



Illumination

Text and photos by Kurt Amsler. Translation by Arnold Weisz

Nice subject matter and good visibility is a prerequisite for a great image. But just as important is correct lighting.

For underwater photographers, who are not only taking photos during night dives or in caves, there are two different light sources available. The first is natural light (sunlight during the day), and second, artificial light (strobe/flash light).

Daylight is a constant light source that influences the film or the CCD-sensor in a digital camera as long as the shutter is open. This creates a photographic rule; the longer the shutter remains open with the same aperture, the brighter the image will be. Another aspect in daylight photography is the speed of the subject. To catch the image of a rapid swimming pilot whale, you should not go below 1/250 second. If you do, your image will be blurred.

Strobes, on the other hand, release their flash in a fraction of a second and are always faster than the shutter. Hence, fast mov-

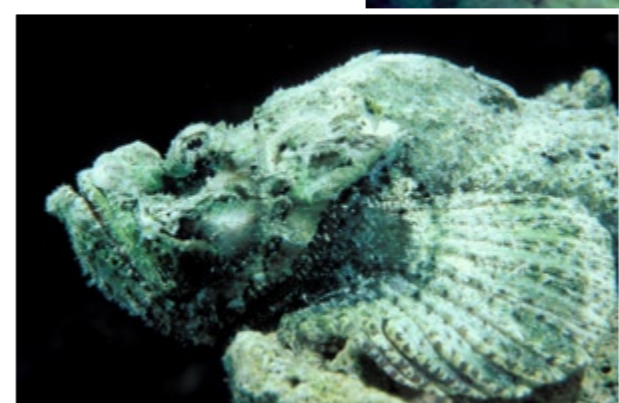
ing subjects are no problem for strobes, as the light emitted will "freeze" the subject in the image.

Exposure techniques

The most ideal subjects are sea mammals that swim near the surface. The best way to catch images of these animals is by snorkeling—in this way, a strobe is redundant. Additionally, images captured without a strobe are clearer than with one.

Even in the clearest water, you will always find particles that will reflect the strobe light. Also in wreck and landscape photography, you can often skip the strobe if the distances to the subject are

not too great. Images don't get more expressive (color rich) under water, because the



red color disappears already at three meters distance anyway.

CLOCKWISE FROM FAR LEFT: Giant tube sponges on Cozumel's Columbias Reef; wreck propeller; scorpionfish

Image techniques for under water daylight images are no different from those used above the surface. But ideally, an underwater photographer should only

work with two kinds of exposure techniques: manual or shutter priority. These are the only ways which allow you to adjust the shutter speed according to the movement of the subject.



CLOCKWISE FROM LEFT: Stingray at the Maldives; Lionfish hovers over a reef; Whale shark eyes diver in Mozambique

In manual mode uses the built-in light sensor in the camera to measure the light intensity towards the subject and sets the correct shutter speed. Working in the automatic shutter mode, the camera will take care of these settings for you. Just keep in mind the following: if the subject doesn't fill at least 60 percent of the frame, the bright exposure values from the water will carry more weight than the subject, and the camera will adjust to this. In that case, your subject—for example, a whale shark—will appear very dark. To correct for the lack of light, modern cameras have an exposure control button that you can set on 1/3 or 2/3 Positive, and the camera will slightly over expose, so the whale shark will get a better exposure.

The strobes are always faster than the subject and the camera. It is therefore impossible to reduce the amount of light by adjusting the shutter speed. To counteract this, you have to use the aperture.

Which aperture setting to choose together with each specific strobe you can often find on a table, which usually comes along with the strobe.

The main point here is the distance between the subject and camera. For those who only shoot with strobes, don't worry too much about the ambient light. This is the case foremost when taking macro or close-up images. For these kinds of images, the ambient light doesn't really matter, as the aperture is too small anyway to allow much light to hit your film or CCD-sensor. Flash-only images, where the viewer has no idea if the image was taken during day or night, are used for close-up or macro subjects.

Mixed light

As soon as you want to include more of the surrounding area or blue water, you need to take into consideration the natural light. The trick here is to mix both the strobe light and the natural light.

The strobe should illuminate the foreground of the image, and the natural light, the background. This means that you have to set the correct aperture and shutter speed on each occasion.

For example, we are taking an image of a fish and want to incorporate a saturated blue color in the background. If one uses only natural light in the image, most probably the fish will appear blurry, and the background will shine in a radiant blue because of the longer shutter speed.

