



Lake Malawi

images: Chilum (top) and Red Top - courtesy of Prof. George Turner

# Fishy Business In Africa

**Martin Plenderleith recently finished his PhD working with species of cichlid fishes. His work took him to Lake Malawi to observe these fascinating fish in their natural habitat. SCOTTISH DIVER asked Martin about his work and what it was like diving in Africa ...**

## *So what's interesting about cichlids ?*

The spectacular diversity of cichlid fishes and the short time scale over which this diversity has arisen has made cichlids a fascinating study species for scientists studying speciation (the process that leads to new species) mechanisms. By understanding how cichlids distinguish between individuals of their own species and those of very closely related species, we gain an insight into the factors that can result in speciation.

The cichlid fishes of the African Great Lakes, Tanganyika, Victoria and Malawi are renowned for their spectacular diversity. Each of these lakes is home to a large number of endemic species that are thought to have arisen over comparatively short periods of time.

Lake Tanganyika is probably the oldest of the three lakes, being between 5-20 million years old, contains around 160-185 endemic cichlid species. These species represent several ancient lineages, differing not only in their morphology and ecological niche but

also remarkably in their reproductive habits.

Lake Victoria is thought to be markedly younger, with estimates placing it around 0.25-0.75 million years old. Also core samples from the deepest part of the lake indicate that it was largely or wholly dried up as recently as 14, 500 years ago. Despite its young age the lake contains around 500 endemic cichlid species.

Lake Malawi is situated in the east of Africa with its shores bordering three countries; Malawi, Tanzania and Mozambique, with its surface lying around 470m above sea level. At present Lake Malawi is the ninth largest lake in the world, measuring around 580km in length and 80 km at its widest point. The deepest part of the lake is around 700m deep, but this can vary from year to year as lake levels rise and fall.

Estimates of the number of cichlid species found within Lake Malawi are around 450-600. Five of these species are members of the tilapiine tribe, but the

vast majority are haplochromines. Of the haplochromines, only two species are found outside of the lake basin, suggesting that the majority of the cichlid diversity has arisen within the lake itself.

## *What's the diving like at Lake Malawi?*

The sheer scale of the lake means that when standing on its lake shore it seems more akin to the sea than an enclosed body of fresh water. Wind action over the surface of the lake creates many currents that at times can give the illusion of a tidal flow.

Diving in the lake is easy even for novices, the water is fresh making buoyancy control easy. During the dry season visibility usually exceeds 20 metres. However during the wet season visibility close to the shore drops to zero as river discharge is greatly increased.

The average surface water temperature ranges between 23 and 28°C meaning that a shortly or 5mm wet suit provides adequate insulation for most dives, but it starts to get a little chilly after an hour.





*Divers in Malawi keep a wary eye for crocs*

Luwino reef though only a short distance away contains a completely different set of species and colour forms. There is a more gradual drop of with the bottom being covered with much smaller rocks than those found at Mpanga rocks. It was here that I first discovered Malawi has small fresh water crabs that are really colourful compared to our British varieties, they have blue shells with bright red joints.

I was startled when running into a catfish that was only just smaller than I was. At the time I wasn't certain of its exact species, for some reason something that size swimming at you makes you think 'crocodile'. By the time I had recovered my wits it was disappearing into the distance having been just as spooked by me. I later identified it as Kampango which as said above are

rarely seen by divers in the Lake, so suppose I should really privileged to have been scared by it.

Katale Island to the south has yet more species and yet more colour forms of the Callanos (found at all these sights but with different colours). There is a nice rocky drop off from this island with different species found at different depths. I don't know where the slope bottoms off at since at 20m it showed no signs of stopping and the camera I was carrying wasn't rated below this depth. Another good sight for diving is Otter point right at the southern end of the lake near the town of Chembe. This site is notably species-rich even in the species rich lake and is a reserve with restrictions on fishing.

Air and gear are available in Chembe from The Scuba Shack. Diving at Otter point is possible from a gently sloping shallow beach (which I used for taking trainees in) or from a boat (again locals are usually delighted to help for a small donation).

Recently there have been a number of additions to the mbuna at this site as species from other parts of the lake released at the nearby Thumbi West Island have managed to colonise the rocks. Diving here is really spectacular as the rocky slope has many swim throughs and over hangs you can look in

for some of the lesser seen species like the predatory Linni, long speckled brown fish with large extendable mouths for catching unwary fry.

Finally Thumbi West Island is a truly spectacular place to dive as year ago a fish exporter used the island as a store for fish he had gathered from all over the lake. As a result there are dozens of species present from all over the lake and at high density. The area of the island we dived is locally known as the Aquarium due to the density and diversity of fish found there.

Just lying on my back at six metres I lost count of the number of species in the water above me. Below 10m we also came across a large Kampango (catfish) scavenging among the rocks. This time I had the presence of mind to follow it for a little before it spotted us and swam off. This second encounter with these massive catfish left me wondering whether they were really as rare as I was led to believe or if I was just really lucky. The bottom here is boulder covered with a plateau at six metres that comes to a fairly steep drop off as you head away from the island. A deep dive here would have been possible but with the density of fish lower below 10m there seemed little point in any thing other than a quick dip to 17m to look for different species.

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