

chapter eleven

Underwater Photography

Text and photos by Jack and Sue Drafahl

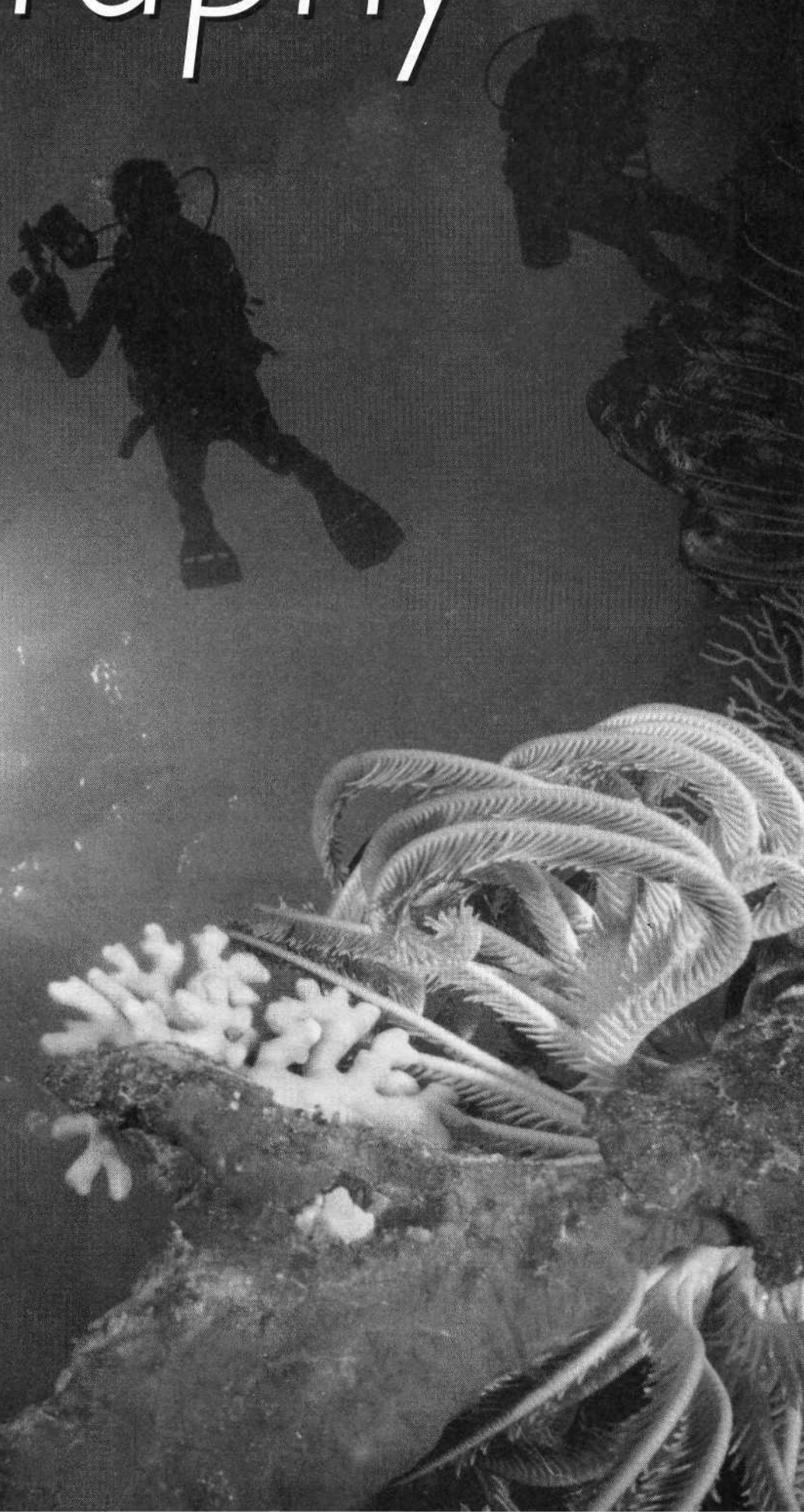
Discover a new world with your camera

As photographers expand their skills and photographic knowledge, they want to travel into new photographic worlds. One area that has always offered excitement and mystique is the undersea world. Wouldn't it be great to photograph the vivid colors and elusive critters? But just where do you start? Who do you ask for advice? What equipment should you buy? What is the best film for underwater photography? How much is it all going to cost? There are so many variables that it may seem a bit overwhelming, but not to worry. Underwater photography has evolved to a level that makes it easy for almost anyone to get good underwater pictures.