If we are only using the strobe, the fish will be well illuminated, but the background will appear dark and dull. To get this kind of image perfect, you need to mix the strobe light and the natural light.

So, what's the trick? Use the aperture for the strobe and the shutter speed for the natural light. To get

a clue on the correct aperture, you can read off the table, which usually is found on the strobe. For the background, you need to trust the camera exposure meter. Use this in-built function to measure the background light—not directly

behind the subject, but about 30 degrees above. This way, you will obtain a slightly darker background because the camera will give you a little faster shutter speed and the background will receive less light.



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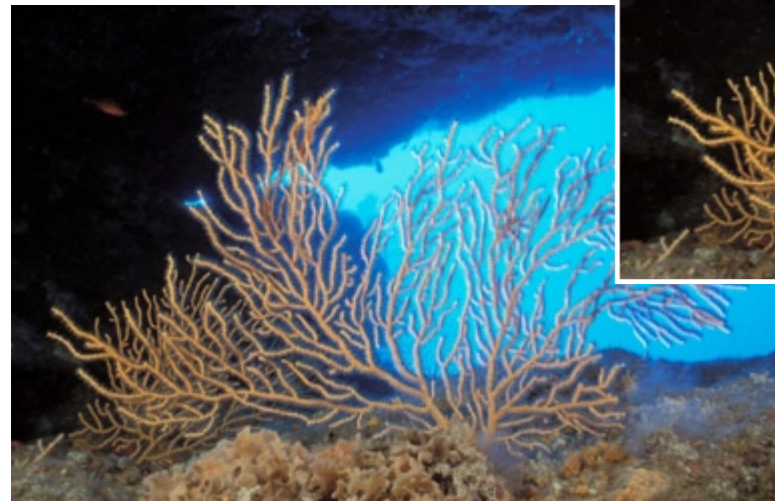


The correct mix

For example, the camera exposure meter shows aperture 8 (which we need for the strobe), and the shutter speed is set for 1/30. With these settings the shutter is still open after the strobe has gone off, allowing for more natural light, making the background blue. To achieve the perfect mix, you need to practice. A good tip here is to train your eyes to measure the natural light, at different depths, at different times of the day and within a different range of visibility. Keep this in mind during any dive, and you will learn "to read the light". This will make you able to choose, without hesitation, the correct settings for mixed light images.

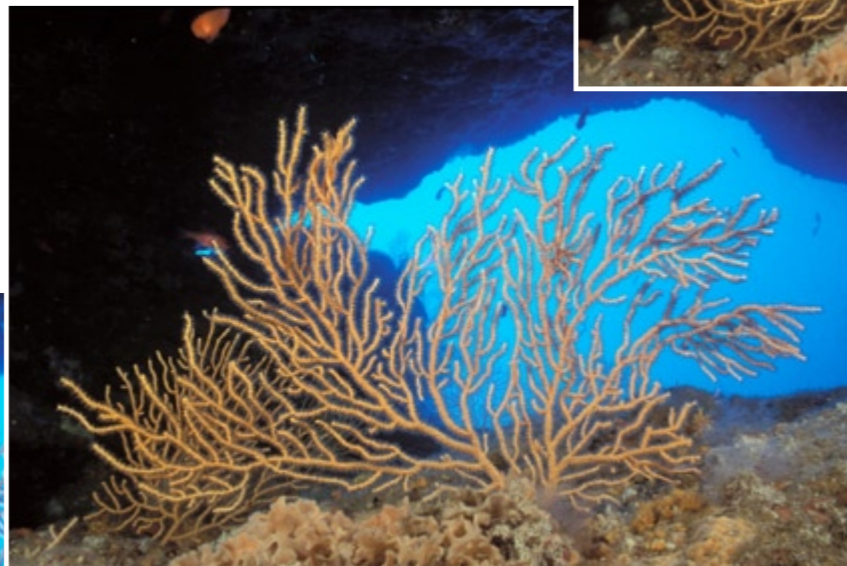
Practical tips for illumination

- Working with images in natural light



only, you have to adjust your shutter speed to match the movement of the motive.

- When taking images near the surface or in shallow water, a strobe is unnecessary. Often you may need to swim fast, and then the strobe will only slow you down.
- For natural light images, it is easier



Fan coral exposure series (top to bottom):
f8 125 seconds;
f8 60 seconds;
f8 30 seconds;
f8 15 seconds



to work with the automatic aperture. As you preset your shutter speed, the camera takes care of the aperture. You save time, and it allows you to concentrate on the subject.

