STATE OF CONSERVATION OF LAKE MALAWI NATIONAL PARK

NAME: Lake Malawi National Park, STATE PARTY: Malawi, ID No: N 289

EXECUTIVE SUMMARY

State of conservation report for Lake Malawi National Park World Heritage Site outlines the progress that has been undertaken by the Site since 2016 in response to the IUCN /UNESCO joint Mission report following to the visit undertaken in April, 2014 (**Decisions 38 COM 7B.92 and 40 COM 7B.81**) and thereafter **Decision: 42 COM 7B.93** by the World Heritage Committee. As it has been noted by the World Heritage Committee in its **Decision: 42 COM 7B.93** the effort which the State Party of Malawi has taken for the property's conservation and the implementation of the 2014 mission recommendations, the management has put much effort for the conservation, maintenance and monitoring of the Outstanding Universal Values of the property by engaging different stakeholders including the local communities.

Malawi in response to recommendation by the monitoring mission in 2014 received support from the World Heritage Fund which has been used for finalization of the drafting of the Management Plan and Monitoring Protocol. Equipment for monitoring of biodiversity in the property has been procured using these funds. Different stakeholders are being engaged in assisting with monitoring procedures. University of Malawi, the Chancellor College and other International Researchers have been assisting in monitoring of aquatic and terrestrial resources. The property has been included in areas of Key Biodiversity by IUCN following the recent workshop that was held in Malawi by IUCN.The focal point on Key Biodiversity Areas is the Department of Fisheries which is being supported by World Bank. Monitoring of its activities will include areas of the property.

Africa Development Bank which has provided grant for Promoting Investment in Tourism Sector has extended its components to the conservation of two protected areas in the country which included Lake Malawi National Park World Heritage Property. This will enhance conservation and monitoring activities for the property as they will be procuring equipment for law enforcement and continue replacement of markers and marking of the aquatic boundaries.

From what is being examined by the World Heritage Committee "Document **WHC/18/42.COM/7B**" there are number of activities that are being addressed for monitoring of management of the key Outstanding Universal Values of the property to maintain its status of World Heritage Site. As indicated above management activities undertaken as requested by the WHC are outlined below paragraph by paragraph.

The Outstanding Universal Values of the site are being maintained though there might be some challenges as pointed out in the previous Monitoring Mission and are indicated below as current issues observed by the State Party.

WORLD HERITAGE VALUES OF LAKE MALAWI NATIONAL PARK		
Values	**Description**	**WH Criterion**
Outstanding natural beauty of lake in Rift Valley	The lake is characterized by its crystal clear waters, and the diversity of habitats amongst its many rocky islands and shores. It is situated in the Great Rift Valley and set against the wooded hillsides of steep escarpments on either side. Much of the shoreline is composed of massive rounded granite boulders, partially submerged and washed by wave action. Between the steeper rocky sections are sun-drenched sandy bays, with inflowing rivers and streams creating the occasional reed-filled lagoon and lake-edge swamps. The position of these landscape elements creates scenes of Outstanding Natural Beauty (Statement of Outstanding Universal Values, 2010).	(vii)
Key example of evolutionary processes	The lake provides an extraordinary example of evolutionary processes, the phenomenal adaptive radiation of cichlid fishes (known locally as mbuna) along its rocky shores resulting in an array of species and varieties unmatched anywhere else in the world. The speciation of cichlid fishes in Lake Malawi is considered to be of equal or greater importance for the study of evolutionary processes as the Galapagos Island finches or honeycreepers of Hawaii (IUCN Evaluation, 1980, SoOUV, 2010)	(ix)
Extraordinary diversity of fish species	The lake is thought to have the largest number of fish species of any lake in the world, with estimates varying between about 1,000 (SoOUV, 2010) and 3,000 species (UNEP-WCMC, 2012), of which as many as 800 belong to the family Cichlidae. Lake Malawi is home to 15% of the world's freshwater fish species (Chafota et al., 2005)	(x)
Extremely high levels of species endemism	Endemism is extremely high, with more than 98% of cichlid fish known only from Lake Malawi (SoOUV, 2010).	(x)
Terrestrial	The terrestrial part of property comprises wooded hillsides that protect part of the catchment of the lake, the	

