



Proposal to Include Tiwai Island Wildlife Sanctuary on the Tentative List of Sites for World Heritage Status in Sierra Leone



STATE PARTY: Sierra Leone

DATE OF SUBMISSION: 2 May 2012

Submission prepared by:

Name: Tommy Garnett

E-mail: tgarnett@efasl.org.uk

Title: Director of Programmes

Address: 1 Beach Road, Lakka. Freetown Peninsula Fax:

Institution: Environmental Foundation for Africa (EFA) Telephone: +232 76 611 410

Name of Property: Tiwai Island Wildlife Sanctuary
--

State, Province or Region: Located in the south-eastern portion of Sierra Leone, about 30 km from the border with Liberia
--

Latitude and Longitude, or UTM coordinates: 7° 32' 36.16" N, 11° 20' 59.48" W
--

DESCRIPTION:

Tiwai Island has lush rainforest, unique and rich biodiversity, and a high concentration of endemic species. It is currently a protected area and eco-tourism destination supported by the local community, the Environmental Foundation for Africa (EFA) and other local and regional stakeholders. Although EFA has helped preserve Tiwai Island over the previous decade, long term, sustainable preservation is only possible through increased global awareness and funding from sources previously unaware of its presence. The recognition of Tiwai Island as an UNESCO World Heritage site would provide the impetus for EFA to further its goal of environmental protection and restoration in Western Africa.

Location & Setting

Sierra Leone is situated on the Atlantic coast of West Africa. It is situated between Guinea and Liberia, and lies at the Western end of the Upper Guinean Forest Block. Sierra Leone is home to a multitude of ecosystems including forested mountains, grasslands, and mangroves. Teeming wildlife and diverse plant species are found throughout the country, making it a biodiversity hotspot. However, major environmental threats include the rapid population growth that places pressure through overharvesting of timber, as well as slash-and-burn agriculture, which results in deforestation and soil exhaustion. Uncontrolled diamond mining during the civil war and current alluvial diamond mining have contributed to natural

resource depletion. Overfishing and bush meat hunting also represent a serious threat to Sierra Leone's biodiversity.

Despite being one of the top diamond producing nations in the world, Sierra Leone is still considered one of the least developed countries, riddled with high unemployment and a government that has been slow to implement reforms since the civil war that devastated the country. However, it is also rich in culture and, despite its small size, rich in biodiversity with ecosystems ranging from savannahs to rainforests.

Tiwai Island is located in the Upper Guinea Tropical Rainforest in south-eastern Sierra Leone, about 30 km from the Liberian border. Tiwai Island is an inland rainforest island in the Moa River, approximately 12 km² (1200 hectares) in size, located between latitude 7° 30' and 7° 34' N and longitude 11° 20' and 11° 21' W. It is located on the edge of the Eastern Province, approximately about 300 km from the capital city, Freetown, and 15 km from Bo, which is the nearest town to the sanctuary.



In the late 1970s, the island was recognised as a special biosphere for wildlife conservation, and ecological research began on Tiwai in the early 1980s. Some of the researchers, along with the Barri and Koya people who share ownership of the land, requested it become a wildlife sanctuary, and it was officially designated a reserve in

1987. In 1991, a civil war in Sierra Leone broke out and support for the island stopped. Nearly a decade later peace was declared in the country, and EFA, along with local communities, launched a project in May 2002 to restore Tiwai Island as a model for protected area management and community development.

Ecology

Tiwai Island is located in the Upper Guinea Rainforest, a humid, tropical lowland ecosystem where rainfall can exceed 4,000 mm per year in some places. It is an inland river island in the Moa River, which flows from the highlands of Guinea southwest into the Southern Province of Sierra Leone. The Guinean Forests Biodiversity Hotspot, designated by Conservation International (CI), is home to around 9,000 vascular plant species, 785 bird species, 320 mammal species, 425 herpetiles and 510 freshwater fish. Of these species, a very large percentage are endemic, ranging from 20 percent of plants to 35 percent of freshwater fishes.

