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Photo & Videography

The biggest advantage: using long focal lengths from 100 to 200mm results in a greater distance to the subjects. This is a prerequisite for catching special behaviours of animals. The picture shows a Coral Grouper on the Maldives enjoying the "service" of a cleaner shrimp. Long focal lenses are great tools, but keep in mind, they swallow a lot of light! To work with recommended aperture of 22 or 32, two strobes with guide numbers 16 are necessary for 100ASA

By Kurt Amsler

Mastering

M Macro

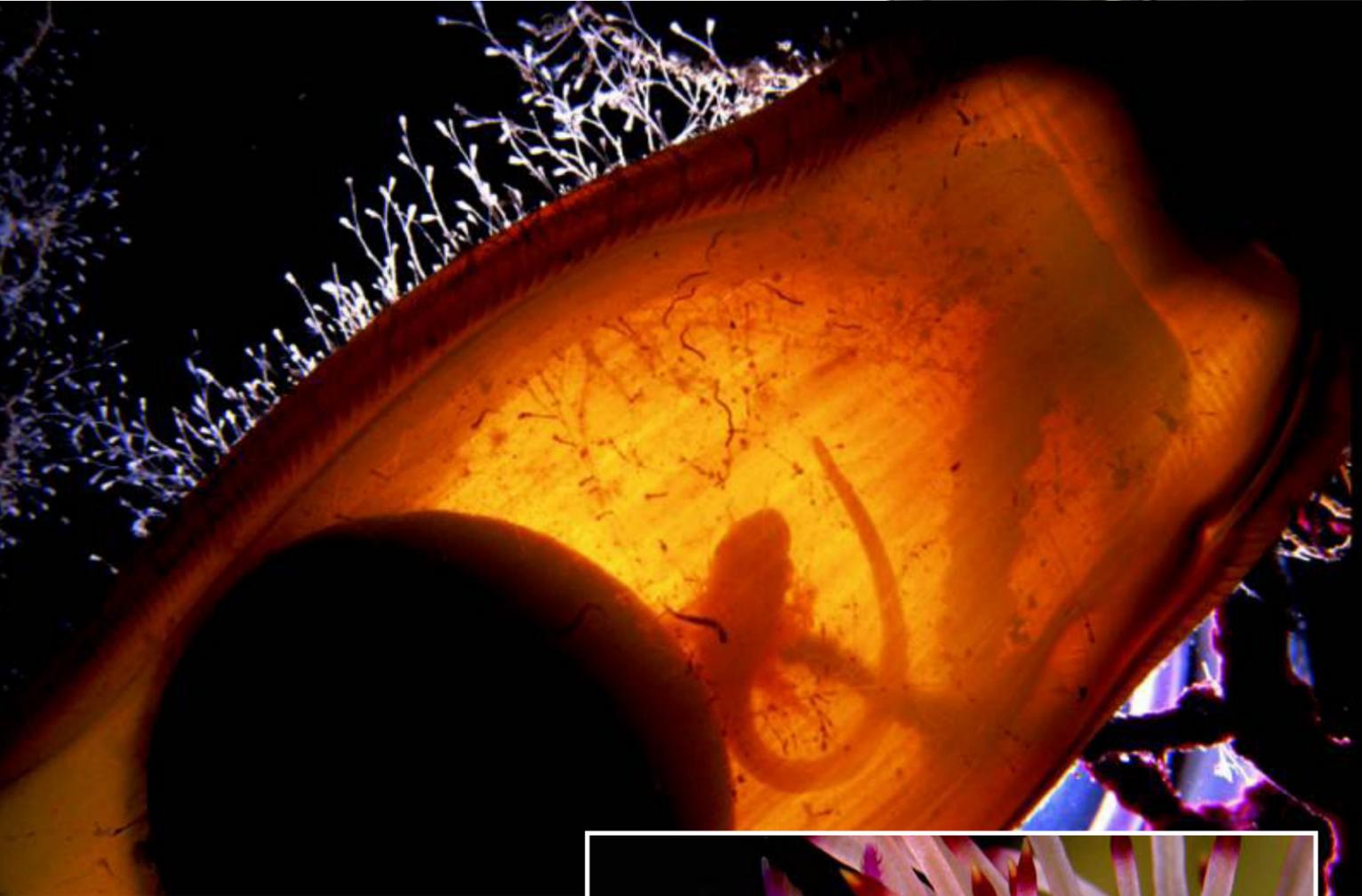
Differences of opinion have have raged throughout history as to where close-up photography ends and macro photography begins. For underwater photographers this question tends to

be academic, though: all we are trying to achieve is detail and the best angle and frame to make the most of it. Thankfully all underwater cameras allows the use of all the lenses that make sense when we try and get close and personal.

