

Lake Malawi National Park Fish Conservation Project Report on Scoping Visit 14th – 19th September 2020



Empowering communities to achieve a sustainable future
by providing a hand UP, not a hand out.



1st October 2020

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Proposed Outcome

The visit was tasked with finding answers to the following questions:

1. Are the critical protected areas actually being effectively protected within the National Park?
2. How do Fisheries and Parks want to see the area protected more effectively?
3. What other species are also under threat here? There is a lot of attention on cichlids, but by increasing stocks of other species that are more popular to eat, pressure on these could be eased.
4. Do fishing communities feel that they would benefit from enforcing regulations more effectively within the protected area?
5. Are fishing communities actually prepared to work in partnership with Fisheries and Parks to protect fish stocks? Without this, there would be little point in trying to introduce Ripple Africa's approach here.
6. How can existing Beach Village Committees be more effective in their activities?
7. Where are the key areas in need of protection?
8. How might a cost effective and sustainable monitoring system work?

Ripple Africa was asked to produce a report in partnership with Parks and Wildlife and Fisheries to highlight:

- the attitudes of key stakeholders in and around the National Park to fish conservation, diversity monitoring and to Ripple Africa's Fish for Tomorrow approach;
- what enforcement activities are taking place and their effectiveness;
- what monitoring is currently taking place to establish species diversity;

and make recommendations for the UNESCO committee on:

- how to improve relationships between stakeholders;
- how enforcement of fishing regulations could be more effectively carried out;
- how monitoring of fish stocks might be improved.

Activities Undertaken

Consultations were held between Ripple Africa's Country Director, Force Ngwira, and Project Manager, Sam Manda, and:

- Lake Malawi National Park officers – Division Manager, Research and Planning Officer, Park Manager
- District Fisheries Officer – Mangochi

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- Director of Parks and Wildlife – Lilongwe
- Chief Fisheries Officer – Research Ichthyologist Senga Bay Fisheries Research Centre
- Madothi, Chembe and Msaka Beach Village Committees (BVCs)
- Chiphamba and Chembe Village Natural Resource Committees (VNRCs)
- Chiefs – Senior Chief Mponda, Senior Chief Nankumba, Group Village Heads
- Fishers at Madothi, Chembe and Msaka
- Lodge owners
- Tour guides and curio sellers



Parks and Fisheries meeting



Chiefs' meeting

Ripple Africa and Mangochi Parks and Wildlife representatives met with the Director of Parks and Wildlife, Brighton Kumchedwa, in Lilongwe for a briefing meeting about the project scoping visit. The Director expressed his interest in working with Ripple Africa as an implementing partner in order to replicate the benefits of their Fish for Tomorrow approach in the National Park protected area and said that he is expecting the full participation of communities there. He also said that extending the conservation project outside the protected area will help to increase stocks of other fish species that are more popular to eat, which will help to ease pressure on the cichlids in the protected area. In other words, he proposed that the Fish for Tomorrow project should cover the whole of Mangochi District.

We have also met with Reza Sacranie, a local resident who is passionately interested in supporting local communities to protect the National Park. He has been studying trawler activity in this part of Lake Malawi and has shared drone footage of the trawlers operating in the National Park area.

This report also includes information acquired during Ripple Africa’s visit to Mangochi in December 2019 when we met with Parks Department, Fisheries, Community Initiative for Self Reliance (CISER) and fishing community members. The visit covered all of Mangochi District, not only the National Park area. The report of this visit will be sent as a separate document.



Chembe BVC meeting

Findings of the Scoping Visit

Are the critical protected areas being effectively protected within the National Park?