JUSTIFICATION FOR OUTSTANDING UNIVERSAL VALUE OF THE FUTURE NOMINATION AS A WHOLE

The Upper Guinea Rainforest areas that remain are recognized as internationally important sites for biodiversity conservation, receiving designations from CI as a Biodiversity Hotspot, WWF as part of a Priority Ecoregion (Guinean Moist Forests), and Birdlife International as an Important Bird Area (IBA). Tiwai Island has lush rainforest, unique and rich biodiversity, and a high concentration of endemic species. It is an ideal site to be put forward for nomination as a UNESCO World Heritage Site. Recognition as a World Heritage Site would have especially positive impacts in three main areas: (1) the conservation of rare and endangered species and critical habitat areas located on Tiwai Island; (2) a boost to the eco-tourism industry in the Upper Guinea Rainforest region bringing more income into local communities; and (3) increasing global awareness and raising Tiwai Island's profile for potential funding opportunities to preserve biodiversity in the Upper Guinea Rainforest. In addition, a World Heritage designation for Tiwai Island would further enhance the pride of the Sierra Leonean people in its environment, and help bring much-needed income to the communities surrounding Tiwai Island.

CRITERIA MET:

(i) (ii) (iii) (iv) (v) (vi) (vii) (viii) (ix) (x)

Criterion X. Contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Tiwai Island has been under a hunting ban and farming restriction since 1982. A field research station managed collaboratively by Njala College (University of Sierra Leone), Hunter College (City University of New York), and the University of Miami was established in the early 1980s to study primates, forest dynamics and other rare mammals found on Tiwai Island. Although research was halted during the civil conflicts of the 1990s, and some hunting and farming took place on the island, by the early 2000s Tiwai was re-established as a protected eco-tourism and ecological research facility. The Island is an ideal research location due to the dozens of unique species that thrive there in a nearly undisturbed environment. The biodiversity of the island, which measures a mere 12 square kilometres, is rich and varied, and community-based tourism initiatives supported by EFA and the Tiwai Island Administrative Committee are committed to long-term preservation of the island.

Tiwai Island is located within the Upper Guinea Rainforest, one of the two major lowland rainforest areas in Africa. Much of the original extent of the Upper Guinea (Sierra Leone, southeastern Guinea, Liberia, the southern Ivory Coast and southwest Ghana) has been deforested, and species are confined to the remaining patches of undisturbed or minimally disturbed rainforest like the Gola Forest Reserve and Tiwai Island. Protecting the biodiversity found here is critical to ensuring the survival of many rare, endangered and endemic species.

The elusive and endangered pygmy hippopotamus (*Hippopotamus madagascariensis*), endemic to the Upper Guinea Rainforest, has been observed on Tiwai Island. Tiwai, along with the neighbouring Gola Forest Reserve, is Sierra Leone's last main refuge for the pygmy hippo. There are 2,000-plus individuals from 11 species of primates present on the island, one of the highest primate densities in the world,



including rare and endangered species such as the West African red colobus monkey (*Procolobus badius*) and the vulnerable Diana monkey (*Cercopithecus diana*). Tiwai is also home to endangered chimpanzees (*Pan troglodytes*), charismatic apes whose natural habitat has been decimated to such a degree that there are very few



Chimpanzee

remaining places to observe them in the wild. There have been more than 40 species of bats recorded in the region, making it one of the most diverse forests in West Africa for bats. Tiwai is also home to more than 20 species of small terrestrial mammals.

