

Photographing the spawning of whitebelly damselfish.

By Alexander Mustard

At Visions in the Sea 2001, I was asked to speak on the subject of “Capturing fish on their best behaviour” to give tips on how to photograph the natural behaviour of coral reef animals. And although I dragged the talk out for most of an hour, in my opinion the key to this type of photography can be summarised in a sentence. To learn as much as possible about the subject before entering the water.

Knowledge is everything. With understanding we can select a common and easily approachable subject, know how to recognise and predict its behaviour and select the optimum photographic equipment to capture it. Field experience is, of course, invaluable; but with prior knowledge, quality field experience can be accumulated much more quickly.

If I had to recommend one subject, as an ideal introduction to taking photos that show a bit more about the lives of reef animals, it would be the reproduction of the whitebelly damselfish - WBDF (*Amblyglyphidon leucogaster*). In this article I will introduce some aspects of its biology and relate some of my experiences photographing this species spawning in the northern Red Sea, I hope these will be of help when photographing this species.

The whitebelly damselfish is a widespread species, tending to live on the upper parts of reef walls and pinnacles from the Red Sea eastwards throughout the Indo-West Pacific region. This species lives in groups feeding on plankton brought to the reef by the prevailing currents. The WBDF is generally unafraid of divers probably because of its comparatively large size and deep body which makes it quite a mouthful for predators. As a result it is possible to carefully approach this species close enough for photography without disturbing its natural behaviour. This is ideal! In fact, often I feel that I should stop my photographic sessions with this species because I fear that they will soon start laying eggs on my port!

During the mating season, which in the Northern Red Sea lasts from May to September, one can usually spot mating activity on almost every dive. The start of the mating season in this area is probably controlled by water temperature, with things tending to kick off once it is above 22s°C. On a daily basis, the first dive of the



Our subject, the whitebelly damselfish, Amblyglyphidon leucogaster. This male was easy to approach because he was guarding eggs at the time. Nikon F100 + 60mm. Subal housing. YS120 + YS30 flashes. Fuji Velvia.

morning coincides with the climax of mating activity, which is also a great time of day to strap on the macro lens, while waiting for brighter light for wide angle. But spawning will continue throughout the day.

Furthermore, you should be able to catch the show whenever you travel because studies have not found any relationship between mating and the cycle of the moon and the tides in the Northern Red Sea.

Males and females can be differentiated by the different shapes of their genital papilla, or to get technical, their bits. However, when watching their spawning it is easiest to tell them apart by their behaviour. Male WBDF defend nest sites on the reef, these are usually an area of dead coral or a



A male stands guard while a female lays eggs behind. Nikon F100 + 105mm. Subal housing. YS120 + YS30 flashes. Fuji Velvia.



The eggs of the WDBF close to hatching. Nikon F100 + 105mm with +2 diopter. Subal housing. YS120 + YS30 flashes. Fuji Velvia. raid.jpg -

seafan although man made objects are often favoured where they are available. The flanks of wrecks, mooring attachments etc are often top of a male's shopping list. Once a male has selected a mating site, he sets to work with a bit of spring cleaning, pecking away at the substrate. Males are territorial and will defend their permanent nest site throughout the breeding season, and once the nest reaches

his standards, it is time to attract a mate!

While the male is busy working away preparing the nest site, the females tend to be up in the water column in a loose aggregation feeding. This is of course vital, because the females must be in peak condition to produce the energy rich eggs. Females periodically break off from feeding and wander through the males' territories.

Once attracted to a nest the female will face upwards and start to deposit eggs. Egg laying is a stop-start affair with females regularly taking breaks or being chased away by the male. An entire egg laying episode takes on average about an hour, which usually fits in pretty well with my dive profile, although laying can stretch to over 2 hours.

Most females will only spawn with a single male on a given day, and in the north Red Sea an individual female generally spawns every other day. Desirable males quite often have two or more females laying eggs at the same time! I am pretty sure that if you look carefully, you can see the corners of the male's mouth upturned at this time. Apparently, the luckiest reported male had 5 females in his nest at once! According to studies, the male generally waits until the females have stopped laying before fertilising the eggs.

Although I often see males moving along behind the female, apparently this is just to encourage her! The male will often stand guard, chase off predators or try to attract other females once the first female is busy laying.

A recently laid clutch of eggs is pink, but they darken to grey in 2-3 days and then to black after 4-5 days. The eggs hatch during the night after 5 to 8 days, with the time shortening as the water warms up. During this time the male guards the eggs both day and night, although males still feed on passing plankton during this time. Males are good guardians and it is very rare for a clutch of these energy rich eggs to disappear before they hatch.



(Left) On rare occasions the nest of the WBDP may be raided by a variety of reef fish. Nikon F100 + 17-35mm. Subal housing. YS120 + YS30 flashes. Ektachrome extracolour.

(Below) A male WBDP cleans his nest site. Nikonos RS + 50mm. YS120 + YS30 flashes. Fuji Velvia.



Males are also very easy to photograph at this time! On only one occasion I have seen a nest raided by other fish. The raiders included Klunzinger's, birdmouth and even cleaner wrasses, as well as butterflyfish and angelfish.

After hatching the larvae drift amongst the plankton in open water feeding and growing until they metamorphose into juvenile fish and settle

back on the reef, about a month to 6 weeks later.

Parental care of eggs laid on the reef is a just one example of the ways in which coral species reproduce. The advantages of this strategy are clear - by looking after the eggs through the early stages of their development the young inherit a much better chance of survival. Also by dividing the work, with females producing the eggs and the males looking after them, the reproductive output of the species is increased. You don't have to be Darwin to see how natural selection would favour such a strategy! Although this is just one of the 4000 or so species of fish that can be encountered on coral reefs, the WBDP is an ideal tutor. It is common, approachable and during the mating season you can find it at it on almost every dive - in short an ideal starting point for taking pictures that show that bit more about the inhabitants of the coral reef.

Alexander Mustard

The author has a PhD and works as a marine biologist at Southampton Oceanography Centre. I would like to acknowledge Dr Denis Goulet whose research on the reproduction of the WBDP has enabled me to take more meaningful images of this species.

Whether you're on the water, in the water or by the water, we can cater for all of your needs.

With helpful and experienced staff you will find it easy to get the exact kit to suit you.



**11 - 14 Northumberland Avenue
London, WC2N 5AQ**

Tel: 020 7930 5050

Fax: 020 7930 3032

OCEAN LEISURE

email: info@oceanleisure.co.uk