

August, 2009 **PhotoWorld** Article Translation

Mostly consisting of Bruce Yates' e-mail answers to e-mail "interview" questions, translated by the magazine into Chinese, which was then taken from the Chinese characters back to English using Google Translate, which was then "cleaned up" (into grammatically correct sentences) by Bruce Yates – whew!

A Grinning Shark?

- A diving photographer's hobby and joy

Bruce Yates / Chart LI / interview Lee Xin / Editor

Editor's note: in the 2008 Windland Smith Rice International Photography Award, this close-up photo of a lemon shark underwater was selected from 20,000 entries to win the first prize of the marine (Oceans) category. A little surprising to many people is that the winner Bruce Yates is not a professional underwater photographer, but is a professional investment manager in Seattle. Mr. Yates has loved diving for many years, and in diving resorts around the world, he has shot in modesty—to learn more, but also to share...

"Latent" passion for photography

I started SCUBA (self-contained underwater breathing apparatus) diving 15 years ago. Although diving in the sea near my home is difficult—low water temperatures, strong currents, and the water is not very clear—I quickly fell in love with the feeling of being underwater there. I soon began to travel to other parts of the world diving. After a few years, I began wanting to take pictures of things I was seeing. I wanted to share with my family and other people the things I was seeing in the ocean, and also to record and remind myself of the sea and my many interesting experiences.

Underwater photography was just a hobby initially; it was the icing on the cake of my diving experience. However, I became more and more passionate about it. I became a true fan of photography. Now, I can see how each photo could have been better, and try to shoot better next time. In addition to the composition, exposure, flash and so on—the basics of photography—I now try to shoot beyond just the "proper" exposure of the photo, try to discover unusual angles and effects, to create more interesting photos. I also study the works of other photographers to learn from them. The more I learn, the more I discover there is to learn!

I am very fortunate to have been to many of the world's best diving destinations, including the Caribbean, the Red Sea, Central America, Micronesia and Southeast Asia, to name a few. Different waters are best for different things. I have seen the most beautiful corals and coral reefs in Indonesia and Papua New Guinea. For large animals such as sharks, sea lions and rays, Cocos Island, Galapagos Islands and the Bahamas are better places.

The more time I spend diving in the sea the more I enjoy it, but it is not the time submersed—or how deep I go—that makes for good diving, as long as I can see different things,. Dives in general are at a depth of 15 to 30 meters, and last 45 minutes to 1 hour. Deeper diving uses more of your tank's air, so you can stay underwater less time. Also, the most beautiful marine life is usually not far from the sea surface, so I generally stay within 25 meters underwater, even in places where it is possible to go deeper. In Indonesia, at the edge of a mangrove jungle, I have had single dives lasting more than two hours that were no more than 5 meters deep.

Nature is my teacher

My most exciting diving encounters have been with sharks, especially Tiger Sharks, which can be 4-5 meters long. They are amazing and beautiful - the top of the food chain predators – and

seeing them up close in the open sea (not from inside a cage) is an awesome and moving experience. In fact I have a love for sharks. Unfortunately the world's shark populations are being decimated as shark fins are cut off to meet people's demand for shark fin soup - sharks are caught by ships, their fins cut off and the live sharks thrown back in the water to die. I very much hope that my photos can help people to understand this horrific act, and influence people to no longer eat shark's fin soup, so that the dwindling number of shark species can recover.

My cameras are designed for shooting above water, so I need to put them in special waterproof covers. It is worth mentioning that in the sea, the light is different from the air light, because the spectrum of red and yellow light is absorbed in the top 5 meters of sea surface water layer. Therefore, underwater photographers need special underwater flashes to make up for "lost" light in order to restore the integrity of the full spectrum, the true reproduction of color underwater.

