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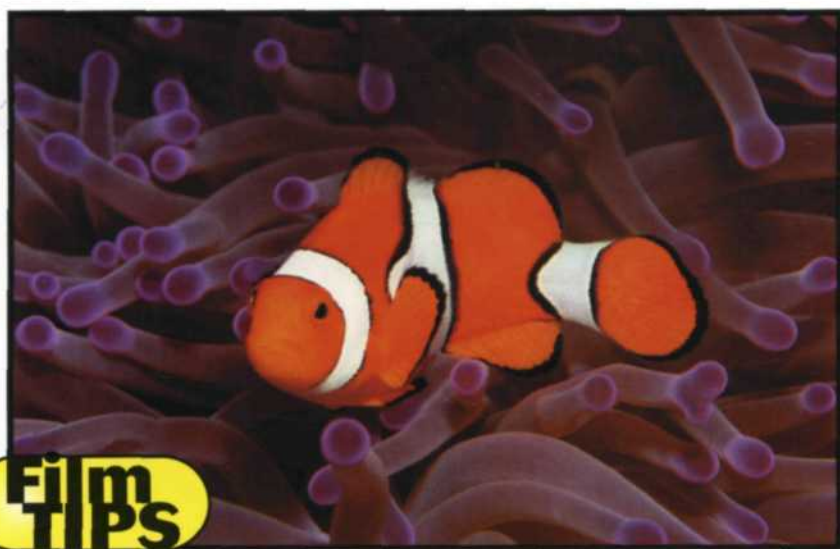
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User REPORT

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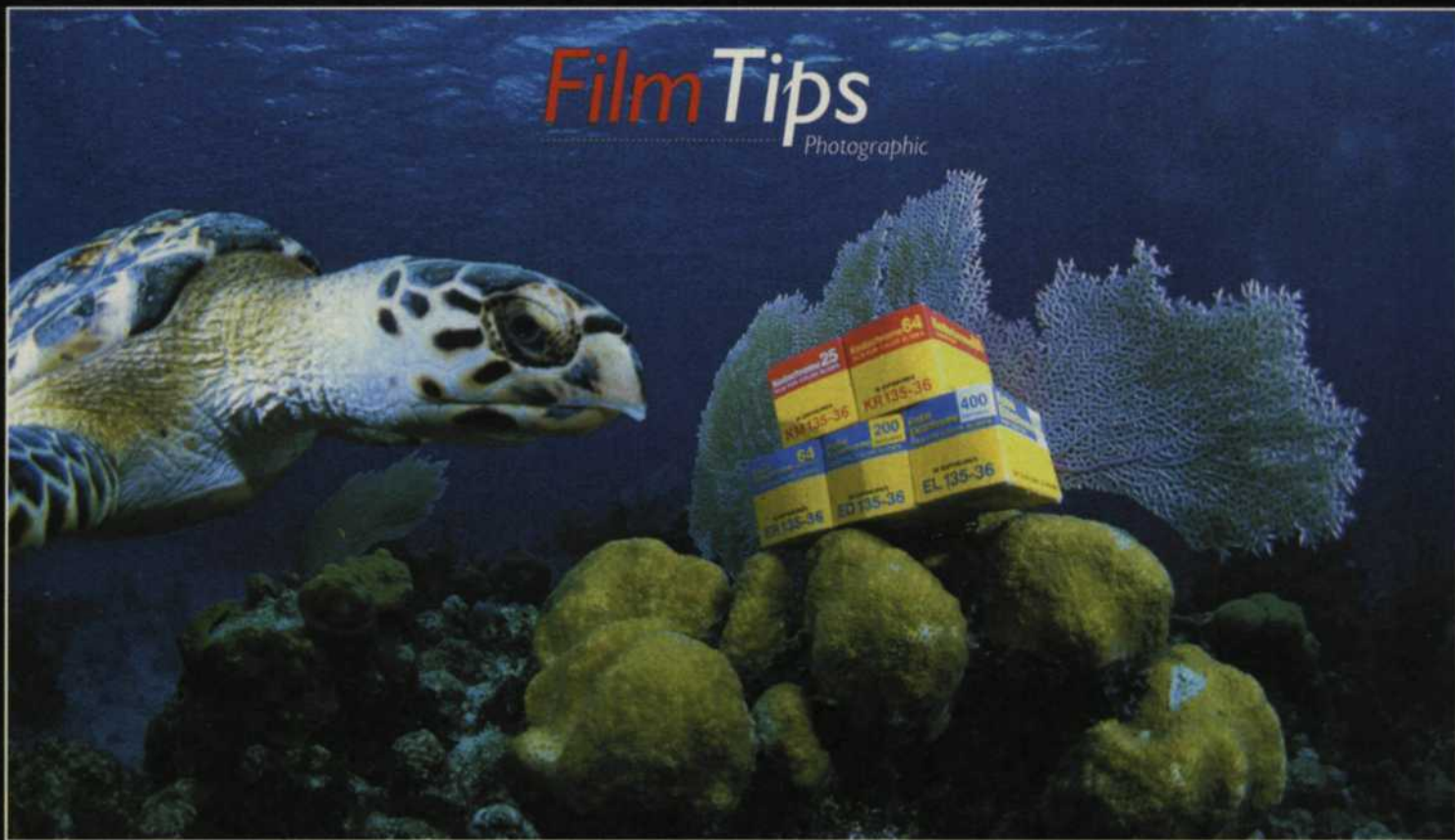
Film TIPS

