Underwater Photography

Nov/Dec 2022
Issue 129

UwP

"We are thrilled to be returning in a few months! The reef systems here are the most unspoiled we have seen in our travels around the world and the resort is paradise. We can't wait to see all our friends at Wakatobi." ~ Robert and Barbara Hay

An experience without equal

At Wakatobi, you don't compromise on comfort to get away from it all. Our private air charter brings you directly to this luxuriously remote island, where all the indulgences of a five-star resort and luxury liveaboard await. Our dive team and private guides ensure your in-water experiences are perfectly matched to your abilities and interests. Your underwater encounters will create lasting memories that will remain vivid and rewarding long after the visit to Wakatobi is concluded. While at the resort, or on board the dive yacht Pelagian, you need only ask and we will gladly provide any service or facility within our power. This unmatched combination of world-renowned reefs and first-class luxuries put Wakatobi in a category all its own.

wakatobi

www.wakatobi.com

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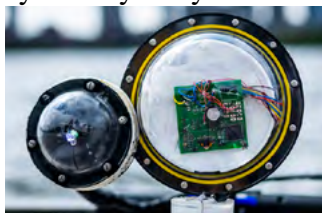
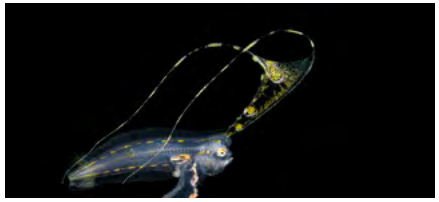


Underwater Photography

A web magazine UwP129 Nov/Dec 2022



Cover shot by Matt Curnock

Publisher/Editor Peter Rowlands
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Editorial

I blame Nikon

This isn't as serious as it sounds but, the truth is, they started it.

The 'It' I'm referring to was the introduction of the ground breaking 15mm UW Nikkor lens back in the 1970s. A very wide angle, rectilinear, water corrected lens; it produced exceptionally sharp results and covered 90°.

'So what's the big deal?' I hear those remotely interested, asking. Well, the point is that a coverage of 90° on a 35mm format should really be 20mm and not 15. I can only guess that their thinking was that the 'in air' coverage equated to 15mm but, surely, for a lens that was designed for use in water, it should really be a 20mm.

This was further compounded when the 180° full frame fisheye was nominated as a 16mm!

Regardless of the theoretical reasons for this nomenclature, my point is this; the only specification that communicates reality, and I have banged on about this before, is the angle of coverage; and, if I may be pedantic, preferably horizontal rather than diagonal. That single numerical figure tells me all I need to know.

The ray at the end of the tunnel for me was when I saw Nauticam's new EMWL lens system which is available in four versions - 60°, 100°, 130° and 160°. Sorted.

Sony Alpha 7 series

There can be no doubt that the Sony Alpha 7 series of cameras has changed the game both above and below water.

In just eight years since it was launched in 2014, it has almost single handedly twisted the knife on the DSLR market; but, in hindsight, it was always going to happen. Unlike conventional film, the image sensor doesn't need a 'flipping' mirror so doing away with a significant amount of complicated mechanics and helping increase the frames per second rate.

The specs just get better and better with each model and that's where my admiration fades for two reasons: they are very expensive and there have been nearly a dozen models in just eight years so you know, as soon as you buy one, there will definitely be a better model coming out in less than a year.

This also creates a problem for UwP and its reader for no sooner do we get time to include Jim Decker of Backscatter's excellent review of the A7 IV than Sony announce the V!

I guess that's the price of progress.

A battery-free, wireless underwater camera

As you can read in this issue, those impressive engineers at the Massachusetts Institute of Technology (MIT) have built a battery-free, wireless underwater camera and I think that's worth repeating - a battery-free, wireless underwater camera.

The camera is powered by sound. It converts the mechanical energy from sound waves traveling through water into electrical energy that powers the camera's imaging and communications equipment. And, as if that weren't enough, after recording and encoding image data, the camera then uses sound waves to transmit the data through water to a receiver, which then reconstructs the image.

The implications for long term, remote monitoring underwater are obvious and I'm sure that, with development, the capability and quality will prove even more useful.

A battery-free, wireless underwater camera has made science fiction become reality.

Nauticam lenses

Many issues ago I highlighted and praised Nauticam for their development and production of top quality water contact optics such as the WWL-1 as well as their CMC and SMC macro lenses.

Since then, they, and in particular their founder Edward Lai, have not rested on their laurels but have continued to innovate with new, ever specialist, water contact optics.

Back in the mists of time it was the humble dome port which improved the quality of wide angle underwater images but they were, in essence, a catch all design; but they were far better than a flat port.

It was only by becoming more focused (pun intended) that underwater optics could be improved and that is where the very clever Mr Lai came in. He went right back to basics and designed whole optical systems with the sole purpose of producing flawless performance from edge to edge.

The result is that his dedicated work has produced lenses which are, quite literally, changing the way the underwater world is portrayed so, for that reason, he is a true modern pioneer and I salute him.

Peter Rowlands
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www.uwpmag.com

News, Travel & Events

UPY 2023. Searching for images to help Save Our Seas

The Marine Conservation Photographer of the Year Award, sponsored by The Save Our Seas Foundation (SOSF) and organised by the Underwater Photographer of the Year competition opens for entries on 1st November and closes on 7th January 2023. It is free to enter and offers cash prizes for the first, second and third placed photographs.

The Marine Conservation Photographer of the Year is open to both above water and underwater photographs and they must highlight a marine conservation story or theme, with both positive and negative stories encouraged. Freshwater themed conservation images are also accepted.

Chair of the judges, underwater photographer and marine ecologist Dr Alex Mustard MBE said "Powerful photographs are able to change hearts, minds and attitudes. Conservation imagery is especially important from the oceans, which faces many threats from our activities. However, these issues mostly happen unwitnessed, out of sight of land or beneath the surface. This contest gives these valuable images a huge public platform."

Dr James Lea, CEO of the Save Our Seas Foundation, said "Images have a profound capacity to affect how people view the world, and at SOSF we are all about encouraging positive change in how people view and interact with the marine environment. As such we are delighted to partner with the Marine Conservation Photographer of the Year award, which is uniquely placed to highlight issues our oceans are facing and inspire change".

Previous editions of the contest have attracted entries from photographers around the world, keen to draw attention to conservation issues, campaigns and success stories important to them. The award was most recently won by Thein Nguyen Ngoc from Vietnam, with his aerial photograph "Big Appetite". The photo

shows boats straining the waters for anchovies in the Phu Yen province of his country. "Salted anchovy is the most important raw material in traditional Vietnamese fish sauce. But these little fish are also a keystone of a natural ecosystem. Despite increased fishing, the catches of anchovies have decreased by 20-30% in the past 10 years. When they are overfished, the whales, tunas, sea birds and other marine predators face starvation and critical population declines."

The Marine Conservation Photographer of the Year, part of UPY is an annual competition, that traces its roots back to 1965.

The Save Our Seas Foundation has been dedicated to protecting life in our oceans, especially sharks and rays, for 19 years. They have funded around 425 projects in over 85 countries, supporting passionate and innovative researchers, conservationists and educators.

Each project strives for deeper understanding and more innovative solutions in marine research, conservation and education.

www.underwaterphotographeroftheyear.com

Could you be Underwater Photographer of the Year 2023?

The search is on for the world's best underwater photographs. UPY - the Underwater Photographer of the Year 2023 contest opens for entries on 1st November closes on 7th January 2023. The contest is widely regarded as the world's leading underwater photography competition, attracting thousands of entries, with the winners showcased around the world in the mainstream media. The previous edition was won by Rafael Fernandez Caballero with his nocturnal photo of a gathering of whale sharks "Giants Of The Night".

Chair of the judges, Alex Mustard said "the previous edition of UPY taught us that restrictions on travel may have stopped many photographers visiting their favourite waters, but it didn't stifle their creativity. Our entrants showed us how diverse underwater photographs can be, from swimming pools, underwater mines, deep shipwrecks and ocean wildlife spectacles. The last 12 months has seen travel reopen and we are excited to see what images have been captured, especially with photographers returning to work with subjects dear to them."

A new addition to the contest for 2023, is that exciting underwater photography equipment manufacturer Marelux has joined UPY as a double category sponsor. Marelux are, generously providing UPY's biggest ever cash prizes for photographers finishing 1st, 2nd and 3rd in both the Wide Angle and Macro categories. Jun Ouyang from Marelux said "We are delighted to be supporting a contest that is so highly regarded by the underwater photography community, best of luck to all the photographers, we cannot wait to see the stunning winning images".

UPY is an annual competition, that celebrates photography beneath the surface of the ocean, lakes, rivers and even swimming pools. The competition is truly international, has 13 categories, testing photographers with themes such as Macro, Wide Angle, Behaviour, Wreck and Conservation photography, as well as four categories for photos taken specifically in British waters.

The contest incorporates a bespoke results system, providing feedback to the photographers on how far through the contest every single image has progressed, so every entrant benefits from taking part.

The experienced judging panel consists of underwater photographers Peter Rowlands, Tobias Friedrich and Alex Mustard.

www.underwaterphotographeroftheyear.com

Anda, Philippines with Simon Rogerson, June 2023

Anda is a little explored area on the east coast of Bohol featuring 15 kilometres of fascinating dive sites. Join Simon Rogerson for 17 dives over seven days on this exclusive adventure to discover the diversity of the marine life and unique topside experiences on this emerald isle.

With easy access to a multitude of stunning dive sites away from the crowds, the holiday experience in Anda is both relaxing and rewarding, especially for divers. The magic of Anda is in its mix of habitats as well as the diversity of the colourful marine life.

The first four bookings get free nitrox, and there's a discount for BSAC members.

Whale Sharks in Stereo for First Time

Here is a new way of measuring Whale Sharks being tested by Dr Chris Rohner on one of Aqua-Firma's Whale Shark Research & Photography expeditions to Mexico.

It is hoped that this will be the most accurate method yet, using two video cameras to create 'stereo pair images'. The length of the shark can be determined from the degree of overlap of the two images.

If it works, this technique will replace 'laser photogrammetry', which involves taking an image of two lasers exactly 50cm apart, pointed onto the side of a shark. This laser technique was easier than the method it replaced (two swimmers holding a tape measure at either end of a shark.

The ability to measure sharks accurately is important. We see some sharks year after year and so by measuring their length, we can understand how fast they grow. Researchers like Chris can monitor if this varies by location; and where satellite tracking tags have been applied, we can compare rates of growth according to where whale sharks have been feeding. We may also be able to spot changes in growth rates due to anthropogenic influences too, such as the build-up of plastics within the stomach.

If the technique works well, you can next see it in action if you join on of our Whale Shark Research experiences in Madagascar this October, Tanzania this November, or in July next year in Mexico.