Equipment

Close-up photography under water is not technically challenging. Thanks to TTL metering or the immediate feedback offered by shooting digital, exposure is a piece of cake. Also, all your tried and proven techniques that you have learned on dry land works under water as well.

Within the scope of this article, we define macro photography as ranging



No other technique in UW-photography gives more possibilities to play with light. This picture shows the embryo of a Mediterranean cat shark. The females of this species are one of the few sharks who place their eggs on gorgonian corals where they remain alone until the baby sharks hatch. To make the baby shark visible, the slave strobe was placed behind the egg



The nice thing about Macro photography is that the subject can be fare to spectacular, exceptional and hard to find. Simple creatures, such as this Polynesian sea urchin, make nice pictures. With the Macro camera, photographers do not have to swim mile and miles to find subjects to shoot. Transform your eyes to "short distance" and be patient enough to investigate one single rock or coral head. Most the time, you'll find more subjects than your film can capture

between a reproduction ratio from 1:3 to 1:1. A 1:3 ratio means that the subject's reproduction of film is a third of the actual size. Likewise, a 1:1 ratio means the that the subject gets reproduced on film in its actual size. To take pictures in the macro range, we need special macro lenses and a corresponding flat port for the underwater housing.

Macro lenses can usually focus continuously from infinity down to their maximum reproduction ratio. Alternatively, the standard lens (around 50mm focal lens) can be used in conjunction with distance rings. However, distance rings restrict the lens to a certain focus range close up, and as they can't be removed during a dive, this option has its limitations. A "classic macro lens" has a focal length of 50 to 60mm and f1:2.8.

Focal lengths of 100 or 105mm or 180 or 200mm don't result in a larger reproduction ratio but enables the photographer to keep a greater distance to the subject. This can be a distinct advantage,

even a necessity, when attempting to photograph shy creatures.

Technique

There are some distinct differences between extreme close-up photography and other techniques. Due to the long extension seen in macro lenses the distance to CCD-Sensor or film is increased and this drastically reduces light transmission.

Owners of TTL strobes (for film cameras) have distinct advantage on this point as they don't need to calculate how to compensate for this reduction. Automatic strobes for digital photography, on the other hand, does not have this important feature anymore, because the photographer can immediately control the exposure of the image—particularly, by checking the histogram, which is the most accurate method.

Focus can also be a challenge in close-up photography, with the depth of field dropping away exponentially as the



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To achieve a blue background—rare to see in macro—look for subjects, like this wire-coral, which can be photographed against the surface. Don't change the recommended smallest aperture of 22 or 32, but bracket with long shutter speeds from 1/15" to 1" of a second. For proper composing, a diagonal placing of subjects is most times the best solution

photographer enters the macro range. Focusing manually to place the few millimetres of focus at the right distance can be challenging and result in many close misses. This is especially true when light conditions are low. Therefore, a low power focus light can come in handy. Once more, experience shows the budding underwater macro photographer is best served by relying on auto-focus.

This mode focus on a point in the finder selected by the photographer much faster and more precise than the eye. Put your camera on servo-autofocus (position S). In this mode, you can make sure the selected point stays sharp while you compose the frame. Wait for the right moment and then release the shutter. If necessary, small adjustments can be made by moving the camera forward or back.

Exposure

Short depth of focus is also the reason why we stop down the aperture of our macro lens as far as possible to compensate. Macro lenses from all the major brands therefore allow stopping down to f32. But when we combine this with the loss of light due to increased distance between lens elements and film plane,



This photograph of a rare red fire-coral, only found north of the Maldives, shows the effect of double strobe. On the picture on the left, only one strobe was used. The colours seem good, and against the black background, the subject may appear nice and contrasty. But comparing it to the second picture, the enthusiasm is soon gone. The difference is day and night! Here, a small slave strobe was used halfway from the back and top. The subject now appears less flat, as the second light source sharpens the edges and show small details.

or sensor, it becomes obvious that we will need a lot of light for a correct exposure.

