INFORMATION SHEET ON RAMSAR WETLANDS

1. **Date this form was completed/updated**:
21-08-1999

Designation Date

Site Reference Number

1. **Country**:
The United Republic of Tanzania

3. **Name of Wetland**: The Malagarasi-Muyovozi Wetlands

4. **Geographical coordinates**: 5°S and 31°E

5. **Altitude**: Average approx. 1,200m

6. **Area**: Approximately 3.25 million ha.

7. **Overview**:
The Ramsar Site is a vast and complex riverine floodplain wetland in the basin of the Malagarasi River in North West Tanzania. It is one of the largest and most important wetlands in East Africa The basin has five main rivers, the Malagarasi, Moyowosi, Kigosi, Gombe and Ugalla which drain an area of 9.2 million ha. The core area of the Ramsar site comprises lakes and open water in the dry season covering about 250,000ha together with is a permanent papyrus swamp of about 200,000 ha with large peripheral flood plains that fluctuate widely on a yearly basis depending on the amount of rainfall but cover up to 1.5 million ha. There are two relatively large lakes associated with the flood plain namely, Sagara and Nyamagoma lakes.

The wetland habitats are surrounded by very extensive miombo woodlands and wooded grasslands which are part of a larger region of forests and wetlands covering about 15 million ha in Western Tanzania..

The site is extremely important for large mammals, migratory and resident waterbirds, fish and plants as well as providing significant livelihood support to local communities. Major livelihood activities in the site are fishing, hunting, honey gathering , harvesting forest products and cattle grazing.

The majority (95%)of the Ramsar Site is within protected areas – game reserves and forest reserves while the balance is in district or village lands .

8. **Wetland type**: In approximate order of occurrence
Inland: Seasonal Floodplains and marshes (Ts), Permanent Swamps (Tp), Seasonal Freshwater lakes (P), Permanent freshwater lakes(O), Permanent rivers(M), , non-forested peatlands (U), Seasonal rivers and streams (N)) and freshwater swamp forests (Xf)

9. Ramsar Criteria

1, 2, 3, 4, 5, 6, 7, 8(according to criteria adopted at COP7 in May 1999)|

Most Significant Criterion applicable to the site:

10. Map of Site included? Please tick *yes* ☑ **or- *no*** ☐

11. **Name and address of compiler**

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12. **Justification of the criteria selected under point 9, on previous page**:

Criterion 1: Representativeness/uniqueness

The wetland is a large and excellent example of an East African floodplain wetland ecosystem in good condition.

Criterion 2: Vulnerable/endangered species

The wetland supports a number of vulnerable or endangered species including the Shoebill (*Balaeniceps rex*), Wattled Crane (*Bugeranus carunculatus*), African Elephant (*Loxodonta africana*), Sitaunga (*Tragalephus spekei*) and African Slender–snouted Crocodile (*Crocodylus cataphractus*). *Pollimyrus nigricans* and *Bryconaethiops boulenger* are some of the rare fish species. In addition there are a number of endemic fish species in the system whose conservation status has not been determined.

Criterion 3: Maintaining regional Biodiversity

The Ramsar site supports various plant and animal species important for maintaining the biodiversity of the region. The site contains a broad range of wetland habitat types important in the region and a number of migratory animal species including waterbirds and other migratory birds from Africa and the Palaearctic region; large mammal populations that migrate through much of western Tanzania and fish that move within the river systems of the Malagarasi River basin the third largest in Tanzania.

Criterion 4: Supports species at critical stage

The wetland provides an important dry season refuge and feeding area for many waterbirds and large mammal species. The wetland is also an important breeding area for fish species found in the river system.

Criterion 5: More than 20,000 waterbirds

Aerial and ground surveys of the site have indicated that there are more than 20,000 waterbirds utilising the area.

Criterion 6: Supports more than 1% of waterbird species population

The site regularly supports more than 1% of the individuals of several species of waterbird including Shoebill Stork (10-20%), Wattled Crane (5-10%), Goliath heron (1-2%), and Great Egret (2%).

