



Under the sea

He spends most of his days diving in tropical seas, photographing alien-like creatures, but to become a successful underwater photographer **Tony Wu** had to adapt to the challenging shooting conditions water presents. **Jade Lord** reports

FINDING yourself inside the mouth of a gigantic sperm whale, floating adrift at sea or running out of air while diving at depth are not risks a photographer is normally required to take. Yet for American photographer Tony Wu, such hazards are all part of the challenge in his quest to capture stunning scenes below the ocean's surface.

'It's a bit more complicated photographing in the water because your time is limited by the amount of air you carry and the time you can stay at a given depth without risking decompression sickness,' explains Wu.

However, these dangers are not evident in his photographs – Wu captures the magic of the marine world perfectly in vibrant Technicolor, belying the immense skill that is demanded in both diving and photography.

'Some images, from the time of conception to actually getting the image I envision, have taken me years to get right,' says Wu, who started his career in finance before becoming a professional photographer. 'When you find yourself with the opportunity to photograph something

really pretty or unusual in the water, it may be the only chance you'll ever have.'

As a result, getting the perfect underwater shot requires huge amounts of preparation and inside-out knowledge of your camera settings. Wu has travelled the world to destinations such as Malaysia, the Maldives, Papua New Guinea and Fiji, photographing for corporate clients in the imaging and travel industries. Each time he knows how the subject behaves, how the currents will be running, where the sun will be setting and, most importantly, the exact camera settings to maximise his chances of getting a successful shot.

'Knowing your settings is paramount,' explains Wu. 'I have a ritual that I follow: depending on the ambient conditions and subject, I'll decide in advance what my "jump settings" [the setup of the camera as he jumps into the water] are, deciding the aperture, shutter speed, ISO, flash settings, focus point and focus system that I think will give me an OK result if I suddenly have to turn and shoot without warning.'

It is this ritual that has enabled Wu to capture scenes that would be lost through a moment's hesitation. Unfortunately for him, his experiments to reach his current point came before he switched to digital imaging. It cost him time and money in the form of tens of thousands of wasted film exposures.

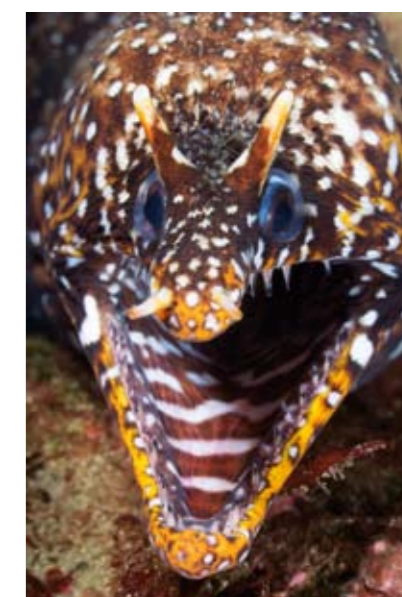
Thankfully, shooting with a digital camera has enabled him to see results immediately and also enabled him to share images in real-time through his blog and social networking sites such as Flickr and Facebook. Today, he shoots with a series of Canon DSLR bodies: the EOS 5D Mark II, EOS 7D and EOS-1D Mark IV. For Wu, the capability to shoot hi-definition video is increasingly important within his work and at this stage Canon is the best choice, enabling him to shoot 1080p video. Each camera body is kept safe within underwater housings manufactured by Zillion in Japan or Seacam in Austria, both of which allow full functionality of all camera controls. Wu says that both housings have their strengths, 'so it's nice to have

Sperm whale in profile. When shooting subjects against a blue background, Tony underexposes the background by 2 stops and lights the foreground slightly over neutral
Canon EOS 5D Mark II, 15mm, 1/400sec at f/5, ISO 200





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‘a choice of tools for each situation.’ In the past, he has also used Nexus, Sea & Sea and Subal housings.

