

Blackwater for Beginners

by Phil Rudin

With over 6000 dives to date I would be considered a very advanced diver but when it comes to blackwater diving I am still a novice. For those not yet baptized into the world of blackwater diving these are a few things you need to know both as a diver and photographer.

First let me warn you that blackwater diving can become very addictive, sometimes to the point of abandoning all other areas of diving. I have several friends that are making blackwater dives several times a week in my area of south-east Florida and plan their international dive trips around blackwater diving.

During the past three or four years blackwater diving has become an international pursuit for many divers and underwater photographers. Fuelled by an explosion of quality images that are circulating the internet on sites like Facebook, Instagram and in underwater specific photo competitions. Dive resorts around the world are adding blackwater to the list of dives and classes they offer clients. At my recent workshop in the Philippines Asia Divers at El Galleon Resort had trained all of its staff members to assist clients with their blackwater diving needs. We took

advantage of the added service and many of my images for this article are from those dives.

So what is blackwater diving and why has it become so popular?

Blackwater dives are night dives in the open ocean or other deep water areas where the bottom may range from 50 to over 300 meters and more. Upon entering the water divers drift in the current following a large float with a weighted line that drops to around 14 meters (45ft). The weighted line is adorned with an assortment of bright lights that are used as a reference for the divers and the dive boat following the divers. The lights are spaced about every three meters so that divers can judge depth. Keep in mind that without a depth gauge you have no frame of reference for how deep you are because you will not be able to see the bottom or the horizon. The tree of

Moorish Idol advanced larval stage, Puerto Galera, Verde Island Passage, Philippines, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue video light, S-Turtle Smart in manual, ISO 200, F/13, 1/250th sec



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lights is the only reference for depth and proximity to the dive boat which you will want to be near when the dive is over.

In the case of blackwater diving in Palm Beach County Florida where I live the dives are conducted from around five to six miles offshore, so a long swim home if you get separated from the boat. In the same waters we will drift from about one to seven miles during a normal ninety minute dive.

Most blackwater divers will limit themselves to the 3 to 20 meter range only occasionally going deeper following a subject they have been photographing. Animals like Flyingfish, jellyfish and Seahores can also be found at or near the surface sometimes hiding in the sargassum weed along with other small fish. Avoiding boat traffic is a major concern near the surface so be aware.