Criterion 7: Significant indigenous fish population

The Wetland and associated Malagarasi river system has at least 51 indigenous fish species, but no intensive studies have been conducted. A study of main commercial fish species in Tanzania (Eccles, 1992) indicated that 10 species of fish were only recorded from the Malagarasi river system and a further eight were shared between the Malagarasi and Lake Tanganika. However in addition more than 200 endemic fish species are found in lake Tanganika and since the Malagarasi river predates the lake and forms about 30% of the catchment of the lake system it is predicted that intensive studies may reveal significant additional numbers of endemic or restricted distribution species. .

Criterion 8: Important feeding spawning, nursery or migration site for fish
The wetland is an important, nursery, and feeding ground for a wide variety of fish species found in the Malagarasi river system
The following are food fish species are found in the wetland area: *Oneochronis spp., Orthrochronis malagarasiensis, Clarias gariepinus, Afromastacembelus frenatus, Alestes spp, Shilbe mystus, Labeo longirostris, Synodontis spp, Cytharinus gibbosus.*
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13. General location:
The wetland is located in the north west of Tanzania in the river basin of the Malagarasi River, Tanzania's second largest river basin which in turn forms over 30% of the catchment of Lake Tanganika. The wetland is primarily in the administrative regions of Kigoma, Shinyanga and Tabora. A railway passes through the wetland joining the towns of Kigoma in the west and Tabora in the east. A spur to the railway heads in a southerly direction through the wetland to the town of Mpanda. The nearest significant town from the centre of the wetland is Uvinza which is downstream on the Malagarasi River about 150km to the west of the centre of the wetland.

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14. **Physical Features**:
The wetland is part of the Malagarasi River Basin which covers an area of 9.2 million ha or about 10% of Tanzania. This river has existed for a long time and used to be part of the upper basin of the Congo River system draining directly into the Atlantic Ocean During the uplifting associated with the formation of the Lake Tanganika Rift Valley to the west of the wetland, the flow of the river was blocked and a large shallow lake was formed in the area occupied currently by the wetland. Eventually the Malagarasi river cut back through the uplifted rock to connect to Lake Tanganika and the lake level dropped to leave the current complex of smaller lakes, permanent swamps and floodplains which form the Malagarasi-Muyovozi wetland system. The Malagarasi and Moyowosi Rivers both rise in the highlands of Burundi and together with the Ugalla, Gombe and Wala Rivers the basin drains a considerable portion of north western Tanzania. These rivers converge on the western edge of the wetland to form the Malagarasi River which flows west into Lake Tanganyika
The wetland system can be divided into three components – the northern portion comprising permanent swamps, lakes and floodplains along the Malagarasi, Muyovozi and Gombe Rivers. The core permanent swamp area is associated with the main rivers of the system with large seasonally inundated floodplains. The permanent swamp runs north/south in a large zone covering some 320,000 ha along the Moyowosi/Nikonga/Kigosi Rivers (3°55'-5°05'S/30°50'-31°35E) turning west, south of Lake Masimba, along the main Moyowosi River to its confluence with the Malagarasi and Ugalla Rivers. This permanent swamp follows the Malagarasi north becoming patchy in the northern reaches.

The central portion comprises a n extensive floodplain/lake/swamp system occurs on the Zibwe River and Lake Sagara (5°13'S/31°10E) covering a total of 93,000 ha and extensive floodplains and swamps to the SE towards the Ugalla River.

The southern portion of the wetland continues south and south-east following the Ugalla/Wala River system and expanding into a very large floodplain to the south east of Ugalla Game Reserve. .

The soil in the majority of the swamps are organic hydromorphic in nature but along the Malagarasi they are mineral hydromorphic. The floodplains, in the periphery of the permanent swamp, and those associated with the rivers are inundated by floods which vary in level by as much as 6 m over a series of dry, or wet years in the more southerly regions of the Muyovozi floodplain. These floodplains have saline alkaline soils of a mineral hydromorphic nature. .