To some extent, the short distance to the object will compensate for this as will using a 100ASA setting. It is possible to use a strobe with a guide number of only 11 with a 50 or 60mm lens. However, with



Wetdiopter on a Seacam housing

a 100mm or 105mm light, output needs to be double that. In these instances, it is better using not one but two macro-strobes, as still longer focal lengths require even more light if one is to keep the aperture down at a f22 or f32 setting. The same applies when we use tele-converters, which double the focal length of a standard lens for reproduction ratios up to 2.5 : 1.

Macro photography is a perfect tool for being creative. Lines, patterns and structures are great for composing pictures in the way you want

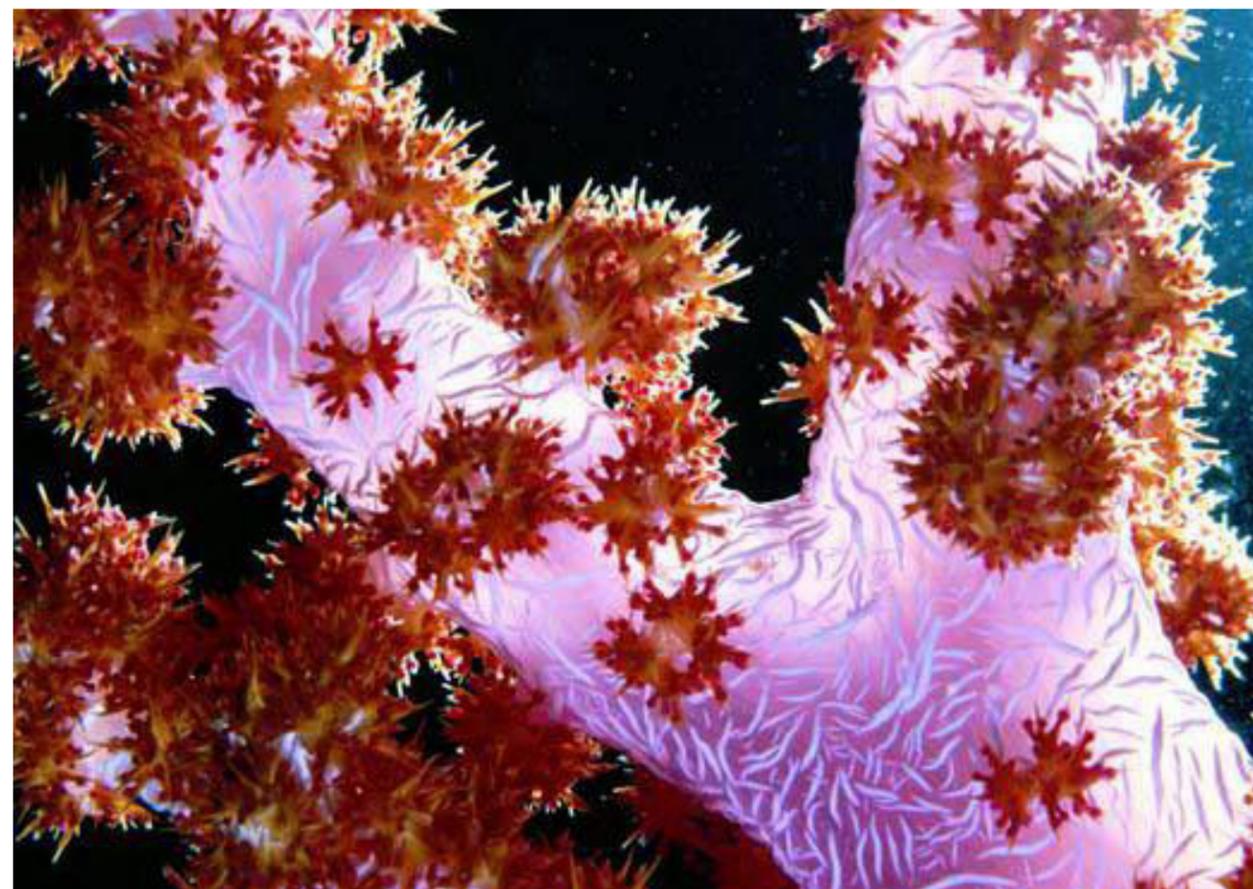
Wet Diopters

Owners of famous Seacam housings may use the so-called, "Wet-Diopters". These are additional lenses mounted on the the outside of the port to give a magnification from 1.5 : 1 up to almost 3.2 : 1 by adding them together. This system has great advantages in comparison compare to converters as no light gets lost



and, as they are attached outside the plan port, they can be removed if not needed even during a dive.