Underwater, in the beginning, I used 35mm film cameras. 9 years ago, I switched entirely to digital cameras. The camera I now use is a Canon 5D Mark II, packed in a waterproof Aquatica case (housing), and equipped with two Inon Z-240 flashes (strobes). The lenses used depend on the purpose of filming, such as the use of Canon 100 mm Macro lens for photography of small things, or Sigma 15 mm fisheye lens for larger objects, such as sharks, rays and coral reefs.

I have no formal training or education in marine biology, but I have learned a lot about the sea and marine life through diving and photography. Other divers always know things I don't, so when I see new things in the sea, there is always someone there after the dive to tell me what they are, and about their characteristics or habits. This is really wonderful. I almost always dive with other people, sometimes one person, sometimes more. I like to dive with other photographers because they take their time and stop awhile to observe and shoot, rather than hastily moving on. But I also like diving with non-photographers, because they spend their time helping me find fun-filled things to photograph!

I only began to participate in photographic competitions about three years ago, and even then, mostly just underwater competitions. Several winning photos are published here: the brown coral pipefish face won third place in one category of the 2008 Underwater Images competition, and the mating mandarin fish recently received a second prize in that same competition for 2009. But my biggest win was in the Windland Smith Rice International Award for Nature's Best Photography, where my "Cheshire Cat Grin" shark photo won first prize for the marine (Oceans) category. I was able to visit a beautiful exhibition of the winning entries in the Smithsonian Museum of Natural History, and was amazed to find my photo enlarged to a print two meters high, and hung with so many wonderful other photos.

I took that photo at sunset in the Bahamas, and the lemon shark in the photo has aroused more interest than any other photo I have ever taken. In my opinion, that is because it is a rare case of capturing a shark's face with an "expression." The camera was only a few inches from the shark's face. Using the camera's continuous high-speed mode and a fish-eye lens, I caught what looks like the shark laughing/grinning. It reminded me of the "Alice in Wonderland" Cheshire Cat's grin.

My career is as an investment manager. Photography is a hobby that I love, but I never tried to profit from my photography. When people began wanting to buy my pictures, I decided to donate all of my profits to charity. A few years ago, through the sale of a calendar of my photography, we were able to donate for kidney research more than 12,000 U.S. dollars. Currently all profits from the sale of prints and other aspects of my photography go to a very good institution (the International Children's Surgical Foundation, www.icsfoundation.org), which sends medical

teams around the world, including China, Pakistan, Vietnam and the Philippines, to correct congenital facial deformities in children. I have donated to them more than 7000 U.S. dollars, enough for operations on 25 children. My goal is to donate to them a total of 20,000 U.S. dollars, enough to completely fund one of their medical team projects.

When traveling, I try to shoot photos of people and then give them JPG files (or Raw files, if they want) of photos they are in. For me to do so entails little cost, but some photos may be very meaningful to them. One couple told me that a photo I shot and gave them a few years ago was now a framed print 1 meter square, and that it is the centerpiece of their living room.

I originally had a very simple website, with a lot of photos, both good and bad, mainly so that people I travel with could see them. Later, some people began wanting to buy prints of my photos, so I decided to get a website with this feature. I now have such as site (www.underwaterreflections.com), and I try to put on it only my better photos. It is hosted by Smugmug.com, which allows customization, and I paid a man to help me make it into a unique site. He still occasionally helps me with major issues, but I can now handle the basic operation of the site myself. The site helps in my efforts to raise money for charity, but it also provides more exposure for my photos. Each year, tens of thousands of people around the world visit the website to see my work.

I have developed a love and reverence for nature, and nature is my best teacher. The more time I spend in and near the ocean, the more I am in awe of her amazing beauty and biological diversity, and better understand that to maintain marine ecosystems, in the complex and delicate balance with humans, requires action to protect the health of marine life.

Photography Tips

Whenever people ask how to get good photos, my first reaction is, "First, shoot a lot of bad photos!" Then let good photographers take a look at your bad photos, and they may be able to tell you what you could have done differently to make the photo better. Go on excursions with good photographers, and listen to their suggestions. Underwater photography actually entails many of the same principles as other photography, and here are a few I have learned that are useful for nature photography in general.