- The built in exposure meter is of great help to under water photographers—specially for mixed light exposures. On the other hand, you need to have

a good comprehension of how to work with the exposure meter. Study the manual and train both on land and under water. This will help you to easily find the correct settings.

- Using strobes, there is only one rule: flash combined with aperture. As the flash-light from the strobe is always faster than the shutter speed, the only way to influence the image is by aperture.

- The exposure tables that usually come with strobes do

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not always reflect reality under water. You should always take some images with different settings of a subject exactly one meter away, and use the correct illuminated image as the foundation for your continuous work. With every change of distance by half a meter (away from the subject), you have to open the aperture by one step, or close the aperture, if you get closer to the subject. This way you can make your own table, which is adjusted to your equipment.

- Flash-only photography only makes sense when used in macro or close-up photography. For any other kind of images, in for example wide angle, you need to consider the natural/ambient light. The rules

that apply are: use flash for the foreground controlled by aperture, and get the saturated blue background by correct shutter speed.

- The background on mixed light images should always be darker than the foreground, to get a good contrast. Never measure the light directly on the subject, but about 30 degrees above (towards the surface). ■

For more information about underwater photography, Kurt Amsler and his photo workshops, visit: www.photosub.com

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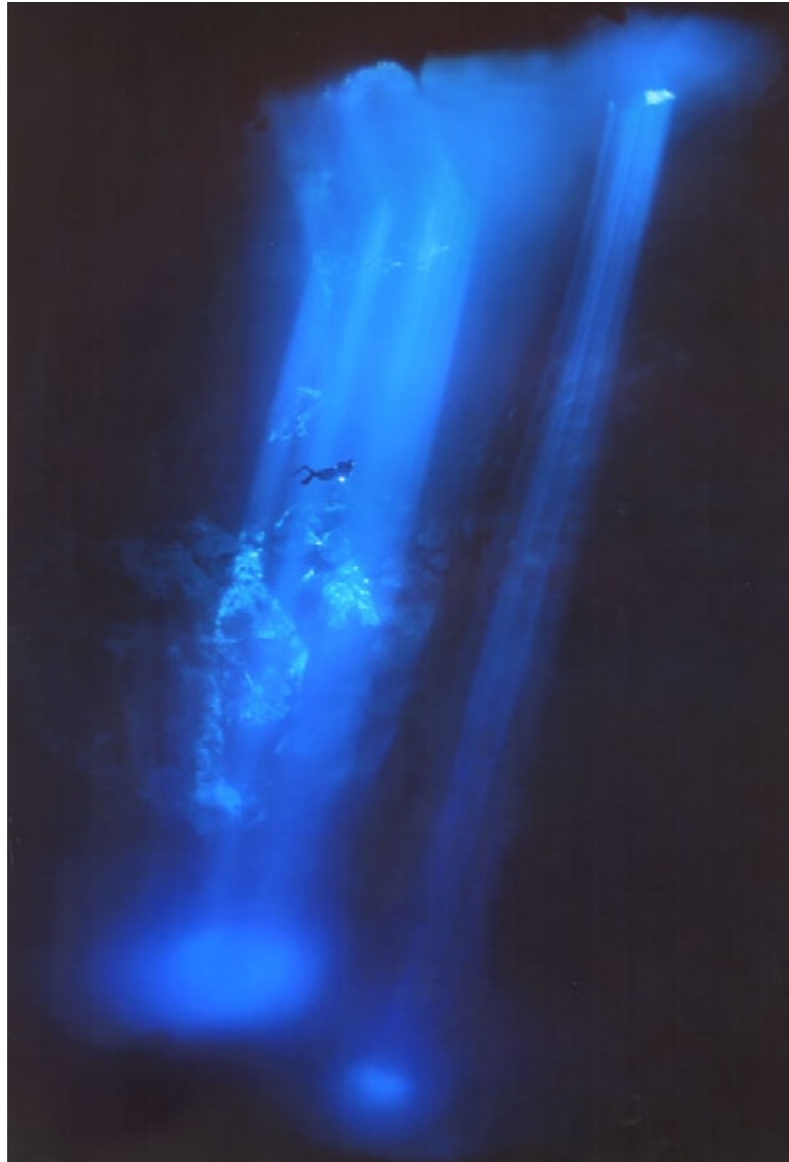
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Underwater
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Photography:
Marina
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Mikhail Vedekhin

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Andrey Narchuk



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Wide Angle:
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2nd Place
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