Link https://www.aqua-firma.com/news/2019/08/06/measuring-whale-sharks-in-stereo-research-mexico-tanzania-madagascar

https://marinemegafauna.org/magazine

Wakatobi resort & liveaboard combo

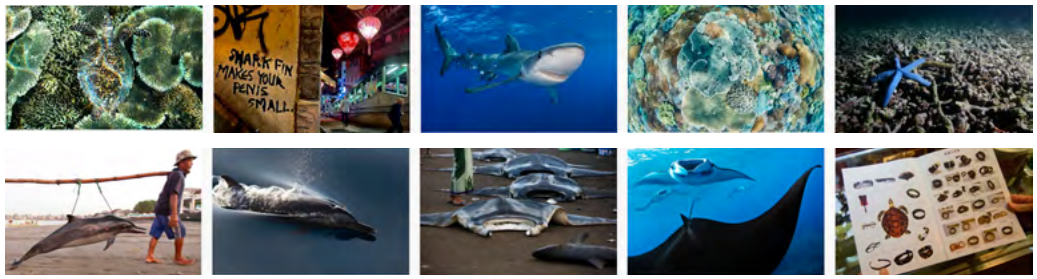
Opinions vary over which offers the best experience – resort or live aboard? Of course, they are both very different experiences and each has its specific attractions.

At Wakatobi you can experience the best of both worlds by adding a cruise aboard our luxury dive yacht, Pelagian, to your resort stay. This luxuriously appointed 36-meter private yacht carries a maximum of ten guests to create a private yacht experience, and ventures farther afield in the Wakatobi archipelago and the southern shores of Buton Island.

If you've dived sites around Wakatobi Dive Resort before, you'll definitely want to expand your dive adventures to the reef systems beyond the island of Tomia. New marine life discoveries lie waiting for you and your camera. Exotic and rare marine life can be found on all dives but if you love muck diving, then sites like Cheeky Beach and Asphalt Pier are sure to create excitement. If you like sheer cliffs and caves, Tanjung Batutoro offers something for both wide-angle and macro photographers.

www.wakatobi.com

Ocean Eye - Chasing the Beauty



Ocean Eye has launched a series of 10 NFT images in a collection called 'Ocean Eye - Chasing the Beauty' - taken by the Award Winning photojournalist Paul Hilton.

This is a unique series of images from the decades long mission of photo journalist Paul Hilton to document the destruction and beauty of our Ocean. The collection is to be sold in order to fundraise for the start-up operations of marine conservation technology platform Ocean Eye.

In his own words 'Ocean Eye is one of the most promising innovations in a long-time that can help bring solutions to critical issues of marine wildlife capture and trade from shark finning to unsustainable hunting of all marine species'.

At the time of multiple environmental crises Ocean Eye provides a solution to the number one marine conservation success factor; stakeholder buy-in. Too often coastal communities lack incentives to support conservation initiatives and continue to unsustainably exploit vulnerable marine life such as sharks, turtles, cetaceans and others.

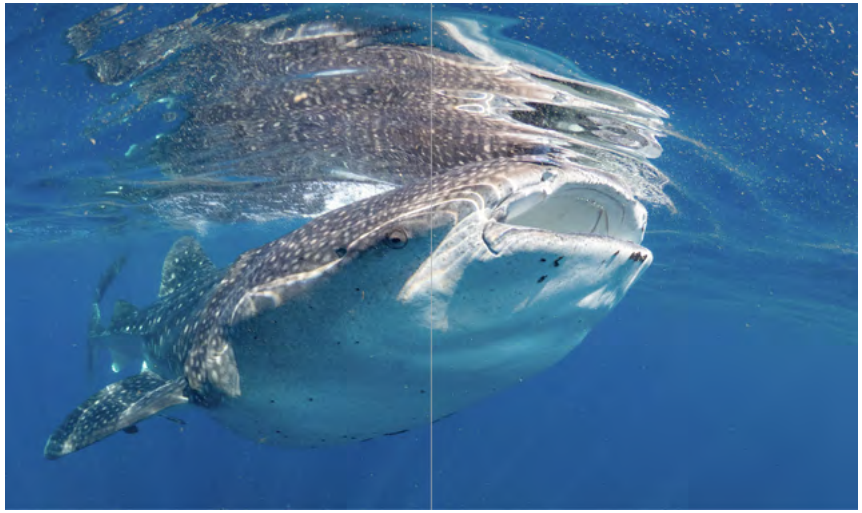
Ocean Eye is a data collection and financial transfer platform that collects wildlife sighting data and transfers ecosystem service payments. The animal sighting reports are directly linked to micro payments from tourists that go to coastal communities in order to incentivize the protection of endangered and vulnerable species.

'Ocean Eye supports equitable and fair access to finance and we are excited to be part of the disruptive economy of blockchain and trailblazing biodiversity conservation in a measurable way in this space', said Mareieke Dornhege of Ocean Eye.

https://opensea.io/collection/ocean-eye

Whalesharks in Mexico

22 - 28 Jul 2023



Join an international & local expert team of whale shark researchers, marine biologists, photographers & filmers amongst the world's biggest aggregation of whale sharks peak season hosted by Aqua-Firma Marine Scientist, Charlotte Caffrey & Whale Shark Researcher from the Marine Megafauna Foundation

Accommodation is at a premium all-inclusive hotel with careful COVID-safe protocols.

The experience of snorkelling with the largest fish in the sea, the whale shark (Rhincodon typus) is not one you are likely to forget. These gentle plankton eating giants grow as large as 20 metres, display beautiful spot patterns from above, block out the light of day from below and often carry with them a living reef of fish life.

This exclusive experience off the Caribbean coast of Mexico allows as small group of people to join an expert Aqua-Firma research team in search of whale sharks in the largest known aggregation of them on our Planet. We have been operating these trips for 8 years, during what has proven to be a peak period of the year. More than 400 whale sharks have been counted on aerial surveys and our research boat is sometimes surrounded by as many as 200 or more sharks. Photographic and video opportunities can be superb.

US$ 3,590.

https://www.aqua-firma.com/experiences/mexico-whale-shark-research-snorkel-freediving-cancun-isla-mujeres

Niue Island
Photo trip with PanOcean Photo & Travel
14th – 28th August 2023

Your tour guide: Roland Conrad
Photo Expert & Tour Guide

The only way to get to Alofi, the capital of Niue, is via a 3 hour direct flight from Auckland in New Zealand twice a week every Tuesday and Saturday. As you cross the international date line, you arrive in Alofi a day earlier. This means you have to take the Air New Zealand flight around 9am on Tuesday 15th August 2023 and arrive back in Auckland on Tuesday 29th August 2023. We will accordingly spend 14 nights on the island from Monday to Monday. (14th – 28th August 2023)

Meeting point for the trip will be in Auckland International Airport at the latest. Due to most flight connections, your guide will likely spend the night at a hotel near AKL Airport before flying to Alofi. Of course we can also organize your trip from your front door to the island including all flights and necessary overnight stays. A combination with New Zealand or at least Auckland would also be conceivable. However, at this time of the year it is winter there.

Upon arrival on the island, a minivan will be ready for the group and your guide will drive to the accommodation.

Daily schedule:

A 25 minute drive along the coast brings us to our local partner: Niue Blue Island Adventures. For our whale watching trips and dives, a private boat will be available for the group with a maximum of 5 divers plus your guide, crew and captain from Niue Blue.

The whale trips take place either in the morning or in the afternoon and last up to 4 hours. Depending on the weather conditions and the decision of the participants and the guide. You really can't say which time is better or worse. Nature is unpredictable here. Theoretically, diving would also be possible on the same day, but experience has shown that the snorkeling trips are very strenuous. 6 trips are planned and included. A double dive is planned for 3 days each. A guided island tour by Niue Blue will take place on one of the days off. So you still have 3 free days for further dives or your own activities. Explore the island on an e-bike or hike along the beautiful coast.

Please note that all shops and companies are closed on Sundays. This is a traditional Tonga-like rest day. This local tradition must also be respected so please keep this in mind if you head out to explore the island on Sunday.

A maximum of 5 freedivers and your guide are allowed per boat. This ensures a maximum nature experience!

https://behind-the-mask.com/dive-travel/groups/2023-08-niue-island-panocean/

AQUATICA™ Digital

Year End Global Sale!

15% OFF *all retail items*
November 1st - December 31st, 2022

*** NEW Lower price**

Example 1:
AR5 Housing For Canon R5
Regular price: $3,199.00 USD
15% Sale price: $2,719.00 USD

Example 2:
Aquatica 5HD Monitor Housing
Regular price: $1,695.00 USD
15% Sale price: $1,440.00 USD

Example 3:
A1 Housing For Sony a1
Regular price: $3,199.00 USD
15% Sale price: $2,719.00 USD

All Aquatica housings now come standard with vacuum pump, valve and alarm sensor as well as your choice of strobe connectors!

www.aquatica.ca

New Products

Nauticam EMWL

130° Objective Lens, Click for high res image.

100° Objective Lens, Click for high res image.

60° Objective Lens, Click for high res image.

The EMWL (Extended Macro Wide Lens) is built to work with several popular macro lenses and is optimized for both stills and video. It is a wet mount design so the lens can be attached and removed underwater. This increases the versatility of the entire system and other accessories like SMC and CMC macro converters can also be used.

It is a modular design with three individual pieces that make up the EMWL, the Focusing Unit, the Relay Module and the Objective Lens. Nauticam has made components optimized to work with different camera manufacturers and their macro lenses, as well as choices for four unique perspectives.

To ensure the best results across a range of cameras, four focusing units were designed and each unit is custom designed optically to work with the recommended primary lenses.

The next piece that attaches to the front of the focusing unit is the Relay Lens. It was designed to the highest standard with 14 glass elements in 10 groups. The EMWL Objective Lenses generate an inverted image, making it appear upside down. The Relay Lens corrects the inverted image and relays the image back to the focusing unit and sensor.

The final piece that attaches to the front of the Relay Lens is the Objective Lens. There are four different versions with varying degrees of angle-of-view. You would choose one based on the look, subject or type of image you would like to produce. These, like the other two parts, can all be put together and disassembled underwater. You could keep all four objective lenses with you and swap out when needed. You can shoot these just like you would any other lens, but the real magic happens when you get up close to your subject.

The 160°, 130° and 100° objective lenses will focus as close as the front element and the 60° objective lens can focus as close as 15mm. You could fill up most of the frame with a nudibranch and still have room for a diver in the background!

There is also an optional flip holder for the EMWL. It is a double flip design with one dedicated flip for the EMWL and another available for a SMC or CMC. Please note: Ports shorter than 80mm are not compatible with the flip holder.

The EMWL is a great tool to boost your creativity.

www.nauticam.com

BACKSCATTER

THE BEST BANG FOR YOUR BUCK

OLYMPUS E-PL10

Nauticam NA-R7 housing for Canon EOS R5

The NA-R7 underwater housing follows suit with Nauticam's drive for innovation. Like the full frame Canon EOS R5, R5 C and R3, the NA-R7 present shooters with the ability to use both the available legacy EF lenses via an adapter in addition to their native RF optics.

To support both the legacy and native lenses, Nauticam has designed a N100 to N120 adapter which integrates into the N120 Canon EF port system. Canon's EF to RF mount adapters can be affixed to the camera before insertion into the housing.