The wetland system is surrounded by low hills naturally vegetated by Miombo woodlands, but with large areas converted for agricultural activities.

The average annual rainfall for the area is 800-1000 mm. Temperatures average from 12 to 20°C between November and April (main rainy season) and from 20 to 26° in August and September (main dry season).

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15. Hydrological values:

The Moyowosi, Nikonga, Kigosi, Ugalla and Gombe rivers join the large Malagarasi River which discharges into Lake Tanganyika. The Malagarasi-Muyovozi Wetland Ecosystem plays an important hydrological role in Western Tanzania. The main hydrological functions of the system are water storage, flood control, groundwater recharge, sediment retention and water purification. Flood storage in the wetland reduces downstream flooding in towns such as Uvinze and during the dry season the steady discharge of water supplements dry season river flow. The floodplains also play a role in trapping sediments carried by the major rivers in times of peak flow and hence reducing the levels of sediments carried into Lake Tanganika – thereby helping to maintain the natural clearwater conditions important for the survival of many fish species.

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16. Ecological features:

The Ramsar site includes the following key wetland types: Floodplain grasslands, floodplain woodlands, Papyrus swamps, lakes, rivers and other open water bodies; riverine and groundwater forests. Non wetland habitats within the Ramsar site includes extensive Miombo woodlands and grasslands with scattered vegetation.

Headwater streams have associated gallery forest or woodland which include *Acacia spp., Borassus aethiopum* and *Phoenix reclinata*. The core permanent swamp area is dominated by *Cyperus papyrus* and *Oryza barthi*. The shallow lakes and the floodplains filled during the rainy seasons in the Malagarasi - Muyovozi swamps contain *Nymphaea* along with the grasses and *Leersia hexandra*. The more regularly flooded floodplain areas support grasses such as *Hyparrhenia rufa* and *Echinochloa pyramidales.* Serial stages of the grassland follow the recession of the floods, giving concentric zonation of *Hyparrehenia-Echinochloa-Vossia* as permanent marsh is approached. in dry years the floodplains are scoured by fire.

The mid-upper portion of the Ugalla River Basin is a large floodplain 120 km long and up to 50km wide. This floodplain is underlain with gley clay under which there is often an impervious hardpan. These areas become flooded in the wet season and support extensive grasslands dominated by *Echinochloa haploclada, Themeda triandra, Settaria spp Andopogon spp, Eragrostris spp Digitaria spp* and *Sporobolus spp*. Scattered trees and shrubs occur on the floodplains notably *Combretum fragrans, C. obovatum amd C. purpureiflorum.* In certain areas large termite mounds in the floodplain are colonized by a number of tree species growing to 15 m in height. Another distinctive feature of the floodplains are the groves of borassus palms *Borassus aethiopum*. Downstream of the main floodplain the river flows through an increasingly narrowing floodplain between5km and I km wide fringed by hills and in the downstream sector an escarpment about 100m high.

The country surrounding this wetland is covered by a variety of miombo woodland types dominated by *Brachystegia spiciformis-Julbernardia globifora* miombo woodland.

The river systems and lakes support large populations of hippopotamus and crocodiles. Woodland areas near larger permanent swamps have large mammal densities. The most biomass is found in the riverine grasslands, in the form of buffalo, zebra and topi, particularly in the dry season. The commonest large carnivore in the site is the lion (Panthera leo). Leopard (*Panthera pardus*) spotted hyena *(crucota crucota*) and wild dogs (*Lyacann pictus*) are occasionally encountered.