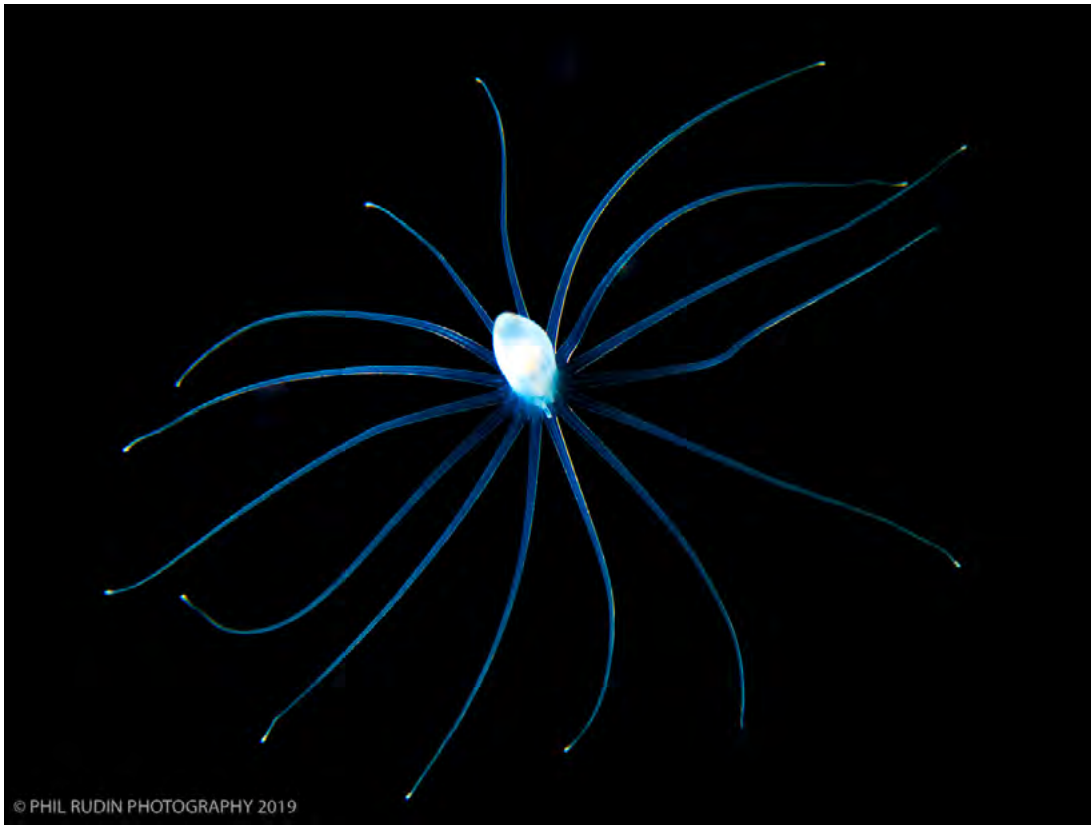
Blackwater diving is not for amateurs; you need to have excellent bounce control, a familiarity and high comfort level with diving at night, well maintained dive gear and a redundancy of well charged dive lights. Also realize that your best dive buddy is the light tree you are following and not the rest of the divers with you. Also be aware that you are in an area where large animals also roam. If you don't feel comfortable doing a solo dive at night then you probably should not be blackwater diving. Keep in mind that this article and other articles like it are not a substitute for getting proper blackwater dive training. In Palm Beach County Pura Vida Divers offers blackwater dive training and they run three blackwater trips per week, weather permitting.

I believe the reason blackwater diving has become so popular is that it opens up a new world of fascinating and unusual creatures that can only be observed and photographed by recreational divers at night and in deep water. A second type of night dive called Bonfire Diving uses surface lights or lights planted in the sand on shallow reefs and sandy bottoms to attract some of the same types of unusual critters. These



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Small fish hiding in Banded Hydromedusae, Palm Beach County, Florida coast, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue video light, S-Turtle Smart in TTL at EV +2.3, ISO 100, F/18, 1/250th sec



Larval Stage Sea Anemone, Palm Beach County, Florida coast, Olympus EM1 MkII, Olympus 30mm f/3.5 macro lens, Nauticam NA-EN1 II Housing, two Inon Z-240 strobes, WeeFine ring light, ISO 200, F/7.1, 1/250th sec

Scale Worm, Palm Beach County, Florida coast, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue video light, S-Turtle Smart in TTL at EV +2.3, ISO-100, F/22, 1/250th sec

dives take place near the surface and in shallow water so they should not be confused with blackwater diving.

Why all of these unusual blackwater creatures are found near the surface at night and not during the day

is simple. At night our vast oceans host the largest vertical migration of animal life on the planet when zooplankton rise from the depths to feed in the shallower waters near the surface. The plankton then attracts both pelagic and



larval stage critters which feed on the plankton, mate, spawn and continue the circle of life in the sea.

Many of the pelagic and larval stage critters that are found blackwater diving are no bigger than a centimeter or two and may be as small as only a few millimeters. Most of these small critters shy away from divers' lights and strobes. They become agitated and move rapidly or move so randomly that trying to photograph them is a distinct challenge. This challenge is what draws many underwater photographers to blackwater diving. Capturing images of many of these very shy animals requires photographers to up their game or come home empty handed.

