



Snoots

Text by Keri Wilk
Photos by Keri Wilk and Alex Mustard

When I began shooting underwater 15 years ago, the underwater photography world was much smaller than it is today. Traveling with oodles of slide film, being restricted to 36 exposures per dive, and requiring an intimate understanding of how light works are just a few factors which kept underwater imaging from being widely popular.

Now we're in the digital era, and there have been some drastic changes: high-capacity memory cards allow photographers to shoot until their trigger finger is callused; large, bright LCD displays give instant image feedback, making it easy to nail proper exposures, focus, composition, etc; high-quality compact cameras and housings have been made affordable, even to penny-pinching divers.

What was once a very niche hobby, pursued only by the most determined and passionate individuals, has now become almost as common as scuba diving itself. Okay, maybe that's a bit of

an over-exaggeration, but my point is that the digital revolution has caused an explosion in the number of underwater photographers in the last several years.

Image hosting websites (i.e. Flickr, Smugmug, Picasa, etc.), personal websites and social networking sites have all provided outlets for images to be easily shared with the world. Since photography is often an inspiration-based art, and since there are so many images available at one's fingertips, there is a tendency for images to be imitated—yawning frogfish, pygmy seahorses, silhouetted divers pointing a torch, soft corals hanging from mangrove roots... the list goes on and on. Your photos will blend in with the crowd, unless you do something different. You can either hope for a trip filled with high-impact subjects, or you can put a different photographic spin on ordinary subjects.

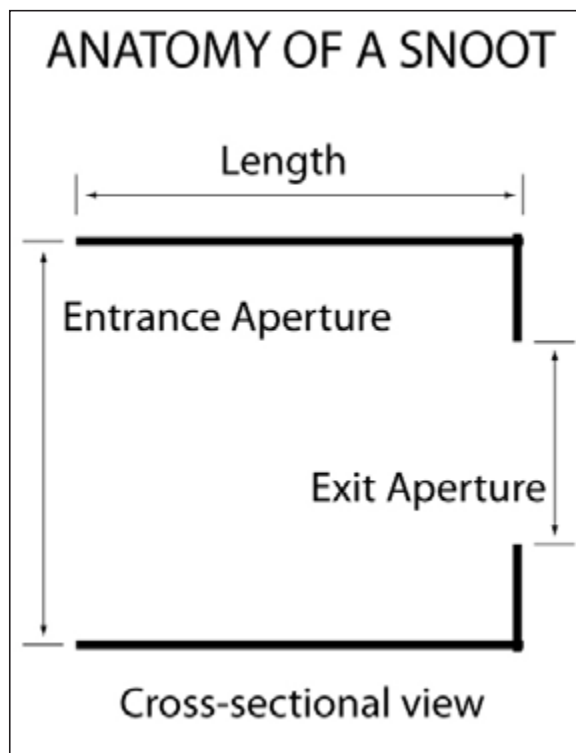
Enter the snoot.

What is a snoot?

Snoots are devices used to reduce beam angles from light sources in order to provide photographers with more control over the illumination of photographic subjects. In their simplest form, they can be no more complicated than conical or cylindrical pieces of tubing that attach to the front of light sources. Some designs incorporate a fine grid

(egg crate works well), resembling the grill of a car, at the snoot's aperture, to further direct the exiting light beam. They can be constructed very easily from common household items such as: toilet paper rolls, funnels and PVC piping. Take a look around the room you're in right now... chances are that something there can be made into a snoot!

The diameter of a snoot's entrance/exit aperture and its proximity to the light source are two factors that affect the angle of the beam that will be projected from it. The smaller the aperture,



A sailfin blenny meets the tip of my snoot



This sand-coloured snake-eel normally blends in with its surroundings. Snoots allow subjects like this to stand out from their sometimes drab backgrounds



photo & video



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This porcelain crab was in a cloud of silt, but, by using a snoot, only a small amount of backscatter was illuminated in this photo

Photographers often strive to create images with black backgrounds to make the subject in the foreground “pop”, but it’s sometimes difficult to prevent strobe light from hitting the background as well. The use of a snoot can solve this problem.