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17. Noteworthy fauna:

Bird species of special significance are the Shoebill or Whale-headed Stork (*Balaeniceps rex*) and the wattled crane (*Bugeranus carunculatus*). Both these species are listed in the 'suspected' list of the IUCN red list of threatened animals as not enough information is presently available to categorise them further. The estimated population of Shoebill is between 1000-2500 individuals (TWCM 1990, 1992 and 1993) for the Moyowosi/Kigosi swamp areas alone. The population numbers in this ecosystem are thought to vary considerably seasonally and possibly annually. A total count conducted in 1992 over an area of just 36, 800 ha showed there to be 578 shoebill storks which, in places, reached a density of five birds per square kilometer. This number of shoebills is significant as the largest estimate of total world population for these birds is 11,000 (Handbook of the Birds of the World, 1992). The 1996 waterbird count gives a rough estimates of less than 2,500 for Tanzania. Wattled cranes are also dwindling in number throughout their range with a total population estimate of 4000-6000 birds (Handbook of the Birds of the World, 1992). This makes the estimated population of 200-500 birds (TWCM 1990 and 1992) a small but important one. However, There are several hundred other species of birds at this site which include raptors such as African fish eagle (*Haliaeetus vocifer*), palmnut vulture (*Gypochierax angolensis*), osprey (*Pandion haliaetus*) and African marsh harrier (*Circus ranivorus*). Large numbers of resident and locally migrant waterfowl are found throughout the ecosystem and include more than 500 Goliath Herons (*Ardea goliath*) and 1,400 Saddlebill Storks (*Thippiorhynchus senegalensis*) (TWCM, 1992) in the Moyowosi and Kigosi swamps and Lake Sagara alone. No study has been made of the palaearctic migrants associated with this area.

This site is one of the few areas in Tanzania that Sitatunga (*Tragelaphus spekei*), an antelope species specially adapted for life in wetlands, occur within a protected area and is possibly one of East Africa's largest protected populations. The African elephant (*Loxodonta africana*), listed in the IUCN red list as 'vulnerable', is present in small numbers and particularly favours ground water forest habitat in the dry season. The African slender-snouted crocodile (*Crocodylus cataphractus*), listed as 'indeterminate' in the IUCN Red Data Book, is also found in small numbers in this wetland area. Other large fauna associated with the wetland include hippopotamus (*Hippopotamus amphbius*) and Nile crocodile (*Crocodile niloticus* in the swamps. Buffalo (*Syncerus caffer*), reedbuck (*Redunca sp.*), topi (*Damaliscus.korrigum*), zebra (*Equus burcheli*), waterbuck (*Kobus defassa*) and lion (*Panthera leo*) are found in the floodplains.

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18. Noteworthy Flora

This wetland site is a region of considerable floral diversity. The main ecosystem types are described in Section 16 above. The site contains some of the largest areas of permanent swamps and floodplain grasslands in eastern and southern Africa. The area also contains excellent examples of Miombo woodlands and riverine and groundwater forests. More detailed botanical studies need to be conducted at the site to more fully document the floral

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19. **Social and Cultural Values**:

The wetland system has many important socio-economic and cultural values. Some of the most important include harvesting of wetland related products including fish, forest products, medicinal plants, honey and wildlife. Other values of importance to the local communities include flood control, water supply, and dry season grazing. Human population's subsistence economy in and around the proposed site depends largely on farming, fishing, hunting and honey gathering. Although honey gathering and fishing is not normally permitted in game reserves in Tanzania, it has been the practice to permit such activities in the game reserves in the Ramsar site as these activities predate the establishment of the reserves. Large numbers of fishing and bee-keeping camps operate throughout the Ramsar site during the dry season (July to December).. Permanent fishing villages are present around some of the lakes such as Lake Sagara.

There are an estimated 15-20,000 cattle in the central portion of the wetland and more cattle in the southern parts of the Ramsar site Groups of nomadic pastoralists are also moving into the area during the dry season.

The traditions of the local people on this site does not allow hunting or capture of some birds like ground hornbill and animals like bush buck.

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20. Land tenure/ownership of:

(a) site:The majority of the Ramsar Site is under the direct jurisdiction of government agencies comprising game reserves 2.45 million ha; forest reserves about 650,000 ha and the balance being district or village land amounting to about 150,000ha

(b) surrounding area:In certain areas, notably in the north east and south, the Ramsar site is surrounded by forest reserves, in the central portion and north west portion the site is bounded by open or public land or agricultural areas primarily under the control of villages or district authorities.