In the field, it is far better to use two or



10 Macro Tips

- 1 Very important is the isolation or exemption of the main subject. Macro photos that make the onlooker search for the main feature are usually boring. The main subject should be recognized in a second! This can be easily achieved by shooting the subjects against the water or a faraway background. Also, firing the strobe from the top can keep backgrounds in the dark.
- 2 In no other technique is playing with light so important as in macro. One strobe above the camera fits most situations. Two strobes, for example one frontal and one side light, will change the picture dramatically. Using a SEA&SEA YS-30 strobe, which

works in TTL Mode without a cable, the strobe can be fired from any direction the photographer wants or the subject needs.

- 3 Due to the very small depth of field—which is decreasing dramatically the closer you get—it is necessary to set the lens always on aperture 22, or if possible, on 32. Consider that macro lenses “swallow” plenty of light! Make sure your strobe is strong enough, or choose 100 ASA film rather than 50 ASA.
- 4 Macro photographers may never swim more than 50 meters during a dive. Macro subjects have to be observed by searching a small area cm by cm. A small torch helps anyone who requires “reading-glasses”. It is a good idea

to have the diving mask prepared with your prescription.

- 5 Your camera set up has to be “handy”! This means that even with one or two strobes, the camera has to lie in your hands absolutely balanced and weightless. If so, you will be able to hover a long time in one spot, holding the camera without straining while you wait for that small gobyfish to open its mouth.
- 6 Patience is the main ingredient here, as we can't direct the animals we're photographing. And sometimes, you need quite a lot of it while waiting for a snail to arrive in that perfect spot... Not to mention, it is NOT the way of a serious photographer to place snails and other slow moving animals by hand!

7 Proper buoyancy, diving gear, which fits to the body and exact weights, are prerequisites for successful macro photos. To hover in one spot, stabilized only with two fingertips on a dead piece of coral, will be easy then. Good diving skills and fitness will bring advantages in any situation.

8 Owners of amphibious cameras such as NIKONOS or MOTORMARINE have to use the so-called, “Macro-frames”. These frames have to be used because it is just not possible to estimate precise distances by a centimetre and have the focus in the right place. If you can unscrew it, or after gaining enough experience, take off both of the frames' sidebars, it will help to approach subjects more easy.

9 In contrast to super wide angle photography in which manual exposure definitely brings better results, macro TTL is the key to success! Everything fits perfectly to this electronically device—short distances and small picture angles. It does not matter how many strobes you've got, all the shots are proper exposed.

10 Using a modern SLR camera, auto focus can be used in 95 percent of all underwater photo situations—especially in macro where it works perfectly: Set your camera on “S” (servo autofocus); Let the camera focus on the subject; Hold the focus by keeping the shutter halfway down, or use the AFL key; Compose the picture; Shoot! ■

three smaller macro strobes rather than one single industrial strength unit. The dedicated macro strobes come with the appropriate colour temperature of 5600K for accurate colour reproduction and

are much easier to handle and position. Wide-angle strobes are built for greater distances and have a lower colour temperature, which leads to orange/red hues on close range.

Light and composition

The classic approach to macro lighting is full frontal. The strobe is mounted right above the camera, a position that assures perfect lighting for most situations. With two strobes, a combination of frontal and side lighting can be used to accent certain features, i.e. side lighting to accentuate the gills of a nudibranch, or frontal and top lighting to bring out the spines of a stone fish. To accomplish positioning, the strobe units need to be small and mounted to short double jointed arms.