Minimize backscatter

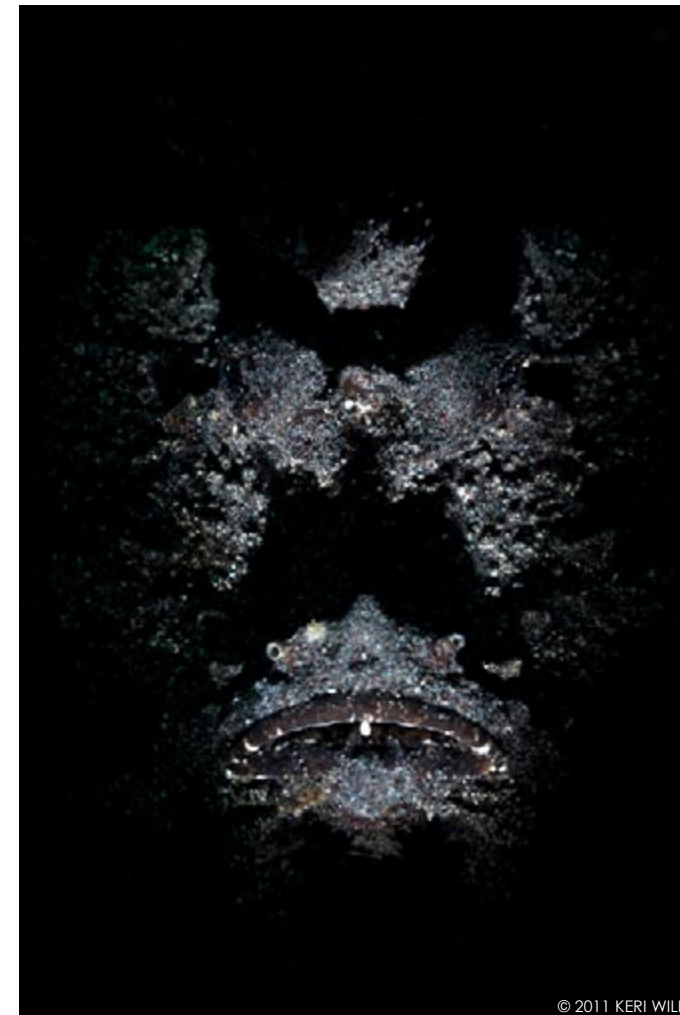
Backscatter is seen in images when stray strobe light illuminates suspended particles between the camera’s lens and the subject. By snooting a strobe, you decrease the beam angle, make it easier to control stray light, and minimize backscatter.



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A single, heavily-snooted strobe casts a strong directional beam of light over the face of this devil scorpionfish, creating strong shadows

and farther away it is, the narrower the beam—and vice versa.

The intensity (energy per time per area) of a snooted light beam is highly dependent on the reflectivity of the internal surfaces of a snoot. When constructed from highly reflective materials (white colour, or mirrored), it’s possible to create a more concentrated light beam than the un-snooted strobe, so battery life can be prolonged. Conversely, when constructed from highly absorptive materials (black), you may need to boost the strobe power to maximum in order to obtain well-illuminated images.