The Gola Forest Reserve IBA encompasses the majority of the Gola Reserve, adjacent to the southeast portion of Tiwai Island, and Tiwai Island comprises the remainder of the IBA. Six bird species have been found within this IBA that have not been observed elsewhere in Sierra Leone. Nearby Kangari Hill Non-Hunting Forest Reserve IBA and Kambui Forest Reserve IBA to the north of Tiwai are also found in the Upper Guinea Rainforest, and together with the Gola IBA are home to 313 species of bird, 18 of which are globally threatened or near-threatened. More than 135 bird species have been observed on Tiwai Island itself, including eight species of hornbill and the white-breasted Guinea fowl (*Agelastes meleagrides*). Tiwai also provides important habitat for the endangered Gola malimbe (*Malimbus ballmanni*) and vulnerable white-necked picathartes (*Picathartes gymnocephalus*).

There are over 500 species of Lepidoptera (butterflies and moths) and 140 species of Odonata (dragonflies and damselflies) found in and around Tiwai, including several species that were discovered within the past several years. About 700 plant species have been identified on Tiwai Island, an extremely high density for such a small island.



Weaver bird



Stork

Criteria IX. Be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals.

Tiwai Island is a very small, but highly diverse river island, with a high degree of species endemism. It is located in an area that was a glacial refugium, meaning it was protected from the effects of glaciation during the last ice age. Some glacial refugia were large enough to protect an entire population, while others were small pockets that hosted isolated populations of the same species that subsequently differentiated from each other. These new populations may have spread out and repopulated their former range once the glaciers retreated, relocated to an entirely new location or remained in a refugium. Range restriction associated with refugia is highly correlated with the distribution of endemic species.

Endemic species are species with a habitat restricted to one geographic area or location. Species can be endemic to a country, a geographic region or a specific site. In this case, the region is the Upper Guinea Rainforest. Tiwai Island has a high level of species richness as well as a high level of endemism. The aforementioned pygmy hippo is endemic to the region. Thirty-five percent of the 31 species of fish found in the area are regional endemics. Many of the 43 amphibian and 13 reptile species are also regional endemics. Studies of the composition and distribution of the Lepidoptera of the region have shown it to be a local centre of endemism.



Sooty mangabey

It is critical to preserve areas like Tiwai with high concentrations of endemic species, as these species are found nowhere else in the world and have little chance of recovering from major habitat or population loss. Endemic species are so highly adapted to their environment, that they can only exist within a certain ecosystem or region and would not survive elsewhere.

STATEMENTS OF INTEGRITY:

Criteria X. Although only 12 square kilometres, Tiwai Island is an incredibly biologically diverse island. In the small area, there have been recorded more than 11 species of primates, 40 species of bats, 20 species of small terrestrial mammals, 31 species of fish, 43 species of amphibians, 13 species of reptiles, 135 species of bird, 500+ species of Lepidoptera, 140 species of Odonata, and approximately 700 plant

species. Tiwai Island provides critical habitat for many endemic species including the pygmy hippo, 11 species of fish, several butterfly species, and numerous herpetiles. All of these represent an extremely high concentration of biodiversity and endemism on such a small island.

Criteria IX. Tiwai Island is an inland river island in the Moa River with both rainforest and riparian habitat. As a glacial refugium, Tiwai was spared the effects of the last ice age and the natural ecological processes have remained in place without interruption for millennia. Tiwai also forms part of a network of forest patches in West Africa, including the neighbouring Gola Rainforest National Park (GRNP). Maintaining a network of suitable habitat is critical to the survival of wide-ranging species, and critical to the survival of species with small ranges found only within the boundaries of one or two of these areas. It is also critical to preserve a network of habitat for maintaining a genetically diverse population and ensuring against stochastic events that could cause population collapse.

In order to help maintain the integrity of Tiwai Island so that it can thrive for the myriad plant and animal species that call it home, the EFA operates alongside numerous partners, both in the field and at the national policy level, for more effective protection and restoration of the environment in Sierra Leone. In this endeavour, EFA manages two field sites, the first being a nature reserve within the Western Area Peninsula Forest, and the second one being the Tiwai Island Wildlife Sanctuary, which is situated on the Moa River in the south-eastern part of Sierra Leone. A nomination of Tiwai Island, with its pristine forest and rich biodiversity, as a World Heritage Site, is actively promoted and supported by the Ministry of Lands, Country Planning, and the Environment; the Environmental Protection Agency of Sierra Leon; the National Tourist Board; the Ministry of Culture and Tourism; and a consortium of international and national civil society organizations.