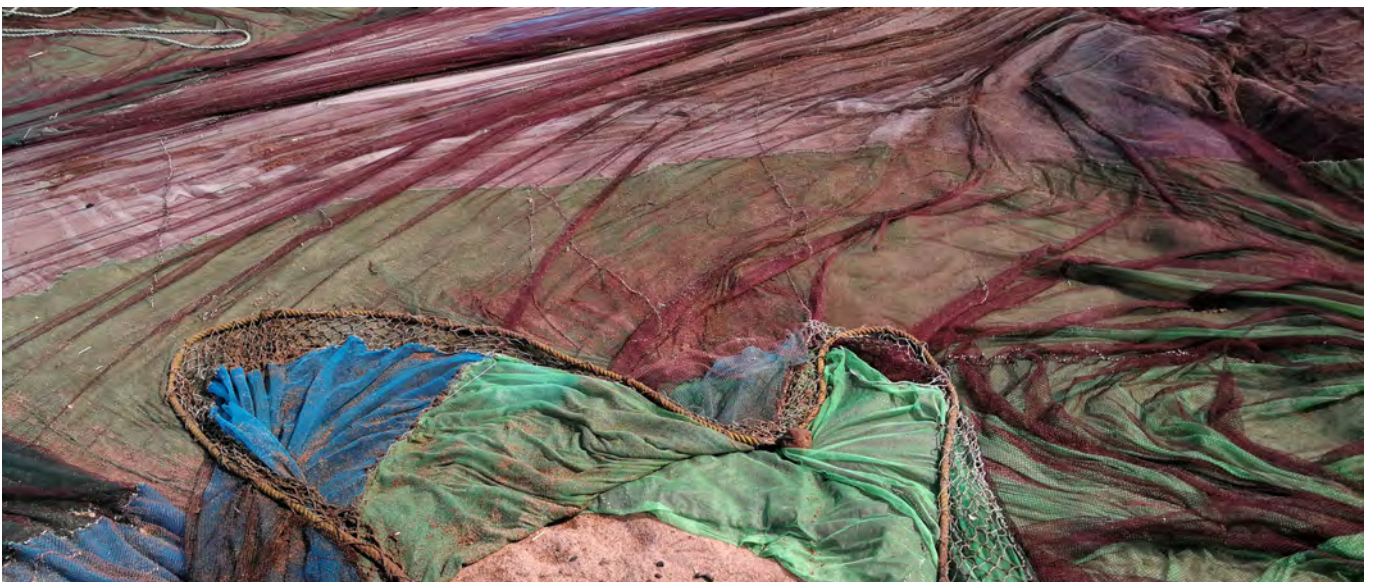
Lake Malawi National Park is a unique protected area in Malawi that has village communities inside. All these communities depend on natural resources on their daily livelihood. The aquatic area is disjointed making management of the park very challenging. The park includes 13 islands, rocks and reefs, most of which are within Mangochi District in TA Nankumba, TA Mponda and TA Makanjira, and some are in Salima District – the three Maleri Islands are within TA Maganga. In addition to the terrestrial / island components, the World Heritage site also includes a 100 metre strip of the lake and lakebed adjacent to the shoreline.

In the areas around the National Park, there are local institutions that were established by the Department of National Parks and Wildlife and Fisheries Department to assist in the conservation of natural resources. There are five Beach Village Committees and 20 Village Natural Resources Committees in and around the World Heritage site. However, despite this, officers from Parks and Wildlife and Fisheries report that critical protected areas, both aquatic and terrestrial, are not effectively protected because of the following:



Thumbi West Island

1. Lack of knowledge among local communities of laws and regulations. For example:
 - Although there are fishing bylaws in place, the Parks and Wildlife Department are not familiar with them and communities have not been empowered to enforce the regulations.
 - BVC and VNRC members admitted that they do not know much about the fishing laws and regulations, including not fishing within 100 metres of islands or the shore, and not using mosquito nets for fishing.
 - Fishers cannot easily assess how far 100 metres is from the shore meaning that the 100 metre no fishing zone is hard to enforce.
 - The use of illegal gears such as mosquito nets and other undermeshed nets is widespread and is contributing to fish stocks declining in the lake.
 - Trees both inside and outside the protected area are being felled and bushfires are destroying wildlife habitats.