For photographers, your first goal should be to learn how to move through the water and approach your subject. Excessive hand movement, fin kicks and body movement disturb the water around you much like a ship moving through the water. This disturbance will send the small subjects you would like to photograph flying in every direction. A much better approach is to restrict movement and drift with the current allowing the subject to come near you without spinning away, folding up into

a ball or just disappearing in the night. Excessive camera motion creates the same problems, so move the camera slowly and go with the flow.

Finding a subject to photograph requires one or more dive lights. How the lights are used varies greatly among photographers. Some photographers use a ring light attached to the macro port on the housing while others hand-hold a light for locating critters. Others attach video lights to the housing or strobe arms while others have head mounted lights and some use all of the above. I suggest you experiment with several lighting configurations, find what works best for you and then stick to it. Using narrow beam lights versus wide beam lights is another personal preference.

All blackwater photography is done with macro lenses and I would recommend the following equipment for best results. If you are using a full frame sensor camera a macro lenses in the 60mm to 105mm range will work best, for APS-C sensor cameras 40-60mm macro lenses and for M43 cameras 30-45mm macro lenses will be best. Most photographers will be using auto focus for best results so I suggest a camera with the very best AF and tracking that

Pelagic Zoea larval stage of crab, Puerto Galera, Verde Island Passage, Philippines, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue light, S-Turtle Smart in manual, ISO 200, F/13, 1/250th sec



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you can afford. Since most subjects will be moving within the frame adding closeup lenses is not suggested because they have such limited depth of field and require that you be very close to the subject. Many subjects will only take up a portion of the frame so be aware many images will need to be cropped dramatically so this is where a camera with a high megapixel count will come in handy. Regarding strobes many of the critters you will be attempting to photograph are very translucent and require a great deal of light to expose properly. Many photographers are using two strobes and some use a third slaved strobe over the top of the macro port pointing downward to help make translucent subjects pop. The background for all blackwater photos is blackwater and you will encounter a ton of particles in front of your lens that will create backscatter.

To reduce backscatter and keep the water color as black as possible I use low ISO values and high F/stop values. For my Sony full frame and 90mm macro combo I shoot from ISO-64 to 200 and F/13 to F/22 at 1/250th sec. and try to keep the background black rather than

milky purple.

Higher ISO settings in the 200-640 range may be required for F/stop settings in the F/22 to F/32 range. Some photographers also like using manual strobe power settings with lower power levels for faster recycle times which requires the high ISO settings. I have used both manual strobe power settings and TTL settings for blackwater. With S-TTL I add about +1.0 to +3.0 EV of strobe compensation to properly expose translucent subjects and +/-0.0 for reflective subjects using my two Inon Z-330 strobes.

In manual power mode I set the strobes to around 3/4 power and use F/stop or ISO changes based on the camera's histogram. Using Auto-ISO does not work well; it will push the ISO to the highest limit because of the blackwater bias.

For small very close subjects I move the strobes close to the macro port and for larger subjects like squid I move the strobes out several inches and turn them outward to avoid backscatter. Side lighting, top lighting and backlighting are also possibilities

Pyrosome (free-floating colonial tunicae) with Driftfish, Puerto Galera, Verde Island Passage, Philippines, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue video light, S-Turtle Smart in manual, ISO 200, F/13, 1/250th sec





