED WHISTLING DUCK	<i>Dendrocygna viduata</i>
SACRED IBIS	<i>Threskiornis aethiopicus</i>
AFRICAN HARRIER HAWK	<i>Polyboroides typus</i>
PIED CROW	<i>Corvus albus</i>
HOODED VULTURE	<i>Necrosyrtes monachus</i>
BLACK KITE	<i>Milvus migrans</i>
SHIKRA	<i>Accipiter badius</i>
LIZARD BUZZARD	<i>Koupi falco monogrammicus</i>
GREY KESTREL	<i>Falco ardosiaceus</i>
DOUBLE SUPPREDFRANCOLIN	<i>Francolinus bicalcaratus</i>
BLACK CRAKE	<i>Amaurornis flavirostris</i>
AFRICAN JACANA	<i>Actophilornis africanus</i>
SENEGAL THICK-KNEE	<i>Burhinus senegalensis</i>
SPUR WINGED PLOVER	<i>Vanellus spinosus</i>
WATTLED PLOVER	<i>Vanellus senegallus</i>
GREY PLOVER	<i>Pluvialis squatarola</i>
RINGED PLOVER	<i>Charadrius hiaticula</i>
EURASIAN CURLEW	<i>Numenius arquata</i>
WHIMBREL	<i>Numenius phaeopus</i>
BAR TAILED GODWIT	<i>Limosa lapponica</i>
COMMON GREEN SHANK	<i>Tringa nebularia</i>
COMMON SAND PIPER	<i>Actitis hypoleucos</i>
EURASIAN OYSTER CATCHER	<i>Haematopus ostralegus</i>
BLACK WINGED STILT	<i>Himantopus himantopus</i>
RUDDY TURNSTONE	<i>Arenaria interpres</i>
GREY HEADED GULL	<i>Larus cirrocephalus</i>
SLENDER BILLED GULL	<i>Larus genei</i>
LESSER BLACK BACKED GULL	<i>Larus fuscus</i>
CASPIAN TERN	<i>Sterna caspia</i>

ROYAL TERN	<i>Sterna maxima</i>
GULL BILLED TERN	<i>Sterna nilotica</i>
WHITE WINGED BLACK TERN	<i>Chlidonias leucopterus</i>
LAUGHING DOVE	<i>Streptopelia senegalensis</i>
BLLUE SPOTTED WOOD DOVE	<i>Turtur afer</i>
SPECKLED PIGEON	<i>Columba guinea</i>
NAMAQUA DOVE	<i>Oena capensis</i>
RED EYED DOVE	<i>Streptopelia semitorquata</i>
VINACEOUS DOVE	<i>Streptopelia vinacea</i>
BLACK SHOULDER KITE	<i>Elanus caeruleus</i>
PIAPIAC	<i>Ptilostomus afer</i>
SENEGAL COUCAL	<i>Centropus senegalensis</i>
AFRICAN PALM SWIFT	<i>Cypsiurus parvus</i>
GREEN WOOD HOOPOE	<i>Phoeniculus purpureus</i>
PIED KING FISHER	<i>Ceryle rudis</i>
BLUE BELLIED ROLLER	<i>Coracias cyanogaster</i>
ABYSSINAN ROLLER	<i>Coracias abyssiniica</i>
BLUE CHEEKED BEE-EATER	<i>Merops persicus</i>
LITTLE BEE-EATER	<i>Merops pusillus</i>
ROSE RINGED PARAKEET	<i>Psittacula krameri</i>
SENEGAL PARROT	<i>Poicephalus senegalus</i>
WESTERN GREY PLAINTAING EATER	<i>Crinifer piscator</i>
BEARDED BARBET	<i>Lybius dubius</i>
RED BILLED HORN BILL	<i>Tockus erythrorhynchus</i>
AFRICAN GREY HORN BILL	<i>Tockus nasutus</i>
GREY WOOD PECKER	<i>Mesopicos goertae</i>
GREATER HONEY GUIDE	<i>Indicator indicator</i>
CRESTED LARK	<i>Galerida cristata</i>
RED CHESTED SWALLOW	<i>Hirundo lucida</i>
FORK TAILED DRONGO	<i>Dicrurus adsimilis</i>
YELLOW WAGTAIL	<i>Motacilla flava</i>
COMMON BULBUL	<i>Pycnonotus barbatus</i>
BROWN BABBLER	<i>Turdoides plebejus</i>
ZITTING CISTICOLA	<i>Cisticola juncidis</i>
TAWNY FLANKED PRINIA	<i>Prinia subflava</i>
BEAUTIFUL SUNBIRD	<i>Nectarinia pulchella</i>
YELLOW CROWNED GONOLEK	<i>Laniarius barbarus</i>
YELLOW BILLED SHRIKE	<i>Corvinella corvina</i>
LONG TAILED GLOSSY STARLING	<i>Lamprotornis caudatus</i>
HOUSE SPARROW	<i>Passer domesticus</i>
GREY HEADED SPARROW	<i>Passer griseus</i>
WHITE BILLED BUFFALO WEAVER	<i>Bubalornis albirostris</i>
NORTHERN RED BISHOP	<i>Euplectes francisconus</i>
VILLAGE WEAVER	<i>Ploceus cucullatus</i>
RED CHEEKED CORDON BLUE	<i>Uraeginthus bengalus</i>
RED BILLED FIRE FINCH	<i>Lagonosticta senegala</i>