When using the EOS R7 inside the housing with the adapter and a supported EF lens, the port and extension ring arrangement will be identical to the same setup on a Nauticam Canon N120 DSLR.

As the RF-S lens lineup emerges, dedicated port and extension ring combinations will be listed on the new N100 RF-S Port Chart.

Nauticam engineers are obsessed with getting the underwater image maker unfettered access to all the necessary controls, with as many within easy reach of the ergonomic rubberized handles.

This Mission Control philosophy extends to the NA-R7 where a dual thumb lever is placed by the right front side accessing the M-Fn and Record buttons. On the rear right side is a thumb lever accessing AF-ON. Near the left handle is a thumb lever for "Playback."

Large knurled and rubberized control dials access the camera's "main" and "sub" command dials. The two-stage trigger allows for smooth focus and firing activation. Additional buttons for "Menu", "Focus Point Selection" and others are also easily reached from the handles.

www.nauticam.com

Aquatica Year End Global Sale



Canadian housing manufacturer Aquatica are having a Year End Global Sale until Dec 31st 2022. There is 15% off all retail items.

For example this would reduce an AR5 housing for the Canon R5 from $3199 down to $2719, a 5HD monitor housing from $1695 down to $1440 and a Sony A1 housing from $3199 down to $2719.

All Aquatica housings come with vacuum pump, valve and alarm sensor as standard as well as your choice of strobe connectors.

www.aquatica.ca

SeaFrogs Sony ZV-1 Housing

The Sea Frogs ZV1 housing was specially created for Sony ZV-1 Digital Camera, manufactured to the highest professional standards of function, style and durability. This compact digital housing is molded of corrosion free ABS-polycarbonate, it is virtually indestructible with heavy duty walls that allow it to operate safely to 40m (130 feet).

https://seafrogs.com.hk

WeeFine WED-5 underwater 5" HD LCD monitor

The WeeFine WED-5 is a compact and easy to use underwater 5" monitor. The housing is made of aluminum alloy with anodized hard oxidation surface treatment for a strong waterproof performance. It only weighs 260gr underwater and 840gr on land.

The screen resolution is 1920x1080 HD resolution, 16,77M colors and 480cd/m2 brightness. It's a pleasure and easy to use with the viewing angle of 85°. With the provided 18650 battery you have a working time up to 3.5 hours.

Easy to use with the power button with indicator light. The light around the powerbutton shows the status of the battery level in a clear way. The monitor has a shade, made of silicon. This shade blocks the false light on your screen.

For the input you can use M16 or M24 (standard) connection. The monitor comes with DD-C1 cable, DD-C2, DA-C2 and DA-C1 are also available.

The monitor comes with:

Battery, charger, spare o-rings, M16 adapter, M24 adapter, HDMI signal cable, HDMI DD-C1 cable, manual

Depth rated: 80m/263ft

Dimensions: 156 x 106 x 47mm

Weight: 840g (on land) / 260g (in water)

www.uwfoto.net
www.uwcamerastore.com

Anglerfish housing for Panasonic BGH1

Anglerfish Creative Lighting has announced that their housing for the Panasonic BGH1 4K cinema camera is available for pre-order.

Panasonic BGH1 is a compact and lightweight 4K cinema camera offering remote camera function through Power Over Ethernet (POE+) as well as 4K 60hz broadcasting and streaming functions. The camera is also features the ability to record RAW video data output over HDMI at 4K, 60hz, 12bit. Users also can record Apple ProRes RAW on Atomos NINJA V. The camera has both HDMI and SDI output. It features Genlock in, TimeCode in and out for camera synchronization.

The camera battery is optimized to provide 5-6 hrs of record time even with the smallest battery. Larger battery is available which allow for record time of up to 12 hrs.

The housing Bayonet is compatible with Nauticam N85 system. This means that users can either utilize their existing N85 ports and extension tubes or use one of Anglerfish's 4-inch, 6.5-inch, 9.5inch and 12inch glass domes or the macro flat ports.

The housing features any two bulkhead ports: M24, M16 or M14.

The housing comes standard with leak detection which allows the user to detect the smallest leak in the housing. The vacuum valve is a simple design which allows the user to service the valve in the field.

www.anglerfishlighting.ca

Seacam housing for the Leica SL2/SL2-S

Seacam has unveiled its latest Silver housing, and this one is designed for a surprising camera: the Leica SL2—a 47MP full-frame monster with an impressive spec sheet, which includes DCI/UHD 4K/60p video with no crop, 6fps burst shooting with continuous AF/AE, 5-axis image stabilization, a 2.1M-dot touchscreen LCD, and a 5.76M-dot OLED viewfinder. And the bonus? The housing is also compatible with the SL2-S, a videocentric version of the camera with a 24MP sensor.

Like all Seacam Silver housings, the SL2/SL2-S housing is milled from a saltwater-proof light metal alloy that is twice hardened and anodized, while the two housing shells are secured with the company's titanium Safety Lock fastening system. Handles are integrated but removeable, and buttons and dials, which offer full control over the camera's functions, are stainless steel and anodized aluminum. As well as a window for viewing the rear LCD, there's an upper display window for the small LCD on the camera's top plate.

The housing can be configured with S6 or N5 bulkheads for electrical strobe triggering, and you have the option to have an HDMI bulkhead and a vacuum system fitted. Seacam's leak detector comes as standard. The housing goes down to 260 feet, but it can be customized upon request to increase that depth rating.

Seacam's housing for the Leica SL2/SL2-S is priced at €4350 (excl. shipping, taxes and custom duties) on the company's website, and it is available in the U.S. from Backscatter, which is now taking pre-orders.

www.backscatter.com

Ikelite Neoprene Cover for DL Compact 8-inch Dome Port

This neoprene cover with drawstring fits the DL Compact 8” Dome Ports for Ikelite 200DL and 50DL Underwater Housings # 75344 and # 75348.

Specifications: 6.25” diameter. Made in China. $45 from Ikelite dealers worldwide.

www.ikelite.com

A message from Paralenz

It is with regret that we inform you that Paralenz has filed for bankruptcy.

For curator questions and queries about your camera repair and general support, please contact lawyer Christina Andersen from Horten: cdn@horten.dk.

Thank you.

We are working very hard on a solution for us to restart the Company.

However, we are not able to confirm anything at the moment, but we will keep you informed once we know more about the situation.

www.paralenz.com

AOI UCL-90PRO Close-Up lens

AOI has announced the UCL-90PRO macro close-up wet lens. It features a magnification of +18.5 and has an anti-reflective coating on all lens element surfaces. Attachment is via an M67 adaptor ring, which allows for the lens' rear element to be located close to the front of the lens port.

The brighter, lighter, and better lenses or the PRO Range are now available. For more information or orders of the new UCL-90 PRO and the PRO Range, view www.aoi-uw.com or contact your local AOI distributor.

www.aoi-uw.com

Kraken KRM07-2200 7" Ultra Bright Monitor

Boasting a whopping 2200 nits of brightness, you can easily see the screen even in full sunlight! We've paired it with our 3×21700 lithium ion battery (same battery as Hydra 4000\6000) with USB C charging to give you a long 3 hour run time.

The monitor can take up to a full 4K input signal. M16, and M24 bulkhead required to pass HDMI cable through. Full sized, mini, and micro HDMI adapters included depending on your camera needs. Ball mount also included for easy mounting on your camera system.

www.krakensports.ca

Immerse Yourself in the World of Underwater Imaging

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Keep up to date with everything that matters to underwater photographers, from the latest gear and gadgets to the newest developments in marine research

TRAVEL
Read about the experiences of accomplished shooters as they visit the world's most iconic dive spots, and get inside tips on maximizing your dive vacation

TECHNIQUES
Learn the fundamentals of underwater photography and progress to the latest, most innovative techniques taught by the top pros in the industry

EQUIPMENT
Use our comprehensive underwater photography and videography gear guide to find the best camera, lenses, housing, lighting, and accessories for you

ARTICLES
Discover the world of underwater imaging through compelling features from photographers, filmmakers, ocean scientists, industry experts, and more

CONTESTS
Submit your best underwater images and short films to our annual contests, including the prestigious DPG/Wetpixel Masters Underwater Imaging Competition

DIVE PHOTO GUIDE

www.divephotoguide.com · contact@divephotoguide.com

Zen Tripod Plate

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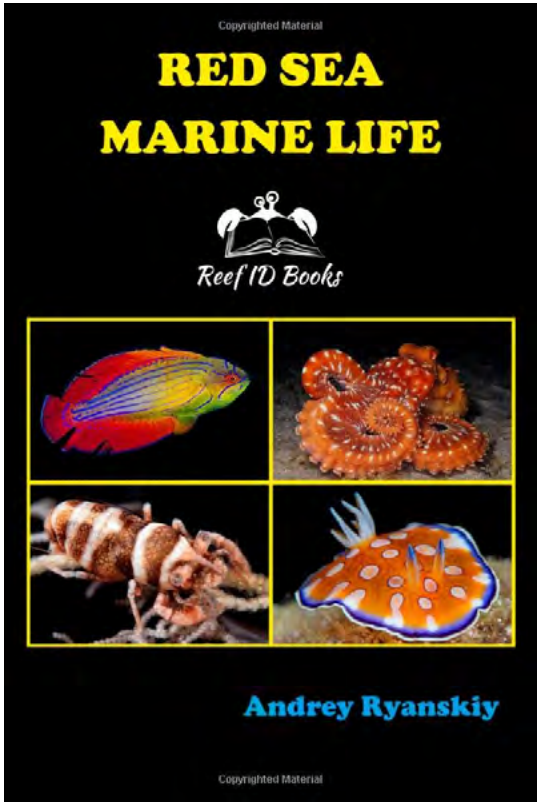
Being double, it allows the coupling of two lenses without the need to change it by unscrewing.

With this double SAGA mount you avoid having to screw and unscrew the lens on the front, thus saving time and avoiding the lifting of particles when handling the lens.

This product allows mounting on metric 67 faceplates.

www.sagadive.com

Red Sea Marine Life by Andrey Ryanskiy



You have never seen such a Red Sea! The pages are full of previously unknown species of fish, nudibranchs, and crustaceans. Many of them were discovered by the author and his colleagues. But even previously well-known species are photographed with unprecedented quality!

This author's photo guides on fish, nudibranchs, crustaceans, sea shells, echinoderms and flatworms have been highly acclaimed by divers and scientists, but he has always dreamed of writing a comprehensive book on the fauna of coral reefs in the Red Sea.

And Red Sea Marine Life is a truly comprehensive: 2900 full colour photographs of 2100+ species, including 810+ fish species, 250 cnidarians (corals and relatives) and near 350 species of nudibranchs and sea slugs.

Live photo of hundreds of species have never before appeared in field guides or popular books. The most experienced Red Sea dive guides open their eyes wide when they see photos of rare and beautiful fish or nudibranchs species in this book.

A lot has changed in marine biology in the two decades since the previous Red Sea guides were published. And this book is based on the latest research.

Red Sea Marine Life will make you take a fresh look at the seemingly well-known Red Sea, the house reef of Europe.