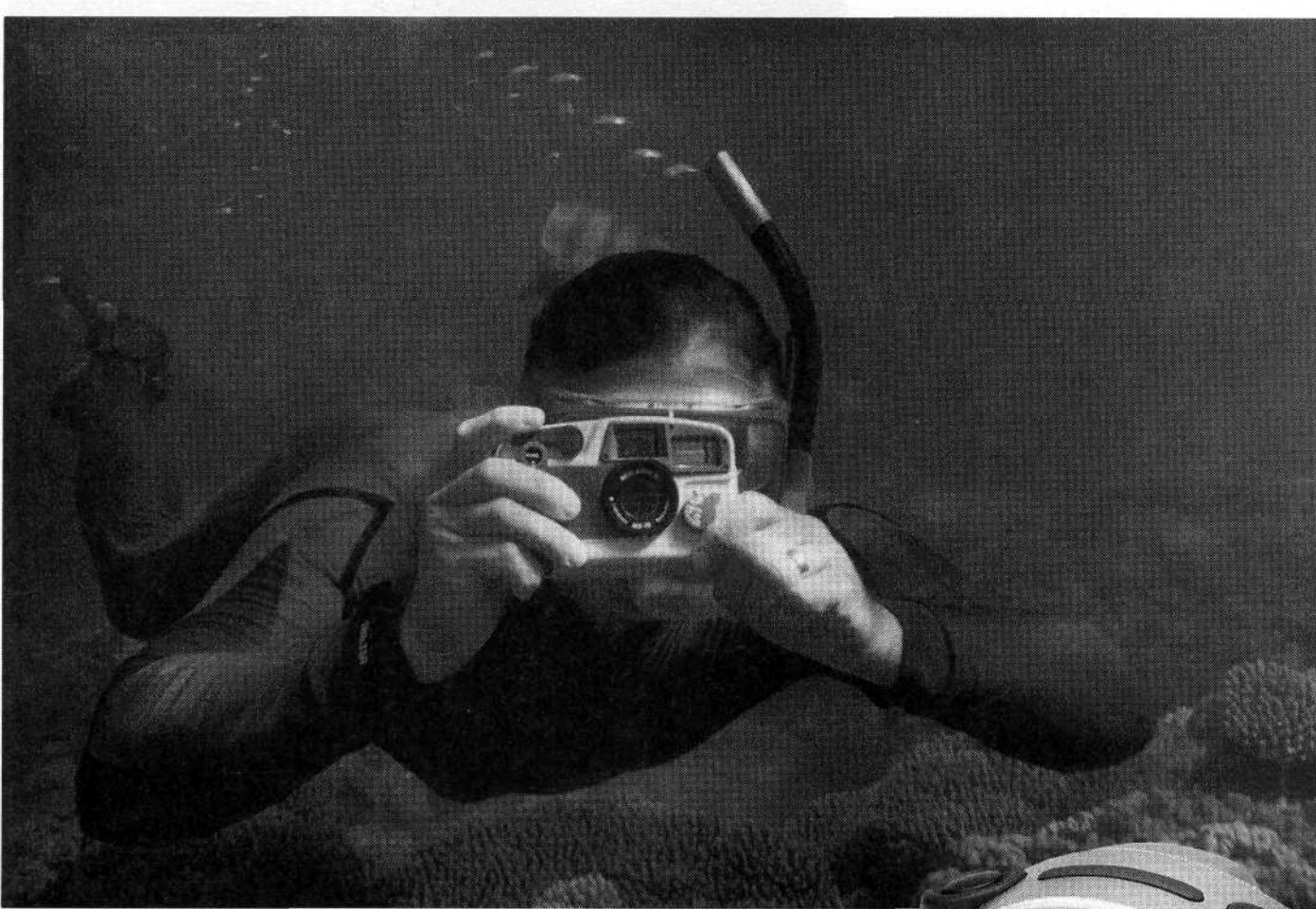
One of the first things you need to analyze before you get too involved is just why do you want to take pictures underwater? This may sound like a simple question, but it is critical to your direction in underwater photography. We often find that beginning underwater photographers desire images for their scrapbooks, snapshots to show their friends or prints to hang at the office. They may even want to put together a slide show for the local dive club. Whatever the reason, it should be clear in your mind because what you do with all your great images makes a difference when selecting your underwater camera equipment and film.