Background

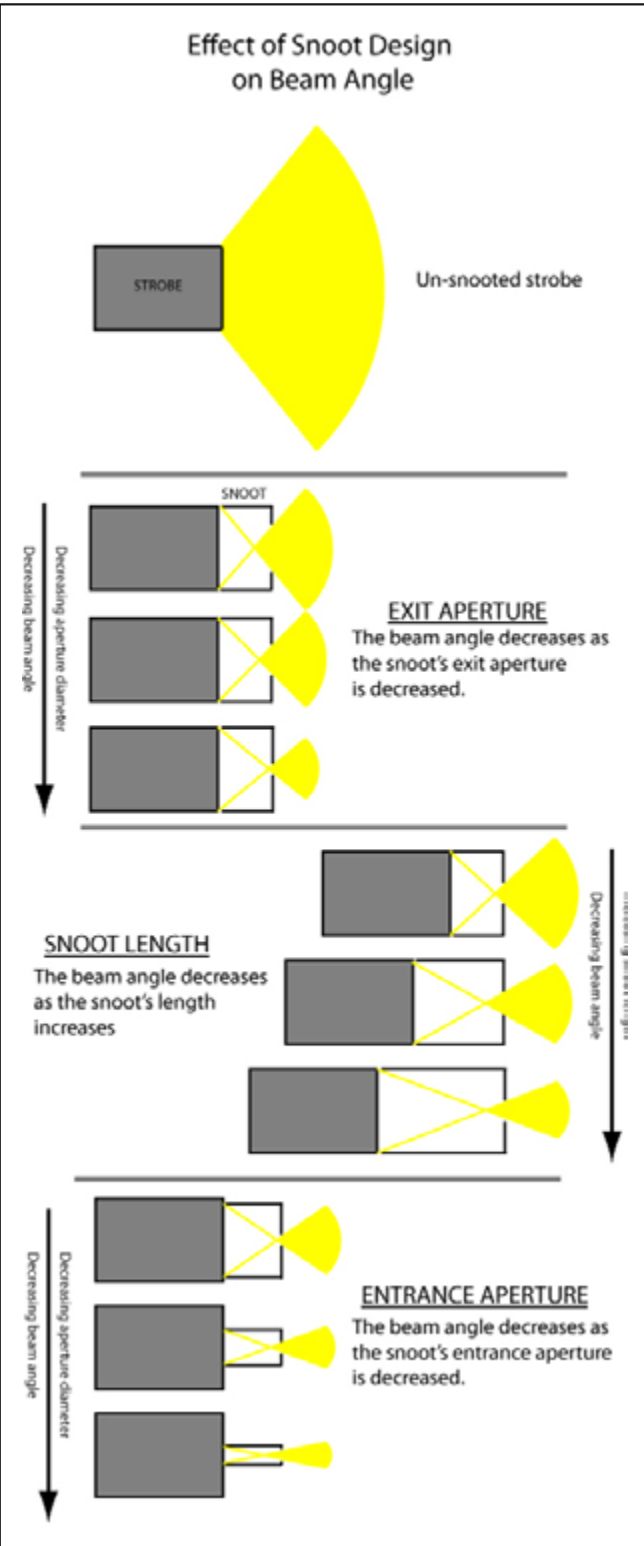
Light-shaping tools such as umbrellas, baffles, grids, diffusers, reflectors and snoots, are commonly used by studio photographers. The restrictions imposed by an underwater environment make some of these tools much less practical for underwater photography. Snoots, in particular, have been experimented with by many underwater photographers and videographers on their strobes and video lights. To my knowledge, most of them have had mixed success, and usually abandoned them out of frustration after a few failed attempts. Their main

drawback is the time and effort required to aim them correctly. For those who do most of their shooting in tropical destinations, the thought of “wasting” several dives trying to light a subject just right isn’t the most appealing idea. For these reasons, snoots have been regarded more as novelties than as useful tools, and have stayed under the radar.

About a year ago, I started doing my own experimentation with snoots. The nervous tick in my left eye, and the bald spots scattered over my head attest to the notorious difficulty of aiming them... but the results were shockingly worthwhile. Now, you’d be hard-pressed to find me diving without my beloved homemade snoots.

Why use a snoot?

—*Isolate the main subject*
Since a snoot greatly restricts a strobe’s beam angle, light can be projected exactly where you want it, eliminating distracting background/foreground elements or giving a spotlight effect.





First Jury Prize
Epson Red
Sea 2009

Directional lighting

Light coming out of a heavily-snooted strobe is much more directional than without the snoot—as if it were coming from a source that is much farther away. Because the snooted light rays are more parallel, they create harsh, sharp-edged shadows when cast over a textured surface (almost like rays from the sun). The

narrower the beam, the sharper the shadows. This property can be used to emphasize textures of corals, create dramatic shadowy images, or give common subjects unusual moods.

They can create unique images. The above-mentioned uses of snoots can be combined to create exciting, thought-provoking, and most importantly, unique images. Even the most common subjects can be given a "wow factor", which can make your trip's image gallery instantly more memorable than others.

Although snoots may not be especially important to casual underwater shooters, they currently have great relevance for shooters interested in entering photo contests. For the

past year, a pair of home(depot)-built, variable-aperture micro snoots (pictured next page) have been a bit of an ace up my sleeve in the competition circuit. Here are a few shots that wouldn't have been possible without my snoots.