Amazon paperback: https://www.amazon.de/-/en/Andrey-Ryanskiy/dp/B0BFHS69HN/
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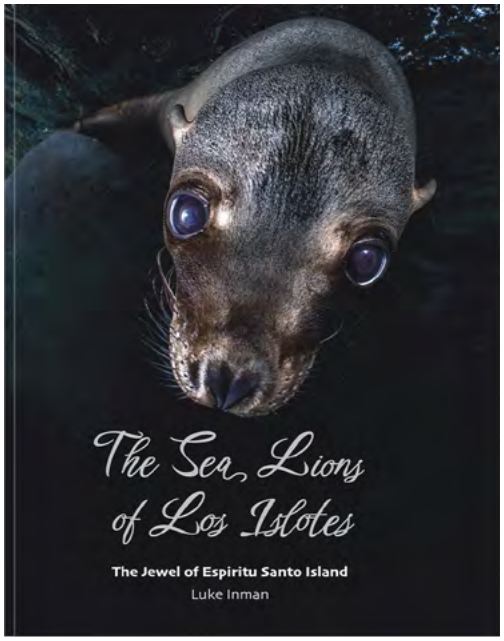
Sea Lions of Los Islotes by Luke Inman



Visitors cannot help but be enchanted by the sea lions of Los Islotes. They emanate finesse and charm without a hint of illusion or wizardry. There is no incantation or voodoo, just an abounding sense of play that inspires every visitor.

When it comes to wild animal encounters, Los Islotes is almost nirvana. Few places so close to a city can truly offer such a convenient and accessible opportunity to interact with Mother Nature in her untamed state. California sea lions are the main residents, strangely thriving in a place so accessible to tourists.

Initial introductions begin at the surface; encounters are then formalized below the water as Poseidon's ocean ambassadors exuberantly whiz towards and around diver and snorkeler alike.

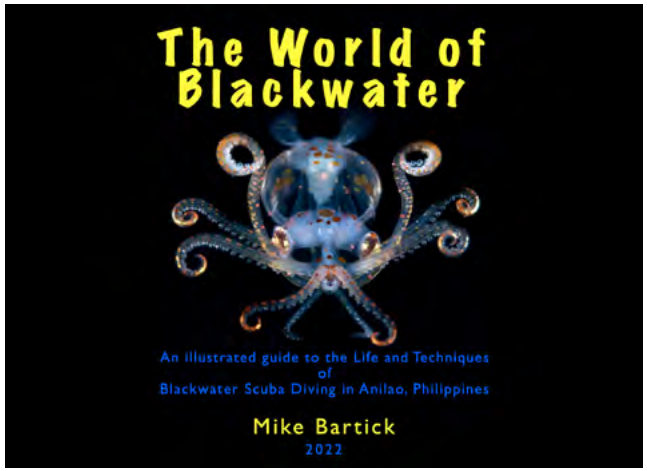
With vivid underwater photography throughout by a uniquely positioned author, The Sea Lions of Los Islotes takes readers straight into the world of these most charismatic marine mammals. The book contents include: A Foreword by Steve Backshall; how to tell different sea lions apart; what their lifestyle is like; their lifecycle; how to have safe interactions; the challenges sea lions face; other visitors to the area; and how to photograph sea lions.

Luke Inman is an award-winning scuba Instructor Trainer, natural history filmmaker, photographer, writer and explorer. His work includes the BBC's Planet Earth 3, Netflix's Our Planet and advertising campaigns. Luke is the Owner and Operator of The Dive Gurus — the only PADI 5 Star Instructor Development Centre in La Paz, Baja California Sur, Mexico.

RRP £25 | Paperback | ISBN 978-1-909455-49-8 | 136 pages | 246 x 189 mm Available now from Divedup.com, online and from retailers

www.divedup.com

The World of Blackwater by Mike Bartick



Highly published, award-winning underwater photographer and Photo Pro at Crystal Blue Resort, Mike Bartick announces the release of his new eBook, The World of Blackwater. Mike chronicles his work from recent years as he dives deep into this mysterious world that only exists offshore at night.

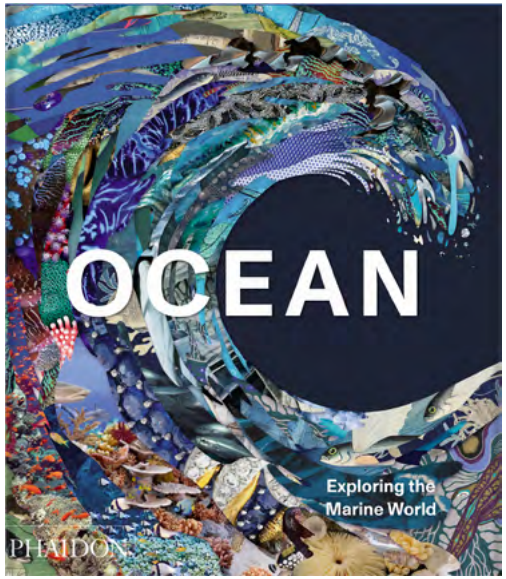
Created to inspire divers in the growing realm of Blackwater Diving, this eBook offers a compilation of images of rare or never seen before marine animals (with common and/or scientific names), natural history, Mike's personal journey into blackwater diving, and photo tips. The eBook is available as a PDF or iBook, so it may be accessed and read on any digital platform at any time! Divers may also use this book as a digital-field-guide for Blackwater Diving in the Indo-pacific and other tropical locations around the world. As a bonus, owners of this eBook will receive automatic updates as they become available. The contents of The World of Blackwater include:

Forward by G. David Johnson PhD
Introduction to Blackwater Diving
Diel Migration and the Great Carbon Pump
Cephalopods - 21 species of Octopus and Squid
Crustaceans - 13 species of Crabs & Shrimps
Larval Fish - 45 species of Larval Fish & Flatfish
Jellyfish & Other Gelatinous Creatures - 16 species
Marine Worms and Pteropods - 19 species
Relationships
Photographic Skills
Glossary

Mysterious, wild, and exotic, The World of Blackwater can be found on his website, Gumroad and iBooks

www.Saltwaterphoto.com
www.Gumroad.com
Apple iBooks

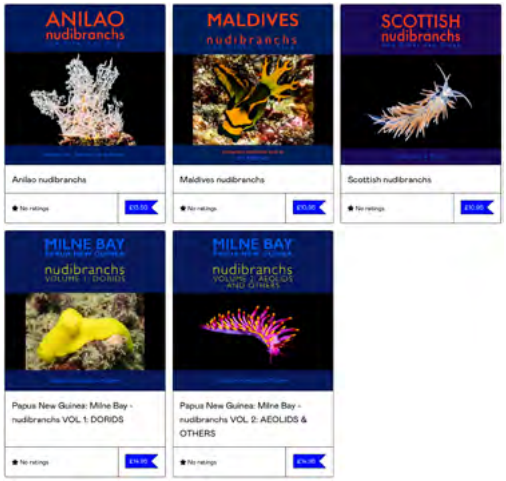
Ocean: Exploring the Marine World



Ocean: Exploring the Marine World presents a remarkable survey of the aquatic kingdom, from the ancient world to the present, through the lens of culture. Featuring 315 spectacular images spanning more than 3,000 years, the book includes fantastical prints of sea creatures, vintage movie posters, paintings and sculptures from classic and contemporary artists as well as maps, scientific illustrations and incredible underwater photography.

www.phaidon.com

Nudibranch ID Guides in pdf



I have decided, after much thought, to make all my ID books available as PDF downloads to purchase on Gumroad. All these publications are based on the current WoRMS taxonomy with several images of many of the species.

Updates to the books sold on Apple iBooks are automatically provided but I now understand that doesn't happen with Kindle. If you have purchased a Kindle version I will be happy to send you the latest version as a PDF free of charge.

Going forward for those purchasing from Gumroad I will provide updates as and when they become available, again FOC.

Jim Anderson.

www.nudibranch.org

https://nudibranchs.gumroad.com/

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Magic filters are now available in 3 options. Original Magic for use in blue water with DSLR and compact cameras with Manual White Balance, Auto-Magic for compact cameras in automatic point and shoot mode. GreenWater Magic for use in green water with DSLR and compact cameras with Manual White Balance. Prices start at just £25.

The Auto-Magic formula is now available in a Plexiglass filter that can be added or removed underwater.

Simple and inexpensive yet so effective

www.magic-filters.com

British and Irish Underwater Photography Championship (BIUPC) 2022 winners

by Nick Watson

‘Bristol photographer takes top honours in competition with stunning image of Bobtail squid whilst night diving off South Devon coast’:

The British Society of Underwater Photographers (BSoUP) are once again pleased to announce results of The British and Irish Underwater Photography Championship (BIUPC) which was held on 3rd September 2022.

For Underwater Photographers, a “splash-in” is a competition that takes place on a single nominated day, when photographers jump into the water to compete against each other.

Traditionally, these competitions have been restricted to particular locations, but BIUPC is unique in that it has developed a format to allow pictures to be taken anywhere within the coastal or inland waterways of the United Kingdom and the Republic of Ireland. This has hugely increased the richness and variety of pictures submitted for judging, and so truly allows for a snapshot of the underwater environment captured photographically around these shores under time pressure.

Kirsty Andrews, the BIUPC Champion 2022. Her bobtail squid image won the close-up category and the coveted Peter Scoones memorial Trophy.

There are three main categories for competitors:

- Wide Angle (open)
- Close Up (open)
- Compact Camera (restricted).

Each of these categories will have one winner, and one overall Champion is chosen from these 3 images. The ultimate prize is the coveted Peter Scoones memorial Trophy.

There is also a category for:

- Human Impact on UK and Irish Marine and freshwater Environments (but this isn’t included for the Overall Champion).
- ‘Newcomers’ – those who haven’t been taking pictures underwater for more than three 3 years, and are eligible to become Overall Champion (it’s the quality of the image that counts not the equipment or experience).

(Top left) Paul Colley won the wide-angle category with a freshwater river image of schooling trout .
(Bottom left) Grant McCarry's Octopus at Twin Piers Loch Long, Scotland took the restricted camera category with his octopus image.
(Above) Jon Bunker won the human impact on the environment category with a shipwreck at night. MV RMS Mulheim against Milky Way. Wrecked in March 2003 at Land's End, Cornwall.

53 images were submitted in total, with 30 entrants, 3 in the restricted category. Results were announced online at the BSoUP monthly meeting held on 20th September 2022.