The best source of information is underwater photo instructors who offer beginning classes on a regular basis. They have learned to put their professional interests aside and provide you with the best information necessary to ease into underwater photography comfortably.

Underwater photography opens up a whole new world—literally—to both photographer and viewer. Whether you're a certified scuba diver or a sometime snorkeler, it's a rewarding—and fun—endeavor.



You don't need scuba gear and a fancy UW camera outfit to make nice underwater photos. At snorkeling depths, natural light (and a simple UW camera's built-in flash) can produce great images.



Once you have decided to give underwater photography a try, the next logical step is to purchase a camera. You want it to be compact, easy to use, and low-maintenance, yet capable of reliable results at a price that won't break the bank. That may sound like an impossible task, but we'll give you a hand in your decision making.

Snorkeling with a Camera

We suggest a small compact that maintains the freedom that you already have as a snorkeler. Avoid big bulky systems that have lots of arms, cords, and accessories. Leave those for the scuba divers. Remember, one of the advantages of snorkeling is freedom of movement. You want your camera system to fit into this philosophy. There are point-and-shoot cameras designed for snorkelers who free dive down to 12–20 feet. These cameras may be one-time-use models with a protective shell, or a point-and-shoot amphibious camera that can be re-loaded with new film at the end of each roll. Most of these cameras have a limited maximum depth of anywhere from 12–20 feet. Make sure you check the maximum depth before taking them below. Most of these cameras have a focus-free lens, and are loaded with ISO 400 color-print film. The lens on these cameras is usually a medium wide-angle, somewhere around 28–35mm in focal length. Photos from these cameras are pretty much restricted to overall scenes, divers, schools of fish, a passing turtle, or animals bigger than an underwater breadbox.

Point-and-Shoot Cameras for Divers

Since divers can go a lot deeper than snorkelers, these cameras have a more durable housing. A few years ago it was hard to find a beginning underwater camera that matched a beginning budget and still provided good-quality images. Today, almost a dozen companies specialize in manufacturing entry-level cameras. Some have a built-in flash, and may have



Canon's Elph Sport Advanced Photo System model is billed as the world's smallest and lightest UW camera.

controls for focus, f-stop and shutter speed. Most of these systems are in a separate housing where the camera can be removed and used for topside photography. Some of the more advanced point-and-shoot underwater cameras will have a couple of lens attachments and an external flash system. In the morning you can take pictures underwater and then photograph your afternoon on the beach with the same camera.