Illegal Chilimira net with mosquito netting in the centre at Msaka Beach

2. Lack of resources. For example:
 - Inadequate resources for patrols and enforcement of fisheries. With only two boats (one speed boat and 15 horse power engine wood boat), daily operations are limited. The National Park has 13 islands but only three can be visited in a month.
 - Inadequate resources for patrol and enforcement in the terrestrial areas. Parks have only one running vehicle in poor condition and no running motorbikes for extension workers.
 - There are inadequate resources for monitoring the diversity of fish species in the lake. A monitoring protocol has been developed but this is not in use because of lack of capacity and monitoring expertise and inadequate equipment.
3. Lack of capacity building of Parks and Wildlife has resulted in skill shortages. For example:
 - The office has no one able to swim or dive to monitor fish species under the water.
 - More training is needed in management skills.
 - Better training is needed to enable the monitoring protocol to be put into practice.
4. Poor community participation within the protected area.
 - Only five BVCs are operating in the area, making community fish conservation difficult over such a large area.
 - All BVC members are fishers which means that they have a conflict of interest, making it hard to enforce the regulations.
5. Encroachment by trawlers in the protected area:
 - Trawlers catch large quantities of fish within the protected areas and destroy fish habitats as the nets drag along the bottom damaging bottom vegetation essential for many fish species.
 - Bunt nets are commonly used in the middle of the Trawler which is against the Fisheries Act.
 - Trawlers are prohibited from fishing within 1.8 kilometres of the land or in shallow water (less than 15 metres deep), but most are operating much closer to shore, sometimes within the 100m protected area.



Trawlers fishing close to the shore

- Drone inspections show that the vessels are very poorly built, most have no life jackets on board, no silencers and engines which leak oil into the lake.
- The trawlers operate at night and are also very noisy, affecting those residing in or visiting the National Park World Heritage site and Lake Malawi's many beaches, lodges and islands.
- One chief said that because so many trawler fishers operate illegally, fishing communities are less interested in conservation as they feel that if the trawlers can get away with illegal fishing, they will as well.
- Communities do not feel empowered to challenge trawler fishers as they don't understand the bylaws.

6. Lack of collaboration between relevant stakeholders (Fisheries, Parks and Wildlife, Chiefs, Area Development Committees (ADCs,) Village Development Committees (VDCs), fishing communities, lodge operators, tour guides, and curio sellers) in conserving natural resources in this prime tourist area. Communication between the parties is poor, and there is often conflict between them.

How do Fisheries and Parks want to see the area protected more effectively?

There are over 45,000 people living within the Lake Malawi National Park, many of whom are fishing families. There are 13 islands in the National Park area (some in Mangochi District and some in Salima District) and the rocky shallow areas around these are well known to local fishers as the favoured habitat of the cichlids and they can easily be caught here. There are also areas where other fish are known to breed and many of the smaller cichlids are used as bait to catch larger fish species or the cichlids are caught as bycatch in the small meshed nets, including mosquito bed nets, which are commonly used in all areas of Lake Malawi. The relationship with surrounding fishermen in some areas is not good as there are confrontations when fishers are found fishing close to the protected area. There have been reports of regular breaches of Park regulations such as in the protected 100 metres no fishing zone around protected islands and from the shore within the National Park, and there have been frequent, sometimes acrimonious, confrontations between user groups.



Kumuchenga Beach showing the density of fishers

Bush fires in most areas of the National Park, both on the islands and on the mainland, have contributed greatly to the destruction of trees and destroyed habitats. The extraction of firewood from illegal tree cutting of live trees from the National Park is particularly acute due to the large number of people living in the park, using wood on inefficient three-stone fires for cooking and for drying and smoking fish.

Officers from Fisheries and Parks proposed a number of issues that would help to improve the protection of the National Park area. These issues include:

- Production and provision of simple, visual educational materials such as leaflets in local languages with pictures illustrating the problems and solutions which are easily understood by all members of the community, Fisheries and Parks.
- Community awareness campaigns involving traditional leaders, ADC members, VDC members, BVCs, VNRCs, lodge operators, tour guides, curio sellers and community members.
- Community radio announcements and drama programmes (soap opera) to further embed the conservation messages.

