Taste of Tanganyika

George Farmer continues his biotope series with a step-by-step guide to recreate the home of shell dweller *Neolamprologus multifasciatus* from Lake Tanganyika.

Setting up a biotope for cichlids was a relatively easy decision. I hadn't kept African cichlids before but had always been fascinated by their highly intelligent nature and character. However, what example would be happy and at home in a 63 l/14 gal aquarium?

Research quickly led me to Lake Tanganyika and the brilliant little *Neolamprologus multifasciatus*. These fitted the bill perfectly, ideally sized at a maximum of around 5cm/2".

I decided to keep the tank a single species set-up to avoid any possible aggravation with other shell-dwelling species. I am so impressed with them that I have decided to set up another tank at work for them in the hope of raising some fry.

Automatic aquascaping

In the lake *N. multifasciatus* are found among the large empty deposits of *Neothauma* shells which effectively become their home. They sleep in them, use them for cover, spawn and eventually raise their fry in them.

Substrate is fine sand which these fish move around tirelessly, turning any tank into an automatic aquascape!

A male will typically establish his territory around several shells and entice females to live in them, forming a small colony in his area. Over time craters will be dug around the shells, but they are not buried, as with other shell-dwelling species. *N. multifasciatus* will dig around the shell right down to the aquarium glass, beginning by scooping sand in their mouth from one side of the shell. Swimming some distance from it they release the sand, often on a neighbour's territory. In my set-up they like to sprinkle sand all over the fake rocks.

Once they have made headway with their mouth, they will force their way under the shell, swinging their entire body from side to side. Eventually they force their way right underneath the shell and out the other side. They have even moved large grains of gravel that must have weighed more than themselves.

I would not be surprised if they manage at some point to move the artificial rocks!

Aquarium maintenance

To keep on top of water quality I have used an oversized external canister filter rated for a 500 l/110 gal aquarium, filled with sponges and ceramic media. Flow rate is adjustable and reduced to mimic the slow circulation of Lake Tanganyika.

The filter is cleaned in old aquarium water once a month. One third is changed each week and nitrates are tested to ensure they are kept to a minimum. The water is crystal clear and enhanced by the 9,000K T5 lighting and glassware.

This, in combination with the OptiWhite glass, gives an incredibly clean-cut appearance. None of these are really essential, but they do look good.

The fish are fed three times a day on a combination of various high-quality dry foods and enriched frozen brineshimp. The lighting is set for four hours each evening. There are no plants to grow, so limiting lighting intensity — one only of four available tubes — and the photoperiod helps minimise nuisance algae.

I wipe the glass with an algae magnet just before performing a water change and the glass lily pipes are carefully cleaned once a month.

Tank profile

Aquarium: 60 x 30 x 36cm/24 x 12 x 14", 63 l/14 gal.
Lighting: Any will do on this set up.
Filtration: I used an external filter, but an internal filter would also be fine.
Heater: 100w heater thermostat.
Substrate: I used a mixture of CaribSea Sunset Gold and Moonlight Sands (9kg total).
Décor: Artificial rocks: Unipac Okiishi artificial rocks (sizes OR/1, OR/3, OR/5), plus Dorset pea gravel and Unipac Zambezi gravel.
Fish: Seven *N. multifasciatus* (two male and five female). Other shelldwellers are also suitable.
Cost: Under £200.

THE HABITAT

The lake and its cichlids

Lake Tanganyika has more than 250 described cichlid species, although many are still likely to be either undescribed or undiscovered. Geologists say that it was formed between three and ten million years ago, making it considerably older that Lake Malawi which is a mere 40,000 years old.

Lake Tanganyika is situated along the East African Rift and creates borders between Tanzania and Zaire. It measures 708 km/440 miles long and up to 80 km/50 miles wide. Some parts are around 1.5 km/1 mile deep.

Unlike other large lakes Lake Tanganyika does circulate, giving rise to a theory that, at its extreme depths, it is heated by the earth's core. However, although incredibly deep, the cichlids are confined to the 'shallower' parts or upper layers of the lake due to oxygen levels.

The surface temperature ranges from 23-31°C/73-88°F, but most fish come from areas at 24-29°C (75 to 84°F).

Cichlids from Lake Tanganyika vary greatly in body shape as they have evolved and adapted to the ecological niches of the lake to survive. Cichlids in Lake Malawi have a rather more uniform shape. Most Tanganyika cichlids measure 5-35cm/2-14".

PHOTOGRAPHY: GEORGE FARMER

HOW TO SET UP YOUR TANGANYIKA TANK

1 Choosing your aquarium

I used a 60 x 30 x 36cm/24 x 12 x 14" tank, but any tank this size or bigger will do. Mine is an OptiWhite braceless, rimless aquarium which is low in iron and has visibly higher clarity. This, combined with overtank lighting, results in a very clean-cut appearance.