biodiversity	biodiversity of these terrestrial habitats includes a few notable species. Mammals include hippo (particularly in the Monkey Bay area) duiker, baboon, vervet monkey, bush pig, warthog and occasional elephant (reported as coming down to the lake between Mwenya and Nkhudzi hills). Leopard, kudu, bushbuck and impala have been reduced or extirpated from the area. The park is rich in birdlife including fish eagle along the shoreline. The islands, especially Mumbo and Boadzulu, are important nesting areas for white-throated cormorant which number several thousand. Reptiles include crocodiles and abundant monitor lizards on Boadzulu Island. (SoOUV, 2010)

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Topics of the State of Conservation Report (as format)	**Summaries of State Party's Report on the State of Conservation of Lake Malawi National Park World Heritage Property, MALAWI**
1) Response from the State Party to the World Heritage Committee's Decision, paragraph by paragraph **Decision: 42 COM 7B.93**	**The World Heritage committee decisions or recommendations, Decision: 42 COM 7B. 93** **With reference to the extract of the Decisions adopted by the World Heritage Committee at its 42nd session of the World Heritage Committee (Bahrain, 2018**.) **MALAWI'S (STATE PARTY) RESPONSES TO WORLD HERITAGE COMMITTEE'S DECISION** (1) Response to paragraph 3 (a) Monitoring on terrestrial and marine species population distribution and diversity in the property is being done by the Property on its normal research activities and the property is also being assisted by University of Malawi Biology Department, Department of Fisheries and other outside Researchers on cichlids fish species population distribution and diversity. Some of monitoring data available in Research papers for; (i) *Habitat Complexity Predicts the Community Diversity of Rocky dwelling cichlid fish in L.Malawi,East Africa by Baoqling Ding, Patrick D. Danley,Martin Huseman Jason Carole (2014),Springer International.* *(ii) Hybridization and Contemporary evolution in an introduced cichlids fish from Lake Malawi National Park by Told Streelman,S.L. Gmyrek,M.R.Kidd,C.Kidd,R.L.Robinson,E.Hert,A.J.Ambali,T.D.Kocher* *(iii) Elevated mtDNA diversity in introduced population of Cynotilapia afra in Lake Malawi National Park is evidence for multiple source populations and hybridization ,Hastings Zidana,George Turner and Cock Van Oosterhourt and Bernard Hanfling,Department of Biology Science, University of Hall,HU5,2DX,School of Biological Science,UK.* *(iv) Seasonality,depth and habitat distribution of breeding males of Orechromis spp. "Chambo" in Lake Malawi National Park by K.R.Mckaye and J.F.Stauffer Reapplication Environmental aboratory,University of Maryland,Frostburg,MD 21532 and School of Forest Resources Pennsylvania,State University ,University Park,USA.* *(v) Woodland Monitoring,Non Published paper, Lake Malawi National Park, Research Activities.* *(vi) Cichlids Fish spp.diversity distribution in Lake Malawi National Park,Non Published Paper by Lake Malawi National Park Research Activity*