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Snoots

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First Place, Black and White, Antibes 2009

Second Place, Young Underwater Photographer, Scuba Diver AustralAsia 2009

Directional lighting brings out the textures of this coral head adding drama to its abode





Last year, I publicly posted some of my macro and super macro snoot shots on Wetpixel (wetpixel.com). As I mentioned in the introduction, the internet is very effective for sharing images and techniques, so I wasn't surprised by the large number of photographers who contacted me for advice regarding this technique as a result. The way I see it, one of two things will happen: snoots will ride a wave of popularity and then fade back into obscurity, or they'll become essential tools for any passionate underwater photographers.

Design and Application

Snoots can be used in both wide angle and macro/super macro photography. However, their design and method of application for each of these branches of photography differ greatly.

Wide Angle

Wide angle snoots are the simplest to construct. In most cases, sharp-edged beams aren't necessary, so very short and wide-aperture snoots are often enough to do the trick.

When I first took a stab at this lighting technique, my snoots were made from old wetsuit sleeves that were cut into 6-inch bands, and held on my strobe heads with trusty zip-ties. The amount of beam restriction could be controlled by the distance the neoprene snoot was extended. The ability to vary the beam angle like this is an important characteristic of any snoot, since it expands your creative possibilities.

Aiming strobes with laser precision isn't necessary; you can usually eyeball proper alignment relatively easily. Don't be afraid of taking some initial test shots to make sure that light is being directed where you want it—but when the time comes for the money shot, make sure you keep the framing consistent with the test shots, or else you may end up back

at square one. If your strobe has a strong modeling light, switch it on and use it to simplify the aiming process.

If the subject you want to photograph is somewhat deep, you might want to take a single photo of it with "normal" lighting (for your reference), and then find a shallow area where you can putz around with your lights all day long, using a simple non-moving subject as a stand-in. Such use of a reference image combined with experimentation in the shallows should reduce the bottom time you need to spend with the actual subject.



Snoots

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TOP TO BOTTOM: First Place, Macro Traditional, Our World Underwater 2010; First Place, Super Macro Traditional, Our World Underwater 2010; Second Place, Macro, Beneath The Sea 2010