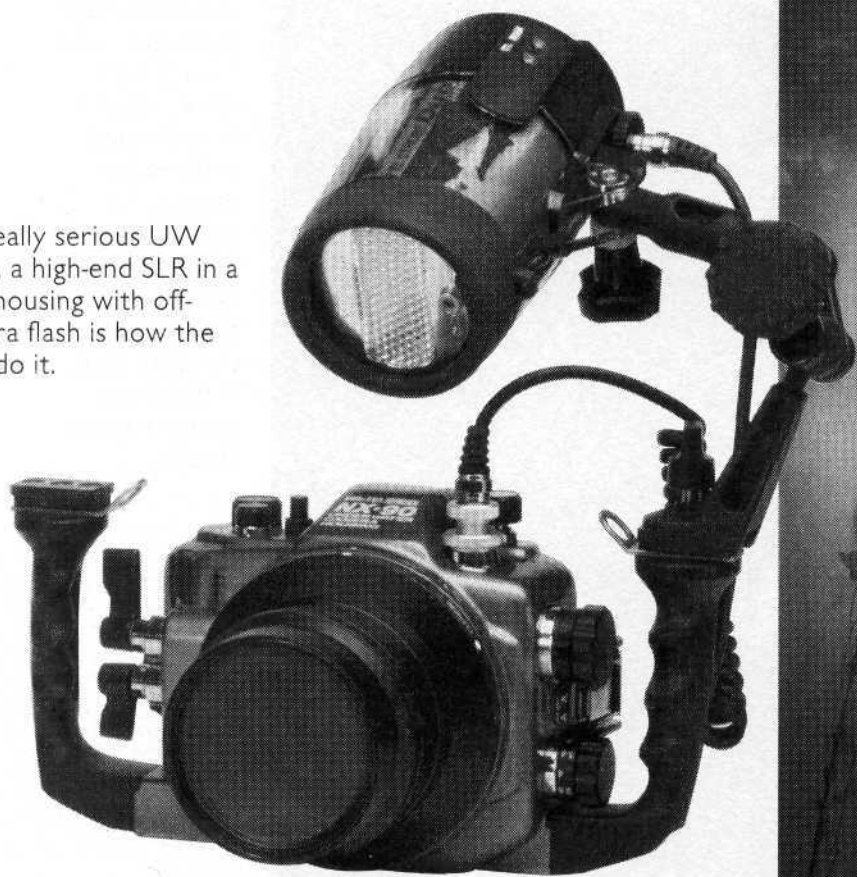
Amphibious Cameras

These cameras are especially designed for underwater photography. They look larger than a topside point-and-shoot camera, and all the camera

The Nikonos-V is a very popular self-contained UW camera among pros and serious amateurs.



For really serious UW work, a high-end SLR in a UW housing with off-camera flash is how the pros do it.



controls are sealed to keep the water out. Most have manual focus control, so you will have to guess distance, and the viewfinder only provides an approximate view of what the camera lens will see.

Amphibious cameras range from beginner level to fully professional depending on the features you desire and how much you are willing to pay. Some have special viewfinders, extra flashes, and interchangeable lenses. One manufacturer even has interchangeable lenses that can be swapped underwater without flooding the camera body!

Underwater Housing Camera Systems

This camera system is more for the advanced underwater photographer. The housings are constructed of metal, plastic, or plexiglass to protect expensive SLR land cameras from the outside environment. Most of these housings have O-ring-sealed controls, interchangeable front ports for different lenses, and accessory ports for underwater flashes. These housings are usually very expensive, bulky, and heavy. The advantages are SLR viewing, professional-quality lenses, autofocus, and all the other features that come with the sophisticated SLR cameras.

Films for Underwater Photography

So, what type of film and brand name do you use in your new camera? We recommend using color-negative film as your first film underwater. Brand name really doesn't matter. All the major film manufacturers have brought their color-negative films to such a high level that the quality difference between them is negligible. Color-negative film is a great learning tool because the exposure latitude is 5–7 stops,

Top right: Slow-sync flash lets you record nearby flash-illuminated subjects and a detailed background.

Bottom right: Compositional concepts apply underwater, too. Use another diver to show scale.



while slide film is usually less than one. When you first start taking pictures, you don't want to lose any images due to incorrect exposure. You need to concentrate your efforts on framing and focus. Your interest remains high when you get good images right off the bat. We also recommend the use of ISO 400 film over the slower films. The quality of these films today is excellent, and your increase in depth of field and flash range gives you that extra edge. As you become more proficient taking pictures underwater, you can experiment with slower films, or even try your hand using slide film.