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21. Current Land Use

(a) Site: A majority of the site is gazetted as game reserve where the main landuse is nature conservation, together with fishing, beekeeping, tourist/subsistence hunting and seasonal grazing. Forest reserves are allocated for harvesting of timber and non-timber forest products and the land under the control of districts is divided between forests and lakes with extraction of forest products and fishing as the main land uses.

(b) Surrounding area: The principal land uses in the lands in the central zone and to the west east of the Ramsar Site on the district lands is agriculture either for subsistence farming (primarily cassava), and cash crops (primarily tobacco). The forest reserves are allocated for extraction of forest products but some have been allocated or encroached for settlements or agricultural land. The hills to the northwest of the Site adjacent to the border with Burundi has been deforested in recent years particularly due to shifting agriculture and the large pressures resulting from the large influx of refugees from neighbouring countries.

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

a) At the site; According to land use maps prepared from satellite imagery in 1997 and from recent aerial and ground surveys, within the game reserves and the forest reserves in the ramsar site there is relatively little habitat destruction through human activity. The boundary of the ramsar sites has been drawn to exclude any significant area of settlement or agricultural land One exception is the southern floodplains in the Moyowosi Game Reserve, where Watusi (refugee pastoralists who originate from Burundi) and their cattle were settled in the early 1970's. They were permitted to remain in the area after the area was gazetted as a game reserve. Fires set by the Watusi and grazing by their cattle have caused a dramatic loss of trees in what would otherwise be an area covered by *Borassus-Phoenix* wooded grassland. The fire damage becomes particularly severe in very dry years when it can penetrate into the permanent swamp. These settlers are also associated with poaching and other illegal activities (Jones and Hill, 1994)

Almost all fires within the reserves result from human activity such as grazing, hunting and honey gathering and fishing camps and can cause considerable damage.

One other area of concern is the International Red Locust Control Programme (IRLCP) which has been spraying insecticides on the Moyowosi southern floodplains intermittently since the early 1950's in an effort to control large locust outbreaks. The impact of this spraying programme is unknown. In addition parts of the sites have been sprayed with pesticides in an attempt to control Tsetse Fly populations and the associated sleeping sickness. Aerial spraying has now largely been replaced by use of traps placed near human settlements.

Fishing is licensed in the game reserve and game controlled areas, but enforcement is minimal and the proximity of the railway in the central part of the Ramsar site is stimulating a commercial market and consequent overexploitation of the resource. The Ramsar site is included in a list of nine heavily exploited or over-exploited fishery areas in Tanzania (Ministry of Water, Energy and Minerals 1995) .

To date human impact on the ecological character of the wetland system is growing fast as the human population in the region grows through high birth rates and large influxes of local migrants and refugees. Many of their activities to exploit resources in the Ramsar site are going on uncontrolled, due to lack of resources of the management agencies..

Heavy levels of poaching have been recorded in the area over the past 20 years and populations of some species of large mammal have been significantly reduced. The influx of refugees since 1994 has

Surroundings/catchment:

Much of the upper catchment of the Malagarasi river system in Burundi and Tanzania has been deforested and converted into agricultural land either for subsistence or cash crops. This trend is continuing as the population of the region grows. This is likely to lead to increased flood flows and decreased dry season flows of rivers and increased levels of pollution and siltation.

There are more than 10 refugee camps housing more than 300,000 refugees from Burundi and the Congo at various locations around the boundary of the Ramsar site (normally 10-30 km from the boundary. The extra demands for food to feed these people has led to intensified cultivation of forest land and wetlands in surrounding areas and to increasing fishing and poaching pressure in the reserves. Farming practices cause siltation and pollution of rivers, which affects the primary production and the growth of the fish. The Ministry of water identified the Malagarasi river system as one of three river basins with significant agrochemical pollution.