Big thank yous to judges Trevor Rees and Richard Thorn. Also to event organisers Nick Watson and Sarah White, who put in many hard yards backstage to enable this unique islands-wide on-the-day competition.

www.bsoup.org

Don't settle for 2nd best

Film - No Filter No White Balance

Digital - No Filter Manual White Balance

Magic Filter Manual White Balance

Digital cameras have opened up new possibilities to underwater photographers. For available light photography manual white balance is an invaluable tool for restoring colours. But when you use it without a filter you are not making the most of the technique. You're doing all the hard work without reaping the full rewards. These three photos are all taken of the same wreck in the Red Sea. The left hand image was taken on slide film, which rendered the scene completely blue. The middle image is taken with a digital SLR without a filter, using manual white balance. The white balance has brought out some of the colour of the wreck, but it has also sucked all the blue out of the water behind the wreck, making it almost grey. The right hand image is taken with the same digital camera and lens, but this time using an original Magic Filter. The filter attenuates blue light meaning that the colours of the wreck are brought out and it stands out from the background water, which is recorded as an accurate blue.

www.magic-filters.com

Nauticam EMWL-160 lens

by Alex Mustard

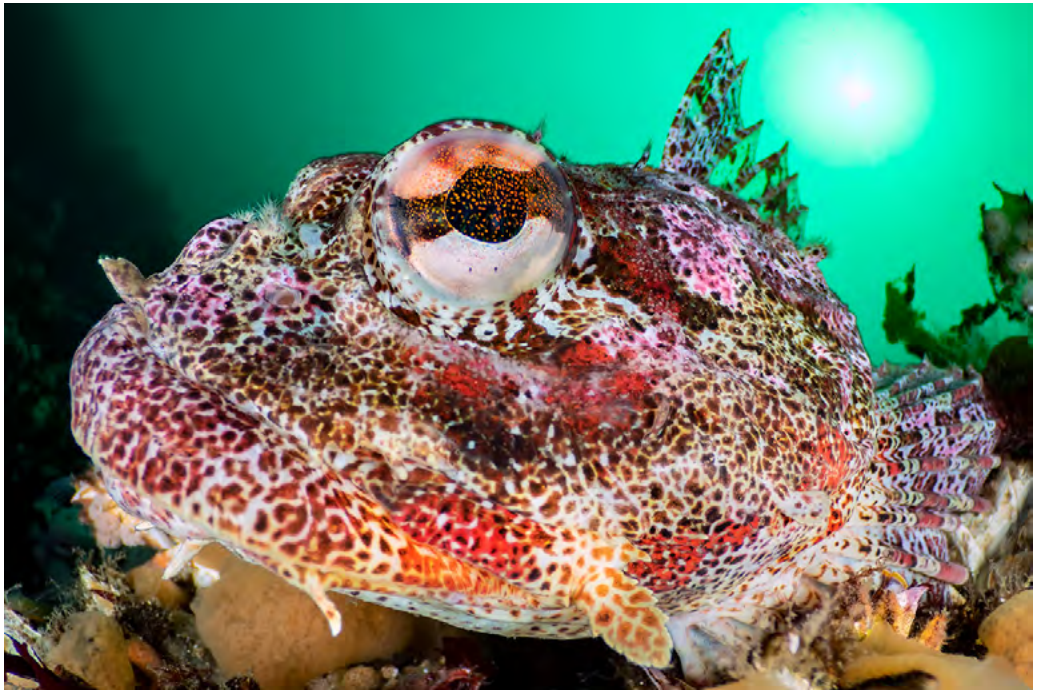
Strange as it looks, Nauticam's EMWL lens is ideally designed for extreme WAM images (Wide Angle Macro), where a small subject is photographed at macro levels of magnification, within a wide angle scene. This viewpoint is often called "bug-eye" because it gets us right down to critter eye-level and transports us into their world. Even if you have never used such as lens, it doesn't take much imagination for any underwater photographer to see the appeal of this unique perspective.

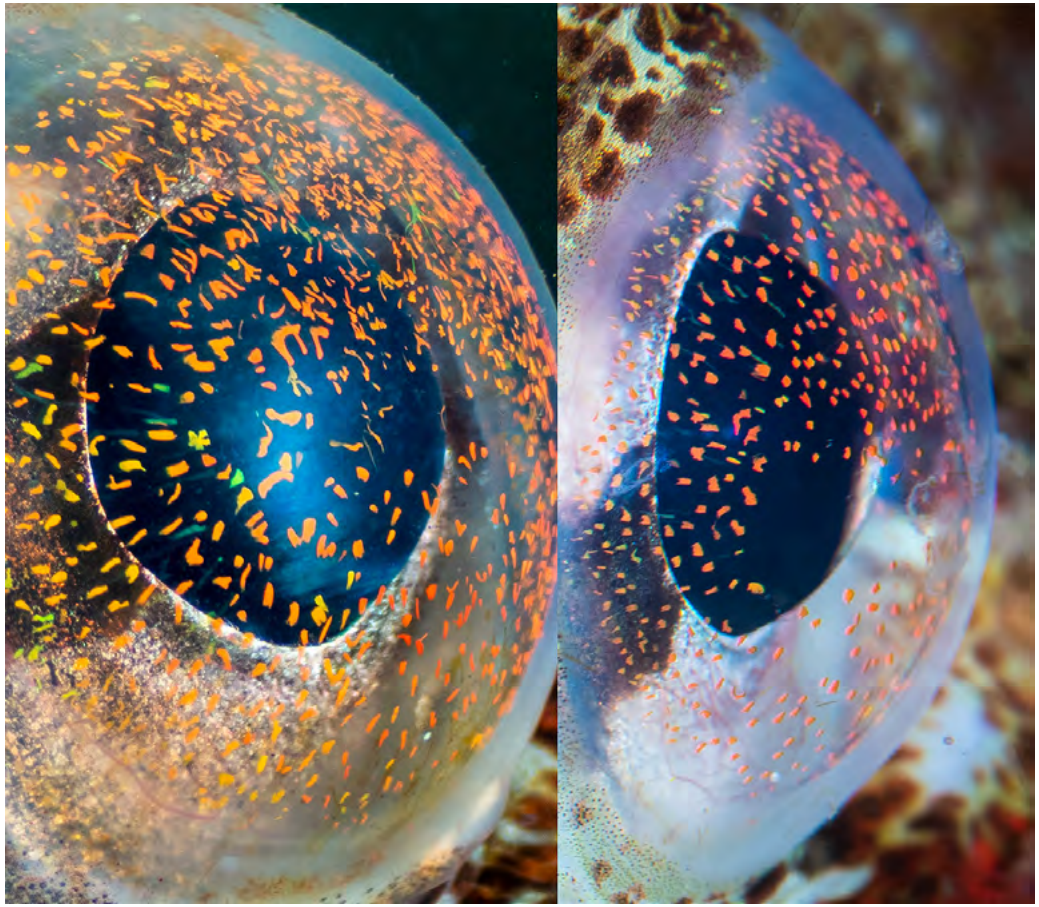
Nauticam designed the EMWL to be modular, with interchangeable final objective lenses, to allow the user to alter the angle of view underwater. Three objective lenses were introduced with the EMWL: the 130˚, the 110˚ and 60˚. If Field of View (FoV) isn't your cur-rency, these are approximately equivalent to full frame, rectilinear lens focal lengths of 10mm, 15mm and 38mm, respectively. Frustratingly, the EMWL lens was released in 2020, timing that meant that many owners still haven't given the lens an appropriate workout. I first shot the finished lens in January 2020, and I am still waiting for the chance to use it in a SE Asia muck diving mecca, where it will be most at home. But the limited travel oppor-tunities for owners have not stopped Nauticam's development. They have just announced new lens option for this modular system, which is also the widest yet – a 160˚ optic. I had the chance to test a production ready prototype on a recent trip to the chilly, but rich waters around God's Pocket Resort, Canada.

The reason that the 160 has me salivating is that it simply makes the EMWL better at what it is designed to do. The wider view allows us to set the subject against the widest background, while

The EMWL is a wet lens and can be attached to most macro ports. The big buoyancy arms aid handling and the bayonets store spare objectives. This system, Nikon D850 + 105mm, Nauticam EMWL + 160 optic, Subal housing, Retra Pro strobes, were used for all images featured here.

EMWL objective lenses, the 110˚, the 130˚ and the new 160˚ (there is also a 60˚, not pictured)





(Above) The small, wide EMWL lens gives a bug's eye view of creatures, making small critters seem giant. 1/40th @ f/18, ISO 320.
(Right) A comparison with and without EMWL. Detail of a red irish lord eye (off centre in both cases), shot with 105mm and EMWL-160 on left and with just 105mm on right. To me, the EMWL-160 is giving sharpness that is equivalent to the prime lens.

the small size of the front element increases how large the subject appears in the picture. The small size also makes it easier to light the subject when it is very close to the lens, because there is almost no shading from the lens. In short, the 160° objec-tive should be top of the range. The EMWL is designed for extreme WAM images, and the 160 is the most extreme option.

That's all good in theory, but the challenge for Nauticam was making this small and wide angle lens deliver usable image quality and the more extreme optics. How sharp will it be in the centre of the frame? And is it sharp right out to the edges? I attached it to my Nikon D850 and plunged it into the chilly waters of British Columbia to find the answer. I wanted to find out if you are an existing EMWL owner should you be adding this lens to your system and if you are a prospective owner, is this the lens that convinces you to buy into the EMWL.

The important stuff first – the sharpness is excellent. Because the 160 is both wider and smaller I was prepared for a drop compared to the 130, which was previously my most used lens choice, but I found no shortfall. Moreover, now I am home and have processed these images out at full resolution, I would say that the 160 is the sharpest of all the EMWL lenses. The 160 is sharp in the centre of the frame and sharp on the edges of the frame. In the water, the 160 made its case swiftly. I loved the angle of view I was getting and the shots it produced. Once I tried it, I used the 160 for almost every EMWL shot of the trip.

The EMWL system is a wet lens, designed to be used in front of a standard macro lens – the

Anemone detail. The EMWL colour reproduction is very good, but I find transitions in hue less subtle than a straight prime lens. 1/40th @ f/18, ISO 500.

105mm on my D850. So impressive is the sharpness from the EMWL 160, that I have simply compared it to the straight 105mm in the sample images here. Bugeye lenses have existed before in underwater photography, but have always been severely limited by their poor image quality. Anyone who has ever used an older design, will appreciate the massive advance in image quality that the EMWL has achieved.

Such a jump in performance was only possible because of the huge amount of work Nauticam put into designing the system, and the diminutive 160 optic in particular. I have heard that Edward Lai evolved the basic design of the 160 more than 50 times to fully optimize the image quality, selecting from a choice of about 120 types of optical glass for each element (the full EMWL has 29 elements). The 160 was designed by running the de-signs on multiple computers in competition, making hundreds of millions of calculations to reach the optimum design. It took more

Backgrounds are important in wide angle macro, but challenging. Open the aperture and they blur out, speed up the shutter speed and they disappear in the dark. We are often forced into pushing the limits with settings. 1/8th @ f/20, ISO 320.

than one year of work just for this one objective lens. It must surely be the underwater lens with the most optical calculations poured into its design.

All this effort explains both the ground-breaking performance, but also the one fac-tor that goes against the 160 - the price. At the time of writing the price is still to be final-ised, but it is expected to be between $2000-2500 USD. That sum comes directly from the extensive development costs, construction - including the two aspherical lens elements, plus the fact that the 160 will only be made in small numbers. The cost will surely push it beyond the price range of many, yet for those that get hold of one, it will give their images serious exclusivity.