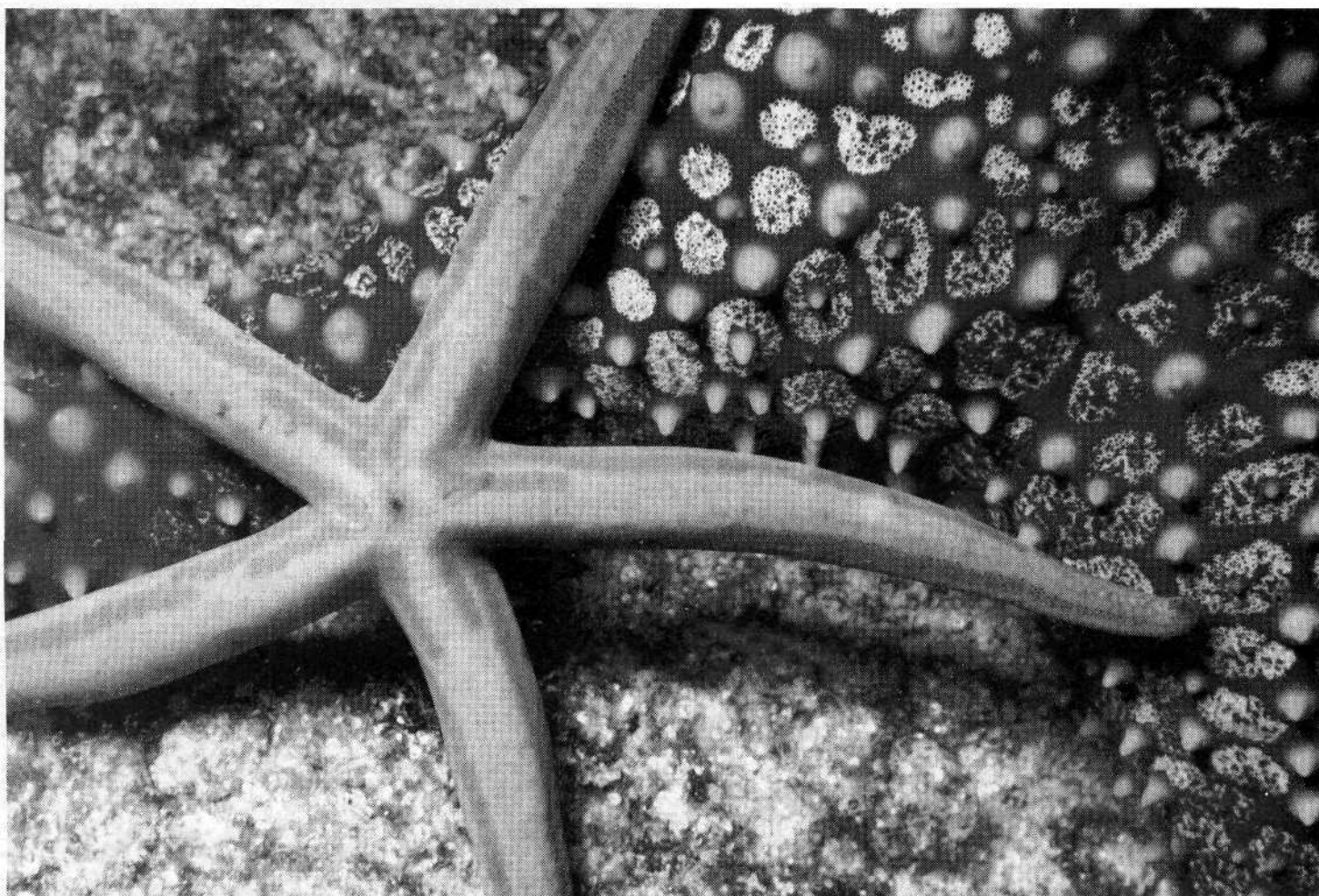
Basic Underwater Photography

Underwater photography is different than topside photography in that there are four very distinct types of underwater photography: general, macro, wide-angle, and fish



Above: Be careful not to damage fragile rocks and coral while taking your pictures.

Right: Close-ups of underwater life let the viewers of your photos visit your world from the comfort of their own homes.



photography. Each requires a different configuration of camera, flash and lens. In the early days, underwater photographers had to plan which type of photography they were going to do before the dive and set up their cameras to match those conditions. Today, photographers still have to plan some of their dives to match their intended photography, but with some of the newer equipment on the market, changing your game plan underwater is becoming a lot easier.

General Underwater Photography

Most point-and-shoot underwater cameras are designed for general photography. It is the most compact type of shooting because it doesn't require much more equipment than the camera itself. Subject matter covered in general photography includes underwater scenics, divers, or both. You can shoot fish and some larger animals, but they are usually small in the frame because of the restrictive focus distance of most of these systems.

Close-Up Photography

The easiest and most colorful type of photography is close-up photography. This is where you try and capture on film all the little critters that are no bigger than your fist. There are several ways to accomplish this, and the method depends on the type of camera system you are using. Most normal camera lenses have limited close-focus capability, so a special lens must be attached allowing you to photograph subjects close to the lens.

Many point-and-shoot camera have a close-up lens and framer system. When you want to take a close-up, you merely attach the close-up system to your camera and place the framer around the subject. A small internal flash is usually all that is needed to get a good exposure.

Some amphibious cameras have underwater extension

Wide-Angle Photography

One of the most exciting aspects of underwater photography is capturing the color of a panoramic reef and its creatures. Wide-angle photography makes it possible to capture those big undersea animals, divers and panoramas galore. Since most wide-angle underwater scenes need more than the sunlight filtering down to light the image, a strobe system that matches, or exceeds the angle of your lens is necessary. The advantage of a wide-angle lens is that distance from the camera to the subject is much less than with a normal lens and therefore there's less water for the image to go through. This in turn increases the contrast and perspective, and gives a sharper image.