	(vii) Detailed Movement and laterality of fin biting behaviuor with special mouth morphology.in Gengochromis mento in Lake Malawi National Park. And 3 (b) management activities include the finalization of the Property Management Plan and development of the monitoring protocol, enforcement of rules and regulation for the protection and maintenance of the Outstanding Universal Values and the sourcing of a grant from AfDB which will enhance protection of natural resources by procurement of law enforcement equipment and floaters for replacement of markers in areas where it was marked and marking the remaining areas.Assessment work for construction of tourist facility at Cape Maclear to be undertaken by assistance by AfDB. 3 (c) The overhead Powerline is a long time instituted infrastructure that was implemented in early 1990s. (2) Response to paragraph 4(a) Marine and terrestrial patrols has been enhanced to ensure enforcement of fishing restrictions and destruction of other natural resource to protect the OUV.A new engine boat has been procured with the funds from World Heritage Fund for aquatic monitoring and law enforcement. A new boat would be acquired with funds from AfDB to enhance patrols and other monitoring activities. (b) Terrestrial Park boundary inspections are enhanced to monitor encroachment and there is close cooperation between the Park, local communities, academic institutions, other government departments and NGOs to ensure protection of natural resources in the park through community awareness on the threat over population. (c) The Park is working closely with local communities where DNPW is allocating 25% of revenue collected from LMNP and local communities are participating in resource protection through monitoring of resource collection by communities in the enclave village through the developed local institutions known as Village Natural Resources Committees. Local community have been benefiting from revenue collected from the Park for their community benefits. Over 25,000 U$ has been allocated to the local communities. Through African Development Bank Project, there are initiatives for sustainable livelihood strategies where local communities will be trained in business management to give them opportunities of business to divert

	them from relying on the natural resources from the Park. (3) Response to paragraph 5(a) Monitoring of key Biodiversity areas as demarcated by IUCN will assists in the maintenance of the integrity of the Property. • (b) The feasibility of establishing a buffer zone and Extension of the property boundary: The Park boundary was established in 1980 through the National Park Establishment Order of 24thNovember 1980 published as Government Notice No. 205 of 1980 which contains the boundary description of the property for both terrestrial and aquatic areas. Concrete beacons were erected in some areas to mark the terrestrial boundary. For the aquatic zone, area of water extending outwards for a distance of 100 meters from the islands is the official aquatic perimeter of the property. The official establishment order for the property does not provide for a buffer zone. As a result, in some areas, there is human activity up to the edge of the park boundary. Expanding the boundaries proves to be a very difficult task considering the fact that Malawi despite its small size has a population of 17 million with over 90% being rural communities hence creating a large demand for farmland. Similarly, on the aquatic zone, the areas outside the property are community fishing grounds. It is pleasing to note that despite increased pressure on the property's natural resources the communities have largely work hand in hand with the park management to ensure the boundaries are respected and its natural resources are protected. (4) Response to paragraph 6 (a) Oil exploration: Currently it has been learnt that oil exploration will take place only in block 2 and 3 which is part of Karonga, Nkhata Bay and Dwambazi. The other blocks that are close to the property have been canceled. The only company conducting explorations Hamra Oil Holdings Limited have renewed their exploration license in the above-mentioned areas for the next three Years 2020 to 2022. Oil exploration activities are closely monitored by several environmental agencies. (5) Response to paragraph 7(a) The State part will follow all necessary steps for any development Projects to be undertaken (including oil exploration outside the Property's boundary and any infrastructure and tourism developments that may impact on the property's OUV) by conducting Environmental Impact

	Assessment (EIAs) in conformity with IUCN's World Heritage Advice Note on Environmental Assessment.
2) Other current conservation issues identified by the State Party	Sustainable management of the increasing human population in enclave villages in the property. Different Stakeholders are being involved in addressing this problem. However terrestrial patrols and boundary inspections are being enhanced to avoid encroachment in areas around enclave villages.
3) In conformity with paragraph 172 of the Operational Guidelines **below are descriptions of potential major restorations, alterations and/or new construction(s) within the protected area and its buffer zone and/or corridors that might be envisaged**	
A)Major restorations	N/A
B) Alterations and/or new construction(s)	1) Expansion of enclave settlements. In the 1970s the population in the enclave villages was at 4,615, in early 1990s it rose to 10,000. In 2002 it was estimated at 18, 000 (Ambali, *et al*; 2002. It is now have grown to over 25, 000 9National Statistics 2018). 2) Inappropriate tourism development: Although all the existing tourism facilities in and around the park appear to be low-impact establishments, there is a real risk of inappropriate developments that could impact the natural beauty and other attributes of the area. Examples include the ecotourism facilities on Hotels, Lodges and cottages along the lakeshores outside the park. 3) Overhead Power Grid Line. The clearing of vegetation along the overhead power gridline passing through the park. 4) Water supply Tank. A water tank constructed on hills at Monkey Bay side of the property 5) Illegal use of terrestrial resources by local communities: Various kinds of resources are used illegally from the terrestrial areas of the park. Poaching is an ongoing threat, as is the grazing of livestock, tree cutting for building poles, timber and firewood, extraction of sand, gravel and rock for building 6) Commercial fish farming. Although outside the park.Trawller fishing is being done close to the site leading to pollution and disturbance to the ecosystem. 7) Aquarium trade in fish. Although most of the (considerable) worldwide demand for Lake Malawi's colourful rock-dwelling 'mbuna' cichlids is met through captive breeding programmes in other countries, there is still a