Although the sharpness of the 160 EMWL is hard to fault, I feel that there is more of a deviation from, say, the WACP image quality in terms of the colour rendering and high-light capture. The subtly and variation of the hues captured by the EMWL are inferior to my prime lenses or the WACP. They are very acceptable, as you can see, but not perfect. Per-haps the cause of this is that I find the many elements of my EMWL create quite a warm image. I often have to process the images below 4000K in Lightroom to get neutral colours. I wonder if this quite extreme white balance is squashing the colour information? These are minor points, and don't cause me reservations about using the lens, but I mention them for the record.

I did find the new 160 handled the sun well, when it was in the frame in Canada. The EMWL lenses can suffer flare and internal reflections when shot towards the light. Nauticam make lens hoods for them all. But I avoid them as they stop me manoeuvring and lighting quite so close to the subjects. Even shooting into the light regularly with the 160° objective, I didn't encounter any flare or reflections, despite never using the hood.

(Above) Subject matter is key to success with the EMWL, we need subjects (and diving skills) that allow a close approach, such as with this flighty lingcod. 1/20th @ f/16, ISO 500

(Right) Part WAM and part CFWA shot of a painted anemone beneath snell's window. The EMWL can do these shots, but I think a mini dome would produce a comparable frame. 1/80th @ f/16, ISO 500

Autofocus works well with the EMWL 160, but unlike wide angle shooting it is criti-cal to nail the focus because the subject magnification means such minimal depth of field. I tend to use single point. While WAM is promoted as a technique for shooting a critter framed against a wide angle background, with smaller subjects, this look is limited by the lack of depth of field. This also means that we need to stop the lens down, as much as pos-sible to have some sort of detail in the background. However, shutting the aperture makes it more of a challenge to achieve a balanced light image, which is needed to show that all important background. This was especially true in dark Canadian waters, where long expo-sures are often necessary to capture any ambient light. You can of course shoot the EMWL with a fast shutter speed and black background, but that, to some extent, defeats the object of the objective. To make things easier, I tend to favour shooting the lens on sunny days, and towards the middle of the day for

The EMWL produces strong colours, but I find myself using quite extreme white balance values with it, to correct for a warm hue. 1/200th @ f/20, ISO 500.

Mosshead warbonnet wide angle, peers out of a bottle at night. 1/200th @ f/22, ISO 200

maximum ambient light levels.

Wherever you shoot, key to success with the EMWL is the right subject. To produce macro levels of magnification with a wide angle lens, you need to manoeuvre that lens very close to the subject. This suits non-moving and territorial subjects. The ideal size range is marble to tennis ball sizes subjects. Go smaller and depth of field is too limiting, going larger works fine, but doesn't make use of the EMWL's unique capabilities.

So should you buy the 160? On performance, definitely. For me, this is the best and most useful lens for the EMWL, to the point I will happily travel with just the 160 when baggage is tight. The 160 simply makes the EMWL better at what it is designed to do. The only stumbling block is the price. For newcomers to the EMWL system the 160 makes the system photographically more capable, but pushes the system purchase price even higher. Especially as the EMWL is a special effect lens, one that you won't use for every dive. So, its justification depends greatly on the type of photography that you do and how regularly you will use it. I do think it is a good lens to consider buying with a friend, to share on trips to-gether and have it for yourself when traveling solo! But quite clearly, the new 160 makes the EMWL considerably more desirable.

Alex Mustard
www.amustard.com

Sony A7 IV camera review

by Jim Decker

The Sony a7 IV boasts an all-new sensor and other significant performance upgrades from the previous Sony a7 III camera. The "middle" child of the a7 series, the base model has often been looked over. But at 33MP resolution, it's knocking on the door of being called a hi-res camera. Can this be a Sony a1 on a budget that deserves a second look?

A More Affordable a7 Series Camera

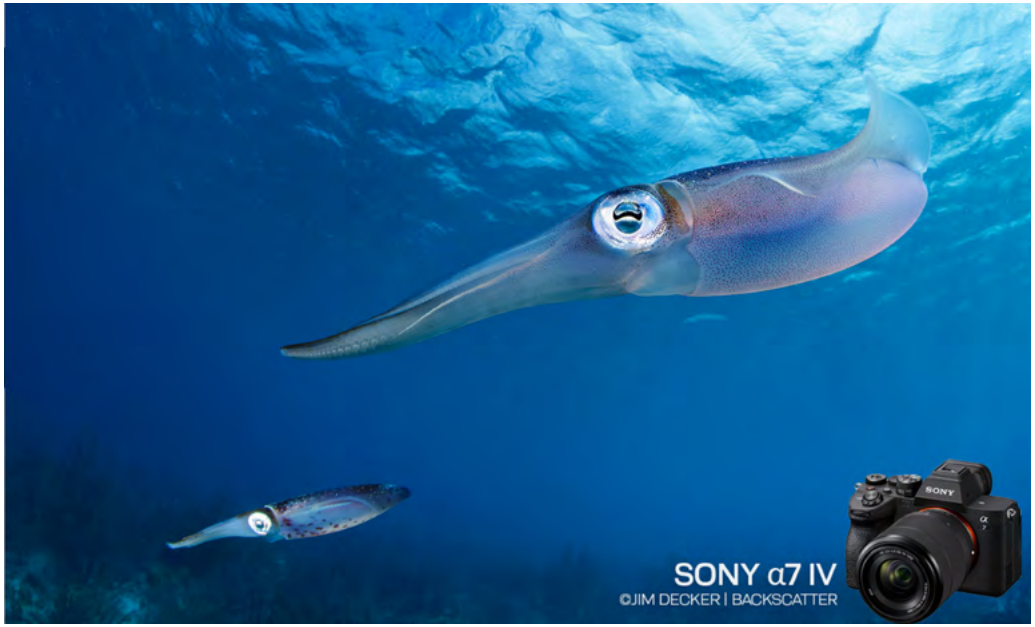
Probably the biggest headline for this camera is the price point. At the time of writing this camera comes in at $2499, which is a bargain compared to the $4000 more you'll spend on a Sony a1.

Previous a7 base models lacked some specs and performance when compared to their S or R model siblings. While there was a price difference for the base a7 models, in the grand scheme of things by the time a complete underwater camera system was put together, it just didn't seem to make sense when the only difference in the cost of the underwater camera system is just the camera body, and a lot of times it amounted to $1500 or less of a difference. Most of our customers at Backscatter wound up going either to the S or R models, and as a result, we had very few takers for the base a7 model cameras.

With the specs and performance of the Sony a7 IV being a significant upgrade to other base models in the past, it's worth it to take another look. With that being said, let's dive into what you get with the Sony a7 IV and what you give up compared to the a7S, a7R, or a1 models.

Much Greater Resolution Than Previous a7 Base Cameras

The sensor is all-new for Sony and is coming in at a 33MP compared to the 24MP sensor of the previous Sony a7 III. While the resolution is much lower than the 50MP of the Sony a1 and the 61MP of the Sony a7R IV, 33MP is still a lot of resolution for big prints and crops in post. While the Sony a7 IV won't capture the detail of either of those cameras, it's still pretty darn good and would have been considered a top camera with these specs just a few years ago. The images captured with the Sony a7 IV look great.



The Sony a7 IV and Sony a1 are extremely similar in terms of size and control layout, but are completely different cameras under the hood. Luckily some of the good tech advancements of the Sony a1 has made it into the Sony a7 IV.

Continuous Shooting Speed

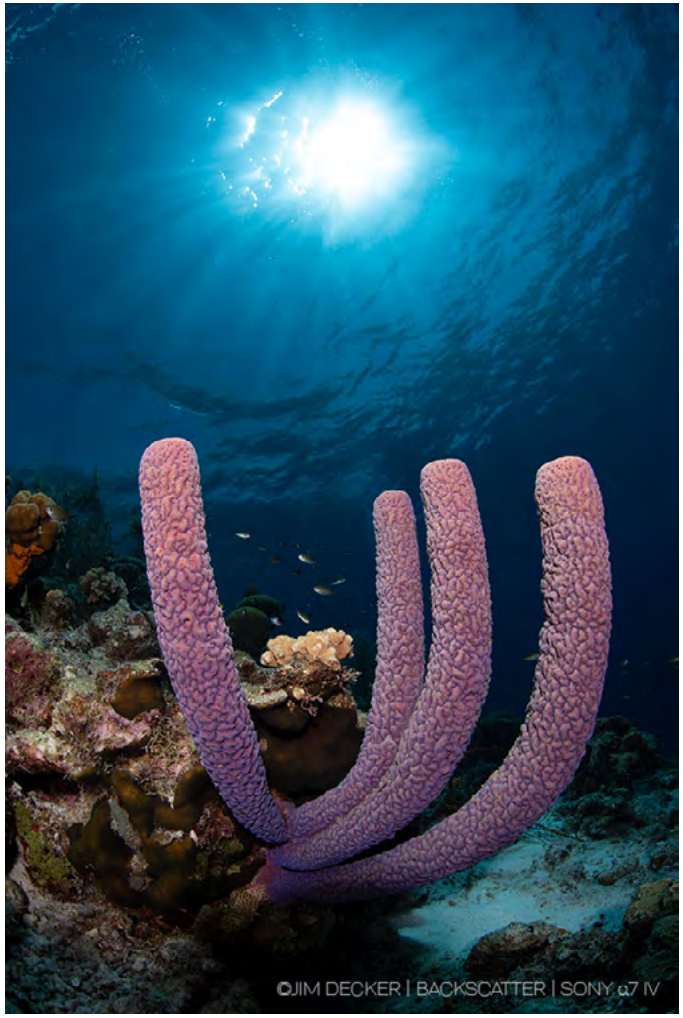
The Sony a7 IV will shoot up to 10 frames per second in a lossy compressed RAW format, and 6 frames per second in uncompressed RAW. I really wouldn't recommend the lossy RAW format as it will cut down dynamic range. In underwater wide angle shooting dynamic range is everything, with the blue channel from the RGB sensor taking the biggest hit, and will show loss of

detail and banding before any of the other color channels. Six FPS isn't bad, and most people shooting with strobes will probably won't shoot that fast. Pro-level shooters will probably find this spec to be inadequate as we've been accustomed to at least 10 FPS and having pro-level big battery strobes keep up at lower power levels.

I shot the Sony a7 IV alongside the Sony a1 during testing and one thing not in the specs that I noticed is there seemed to be a bit of a shutter lag when taking a picture compared to the Sony a1. Sure the Sony a1 is blazing fast and super responsive, and after being spoiled on it, little things become noticeable. After a day of shooting the Sony a7 IV I got used to it and I guess most people not coming from a high-end camera such as the Sony a1 probably wouldn't notice.