Get Closer: As water is far more dense than air, when shooting underwater, getting the lens closer to animals is especially important, but it is important above water as well. Take a few shots, then carefully move a little closer and shoot a few more, then a little closer to take a few more, and so on. In my experience, you will often find that the best photos of animals are among the last few, closest ones.

Go More Slowly: Another thing I have learned by experience is to slow down. I too often used to act like a tourist - always in a hurry to move on, to go elsewhere to see what else might be around the next corner, and therefore only snap a few quick photos of each subject. Now, when I find an interesting subject, I might spend five minutes, 10 minutes or even half an hour with it, trying different angles, exposure combinations (such as different aperture for different depth of field), and so on. I might shoot 100 photos of a great subject, and I am surprised how often the best is one of the very last ones I took.

Think Vertical, Not Just Horizontal: We are generally accustomed to shooting horizontally, because that is the natural way to hold a camera. But many subjects are much more striking if the camera is turned vertically. Cultivating the habit of shooting vertically is not easy. I try to force

myself to shoot 1/3 of my photos vertically, and I am surprised how often the vertical shots of a subject are better.

Use Histograms: After each shot, use digital cameras' quick review feature to quickly check the exposure histogram. There are many resources online with more information about using histograms.

Shoot Raw Format: Whenever you shoot animals, scenery, or anything else you think you might be a great shot that you later want to print and frame, shoot in Raw format. The JPG format is fine for tourist shots, parties, and so on, but if you think/hope there is a chance that your subject might be "art" and be printed and hung on your wall, always shoot in Raw.

For photography underwater, once you have mastered the basics – full buoyancy control and skilled use of the camera's key functions underwater, here are a few suggestions:

Get as Close as Possible. Again, this can't be over-emphasized; the closer your camera is to the subject, the less water there is in between, and more water causes problems with lighting, distortion, etc.

Learn to Control Flash Placement. Rather than using full, direct lighting on your subjects, try to light your subjects using the very edge of your flashes' light beams.

Learn to Shoot with Manual Settings. If your camera can't seem to produce good photos, start setting shutter speed, aperture and flash strength yourself. Not only will this help you master your equipment, but it will teach you how to optimize depth of field, balance flash light with ambient light and so on. That in turn will reduce your dependence on letting the camera make decisions for you. Not many years ago I was afraid to shoot manually; I relied on TTL metering to expose my photos. Then, about 5 years ago, I bought a waterproof camera case that did not allow me to use Canon's E-TTL flash control, so I was forced to learn to control exposure manually. It only took me about two dives to become comfortable doing so, and I have shot almost entirely manually that way ever since (all of the photos you see here were taken without TTL flash control).

Focus on the Eyes. In all nature photography, underwater or otherwise, be sure to focus on animals' eyes. It is alright if a tail or other body part is out of focus in a photo, but if the eye isn't sharp, it will feel "wrong" to anyone viewing it. Since an animal's eye is often not in the center of the frame, it takes conscious effort to make the eye the focus point, lock that focus and then reframe the shot, but it can make all the difference.

With Post-processing, Less is Better. Photographers often do too much with software. If adjustments like contrast and saturation are too much, photos seem unnatural and distorted (e.g., with 99% of my photos, I don't adjust saturation at all). Software can make a good picture better, but trying to use software to make bad photos into good ones is a waste of time. If another photographer looks at your photo and cannot tell you've done any processing, you've done a good job.