**How TO Pro
Tricks for
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Images**

Top Films for Underwater Photography

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Films for Underwater

What the pros use...and is that right for you?

When we lecture on underwater photography, the number one question asked is, "What film should I use underwater?" The problem is that there isn't one clear-cut answer to this question. Film manufacturers have improved films to such a high level of quality that most all will work well underwater. Nevertheless, we still need to decide which films to pack in the camera bag.

Sure, we can try to form some distinction by comparing RMS values, curve shapes, spectral response, and other technical aspects, but the rest is purely subjective. Every photographer has different shooting styles and preferences. One may like to shoot macro images while another thrives on wide-angle. Another may prefer heavy color saturation, while the next strives to achieve the natural look. The key to successful underwater photography is to match individual preferences to the more than 100 different film choices.

Underwater photography is a tough avocation. Besides

having to deal with all the scuba equipment and wet suits, divers also have to contend with photographic physics. When you descend below 15 feet, most of the full color spectrum is reduced to blue with just a hint of warm tone. You also have

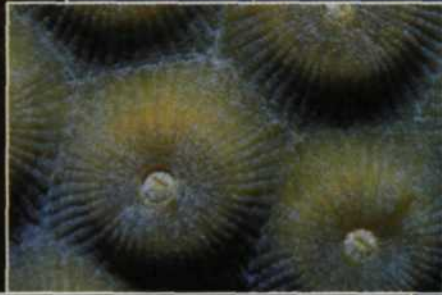
the problems of light loss due to the reflection of sunlight off the ocean's surface. The particulate density in the water can also reduce the contrast and color of a scene. Underwater photographers compensate for these problems by using an external flash, which can restore most of the full color in the scene.

In the beginning, underwater photography was dominated by professionals who used slide film because of its vivid color rendition and the fact that all the



Top: Our first UW film test, for *Skin Diver* in 1981.
This photo: Ektachrome 64 works great for close-ups.

book and magazine editors demanded it. As equipment became more affordable, amateurs started making underwater photography part of their vacations. They started taking underwater photography classes from those few working professionals and would emulate their instructors by shooting



Photography

Text and underwater photography by Jack and Sue Drafahl

Top left: ISO 100 Fujicolor print film is one of our favorites for underwater work. **Above:** Fujicolor Superia 400 really "whales" for UW available-light shots and larger subjects. **Center inset:** Fujichrome Velvia is another great choice for UW close-ups. **Left:** Fujicolor 400 recorded good detail and color in this seahorse.

slide film too. In the early days of underwater photography, almost all underwater images were taken on slide film.

Eventually, it became obvious that amateur photographers had different objectives when taking pictures underwater. They weren't necessarily interested in publishing their photos, but would rather share color prints with their friends and family. Because of the difficult lighting conditions underwater, it is difficult to ensure good exposures when using slide films, due to its narrow exposure latitude. Color negative film provides a wider exposure latitude—up to three stops under and four stops over normal. This makes it easier for the amateur, advanced amateur and even professional to capture the wonders of the underwater world.