Surprisingly Good Autofocus Performance

Something that took me completely by surprise, and the thing I was most worried about, was how well the autofocus stacked up against the Sony a1. I have to say that in practical underwater usage, I didn't notice much of a difference compared to the Sony a1. Which is mind-boggling when you consider the $4000 price difference between the 2 cameras. Previous base model a7 cameras had pretty abysmal autofocus performance with the Sony 90mm macro lens that autofocus was pretty useless when getting anywhere near to the minimum focus of the lens. Even the higher-end Sony a7R IV had the same poor performance with the Sony 90mm. This all changed with the Sony a1 and its massively improved AF tracking, where it could track blenny eyeballs through a diopter, and the Sony a7 IV performed the same.



The EVF of the Sony a7 IV is great, allowing me to see both the sunball and tube sponge in the foreground, just like the more expensive Sony a1. Sony a7 IV | Canon 8-15mm Lens | 1/250 | ISO 100 | f16

Being able to go down to ISO 50 allows for more open apertures while maintaining a dark background while snooting. The image quality bump from less diffraction combined with the nice sensor from the Sony a7 IV makes for a high-quality photo. Sony a7 IV | Sony 90mm Lens | 1/250 | ISO 50 | f13

While 6 frames per second shooting is respectable and will meet most shooters' needs, some pro-level shooters might be wanting for more. Sony a7 IV | Canon 8-15mm Lens | 1/250 | ISO 100 | f16

I was surprised by how quick and responsive the tracking autofocus is on the Sony a7 IV. It had little issue in keeping up with an erratic subject such as a fairy basslet.
Sony a7 IV | Sony 90mm Lens | 1/250 | ISO 250 | ƒ11

Same Great Ambient Light White Balance Performance As The a1 And a7S III

Another big question I had before shooting the Sony a7 IV was will it have the same poor ambient light white balance as previous Sony a7 series cameras or will it get the excellent white balance performance of the Sony a7S III and Sony a1. I'm glad to say it performs identically to those cameras. Colors look good even past 70-80 feet and you'll be able to nail top-notch color in-camera with no color correction in post needed. This is a total game-changer for a camera in this price range from Sony.

Respectable 4K60p Video Spec

A video spec of 4K60p is what I would consider the minimum bar to be met to be considered for shooting video in this day and age. This camera will capture that, albeit at a 1.5/Super 35mm crop. Some might snivel at the crop factor, but in reality, I've found it to be a non-issue. Wide video can be shot with an Canon 8-15mm lens that will give some useable zoom range starting around 9mm. Macro video can be done at greater distances with more depth of field due to the crop factor.

A very cool feature of the Sony a7 IV is that it has a separate video/photo switch on the camera rather than being on the mode dial. There is also the ability to separate video and photo settings. One could set up the video side for 1/125, ƒ8, auto ISO and -0.7 exposure comp with a custom white balance and be ready to go at the drop of a hat. This makes it very easy for a hybrid video/stills shooter to make quick switches on the fly.

The custom white balance is massively improved over the Sony a7 III and is on par with the great capabilities of the Sony a7S III and Sony a1.

Conclusion

The Sony a7 IV has been a box of surprises. Most underwater shooters considering Sony full-frame would have looked right past the base model a7 cameras in the past, but the Sony a7 IV is worth a serious look. Let's explore why.

While the Sony a1 is a fantastic no-compromise camera that truly can do it all, it does come at a very premium price that is $4000 more than the Sony a7 IV. That is a big number that can't be swept under the rug, that prying spouses might give the evil eye to. Previous R series cameras weren't that much more, and the relative performance gap was much larger. Even the Sony a7R IV is only $1000 more and it is the best hands down image quality we've seen yet. But in the areas of autofocus, white balance, and video, it lags behind the more affordable Sony a7 IV. Kudos to Sony for moving performance forward and not reserving new tech for only the higher-end cameras.

All that being said the only difference in price in a fully outfitted underwater camera rig between the Sony a7 IV, Sony a1, Sony a7S III, and Sony a7R IV is the camera body price. The lenses, ports, arms, strobes, cables, housing, etc. are all the same. So it really comes down to how much ramen you want to eat or if you're willing to live with lower specs.

Overall performance does feel a little sluggish compared to the much higher-end Sony a1, but not enough for me to not recommend this to someone who needs to save a buck or 4000.

Overall this is a really good value camera, that can produce good quality stills, and will work well for a hybrid video/photo shooter.

Who Is This Camera For?

For someone looking for an entry-level full-frame mirrorless camera, my first pick would be the Sony a7 IV. If someone was looking for a smaller rig, this is not it. Despite the lower price point, the camera body size is near identical to the other a7 cameras. Full frame optics mean full-frame sized lens ports. Someone who wants a smaller alternative with great image quality and faster shooting performance should take a serious look at the OM System OM-1, but only if they are a still shooter with no interest in video.

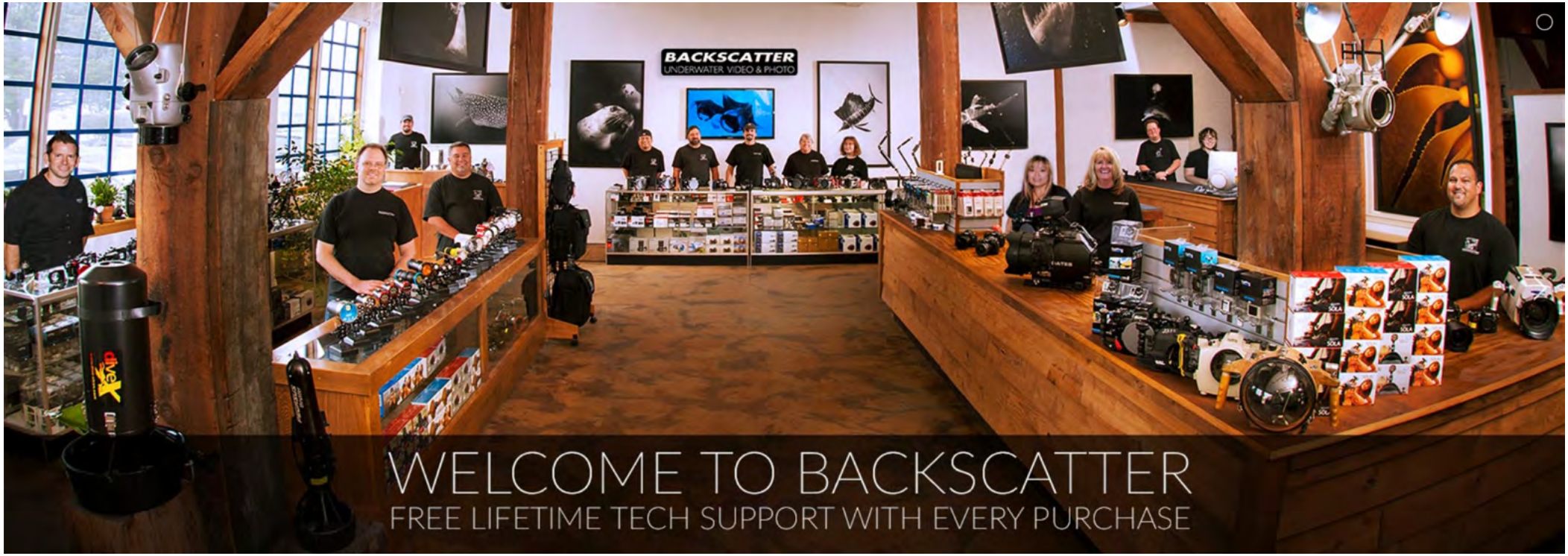
If someone was primarily a video shooter, the Sony a7S III for $1000 more will get you 4K120p from full sensor width and a corresponding increase in overall video image quality. At Backscatter it is our current favorite mirrorless camera for video.

For a still shooter who demands the utmost image quality, the Sony a7R IV at $1000 more will produce the best image quality of anything out there for full-frame. The images are quite stunning. The downside is video is quite disappointing with only 4K30p and a custom white balance that doesn't really execute past 40ish feet.

The ultimate of speed, image quality, 8K30p, and 4K120p video, and accurate white balance down past 80-90 feet, look no further than the Sony a1 which can do it all and do it well, but albeit at a much higher premium price of $4000 more.

If you can live with the slower shooting speed, lower resolution, and 4K60p, then the Sony a7 IV deserves a real hard look.

Jim Decker
www.backscatter.com



Nauticam 0.8:1 viewfinders review

by Phil Rudin

It has been over ten years since my review of "enhanced viewfinders for EVF cameras" appearing in uwpmag.com issue #66. Since then the mirrorless camera market has exploded worldwide with what seems like a new model offering almost monthly.

Mirrorless cameras of all sensor sizes have completely overtaken the now all but dead DSLR camera market. They are now the mainstay of the interchangeable lens camera market with sales beginning to dig out from the Covid downturn and the onslaught of cell phone competition.

Everything about mirrorless cameras has improved dramatically over the past ten years including lightning fast auto focus for many of the top cameras, large electronic viewfinders with resolution in the 3,69M dot to 9,44M+ dot range, high frame rates in the 30 FPS range with electronic shutter, large raw file sizes in the 45 to 60MP range, higher flash sync speeds in many of the cameras with mechanical shutter and much much more.

I am sure we would all agree that one of the best ways to improve image quality is to be able to see bright and highly detailed images in the viewfinder. Being able to see focus detail is key to better focus and image quality.

Nauticam has always continued to improve with age because as their mission statement says they "Think beyond what has been done before and never rest on past accomplishments". My first Nauticam housing review for uwpmag.com was for the NA-NEX5 (for Sony NEX-5) and dates back to issue #57 in late 2010. I am always amazed to see the subtle improvements introduced with each new generation of housings and accessories which brings me to this review of Nauticam's latest generation of exceptional straight and angled viewfinders.

These viewfinders replace the housing's pickup finder to improve critical composition which reduces the need to crop in post processing and also allow you to check pin point focus accuracy prior to releasing the shutter. This is accomplished by magnifying the view into the EVF or DSLR optical viewfinder. These viewfinders also make it easer to review both stills and video without the issues associated with viewing an LCD screen in bright conditions.

I have used the original Nauticam 45 degree finder for over ten years and have found it exceptional for shooting macro subjects. The 45 angle allows you to look into the viewfinder while the camera is at a very low and slightly upward angle. This improves subject separation from the background and allows you to be above the housing and away from fragile flora and fauna.

Nauticam's new 45° 0.8:1 viewfinder

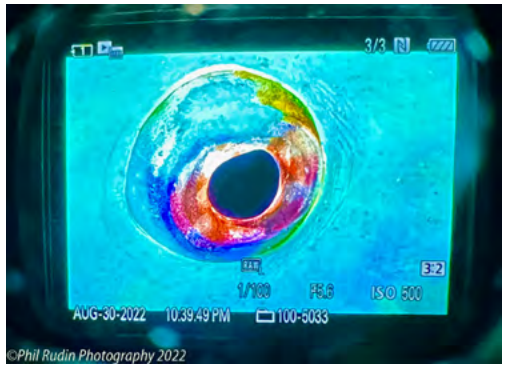
Nauticam's new 180° 0.8:1 viewfinder

(Left) The new 180° 0.8:1 viewfinder on a Sony A1 housing

The straight or 180 degree finders are great for fast moving subjects, reef scenes and other wider subjects. The 45 degree finder has a greater learning curve and is frustrating for some. The issue of the 45 degree finder verses straight is a subject of heated debate in many forum chat rooms. My choice for macro for ten years has been the 45 degree configuration, However, now that I shoot blackwater macro, the straight finder has become a better option for the eye level, fast moving subjects found while blackwater diving.