- More active involvement of communities in conservation – building partnerships between communities, Parks and Wildlife and Fisheries.
- Formulation of local conservation bylaws for the National Park in addition to District fishing bylaws and empowering communities to enforce these.
- Increase in the number of BVCs and capacity building training for BVC and VNRC members.
- More meetings between relevant stakeholders to increase ownership and encourage more effective participation in conservation – trying to get people working together rather than against each other.
- Increasing the use of fuel-efficient stoves and promote tree planting to minimise pressure on existing natural trees within the park.

What other species are also under threat here?

In 2019, an IUCN Red List Assessment update of Lake Malawi found that nine percent of the 458 fish species examined are at high risk of extinction, threatening local food security. Three of the four species of the *Oreochromis* species known collectively as chambo, and considered one of the most important of the food fishes, were found to be Critically Endangered. Other important fish species for food security are similarly in decline.

The National Park is home to many hundreds of cichlid fish species, nearly all of which are endemic to Lake Malawi. Of particular importance are the rock-dwelling cichlids, collectively referred to as mbuna, which are a significant example of biological evolution. 30% of the world's cichlids are found in Lake Malawi and all but five of over 350 species of mbuna are represented in the National Park. These attract large numbers of tourists and are a valuable resource for Malawi.

Parks and Wildlife and Fisheries agree that other species found in the National Park therefore also need to be included in conservation activities to ease the current pressure on cichlids. These species include:

- *Oreochromis spp* known locally as Chambo
- *Bagrus meridionalis* known locally as Kampango
- *Clarias gariepinus* known locally as Mlamba
- *Engraulicypris sadella* known locally as Usipa
- *Opsaridium microcephallum* known locally as Sanjika
- *Opsaridium microlepis* known locally as Mpsa.

Do fishing communities feel that they would benefit from enforcing regulations more effectively within the protected area?

Chiefs, members from BVCs and from the VNRCs agreed that they will benefit from conserving fish, because it is a source of income generation for communities and provides employment and food. They feel that conservation is vital for future generations. They also recognise the impact on tourist numbers of any threats to the mbuna and are keen to help address fish conservation in order to protect these cichlids.

However, officers from Parks and Wildlife and Fisheries report that some communities respect Fisheries laws and regulations but others do not, and they feel that very few are familiar with the laws and regulations. The District Fisheries Officer feels that disputes between chiefs, lack of ownership of natural resources and lack of respect for authority have also had an impact on fishing practices. He suggested that more community awareness meetings are needed, and there is a need to build community resilience.

Are fishing communities actually prepared to work in partnership with Fisheries and Parks to protect fish stocks?

Committee members and chiefs all said they are very eager and willing to work in partnership with policy holders and other stakeholders to conserve fish in the lake. Chiefs were also concerned with the availability of illegal fishing gear and said there is need to restrict the sale of illegal fishing gears such as monofilament nets.

Committee members feel that previous top to bottom approaches have left communities feeling that their role in conservation is not valued. There has been very poor coordination between relevant stakeholders – Fisheries Extension workers do not visit BVCs and VNRCs on a regular basis and, as many fishers in the area are migratory, they do not care about conserving natural resources. There is a strong desire for this to change amongst fishing communities.

The fishing communities recognise the importance of protecting the mbuna for local tourism as this is one of the area's main sources of income. They realise that if the fish disappear, so will the tourists.

How can existing Beach Village Committees be more effective in their activities?

There should be more BVCs operating as the area is large and Ripple Africa's experience shows that there should be a BVC in each Chief's area to enable effective integration of fish conservation into village planning.

Some fishers feel that as the current BVC members are all fishers, they would benefit from the inclusion of non-fisher members to make it easier for the BVC to enforce the fishing regulations. Ripple Africa BVCs include non-fishers and 30% of the members are female to reflect the role that women play in processing and selling fish.