Camera manufacturers also realized there was an influx of divers taking pictures underwater, so they began providing cameras for different skill levels and pocketbooks. There are amphibious cameras like the MX-5 and MX-10 from Sea & Sea, Snapper from Bonica and SeaLife from ReefMaster to name a few. No longer are cameras designed with just the professional in mind.

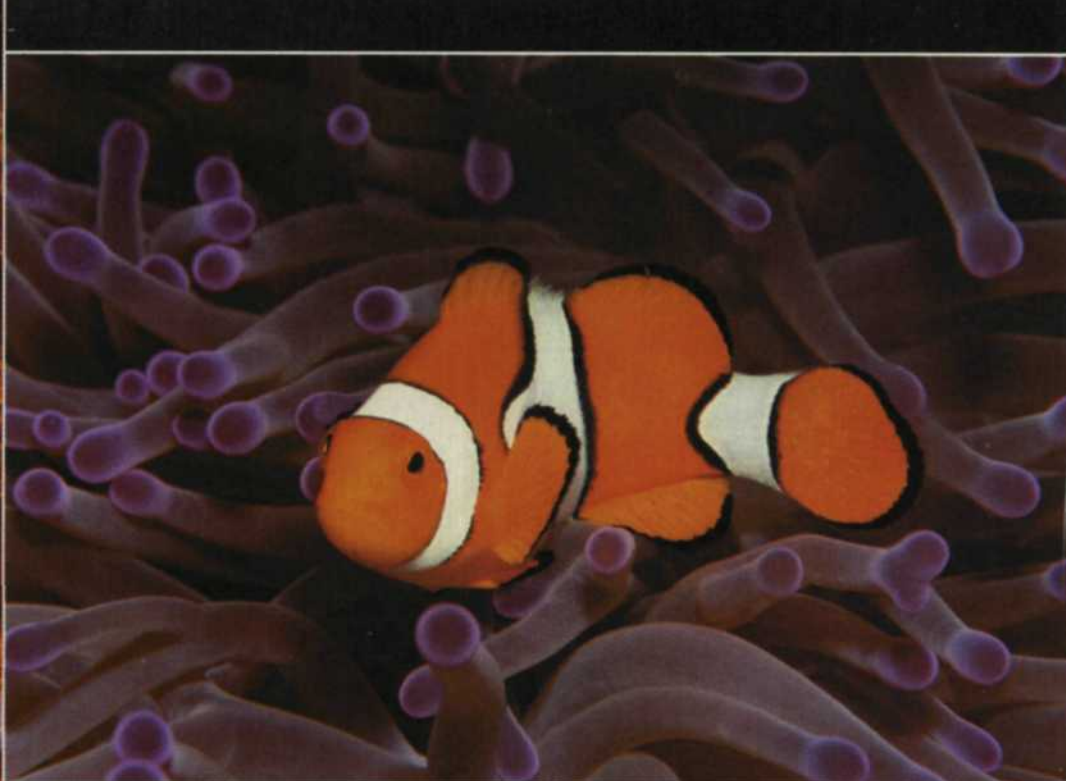
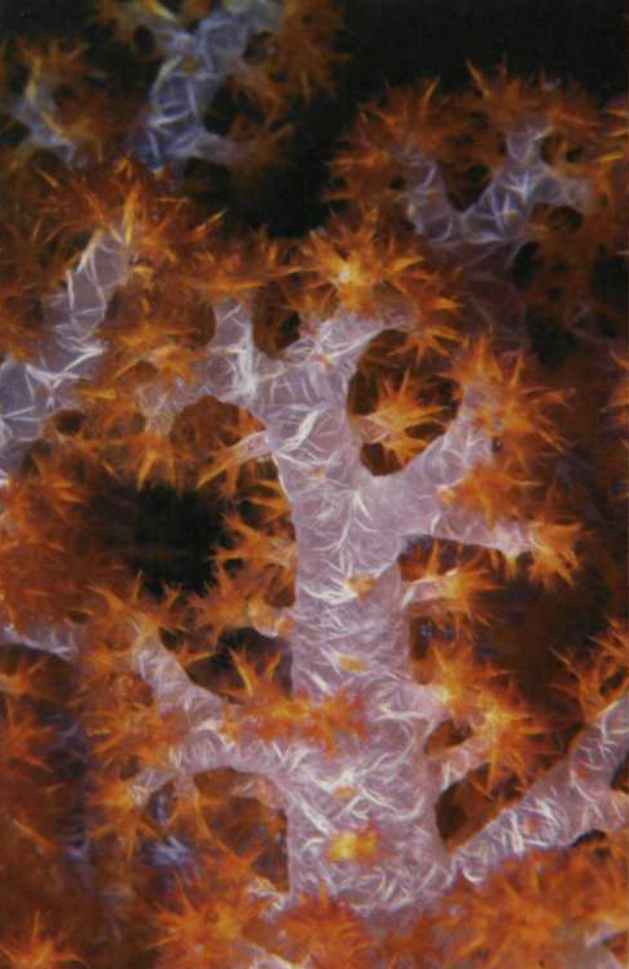
Although all the cameras will take both slide or color negative film, we recommend your first underwater attempts be with an ISO 400 color negative film. Its wide exposure latitude will allow you to achieve acceptable images right from