Wildlife outside the game reserves and forest reserves are experiencing considerable habitat destruction and poaching is marked. Miombo woodland and groundwater forest continue to be cleared for tobacco growing and curing and for shifting cultivation of subsistence crops.. Continued growth of the tobacco cultivation could have significant effects on the ecology of the wetland system.

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23. Conservation measures taken:

Large part of the Ramsar Site (75%) lies within three game reserves (Muyowosi and Kigosi Game Reserves - 2 million ha and Ugalla Game reserve – 450,000 ha) A further area of about 650,000ha is found in the Mpanda Line,Ugunda and Swangala Forest Reserves The balance of about 150,000ha comprises land under the jurisdiction of the districts of Urambo and Kigoma Rural Districts. All of the areas outside the game reserves are included in several game controlled areas where hunting is controlled and subject to licencing. (.

The main protection offered by the game reserves is the status that prohibits settlement and access and all other activities are controlled by permit . The wildlife division has a total of about 50 staff to patrol the two game reserves but has no boats and only limited numbers of vehicles which makes patrolling of the area especially during the wet season difficult. A number of game posts have been established around the reserves but the boundaries are incompletely marked and there are few access roads.

The forest reserves come under the jurisdiction of the central government Forest and Beekeeping Division. However this division has relatively few staff for patrolling of the area and enforcement of regulations. Some of the forest reserves such as the Mpanda Line Forest Reserve and the Ulyankulu Forest reserve have been encroached with nearly 200,000 ha of land (outside of the Ramsar Site) being cleared or converted to agriculture land in the past 30 years.

In game controlled areas, while the only restriction is the prohibition of unauthorised hunting, the level of protection for habitats is minimal. In both cases hunting is closed between January and June each year.

A General Management Plan (GMP) was prepared for Ugalla Game Reserve in 1995, but has only partially been implemented due to lack of funds.

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

a) Site:

i) Game Reserves

A broad range of conservation and management measures have been proposed for the three game reserves in various reports prepared in the past five years. Measures proposed include:

- Better control of hunting, fishing and bee keeping within the reserves to ensure sustainability;
- Upgrading of the game posts, roads and airfields and completion of boundary marking ;
- Recruitment of more staff and provision of necessary transport and communication equipment;
- Undertaking of ecological and baseline surveys of the reserves to enable better management and monitoring
- Conservation extension work and community involvement
- resettle the Watutsi livestock keeping village outside the Muyowosi Game reserve

Unfortunately there has been little progress in implementing these measures- primarily due to lack of resources.

However rapid progress is expected over the next few years – partly assisted by the designation of the area as a Ramsar site. Some specific initiatives include :

- Funds have recently been allocated by the Wildlife Division to prepare a General Management Plan (GMP) for Moyowosi/Kigosi Game Reserves
- Updating of the General Management Plan for Ugalla Game Reserve
- A 5-year community based resource management project in the districts around Ugalla game reserve supported by USAID was initiated in 1998.
- The European Union has provided resources to mark boundaries, upgrade game posts and enhance protection of the Muyowosi Game Reserve especially related to the pressure from the adjacent refugee camps
- The Danish Government through DANIDA is planning to provide support over the next five years to for the conservation and wise use of the Ramsar Site. The first phase of project will concentrate its activities in Urambo and Kigoma Rural districts, although there will be site wide activities aimed at raising awareness on wetland issues and capacity building at all levels.

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b) Surrounding/catchment:

The Ramsar site is in the Malagarasi river basin which in turn comprises more than 30% of the catchment of Lake Tanganika. Improved management of the Malagarasi River catchment and protection of the Malagarasi-Moyovozi Wetlands are identified priorities in the Strategic Action Plan prepared under the GEF-funded Lake Tanganika Biodiversity Project. This may lead to follow-up activities and provide a framework for coordinated efforts for the management of the catchment.