As lenses cannot be changed underwater, Wu’s decision on what lens to dive with comes from experience and understanding the characteristics of each lens. ‘Deciding which lens to use is not that different from making the same decision on land. Underwater, perhaps one additional consideration is that it helps to understand the behaviour of your chosen subject and also the prevailing water conditions,’ he explains. The Canon EF 17-40mm f/4L USM optic provides Wu with good all-round zoom capabilities, while the Canon EF 14mm f/2.8L USM offers unique results thanks to its very wide perspective. Fisheye lenses are also a favourite, with the Canon EF 15mm f/2.8 fisheye and Tokina 10-17mm f/3.5-4.5 AF DX fisheye the models he enjoys using. Wu finds that their inherent distortion is not a limiting factor when underwater.

‘Most people are unfamiliar with underwater scenery,’ says Wu, ‘so having

‘There’s not as much light underwater, at least compared to what we’re used to on land. The deeper you go, the less light there is’

a bit of distortion isn’t as apparent as it would be with land photography. Plus, the closer you can get to your main subjects underwater, the better. Fisheye lenses allow you to get really close.’

Wu’s extreme close-ups of sea life are also achieved using a Canon EF 100mm f/2.8 USM macro and a Sigma 50mm f/2.8 EX DG macro. His choice of macro lens is again influenced by the behaviour of his subject matter.

‘I need a relatively wide and relatively narrow macro lens for different subjects, depending on their size and shyness,’ explains Wu. ‘If you’re going to shoot macro images, you really should have proper macro lenses. There are zoom lenses that claim to be able to shoot macro images, but those will never provide results like a true macro lens.’

Of course, getting close and staying close to your subject underwater has a lot to do with your skill as a diver. ‘It’s really important to hone your diving skills,’ he advises. ‘No matter what kind of camera you have or how good or expensive your kit is, if you’re not in control, you will not get good photos in the water. If you’re completely comfortable and have time to concentrate on composition, lighting, technical settings and such, you’re much more likely to nail a beautiful shot.’

Mastering your diving technique, then, as well as understanding your camera and subject matter are key if you want to achieve crisp, clear shots. Yet all these skills are wasted if you don’t understand one crucial element: light. And light in water behaves very differently to light on land.

A playful juvenile male Australian sea lion in the waters off Carnac Island near Perth
Canon EOS 5D, 17-40mm, 1/250sec at f/10, ISO 200

Top: A swarm of purple anthias fish streaming over pristine coral
Canon EOS 5D Mark II, 15mm, 1/200sec at f/8, ISO 100

Above left: Two male bigfin reef squid square off to win the right to mate with a female
Canon EOS 5D Mark II, 17-40mm, 1/200sec at f/5, ISO 320

Above right: A pink frogfish in the Eastern Fields of Papua New Guinea
Canon EOS 5D Mark II, 17mm, 1/60sec at f/8, ISO 200

‘There’s not as much light underwater, at least compared to what we’re used to on land,’ says Wu. ‘The deeper you go, the less light there is. I tend to stick above 25m in depth, which also helps avoid decompression sickness.’

Objects under water also appear closer and bigger than they really are, so what might appear two feet away will actually be more like three feet away. To ensure you don’t have images where the subject is lost in the distance, Wu says you need to use your diving skills to get as close to the subject as possible. Having to get close to your subject is also forced by the fact that water is denser than air, so any artificial light used won’t be as powerful in water as it is on land. Wu uses Inon Z220, Z240 and S2000 flashes to avoid the blue and green colour casts that can occur.

‘There’s not a lot of colourful light from the warm end of the light spectrum (red, orange and yellow), and the deeper you are, the more pronounced this is. So most of the time you need to add artificial light to bring

out warm colours,’ says Wu. Photoshop plays little part in his work, as he prefers instead to get it right in-camera, using flash and getting close.