the beginning. Immediate gratification goes a long way to build confidence and encouragement.

There are all different types of subject matter to capture underwater. You can record the small shrimp with a macro lens or attached framer. The magnificence of the coral reef requires the use of a wide-angle lens. Elusive fish are best captured with a housed SLR camera and a telephoto lens, and plenty of patience. So you see there is something for everyone, but to accomplish these photos requires different camera setups and varied film choices.

In 1981 we did our first test of underwater films in the sister publication, *Skin Diver Magazine*. We compared Kodachrome against Ektachrome slide film and when we showed photographers our results, everyone picked a different emulsion. Years later, we ran the another test comparing Kodak and Fuji slide films. Again, no one could totally agree on the film winner.

So, which film should you use? We have tried them all, and because of the improved emulsions, we find that they all provide excellent results underwater. You just need to figure out which subjects you want to record and then match the ISO to adequately do the job. The issue of which brand selection is so subjective that we decided to contact a few of our professional underwater friends and query them about their film choices for underwater photography.



Left: Fujichrome Provia 100 is a great slide film above and below the surface—the current Provia 100F incarnation is the finest-grained slide film available, and colors are rich.

Above: Kodak Gold 100 print film is another of our favorite films for general underwater photography. It works very well with flash.



Cathy Church—
www.cathychurch.com

Cathy Church has been writing about and teaching underwater photography since 1967. Cathy teaches all levels of underwater photography at Cathy Church's Underwater Photo Centre and Gallery, a full-service facility at Sunset House in Grand Cayman. Several times a year she runs underwater photo tours to the South Pacific with her husband Herb Rafael.

"While [Fujichrome] Velvia is a hands-down favorite for close-ups, I rarely use it for my longer-distance photos. The extra contrast cannot handle the background exposure range when I am using my extreme wide-angle lenses such as the RS 13mm lens, or the Nikon 16mm full-frame fisheye. When prints are made on the high-contrast Fuji Super Hi Gloss directly from the slide, it is almost impossible to keep details in the shadows and highlights with the Velvia.

"When background shadow detail is important, such as a photo with colorful soft coral in the foreground and shadowed wreckage in the background in Truk Lagoon, I need to use a lower-contrast film such as [Kodak] Ektachrome E100S. With EBX [Ektachrome Elite Extra Color 100, the consumer version of E100VS], VS and Velvia, the shadow details are lost in the black. I have had limited experience with Fuji's Provia 400F, but when my students need a 400-speed film with lovely soft shadows and great color, it has been a great film.

"For my black-and-whites, I use T-Max 400, and T-Max 100. When I need to control highlights, I use Ilford Delta 400."



Stephen Frink—
www.stephenfrink.com

Stephen Frink's editorial work appears monthly in *Rodale's Scuba Diving* and has been featured in general-interest publications like *Islands*, *Natural History*, *Travel Holiday*, *Time*, *Newsweek* and *National Geographic*. He has authored several books and is an instructor for the Nikon School of Underwater Photography. Stephen operates a retail underwater photo center in Key Largo, Florida