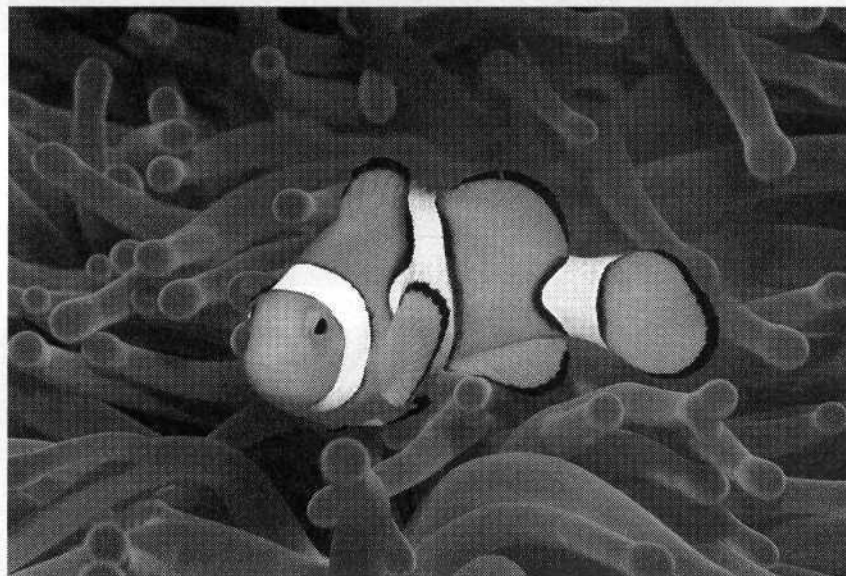
Fish Photography

If you ask divers what type of underwater pictures they want, invariably they all say fish. Too bad, because this happens to be some of the most difficult underwater photography. Fish rarely sit still or let you get close, so a special system is needed to capture fish on film. There are a couple of ingenious systems for point-and-shoot cameras that use gunsight viewers or light beams to tell you when the fish is in the frame and in focus. It is sort of a hit-and-miss operation, but as they say, practice makes perfect.

The easiest way to take fish pictures is with an SLR camera housing and a short tele (100–135mm) macro lens. The housing lets you autofocus, pan and frame the fish, and get close enough to fill the frame. Even so, many a fish has frustrated the best underwater photographer. It just takes time and patience to get those prize-winning fish pictures.

Lighting Underwater

Lighting your underwater subjects is probably the biggest problem you encounter in underwater photography. When sunlight hits the surface of the water, some of it reflects back into the sky. The light that does penetrate the surface starts to lose its warm color almost immediately. As the sun gets lower in the sky even less light penetrates the surface. As you dive deeper, the light decreases and the warm colors are reduced to a gray blue.



Top: Wide-angle lenses and the rapid fall-off in visibility underwater can really give a photo a sense of depth. This is another existing-light, looking-up-toward-the-surface photo.

Above: Fish portraits are hard to get, because fish don't pose for long, but they're among the most popular underwater pictures. Flash is a necessity for colorful fish portraits.



Shooting up against the sun can produce interesting silhouettes and beautiful photographs.