BVCs have to be empowered to enforce the District fishing regulations and National Park bylaws with the support of Fisheries and other stakeholders. They are the front line in terms of their ability to confiscate illegal fishing gear, protect key breeding areas and enforce closed seasons. They need to also be able to control overall numbers of fishers in their area and limit trawler activities. However, in order to do this they need to be supported effectively by Fisheries and Parks and Wildlife, and there has to be commitment by all parties to work in partnership in order to make conservation efforts work effectively.

Where are the key areas in need of protection?

The park includes 13 islands, rocks and reefs, most of which are within Mangochi District in TA Nankumba, TA Mponda and TA Makanjira and some are in Salima District – the three Maleri Islands are within TA Maganga. In addition to the terrestrial / island components, the World Heritage site also includes a 100 metre strip of the lake and lakebed adjacent to the shoreline.

The 100 metre area around the islands and the mainland Park area is vitally important as this is where the cichlids are mainly found. The main park area will be easier to monitor and it may be that anti-netting devices need to be incorporated around the islands. However, attempts to introduce anti netting devices around the Maleri Islands were unsuccessful as the buoys were stolen so steps would have to be taken to make them more secure.

As trawler activity within 1.8km of the shoreline, and often within the 100 metre protected area, is forcing artisanal fishers to fish closer to the shore, there is a need to more effectively regulate trawler fishing zones and ensure that they obey the current fishing boundaries.

How might a cost effective and sustainable monitoring system work?

We have discussed the monitoring systems with Titus Phiri – Chief Fisheries Officer – Research Ichthyologist Senga Bay Fisheries Research Centre. The Department of Fisheries monitors the exports of ornamental fish and issues export permits to legal traders. Stern and pair trawlers are required by law to submit catch (catch composition and biomass) returns to the Department of Fisheries for monitoring purposes.

Mbuna are unique as in some cases they can occupy only one island. Monitoring of mbuna has been very poor and there is very little information on current population status, species biodiversity and the level of threat due to overfishing.

He has recommended that:

- the increased use of light fishing near to the islands need to be discouraged;
- fishermen need to be more aware of, and to enforce, existing laws for conserving mbuna, such as the need to maintain the 100 metre distance from fishing around islands and reefs;
- Beach Village Committees should be empowered to manage fisheries resources in their areas;
- Fisheries field officers and BVCs should monitor fish catches and take note if there are mbuna in the catch;
- there should also be periodic surveys to monitor populations in the targeted area, using the diving transect method or underwater camera monitoring.

Our recommendations to UNESCO

1. Clarification of responsibilities for fishing in the National Park is needed. Fisheries have overall responsibility for fishing in the whole of the District and will be the most important contact for the BVCs. Ripple Africa will support Fisheries with this initially. Our recommendation is that Parks and Wildlife Department should support fishing communities to enforce regulations within the 100 metre protection zone and help with enforcement if required.
2. Clear fishing bylaws should be agreed in partnership with all stakeholders in line with Ripple Africa's Fish for Tomorrow approach and existing National Park and Fisheries regulations. These should include:
 - No fishing of any kind within the 100 metre protection zone – this needs to be explained as the length of a football pitch so that people learn how to estimate where the zone ends without the need for buoys.
 - No fishing with lights near to the Islands and mainland shore.
 - No drag net fishing from beaches at all.
 - No mosquito nets to be used for fishing.
 - No trawler fishing within 1.8km of the shoreline to allow more room for artisanal fishers to fish.
 - Only larger meshed fishing nets to be used.
 - All breeding areas to be protected by BVCs to enable fish to reach the correct size before being caught.