Shooting in manual mode enables Wu to get that ‘pop’ of a bright subject against a generic blue background by underexposing the background by two stops and lighting the foreground slightly over neutral. Manual mode is also essential for dealing with rough conditions.

‘If you let the camera decide your settings, it might not pick the best ones to compensate for swell, waves or other rough conditions,’ says Wu. Having control over the shutter speed and increasing it, if the conditions permit, can minimise camera shake and ensure a sharp image in rough seas.

So how does Wu deal with the problem of making a constantly moving subject appear sharply in focus? For this he switches to autofocus and allows his camera complete control over all the AF points, concentrating on getting the subject in frame without worrying about

A dragon moray eel Canon EOS 5D, 100mm, 1/200sec at f/18, ISO 125



'If the water is really rough, sometimes it's just not possible to take nice photographs'

➔ focus when his subject is darting about. If the circumstances allow, he'll also shoot using one AF point, locking on to a point close to what he wants to be in focus and then recompose.

'One thing I advise people to try to avoid is using the centre AF point and having the centre as the point of focus all the time,' explains Wu. 'In many instances, doing this makes for a great photo, but always doing so makes for monotonous images.'

Wu's photographs are anything but monotonous. Being able to travel to remote destinations such as the Eastern Fields (a system of submerged reefs halfway between Papua New Guinea and Australia), he is able to share scenes that only a handful of divers get to see each year.

'The reefs in the Eastern Fields are pristine, with so many fish and such healthy corals that it's difficult to describe in words,' he reveals. 'The Lembeh Strait in Indonesia is also one of my favourite places to document marine life: there are few places on the planet with such a variety of alien-looking animals in relatively easy diving conditions.'

Travelling the world in search of the best marine life might seem like a glamorous existence, but rigorous amounts of research and planning are needed for such trips, and over-zealous customs checks at airports can often hamper the experience. And sometimes even the most seasoned of photographers has to admit defeat against the perils of Mother Nature.

'If the water is really rough, sometimes it's just not possible to take nice photographs,' he says. 'Knowing when not to fight a losing battle is important,' he concedes. But sometimes you just have to be stubborn, have patience and keep trying until you succeed, because for Wu nothing beats the unique experiences he is fortunate to have.

'Going to a place like the Eastern Fields puts into perspective how magnificent the underwater world, when left untouched by people, can be.' **AP**

Colourful, cute subjects like this baby longnose cowfish are always popular, says Tony
Canon EOS 5D Mark II, 100mm, 1/60sec at f/6.3, ISO 160



BUDGET DIVES

You don't have to be a professional diver to get great underwater photos – a snorkel can sometimes be all you need to get started. 'A snorkel is great for keeping up with fast-moving animals and open-ocean subjects like dolphins and other cetaceans, or for shallow reefs with lots of light,' says Wu. Here he shares his tips for amateurs looking to try their hand at underwater photography.

- 1** Start with a compact camera and buy an underwater housing for it. Many compacts provide excellent photos with a basic setup and although there is a quality difference between compacts and DSLRs, there's a substantial difference in the amount of investment required.
- 2** If you get hooked, add additional light with an external flash. Light disappears quickly underwater, so adding flash will have an enormous effect on how colours appear in your photos. Many underwater flashes sync with built-in flashes on compact cameras, making them easy to set up and use.
- 3** If you want to get close or go wide, then invest in some add-on lens adapters to give you the ability to take macro or wideangle photos. Going wider can give your subject some environmental context, while a longer focal length will help you catch finer details.
- 4** Catalogue your images using software such as Aperture or Lightroom, as a lot can be learned just by going through a daily editing process. Over time, the knowledge and experience gained really add up.
- 5** Travel to places that are easily accessible and well established, such as the Maldives, the Red Sea, the Caribbean, the Great Barrier Reef or Phuket in Thailand. These places tend to have predictable marine life, good local guides who can show you what's around, decent infrastructure and regular flights to get you to and from the locations.