The project mentioned above to be funded by DANIDA will also look in particular at promoting sustainable use practices in areas adjacent to the Ramsar site in Urambo and Kigoma Rural Districts

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25. Current Scientific research and facilities

Tanzania Wildlife Conservation Monitoring (TWCM) conduct regular aerial censuses over this area. All large mammal species and specific bird species are counted to give estimates of population size, density and

distribution. Over time an idea of population trends will be available. Recently, special attention has been given to counts of the Shoebill Stork and Wattled Crane in order to clarify the population dynamics of these birds.

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26. Current conservation education

There are no existing programmes or facilities for conservation education and training in this area although such a programme is proposed in future with support from DANIDA.

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27. Current recreation and tourism

Tourist trophy hunting is the main tourist activity in the wetland site. The hunting season lasts for six months from July-December each year. The hunting operators are obliged to ensure that their clients conform to the hunting regulations and adhere to the hunting quota, set by the Wildlife Division and reviewed annually. It is mandatory for game scouts, provided by the Wildlife Department Project Managers, to accompany any hunting excursions. Accomodation is provided by hunting companies in the form of permanent luxury camps. The tourist hunting is a significant source of revenue to the Wildlife Division and the Districts and provides the bulk of current revenue from natural resources management on the Districts concerned. Options for limited visits by other tourist groups have been identified but are not yet in operation.

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28. Jurisdiction

The Wildlife Division of the Ministry of Natural Resources and Tourism has overall responsibility for the Ramsar Site management. The Wildlife Division has full responsibility/jurisdiction for the game reserves. The Forest and Bee Keeping Division in the Ministry of Natural Resources and Tourism has responsibility for the Forest Reserves and and the District Council has jurisdiction for the village and district lands.

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29. Management Authority

The Wildlife Division, Ministry of Natural Resources and Tourism, Nyerere Rd., Ivory Room. P.O. Box 1994. Dar es Salaam.

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30. Bibliographical references

Government sources supplemented by:

BIRDLIFE INTERNATIONAL (1996). Tanzania waterbirds Count. *Compiled by Neil Baker for the Wildlife Conservation Society of Tanzania.*

DANIDA (1999). Malagarasi-Muyovozi Ramsar Site Project Appraisal Mission Debriefing Notes

Eccles,D.H., 1992, Field Guide to the Freshwater fishes of Tanzania, FAO

HANDBOOK OF THE BIRDS OF THE WORLD Volume I, Ostrich to Ducks, Lynx Editions, Barcelona, 1992

HUGHES, R.J & HUGHES, J.S. A Directory of African Wetlands, Tanzania. IUCN, 1992

IUCN, 1990 IUCN Red List of Threatened Animals. Complied by the World Conservation Monitoring Centre.

JONES, C. AND HILL, J. (1994). The Malagarasi/Moyowosi/Kigosi/Ugalla Riverine Wetland Ecosystem. Report to Director of Wildlife on current status with recommendations for more effective management and further research; and Required information for the Ramsar database.

MINISTRY OF WATER ENERGY AND MINERALS, 1995. Rapid Water Resources Assessment.

MUTCH, G.R.P., (1977). The Flora of the Moyowosi Game Controlled Area. *Tanzania Notes and Records*, No. 81 & 82.pp.155-162.

MUTCH, G.R.P., (1980). The Larger Mammals of the Moyowosi. *Tanzania Notes and Records*. No.84.pp.95-106.

RAMSAR CONVENTION BUREAU (1997) A Guide to the Convention on Wetlands. The Ramsar Convention Manual 2nd Edition

RAMSAR CONVENTION BUREAU (1999) COP7 Resolutions and Recommendations

TANZANIA FISHERIES RESEARCH INSTITUTE RESEARCH PAPERS

TWCM (1990, 1991 & 1994) Ugalla River Wildlife census 1991.
Moyowosi-Kigosi Wildlife Census 1990 & 1993.

WILDLIFE DIVISION (1996). Draft Ugalla General Management Plan