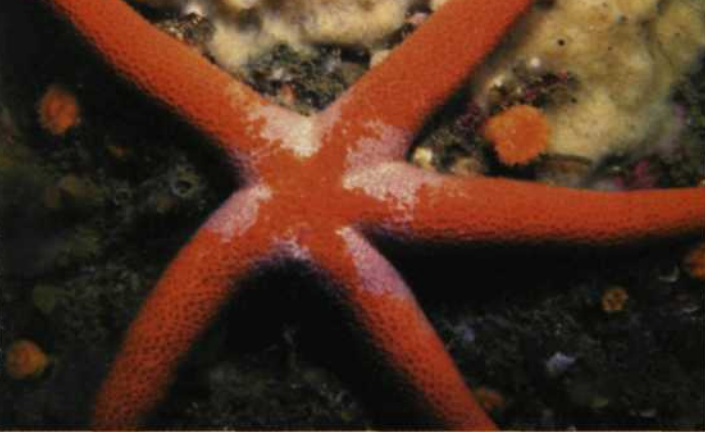
"I make my living taking images both under and around tropical oceans. The intense colors of the marine life (when captured with artful application of strobe light) are best rendered with Fujichrome Velvia in my opinion. The fine grain and vibrant colors make it ideal for fish and macro photographs. I happen to like it best for wide-angle as well, but the impression of how the open water blue is rendered is subjective.

"Some UW shooters still like Kodachrome, others are fond of the Ektachrome family, still others think the newest Provia F is the best solution. I have tried virtually every slide film out there, but when I get it home to the light table, Velvia still rules for color saturation and resolution."

Denise and Larry Tackett—
www.tackettproductions.com

Larry and Denise Tackett specialize in underwater and natural-history subjects. Their work has appeared in books and magazines worldwide. They





Top left: Ektachrome 64 has given us some great UW slides.
Bottom left: Agfa Precisa 100 is another good choice for those who prefer slide films.
Above: Kodak Gold 400 is another good all-around UW print film.
Near left: Kodachrome still has its fans, underwater as well as topside.

lead photography seminars internationally and have worked on several TV documentaries. They are contributors to *Skin Diver* and their book *Reef Life, Natural History and Behaviors of Marine Fishes and Invertebrates* has recently been published.

“For most underwater work we prefer Velvia because it produces images that stand out. The grain is so fine and the colors are vibrant and crisp—the pictures have zing; they really stand out on the lightbox. For wide-angle work, we use Velvia, Provia 100 or Ektachrome VS. All produce nice blues and the Ektachrome VS really lights up soft corals nicely.

“We think Velvia helps hard corals to stand out a bit more in shallow waters, but it can be tricky to use because of the increased contrast. For deeper work, we generally need more light so we go to Provia 100 or Ektachrome VS for the extra stop.

“For Super Macro (>2x) we use Velvia or Ektachrome VS—depending on the subject and how much depth of field we need. We use the Ektachrome VS when we need every bit of depth of field we can possibly squeeze out.”

Jack and Sue Drafaahl—
www.jackandsuedrafaahl.com

Jack and Sue Drafaahl write a monthly column for *Sport Diver* and their works have appeared in *Skin Diver*, *Diver*, and *Dive Training*. They also write for other publications like Petersen’s *PHOTOgraphic*, *Rangefinder*, *Focus on Imaging*, *Outdoor Photographer*, *PEI*, *National Geographic World* and *National*



Wildlife Federation. They have a new book entitled *Digital Imaging for the Underwater Photographer*.

“As you see from their comments, they all use slide film. Well, we don’t anymore. Since we have been testing all the films for *PHOTOgraphic Magazine*, we saw that most of the R & D in film emulsions was dedicated to color negative. So, about 17 years ago we took a solitary stand and made the switch to color negative for all our work. We then can make prints or scan the film for digital output.

“We found that the fourth-layer emulsions from Fuji seemed to cut the ultraviolet in the blue waters, but Kodak Ektar was superb for macro detail. The higher-speed Fuji Superia 800 works wonderfully for available-light images and the Kodak Gold family of films performs wonders on general underwater photo subjects. If you want to match the color balance of the two emulsion you pick, you might consider staying within a specific film family. So, you see we use them all, depending on the subject matter and lighting conditions.”

Conclusion?

As you can see by all of the responses, everyone has a different opinion and preference. There seems to be no first-place winner when it comes to underwater photography. Nevertheless, you still have to make your film selection. We feel that the best way to make the plunge is to start your underwater expeditions with the film brand you shoot topside. Then you can expand and experiment with other brands and various film speeds. Compare your results and examine images taken by other photographers. Keep an open mind and fine-tune your choices as you continue to explore the underwater world. ■