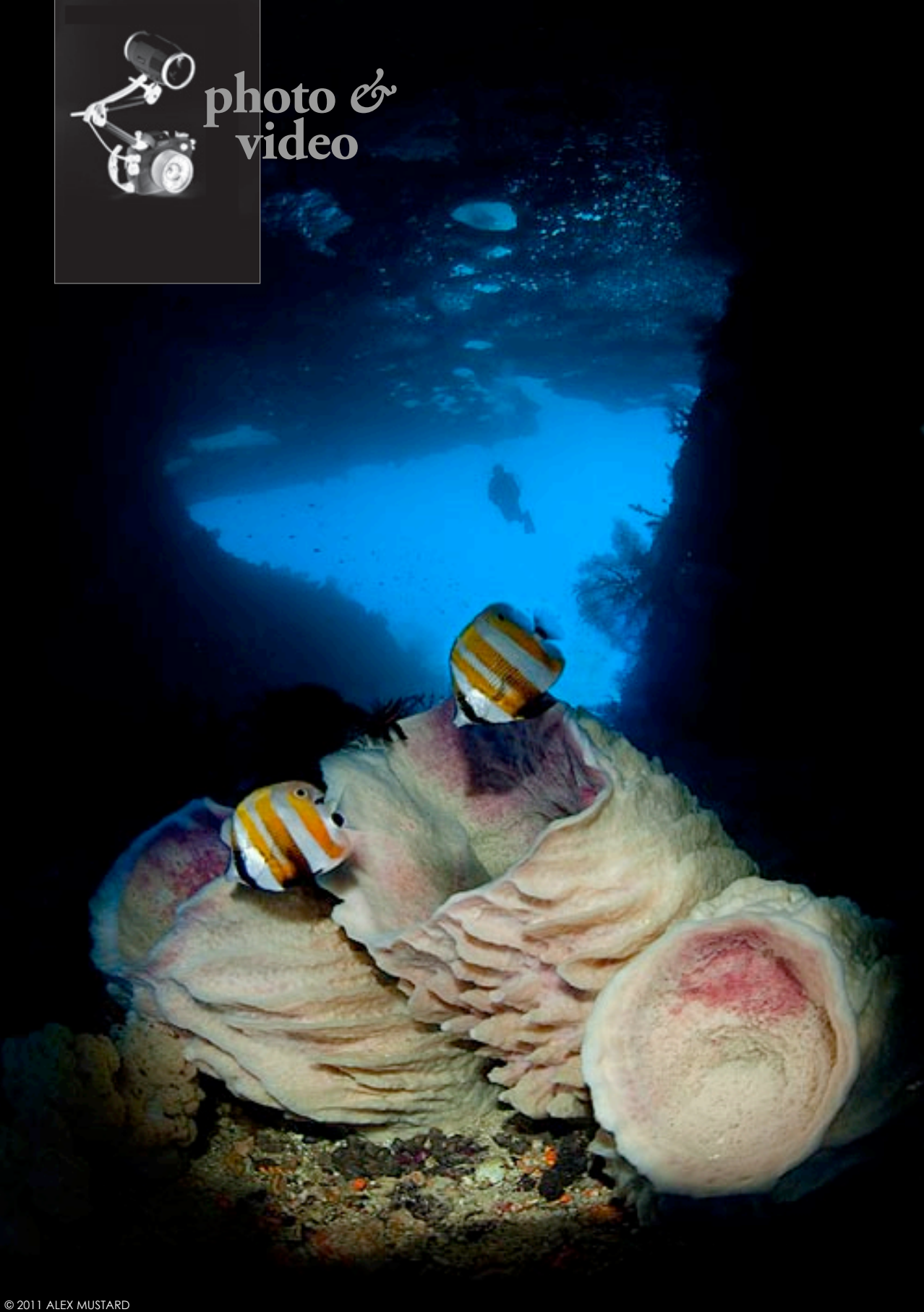
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Proper control of the ambient light in a scene can really showcase what snoots are capable of. By increasing the shutter speed and/or decreasing the lens' aperture appropriately, the main subject can

be well exposed by the "spotlight" from the snoot while the rest of the scene is intentionally dark, thereby creating a sharp contrast that draws attention to the subject. Alternatively, by using two



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Use a snoot that is further away from the source and has a much smaller aperture for macro shots (above); Use two strobes, one snooted and one not, to gently add color to the foreground and still have the main subject "pop" (left)

strobes – one snooted and one not – you can gently illuminate the general foreground to add colour, but still have the main subject pop out of the scene.

Macro/Super Macro

Since the field of view in macro photography is very small, you'll need a correspondingly small beam of light to selectively illuminate a portion of it. This requires the use of a snoot that is further away from the source and has a much smaller aperture (compared to wide angle snoots).

The "micro snoots" that I put together consist of a few mutilated plumbing components that I roughly pieced together while wandering the aisles of Home Depot, and refined to their current state back in my workshop. I designed these snoots in such a way that they can accept various custom-designed variable-diameter tips (also known as "chopped-up black pens"). With one of these snoots, at normal



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My snoot. The white pieces are removable to widen the beam. Additional pieces can be inserted in the end to narrow the beam