I almost always shoot in Raw format, so the majority of my post-processing is done in Adobe Camera Raw (ACR). I crop most photos, and then make small adjustments to exposure. For wide-angle underwater photos, I find that I often need to adjust white balance, because cameras do not seem able to "read" white balance accurately underwater. I sometimes use curves to tweak contrast, and if a photo warrants using the healing brush tool, the one in ACR is far superior to

the one in CS4 itself, as it lets you adjust the area used for the adjustment. All this can be done to a Raw file in ACR without actually affecting the original, so when I finally open the file in CS4, there is little left to do -- just a little sharpening using Unsharp Mask. If the photo has a lot of "noise", I use Noise Ninja (which is a plugin that can be added to CS4) before sharpening.

Although I am more familiar CS4, I know a lot of photographers who are switching to Adobe Lightroom 2.0, which is cheaper than CS4 and allows processing of Raw files without having to use ACR. If I did not already own CS4, I would—based on the high praise Lightroom 2.0 is receiving from experienced photographers—seriously consider it instead.

Use the Internet. There are many online photography forums, where there are photographers at the same level as you, as well as many who know more than you do. And they are more than happy to help you improve your photographic skills.

Figure descriptions:

01. Bahamas, Atlantic spotted dolphins. Bruce Yates photo
02. Tiny crab living on a colorful sea cucumber, taken at Sorong, Indonesia. Bruce Yates photo
03. "Aerobic training" class – school of razorfish. Bruce Yates photo
04. Scrawled filefish in front of feathery crinoids and orange sponge. Bruce Yates photo
05. Mating mandarin fish. Mandarin fish mate at dusk, pairing up and rising about six inches above the coral rubble, releasing eggs and sperm simultaneously, and then immediately diving back into the rubble. The entire process takes only seconds, so I was lucky to capture them at the moment the female released her eggs. Bruce Yates photo
06. Hammer corals. Bruce Yates photo
07. Spot-fin porcupine pufferfish. This is his normal shape, unpuffed and with spines laid back flat against his body. Puffing is very stressful, so it is generally used only as a last resort self-defense. Most divers avoid harassing pufferfish so as not to cause such stress. Bruce Yates photo
08. "Cheshire Cat Grin" - Lemon shark on the surface at sunset. Bruce Yates photo
09. Caribbean reef shark. Bruce Yates photo
10. Spine-cheek anemonefish. This is my favorite anemonefish, and this one is a particularly beautiful color! Bruce Yates photo
11. Clownfish spend a lot of time "blowing" on eggs to keep them flushed with oxygen-rich water. Bruce Yates photo
12. Cleaner wrasses are usually busy around larger fish, where their tube-shaped mouths are perfectly suited to picking off parasites, on which they feed. Bruce Yates photo
13. Hiding in a crinoid, an ornate ghost pipefish looks like just another spiny crinoid arm. Because most red light is absorbed by water within 15 feet of the surface, this pipefish was well hidden. The contrast of his red color with the blue crinoid was not apparent until lit by my flash, which restored the full light spectrum. Bruce Yates photo
14. A small anemonefish (commonly called clownfish) lives among the tentacles of a white anemone. Bruce Yates photo
15. A female squid (1 foot long) laying eggs on a mooring cable. Many eggs (about 4 inches) are already linked to the cable, and more were attached to nearby rocks. Bruce Yates photo
16. Grouper with open mouth, so that a small cleaner wrasse (not visible in this photo, but seen in photo on left) can pick dead skin and parasites from its mouth. Most fish allow this and do not eat cleaner wrasses, seemingly knowing they are more valuable as cleaners. Bruce Yates photo
17. The peacock mantis shrimp is related to neither the shrimp nor praying mantis. Not only does the mantis shrimp have the most complex eye in nature, but its claws lash out at prey in the world's fastest animal action. Bruce Yates photo
18. Brown banded pipefish living among small coral polyps, taken in Indonesia. Bruce Yates photo

19. Bruce Yates with his underwater photography equipment: Canon 1Ds Mark II camera inside a Seacam waterproof case and two Inon Z-220 flashes. David Haas photo
20. Bruce Yates. Cheri Yates photo