As important as lighting is the isolation of the main subject. Macro photos that make the onlooker search for the main feature are usually boring. It is therefore important to emphasize the main feature by setting it apart from foreground and background. Patience is the main ingredient here as we can't direct the animals we're photographing. And sometimes you need quite a lot of it while waiting for a snail to arrive in that perfect spot... A keen eye can help, too, locating the single anemone in a reef that is perfectly

Two fingertips placed on a dead bit of coral should be all it takes to brace for camera positioning

framed by blue water. (To keep it blue shoot up toward the surface and use long exposures—1/15" to 1/8")

Etiquette

Even when shooting close-ups, environmentally conscious underwater photographers avoid any contact with reef or rock. Two fingertips placed on a dead bit of coral should be all it takes to brace for camera positioning while the diver rests suspended in the water. Good diving skills and fitness therefore are a



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As important as lighting is the isolation of the main subject



prerequisite for underwater photography. „Good behaviour” in the reef doesn't only benefit the environment but it'll make you popular with the dive guides. Remember, they all have special places away from the beaten track through the reef - places they only take divers they trust. ■



Call For Entries

DivePhotoFest

DivePhotoFest is proud to announce its inaugural photography contest. In partnership with its sponsors Ikelite and Scuba Diver Australasia, prizes range from underwater flashlights to magazine subscriptions. The contest is open to all amateur underwater photographers and to those who register as a member of the Dive Photo Fest website.

The first competition will not have a theme but will host only one category—Macro. Photoshop and image manipulation for any submitted image are acceptable.

The closing date for entries is **June 15th, 2007**. Winners will be announced on **June 25th, 2007**.

Check out the rules here: www.divephotofest.com

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Toshiba has launched a 200GB portable external hard drive measuring in at a compact 2.5-inches with a fast USB 2.0 interface. The hard drive can store up to 57,000 digital photos, 88 DVD videos or 23 high-definition videos.

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Custom Designed Protective Cases

For those who shoot topside as well as underwater—and that's most of us—there is an exciting new product on the market to protect your

camera from the extremes of what Mother Nature throws at us.

Seattle based Made Products has announced a new line of camera protection called Camera Armor. Made from a protective skin of silicone, this shield is bespoke engineered to fit a specific make and model of camera like a glove. Just like an underwater housing, it is made to fit a precise make and model of camera, so the same principles apply here.

Incorporating shock-absorbing materials, which fit over the most delicate parts of the camera and LCD polycarbonate shield, Camera Armor also sells the optional lens armor made from elastomeric materials, which are reversible and can fit over a lens up to 85mm in circumference. All controls are accessible through the protective shield, and ergonomic handling of the camera is not affected.

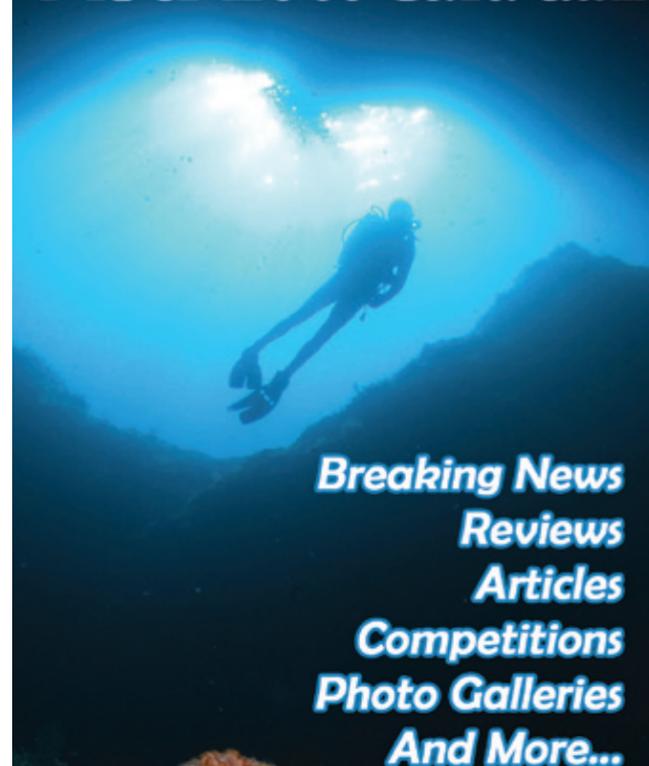
Shooting above water in wet, dry and dusty environments with Camera Armor fitted to your camera will bring peace of mind, without that back of the mind nagging "what if"?

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