shooting distances, I can produce a directional spot of light as large as 30cm

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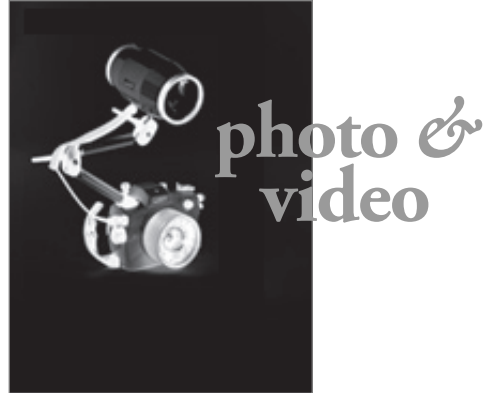
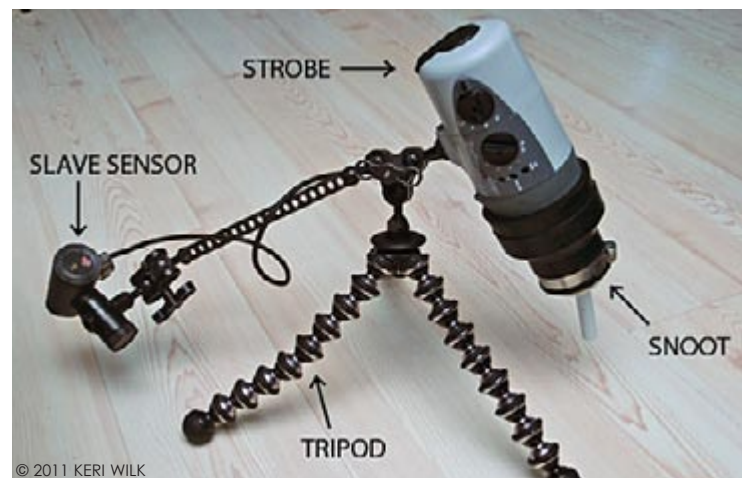


photo & video

My Ikelite DS160 strobe (right top), fitted with my "micro snoot", and mounted on a tripod (Gorillapod). It is connected to an Ikelite EV controller, which remotely fires the strobe when hit with a flash of light; A narrow beam of light (right center) escapes the small snoot tip; A small ribbon eel investigates the tip of my snoot (right bottom); Portrait of a goby (far right)



Snoots



(12") in diameter or as small as 2mm (~1/16") in diameter!

As with wide angle snoots, to maintain creative freedom, it's very important to have the ability to vary the beam's angle... so keep this in mind if you're trying to design your own.

Aiming snoots for macro imaging is far more difficult, frustrating,

and time-consuming than snooting wide angle images. This is especially true for super macro photography, since subjects are often no larger than a grain of rice.

When you intend to shoot a macro scene with a broad, directional lighting effect (explained above), you can follow the same aiming procedure as explained for wide angle snooting. However, if you want to effectively and accurately create macro/super macro images with a spotlight effect, you'll have to follow a very different (and somewhat impractical) route.

Trying to hit a 2cm subject with a 1cm (1/2 inch) beam of light is no easy feat. While it is possible to aim a mini-beam like this with the strobe still attached to the housing, I find it *far* easier to detach the strobe from the camera system

altogether. Being able to move the camera without disrupting the strobe configuration makes a world of difference. Life can be made even easier if, instead of hard-wiring your snooted strobe to your camera with a sync cord, you connect it to a remote trigger—this gives you total freedom... literally, no strings attached! You can even take it one step further, and mount this remote strobe on a tripod (Gorillapods fitted with a ULCS ball-head works very well), allowing you to position the strobe in just about any orientation, with a rock-steady base.

Even with this elaborate setup, aiming can still be a big headache. You need to choose subjects which are very slow-moving, or better yet, that don't move at all—scorpionfish, frogfish, stargazers, coral polyps, etc.

Conclusion

The relatively small underwater photography world is now noticeably saturated with "typical" images. Without bringing new

tools/techniques to the table, the art of underwater photography will quickly become stagnant and boring. This is precisely why tools like the snoot are essential—to advance this discipline. Whether they're used to create black backgrounds, spotlighting or hard-edged directional lighting, there's no doubt that snoots are very capable tools for creatively lighting subjects underwater.

However, as capable as they may be, they can be (usually are) a pain in the butt to use. Aiming them for macro/super macro photography is often mind-numbing, and finding slow-moving/motionless subjects suitable to use them on is up to the scuba gods... so, to successfully use snoots, you'll need to have plenty of patience, and a little bit of luck. If you're looking to expand

your underwater photography skills, you might want to consider the snoot.

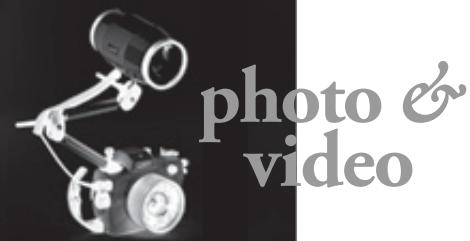
If you're interested in having a set of custom snoots designed and built for you, let me know.