	significant trade in wild-caught fish from Malawi. The effects of this trade have not been investigated, but it is thought that it may lead to (1) local over-fishing of particular (high-value) species and (2) re-introduction of fish to parts of lake where they do not naturally occur (most of the mbuna have evolved in particular parts of the lake isolated from other areas of potentially-suitable habitat by habitat barriers such as lagoons or stretches of sand). 8) Tourist and domestic waste. Tourist and domestic wastes, including pollution both on land and water. This is a particular problem around some of the village enclaves within the property, but also affects all lakeshore communities. 9) Land degradation, erosion and siltation. Satellite imagery of the lake catchment areas reveals dramatic declines of vegetation cover and increased incidence of bare (eroded) soil.A picture taken by Mission team during their inspection on the mounth of Limthipe river implying increased rates of surface run-off and soil erosion. This is leading to increased rates of siltation, decreased water clarity and alterations in water nutrient balance. The long-term ecological consequences of such changes are not fully understood, but it is likely to have an adverse effect on the rock-dwelling mbuna cichlids many of which graze algae from submerged rocks. Sedimentary deposits on these rocks and decreased penetration of light are likely to interfere with these fish feeding grounds. 10) Over-fishing. There are five fishing village enclaves within Lake Malawi National Park (Chembe, Masaka, Mvunguti, Zambo and Chidzale), and over-fishing is reported to be a serious problem, with many species suffering dramatic declines in numbers (Chafota et al., 2006). However, it is reported that the populations and distribution of mbuna cichlids in the National Park have not changed based on fisheries data collected since the 1970s).

OVERALL CONSERVATION OUTLOOK

Lake Malawi retains its outstanding attributes as one of the world's great freshwater lakes, and its natural beauty remains undiminished. The evolutionary processes that have resulted in the development of an extraordinary diversity of colorful rock-dwelling cichlid fish are likely to be intact since the rocky lakeshore habitats are stable and potential threats (e.g. introduced predators, or large-scale pollution) have not been realized. The limited available evidence (from fisheries surveys) suggests that species diversity and levels of endemism are being maintained,

but more systematic monitoring of these key attributes is required.

The World Heritage property covers just 0.02% of the lake's area and is vulnerable to threats originating beyond its boundaries, including over-fishing and the degradation of aquatic habitats resulting from soil erosion in the lake's catchment areas.

Budgets are insufficient to provide the level of management input required. There are no buffer zones for communities to have a utility area for their needs of thatch grass and firewood instead they rely on the Park.

The Lake Malawi Management Plan has been finally finalized and the Fish Monitoring Protocol developed. This will assist in coming up with measures of addressing some of the challenges the property is to face.

The policy, legislative and planning framework for Lake Malawi National Park is strong, and the key values of the property – its scenic qualities and the evolutionary processes that have led to the development if its extraordinarily rich, endemic fish fauna - remain largely intact. These values are however threatened by a number of insidious factors related to the pressures of a rapidly growing human population causing deforestation and soil erosion in the lake's catchment areas, and ever-more intensive exploitation of fisheries. LMNP is very small (94km2, of which only 7 km2 covers aquatic habitats), accounting for just 0.02% of the lake's surface area. This makes it especially vulnerable to potentially devastating threats from outside its borders, including the threat of commercial fishing.

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For: DIRECTOR OF NATIONAL PARKS AND WILDLIFE