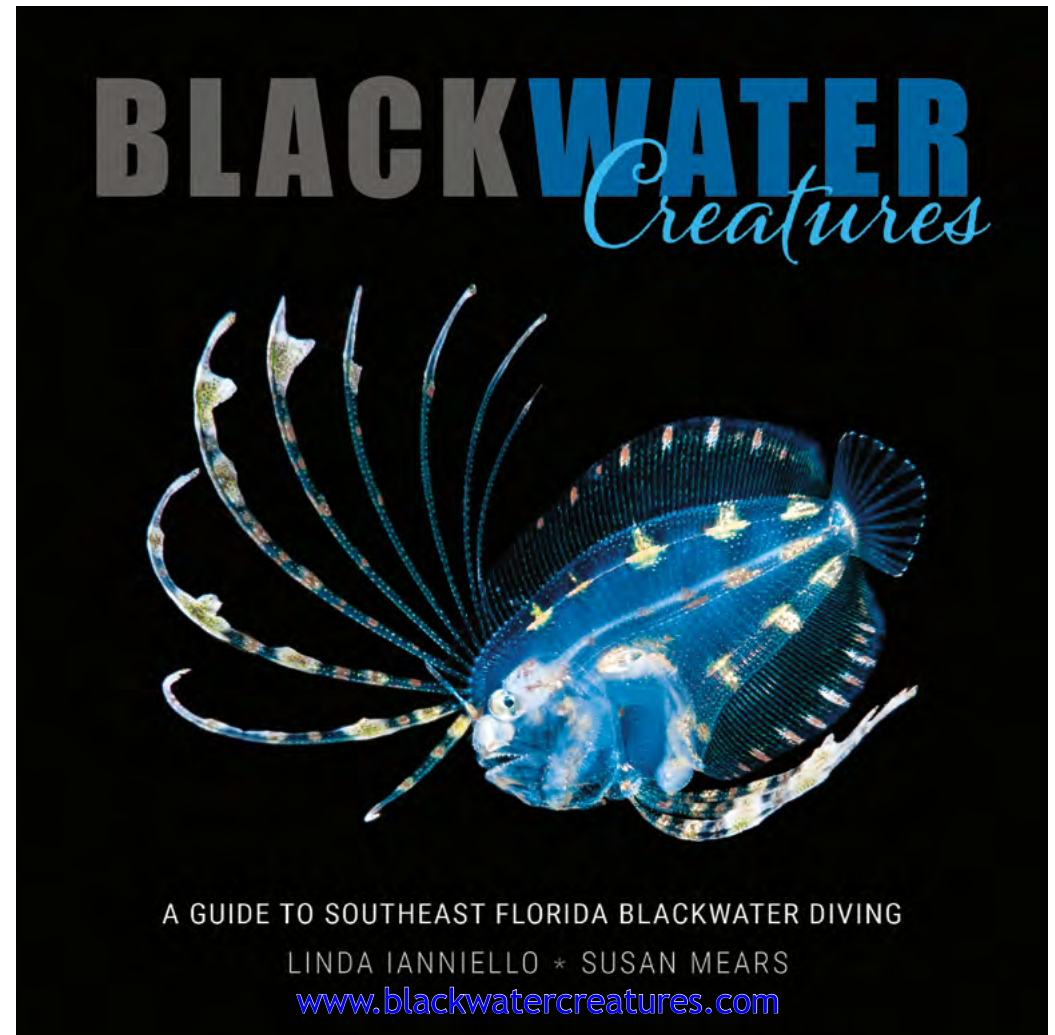
Pelagic Zoea larval stage of crab, Puerto Galera, Verde Island Passage, Philippines, Sony A7R III, Sony 90mm F/2.8 macro lens, Nauticam NA-A7R III Housing, Two Inon Z-330 strobes, RGBBlue video light, S-Turtle Smart in manual, ISO 200, F/13, 1/250th sec

depending on subject matter.

Once you have captured some respectable images you may want to identify what you have photographed. This may be easier said than done as resources are in limited supply and many of the things you may see have not yet been identified.

I highly recommend investing in the newly released book *Blackwater Creatures* by Linda Ianniello and Susan Mears. It contains 170 pages of excellent images indexing fishes,

crustaceans, mollusks, gelatinous zooplankton and miscellaneous critters. It also contains interesting tidbits of information about the behavior of these creatures and four pages of reference sources. This is the source I used to caption all of my images for this article. The book retails for \$39.95 and can be shipped world wide for an additional



shipping fee. If you are interested in purchasing the book go to www.blackwatercreatures.com

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