Keri Wilk is an award-winning underwater photographer and dive writer based in Canada. For more information, visit: Reefnet.ca



Portrait of a frogfish





Edited by Don Silcock

Ikelite Lumix LX-5 Housing

Ikelite has released a version of its Compact Digital Housing series for the excellent Panasonic Lumix LX-5 camera. The housing features Ikelite's proprietary conversion circuitry, which allows two-way communication between the camera and Ikelite Substrobes, providing true Panasonic TTL exposure. In addition to providing the most accurate automatic exposure, this ensures a faster recycling time and longer camera battery life as compared to fiber optic TTL systems. All camera controls except the Flash Open Switch are fully functional through the housing and depth rated to 200ft (60m). An included flash diffuser improves lighting quality when the camera's built-in flash is used. A built-in flash is effective between 1-3 feet (0.3-0.9m) from the subject in clear conditions. www.ikelite.com



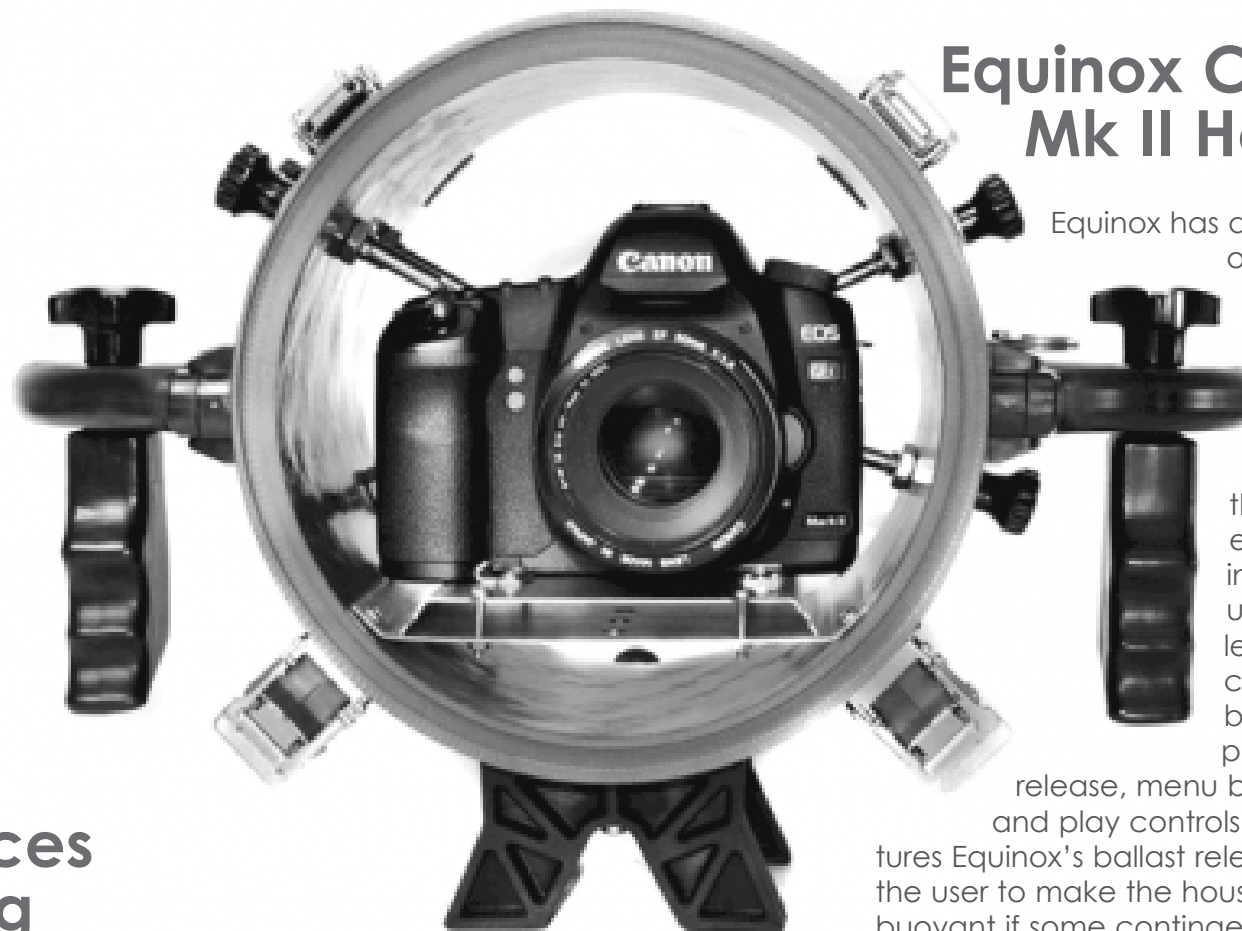
Sea & Sea announces MDX-D7000 housing

Sea & Sea has announced the release of the MDX-D7000 housing for the Nikon D7000 camera. It is machined from a solid block of aluminum, protected by a highly corrosion-resistant coating. Other features include: A port lock mechanism, two fiber optic ports and one optional electronic port and a built-in leak sensor. www.seaandsea.com



Equinox Canon 5D Mk II Housing

Equinox has announced the release of a housing for the Canon 5D Mk II camera. Somewhat of a departure from the company's line of video specific housings, this reflects the popularity of the camera for video rather than stills use. The housing is designed around the use of a Canon 16-35mm lens, although other lenses can be accommodated by special request and it provides access to shutter release, menu button, menu select/scroll and play controls. The housing also features Equinox's ballast release handles, which allow the user to make the housing positively buoyant if some contingency demands it. www.equinoxhousings.com



Fantasea 3D Housing and Camera Package



Fantasea has announced the release of a package containing the Fujifilm FinePix REAL 3D W3 camera and the RecSea WHF-3D W3 polycarbonate housing. The housing was released at DEMA last year, and has a depth rating of 40m, and a fiber optic mounting port. The Fujifilm FinePix W3 features 10 megapixel resolution and is capable of shooting both conventional and 3D stills and video. www.fantasea.com

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Canon Announces Two New SLRs and Two New Speedlights