3. Increase the number of BVCs to monitor fishing activities and fully empower them enforce the bylaws, with the support of Fisheries and Parks and Wildlife. All involved in the scoping visit have been keen to adopt this approach because the current BVCs are not effective as they are not empowered to take action and enforce the regulations.
4. Examine BVC membership to ensure a mix of fishers and non-fishers to reflect the whole community.
5. We would like to introduce a realistically priced District fishing permit fee which would be collected by the BVCs and provide income for the key stakeholders – District Council, Fisheries, Parks and Wildlife and BVCs. This would ultimately provide an ongoing source of income to sustainably manage fisheries in the District and ensure that the project continues without the need for outside funding sources.
6. Ideally, we would like the project to be run across the whole of Mangochi District so that trawler activity can be better monitored and regulated as they operate both within and outside the National Park area.
7. Additional resources are needed to enable Parks and Wildlife and Fisheries to support and monitor the project and BVC activities. The purchase of a boat and motorbikes together with fuel and maintenance costs for them and for Ripple Africa staff will be needed, and there will also be a need for smartphones and equipment to support monitoring, such as underwater cameras and the use of cybertrackers.
8. Drones have been successfully used by private companies and individuals in and around the Lake Malawi National Park to deter illegal fishing, tree cutting, mining and other illegal activities common in this area. They can be deployed in seconds and are cheap to operate, the quality of the imagery and data is good enough that one can identify and record as evidence not only the perpetrators but even the fish species and amount caught. Net size and equipment can also be easily seen and, using software, exact measurements can be calculated if required.



Pictures that can be obtained using drones

Malawi has recently opened the first African Drone and Data Academy to improve drone technology skills across Africa, and we propose that we employ an experienced and trained drone operator to gather information to support better enforcement of the regulations. We would also like to train one of the Parks and Wildlife employees by having them work alongside the drone operator, gaining the necessary skills to operate a second drone on their own. We would also like to work with Reza Sacrani to assist with this as he already has considerable expertise of using drones and detailed knowledge of the area.

9. We will need to work with Parks and Wildlife, Fisheries and Research Departments in Malawi, as well as outside experts, to introduce an effective monitoring system so that we can measure the impact of the project.

Next steps

1. Because of the expertise that Ripple Africa has built up through eight years of successfully operating its Fish for Tomorrow programme, it is vital that it leads this project to maximise outcomes and minimise costs.
2. Ripple Africa should be funded to set up an office in the National Park area from which a small field team will operate. This will enable us to develop our Fish for Tomorrow project which will train communities about the problems and solutions, and empower them to enforce the bylaws. Ripple Africa will be a key catalyst to help the various stakeholders to communicate better and work in partnership with each other. We aim to assist capture fisheries and protect the habitats of the mbuna fish.
3. There will be a need for some capital expenditure; for example:
 - office desks, smartphones, a laptop and printer for the Ripple Africa office;
 - motorbikes for key Ripple Africa, Parks and Wildlife and Fisheries staff;
 - smartphones for key Parks and Fisheries staff;
 - two drones, complete with computers and external hard drives for backup;
 - and, ideally, we would like to include a suitable boat for Parks and Wildlife for enforcement.
4. Monthly running costs will be needed for:
 - transport costs – i.e. motorbikes and a contribution towards running costs of Parks and Fisheries vehicles for project activities;
 - cell phone costs;
 - necessary project subsistence costs for key staff for Ripple Africa, Parks and Wildlife and Fisheries.
5. In order to empower communities, there will be a large number of low cost local meetings which will need to be funded. Ripple Africa is experienced in keeping the costs of these to a minimum, but they are essential to secure the full and active involvement of the whole community.
6. We will need to fund the costs of radio and paper advertising, and the costs of printing leaflets for training purposes.
7. A proportion of Ripple Africa's senior management costs will need to be funded to ensure that we effectively reach the agreed objectives within budget.
8. An ongoing monitoring programme needs to be implemented to establish the cichlid populations.



Signed for Ripple Africa
1st October 2020



Domwe Island



Chembe Village Natural Resources Committee (VNRC)



Building new canoes at Msaka



Parks and Wildlife, Fisheries and Ripple Africa meeting

Ripple Africa

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