

care sheet african (rift lake) cichlids



Cichlids of the African Rift Lakes have gained great popularity with aquarists around the world. This is due to their fantastic colours, fascinating behaviour, hardiness, and the relative ease with which most can be bred.

The Lakes

This group of fish differs from most other freshwater aquarium fish in that they come from a habitat with water that is very alkaline, and much richer in dissolved minerals, especially calcium and potassium. The average pH of water in Lakes Malawi and Tanganyika is between 8.0 and 9.0. The general hardness is about 300ppm, and total dissolved solids (TDS) are approximately 600ppm.

The temperature stays around 26°C. Water is mostly crystal clear, with visibility of up to 20 metres. Lake Malawi and Lake Tanganyika are most important to aquarists, in terms of aquarium fishes. These lakes are extremely large by any standard, having an area of approximately 30,000 square kilometres each, and support enormous fish populations, particular of the cichlid family.

The Fishes

There are over 1500 varieties of cichlids in Lake Malawi, and Lake Tanganyika, with many not yet classified. It is quite remarkable that most cichlids of the "Great Lakes of Africa" are endemic to their own lake, (i.e. found nowhere else). These lacustrine cichlids, (ones that inhabit lakes) have evolved to occupy every niche of the oxygen-rich surface layers of water. Stratification of the lakes' waters occurs. At depths below 50 - 250 metres, no dissolved oxygen exists, resulting in a total absence of fish. Lake Tanganyika, for example, is 1,470 metres deep. Most of the small, colourful cichlids inhabit the many rocky outcrops at the edge of the lakes. Separating the rocky outcrops are sandy plains, where many large predatory species feed. This "predatory barrier" is the reason groups of fish become isolated, leading to the development of the great number of colour varieties (colour morphs) of so many species. For example, the well-known *Tropheus moorii* complex has more than 80 colour morphs recorded, with undoubtedly more to be found in the future.

The goby cichlids for instance, have adapted to the surge zone, where, with poorly developed swim bladders they hop about much like marine gobies in the surge, on the rocks and on sandy slopes. Another group, the shell dwellers, are

diminutive species that use empty snail shells on the bottom for protection, and as spawning sites. *Mbunas* is the collective name (used by the natives of Malawi) for the colourful cichlids, which live in Lake Malawi among the rocky shoreline outcrops. Utakas, on the other hand, is the name used for cichlids that inhabit open water in large schools, feeding mainly on zoo plankton.

Breeding Behaviour

Breeding behaviour of the lake cichlids is divided into two types: mouthbrooders and substrate spawners. Most mouthbrooders are maternal, where the female incubates eggs and protects the young in her mouth. Goby cichlids are an exception to the rule, where both parents share the mouthbrooding task. Substrate spawners lay their eggs on rocks, in caves, or in a depression in sand, and usually both parents protect the eggs.

Adult lake cichlids are often very territorial, especially when breeding. Aquarists should keep in mind that juvenile cichlids usually get along with each other pretty well, but once they reach maturity, care must be taken in selecting the right fish, as well as supplying adequate protection (hiding places) in the form of rocks, driftwood and caves in the aquarium.

Aquarium Conditions

The secret to successfully keeping Rift Lake cichlids is to duplicate, as far as possible, their natural environment. Below is a list of recommendations:

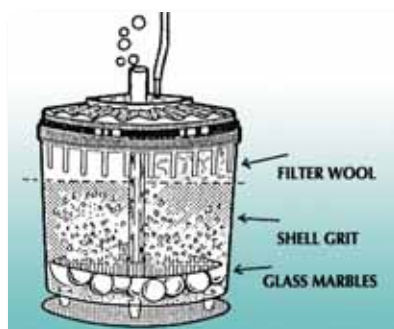
1. pH about 7.6 to 8.0.
2. General hardness about 300ppm to 400ppm. (Some species can tolerate down to 200ppm).
3. Carbonate hardness 120-300ppm.
4. Temperature 25°C to 27°C (for breeding, a little higher 28°C).
5. Adequate biological filtration to ensure no ammonia or nitrite.
6. Sufficient water circulation to ensure oxygen saturation.
7. Adequate aeration (use of airstones) to drive off carbon dioxide.
8. Sufficient water changes to minimise build up of nitrates and other toxic substances (about 1/3 every week or two, depending on population density).

Be particularly careful with Rift Lake cichlids in new, unconditioned tanks. Ammonia is extremely toxic at the high pH levels. Aquariums should be "cycled" (nitrifying bacteria established) before adding valuable fish.