Canon has announced the release of the Rebel T3i (EOS 600D) and Rebel T3 (EOS 1100D) SLR cameras and the 320EX and 270EX II Speedlights. The T3i features: Canon's EOS HD video capture, 18-megapixel resolution, a three-inch vari-angle clear view LCD screen, scene intelligent auto mode, video snapshot technology and feature guide instructions. The T3 is cheaper, and features HD movie capture, 12-megapixel resolution and the feature guide. In addition, Canon has announced the release of two new Speedlights: the 320EX and 270EX II. www.usa.canon.com



Amphibico releases a new line of video housings dedicated to sea turtles

PRESS RELEASE—Ron Hand, owner of Amphibico, and the "Amphibicans" have supported saving the sea turtles for over 20 years. They use a stylized turtle as their company logo. Amphibico was the first and continuing corporate sponsor of the nonprofit Foundation, Save Our Leatherbacks Operation (S.O.L.O.), beginning in 2005.

The TURTLE video housing is available in six hot tropical colors at a price that should shatter the market for excellence in value for money. Some of the features include marine grade aluminum with stainless hardware, fully anodized with a hard coat of polyurethane paint, depth rated to 330ft (100m), fixed front glass (no port—your camcorder does the zooms and focusing), a rear 3.5 inch digital LCD monitor, an electronic right hand pistol grip with one touch white balance. Amphibico guarantees shipment within 72 hours of order and payment receipt—or they pay the shipping. Optional add ons are available to make this housing even more as the "best underwater housing



deal in town".

The TURTLE is designed to fit a wide variety of video camcorders and cameras; Amphibico has an ever expanding list of those listed on their web site: www.amphibico.com

With the production of this set of tropical color housings filled with technology developed by Amphibico, the manufacturer is donating a portion of the sales revenue to S.O.L.O. so the organization can continue proven conservation activities.

This decision is quite humbling to S.O.L.O. and comes at a juncture in our scope of activities, where added donated funds are needed. Having developed a set of activities that does "reverse extinction" of this highly endangered species, S.O.L.O. is expanding its activities to assist all sea turtle conservation activities where our methods may assist on a case basis. Please add your donations to those of Amphibico to assist us. Ninety-five percent (95%) of all moneys raised goes directly to the project. No salaries or wages are paid anyone in the foundation.

— Larry McKenna, S.O.L.O., Leatherbackturtles.org

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