Managed by the Tiwai Island Administrative Committee (TIAC), consisting of the paramount chiefs of the Barri and Koya Chiefdoms, other community elders, government officials, academic institutions and environmental organizations including the EFA, this sanctuary is exceptional in that it is the country's only community conservation programme. Given that the island is surrounded by eight communities, one of the driving factors for the establishment of the sanctuary was that the neighbouring communities would shelter the Island



Canoeing the Moa River

from logging, mining and poaching whilst benefiting from community development and livelihood assistance. In line with this philosophy, the relevant Chiefdoms have expressed a desire to maintain Tiwai Island as an important natural protected area by harmonizing its management with that of the Gola Forest Reserves and creating a permanent natural corridor between the Gola Forest Reserves, Tiwai Island and the Kambui South Forest Reserve.



16 March: BRELC with foundations, timber support columns and timber trusses.

EFA has several ongoing projects to continue improvement of Tiwai Island. They are currently developing an in-depth, long term eco-tourism plan; one of the many benefits of this will be to provide an alternative livelihood for the people of Sierra Leone. In addition, eco-tourism will offer a way for the government to rationalise its Natural Resources Management Strategy in a sustainable manner. A Biodiversity and Renewable Energy Learning Centre (BRELC) is currently being designed and a sustainability and business plan being developed for the centre. This will further expand the potential for research and educational opportunities within Sierra Leone. The centre will serve an audience ranging from primary school children to international tourists.

EFA has deployed substantial effort towards supporting community development and managing the sanctuary as well as rebuilding the infrastructure requisite for a research station, together with Njala University College, and to augment TIAC's capacity to attract visitors to the island. With increased eco-tourism, the project aims to create more opportunities for community development and to highlight the role of these communities in environmental and wildlife protection.



Chimpanzees

The recognition of Tiwai Island as a UNESCO World Heritage Site will also significantly contribute to the conservation and protection of the rainforest and the plethora of plants and animals that inhabit it, and encourage income for both the local community and for conservation efforts by encouraging eco-tourism in the region.

COMPARISON WITH OTHER SIMILAR PROPERTIES:

There are currently no designated World Heritage Sites in Sierra Leone. There is one in the neighbouring country of Guinea, and none in Liberia.

The most similar existing World Heritage Sites are Mount Nimba Strict Nature Reserve in Guinea and Côte d'Ivoire, and Taï National Park in Côte d'Ivoire. All three parks are home to populations of pygmy elephants, chimpanzees, and Diana monkeys, and are part of what was once contiguous primary forest across West Africa. As they are all in the same eco-region, the three parks have many species in common, but as they are located in areas of different weather patterns and topography, they each support a different assemblage of species. It is critically important to protect multiple populations of species in order to preserve genetic diversity and account for potential natural disaster or population collapse.

Although not yet a designated World Heritage Site, Tiwai Island has much in common with the Gola Rainforest National Park. They both fall within the Gola Forest Reserve IBA, and only about 3km separates the boundaries of Tiwai Island and Gola West. They share a similar species assemblage and act as a network of protected areas that increases the total area of available habitat in the region.

The designation of Tiwai Island as a World Heritage Site would be complementary to the other existing and proposed Sites in the region, and, for the reasons described above, would help ensure the survival of endangered, rare and endemic species more efficiently than one protected area alone. Tiwai is also unique in that it is an inland river island between two tribal chiefdoms with a long history of ecological research and conservation. Ensuring its continued importance would help preserve its heritage for Sierra Leone, for Africa, and for the world as a whole.