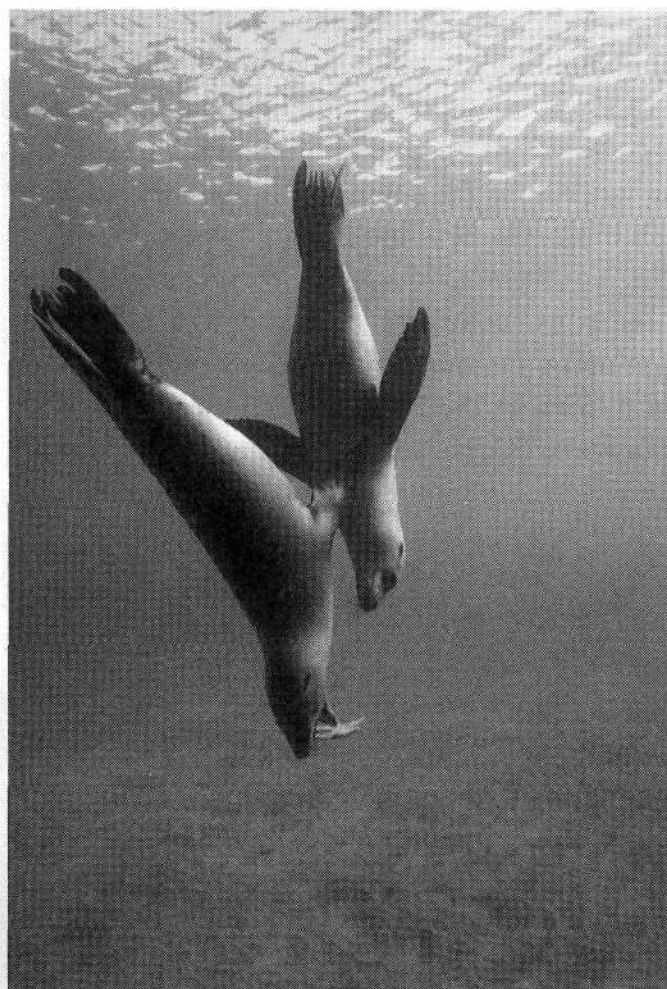
tubes and framers that must be changed topside before going underwater. Depending on the tube you select, you can photograph macro ratios from 1:3 down to 2:1 in magnification. One camera manufacturer allows you to attach your macro framer while underwater. This is great if you are photographing a tiny hermit crab and a manta ray swims by. Simply remove the framer and you are ready for that manta.

Camera housings use land-camera macro lenses specific to each camera. This allows the photographer to shoot multiple macro ratios without making any changes to the camera setup.



Left: When shooting at depth, you'll need an artificial light source if you want good color and detail in your underwater photos.

Below: UW animal life makes for great photos. Being in the right place at the right time helps, but so does staying aware of what's happening around you.



One option is to use faster film, but the pictures still lose color at depth. The next option is to add a flash system. When you add a flash, the vivid color comes back. The problem is if you place the flash too close to the camera, it will light up the particles of dirt in the water near the lens and cause backscatter. If you have a camera that has an external flash, you can move the flash away from the camera to avoid lighting up the particles in the water.

If you find your flash power is not strong enough, then you can use faster film or get a bigger flash. Underwater pros have a saying about underwater flash units: Bigger is better. Bigger flash units will penetrate the water and may even go further than the seven feet that most flash units fail to reach. The other added benefit is that the bigger flash units provide a wider-angle beam of light which provides better coverage for those wide-angle scenes.

There are two strobe techniques for photographing schools of fish. If you want to avoid the silver reflection of the fish scales, keep the strobe at a 45° angle to the school itself. If you want the silver effect, keep as perpendicular as possible. Keep in mind that if you want the silver effect, the TTL sensors may be fooled by the bright light coming back. The results will be a very dark background and silver gray fish. To avoid this problem, you should switch to manual strobe and bracket your exposure.

There are some situations where no amount of flash is going to do the job. Shipwrecks, for example, are usually in deep water and in areas with plenty of silt. Using a flash at any

distance from the camera may cause backscatter, so your best bet is with a high-speed film and as wide a lens as possible. A fisheye or 15–16mm superwide-angle lens and ISO 400 film should provide some great shipwreck photos for your wall. The higher-speed film allows a smaller f-stop, which in turn lets you shoot closer to the subject because the depth of field is increased. You should try and shoot at an upward angle to include the sun glancing over the wreck.

Parting Thoughts

Before you go on that expensive trip to test your new-found hobby, be sure to run some pool tests. This ensures that your camera works, and you are getting your desired results. Schedule your photo class before you go to make your trip even more enjoyable.

When you get your first pictures back, analyze them and learn from your mistakes. If possible, show them to a photo instructor who specializes in beginning underwater photography. Photography allows you to share your new-found paradise underwater with your family and friends—show them both the good ones and the bad. Once you start taking underwater pictures, every dive will be a scavenger hunt that has you looking for the elusive photo. A picture hanging on your wall of that moray eel you captured on film, will serve as constant reminder that you need to get back in the water soon. Don't get discouraged because it takes time to hone your skills. Enjoy the learning process, and take the underwater photography plunge. ■