Retail shops can convert any aquarium into a suitable environment for Rift Lake cichlids by simply increasing general hardness to around 300ppm, by using Rift Lake Water Conditioner. This product should also increase pH to about 8.0, as well as adding potassium and magnesium, two elements, which are essential to the well being of these fishes. The addition of a large corner box filter filled with shell grit will help keep the water around a pH of 8. Of course, the normal undergravel filter should be operating as well. By increasing carbonate hardness to about 200ppm through the addition of "KH-UP" tablets, a stable, high pH can be ensured.

Water changes must be carried out on a regular basis. Rift Lake water conditioner should be added and general hardness monitored. Extremes in calcium hardness levels well in excess of 1000ppm have been recorded in neglected aquariums. Under these unbalanced conditions fish are stressed, prone to illness, blindness, and fry will not grow properly. It is very





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Permanent or Display Aquarium

A display African (Rift Lake) cichlid aquarium may be set up using 5-10% shell grit with your aquarium gravel, plus the regular use of Rift Lake water conditioner. Make sure rocks are placed in the tank before the substrate is added, as these fishes, or for that matter, most other cichlids, are notorious diggers and will undermine rocks if they have a chance. Generally speaking rift lake cichlids develop maximum colour when light coloured fish are kept on a light substrate and dark coloured fish are kept on a dark substrate.

Mixing other fish with Rift Lake cichlids in the display aquarium is not recommended. Fishes from other environments often do not understand the social behaviour, such as territorial and aggression signals, of African cichlids. This can be very disruptive and lead to serious disputes in the aquarium. For the overall well being of these fish, keep the pH, hardness, and other water conditions within recommended guidelines by checking weekly. It is also important to feed a variety of food and to add fresh plant material to their diet. Only under these conditions will the spectacular colours of these magnificent aquarium fish be displayed at their best.

Plants

The best choices of plants are *Microsorium pteropus* (Java fern), *Acorus gramineus* (Spike rush), *Vesicularia dubyana* (Fontinalis), and *Vallisneria gigantea* (Giant val). A rubber band around the roots and a rock is useful in keeping plants anchored, despite the digging nature of the fish.

Feeding

In the lakes environment of clear, mineral-rich water, lush algae growth carpets the rocks. These algae, and the accompanying minute invertebrates, are very important to the cichlids, as this is their main food source. Many species have developed specialised tooth and jaw structures to aid in grazing and grinding the algae. The specialised herbivorous species have developed long intestines, as plant material requires longer digestive time than general feeders or carnivores. For example, the intestine of the *Tropheus moorii* is 3 times the length of its body, whereas in other cichlids, it is usually less than half this size. When feeding algae-grazing cichlids, a large proportion of their diet should be made up of vegetable matter. It is now well accepted that the disease "Malawi Bloat" is triggered by feeding an unsuitable

diet. The fish most sensitive to this problem are species within the genus *Tropheus*. They should never be fed beefheart, tubifex worms (black worms), bloodworms, or any other meaty foods or diets containing any type of animal fats.

Recommended foods are floating or sinking pellets, vegetable-flake, or commercial frozen vegetable-diets. For variety, feed par-boiled and grated or chopped zucchini, lettuce, spinach, pumpkin, or shelled cooked peas with skins removed. Frozen or live daphnia and brine shrimp can be fed, providing it makes up only a small proportion of each meal. Several small feeds are obviously a better and more natural choice. Most other Rift Lake cichlids can be fed "regular" fish foods, however it is a wise precaution to keep all animal fats, as found in beefheart, out of their diet. For all these fishes, a natural supply of live green algae is of great benefit.

Other African Cichlids

There are other popular cichlids that come from Africa, many of them riverine species (fish that inhabit rivers). These fishes do not necessarily have a requirement for hard alkaline water; however the addition of water conditioner to raise the general hardness to 150ppm, is recommended for most. Some examples are *Pelvicachromis pulcher* (kribensis), *Pelvicachromis taeniatus*, *P.subocellatus*, *Hemichromis bimaculatus* (jewell cichlid), the well-known *Pseudocrenilabrus multicolour* (Egyptian mouthbrooder), and the beautiful *Nanochromis nudiceps*.

Summary

Like other aquarium fishes, African (Rift Lake) cichlids are dependant for their wellbeing on their environment (the water they live in). Providing water quality, nutrition, and compatibility are maintained; these beautiful aquarium fish will give the aquarist an enormous amount of trouble free enjoyment.