2 Adding the substrate

The first type of sand is added. It is called CaribSea Sunset Gold and packed with a water conditioner. It is very fine and ideal for energetic digging fish like shell dwellers.

This sand on its own was too dark so I decided to mix it with a paler type.

3 Mixing some paler sand

The second type of sand is added. This is CaribSea Moonlight/Marine Sand and is almost white in colour. The two are mixed together by hand in the aquarium and the effect is a natural looking pale sand. Total sand added is 9kg/19.8lb to a depth of around 4cm/1.6".

4 Smoothing out the sand

I smoothed the sand out with a paintbrush, a technique often used by aquascapers. However, given that shelldwellers dig so much, it's really not necessary, as the fish are going to re-aquascape the tank for you as soon as you add them...

5 Positioning the rock

Main rock is added and this, from Unipac, is called Okiishi (size OR/5). I have drilled extra holes to encourage air to escape when filling with water. Positioning is key to enhancing the aquascape and I experiment with combinations. Do this before adding water.

6 Adding depth with rock

Two more Okiishi artificial rocks are added. Size OT/3 is positioned vertically behind the main rock, adding a further sense of depth. Size OT/1 is added to the right, leaving a pathway between small and main rock. There is plenty of open sand space to add shells behind the rocks.

7 Placing shells and gravel

Fifteen shells are added, most with openings uppermost. I could not source *Neothauma* shells so used some of my daughter's collection. It took some persuasion, but she's happy they have been put to good use! Some Dorset pea gravel is sprinkled around bases of the rocks.

8 Enhancing nature

Unipac Zambezi gravel is sprinkled among the pea gravel and some open areas to further enhance the natural appearance of this biotope. Choosing and positioning the décor materials is a vital aspect in helping to create an effective final project.

9 Adding tapwater

Dechlorinated tapwater is added slowly and gradually using a 6mm air line. I always fill my aquariums this way when setting up to prevent clouding of the water. My tapwater is pH 8, KH 7, GH 15, making it ideal for such a Lake Tanganyika biotope.

10 Fitting the filter

Install the filter. I used glassware on mine. Glassware is ideal as it minimised the impact on the aquascape. It is fragile, so take care when fitting, removing and cleaning. The filter is already mature, so the fish are acclimatised and added the next day.

EXPERT Q&A

Matt Clarke answers some common questions on shell-dwelling cichlids from Lake Tanganyika.

What other shell-dwellers will do?
There are quite shell-dwellers around. Of these the most commonly encountered species are *Neolamprologus brevis* and *N. ocellatus*, the latter species also comes in an attractive form with gold markings. If you're lucky, you may also be able to find *N. meleagris*, which is a very pretty species.

How do they breed?
These tiny cichlids live in and around collections of shells from the snail *Neothauma*. These shells collect in the inshore areas due to the action of waves.

Both sexes can usually get inside the shell, and they lay their eggs in there, where they are protected from predators. The feisty males also defend the shells from the outside, even fighting off much larger fish.

Do they only use *Neothauma* shells?
No. Wild fish use *Neothauma tanganyicense* shells but will also spawn in the shells of *Pila*, *Paramelania* and *Lavigeria*. In captivity, they'll accept most large snail shells, but empty escargot shells and, if they're not too small, whelk shells.

What else can I keep them with?
In a 60cm/24" tank, not a lot. But if you go for a bigger tank *Neolamprologus pulcher*, *Altolamprologus* and *Julidochromis* mix well. In much bigger tanks, try *Cyprichromis*.

THE FISH

PHOTOGRAPHY: GEORGE FARMER

What they lack in size they make up for in character! You'll find it hard to stop watching these fish.

Common names: Shell-dwelling cichlid
Scientific name: *Neolamprologus multifasciatus*
Family: Cichlidae
Distribution: Lake Tanganyika
Diet: Flakes, frozen bloodworms.
Maximum size: 5cm/2".
Sexing: Males are larger.
Breeding: Spawns inside a shell, so provide them with escargot or large whelk shells.
Difficulty: Easy.
Stocking: Keep in a group.
Price: £7.95 each from Wildwoods' Mail Order Fish Service.

DIDYOUKNOW?

This fish is small but tough! In the National Geographic video 'Lake Tanganyika — Jewel of the Rift'. *Neolamprologus multifasciatus* is seen biting at a crocodile that comes too close to its home!

Where we got the fish...

Thanks to the Wildwoods Mail Order Tropical Fish Service for supplying the fish we used in this set-up. They arrived mail order in perfect condition, boxed, triple bagged with oxygen and heat packs. See: www.wildwoods.co.uk/mailorder.html

PHOTOGRAPHY: GEORGE FARMER

Upturned shells help replicate this fish's ideal wild habitat