Nauticam's new Full Frame straight and angled viewfinders now fill a niche not covered by the original line of viewfinders. This is to accommodate the larger EVF's beginning to appear in high end mirrorless cameras with the new 0.64 inch EVF's found in cameras like the Sony A1, A7s III and newly released A7r V.

With these new viewfinders you can chose



The Nauticam collar adapter allows the new viewfinders to be fitted on smaller MIL housings

Cell phone image into new viewfinder

between the original 32°/1:1 or the new 40°/0.8:1 options.

When the announcement for these new viewfinders was first published I noticed some confusion in chat rooms over the meaning of these two choices. First they have nothing to do with the angle of the viewfinder, your choices are still 45 or 180 (straight) degrees but because photographers have different or changing needs, Nauticam has offered a new choice.

With the original 32°/1:1 finder you maximize magnification while preserving the image field and surrounding data on most EVF cameras. The level of detail rendered is industry leading and quite impressive for both EVF and DSLR finders.

The new 40°/0.8:1 finder is for those challenges found with the larger EVF's in cameras like the Sony A-1 and A7s III. For these cameras the 40° finder gives slightly less magnification with uncompressed corner to corner sharpness and as equally tack sharp detail as the 32° version. You also get maximum working room on the EVF to easily see all of the settings information along with world class playback detail.

All of the original Nauticam viewfinder perks are still included like the excellent in-water dioptric adjustments and hassle-free installation without the need for any tools. Like the older viewfinders the new versions are double O-ring sealed, pushed into place and then secured with a third O-ring. The process of removing the pickup finder and installing the new viewfinder can be done in under sixty seconds.

If a picture is worth a thousand words then the improvements over the older viewfinder will be evident as soon as you look into these new viewfinders. I have been using the current viewfinder on my Nauticam NA-A1 housing (Sony A1) for about a year. The new design allows a completely unobstructed view of the cameras LCD screen even when the screen is tilted.

A big advantage with all optical viewfinders is creating distance between your face mask and the back of the housing. I have set the diopter on my camera's viewfinder for best results but I was able to increase detail even more by adjusting the viewfinder dioptric settings. Results will very depending on individual vision needs so if you have a chance, try before you buy.

Once the housing was fitted out with a macro lens I took my first look through this new viewfinder and I was more than impressed. The image detail behind a mask was impressive while retaining full corner to corner sharpness. Shooting information that I struggled to see with the old viewfinder was crisp and in view without needing to reposition my eye in the viewfinder.

The new viewfinder is a few grams heavier than the older 180° but in water I didn't notice a difference in weight or balance verses the older 180° model. Even if you don't have the newer larger EVF found in the Sony A1 these nem viewfinders can provide significant advantages over the older versions on both mirrorless and DSLR cameras.

These viewfinders are not just for expensive full frame cameras either, with the Nauticam #32215 viewfinder collar adapter the smaller MIL housings for APS-C and M43 cameras including the excellent OM-Systems OM-1 camera (large EVF) and MIL NA-A7C housing can take advantage of these high quality optics.

The older viewfinders were sold in two sizes, 45° and 180° for large Nauticam housings and 45° and 180° for the smaller MIL housings. Now you buy one finder and it can be used with both styles of housings using the viewfinder collar adaptor for MIL housings. This allows you to use the same viewfinder when you upgrade to a larger housing system.

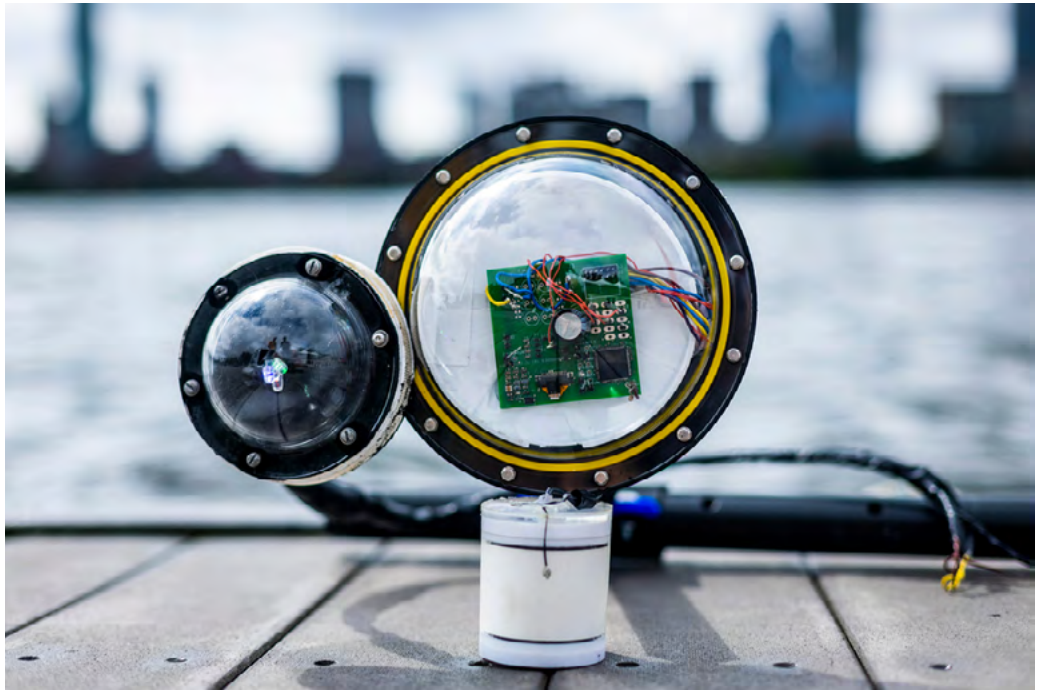
All of these extra features come at a premium with the 180° finder selling for $1970.00/£1730.00 and the 45° selling for $1816.00/£1595.00. The older finders are still available at $1670.00/£1466.00 for the 180° and $1379.00/£1211.00 for the 45° the collar adapter for MIL housings is $144.00/127.00.

For more information on selecting the proper viewfinder for your needs contact your local authorized Nauticam dealer or go to nauticam.com for more details. I would also like to thank Nauticam USA for technical assistance for this article.

Phil Rudin
Instagram

A battery-free, wireless underwater camera

by Jeremy Gray



Engineers at the Massachusetts Institute of Technology (MIT) have built a battery-free, wireless underwater camera that could assist scientists in exploring unknown regions of the ocean, monitoring pollution and surveying the effects of climate change.

Scientists estimate that more than 95% of Earth's oceans haven't been observed. That's a significant amount. We've explored the surface of Mars more than we've investigated Earth's oceans. Part of the reason for the lack of observation is the challenge of powering an underwater camera. Researchers have used vessels to recharge cameras or observed with a camera tethered to a ship to solve the issue. However, that's a limiting factor.

To overcome the issue, MIT researchers have developed a battery-free, wireless underwater camera that is roughly 100,000 times more energy-efficient than other undersea cameras. The new, autonomous camera records color photos, even in dark conditions, and can transmit data wirelessly through the ocean.

The camera is powered by sound. It converts the mechanical energy from sound waves traveling through water into electrical energy that powers the camera's imaging and communications equipment. After recording and encoding image data, the camera then uses sound waves to transmit the data to a receiver, which then reconstructs the image.

Without the need for an external power source, the camera can operate for weeks before it's retrieved, meaning that scientists can search extremely remote areas of the ocean and even search for new species that have so far gone undiscovered. The camera can also search for the effects of pollution or climate change or even be used for commercial aquaculture operations.

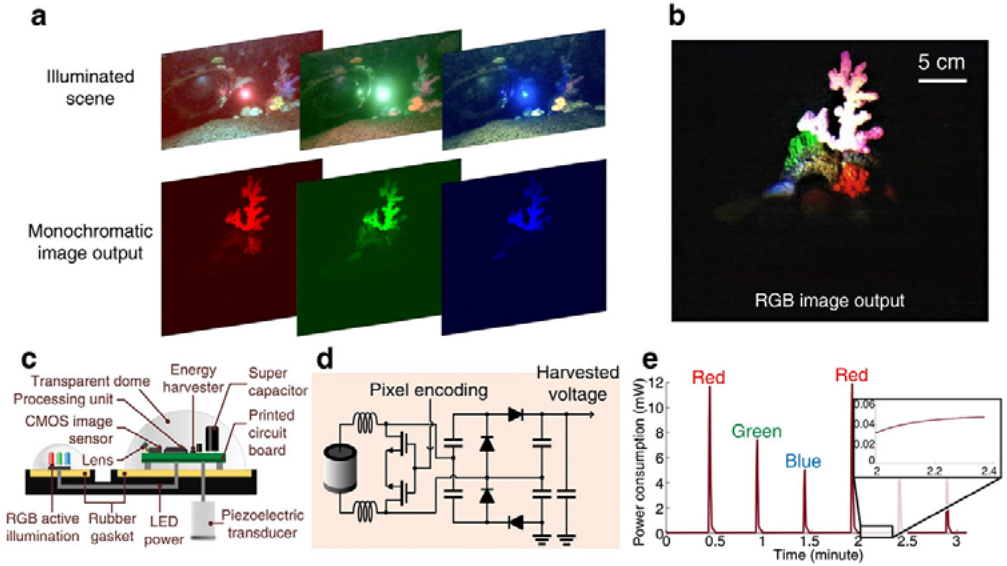
'One of the most exciting applications of this camera for me personally is in the context of climate monitoring. We are building climate models, but we are missing data from over 95 percent of the ocean. This technology could help us build more accurate climate models and better understand how climate change impacts the underwater world,' says Fadel Adib, associate professor in the Department of Electrical Engineering and Computer Science and director of the Signal Kinetics group in the MIT Media Lab, and senior author of a new paper on the system.

The camera is outlined in a new paper, 'Battery-free wireless imaging of underwater environments' written by Adib alongside Sayed Saad Afzal, Waleed Akbar, Osvy Rodriguez, Mario Doumet, Unsoo Ha, and Reza Ghaffarivardavagh. One of the most important parts of the new camera is its battery-free design. The researchers needed to develop a device that could harvest energy underwater while consuming little power. As MIT outlines, 'The camera acquires energy using transducers made from piezoelectric materials that are placed around its exterior. Piezoelectric materials produce an electric signal when a mechanical force is applied to them. When a sound wave traveling through the water hits the transducers, they vibrate and convert that mechanical energy into electrical energy.' The sound waves can come from multiple sources, such as passing ships or marine life. The camera harvests and stores energy until it has enough power to take photos and communicate data.

To consume as little power as

Fig. 2: Active illumination in underwater backscatter imaging.

From: Battery-free wireless imaging of underwater environments



possible, the researchers used off-the-shelf, ultra-low-power imaging sensors. However, low-power sensors only capture grayscale images, and the low-light conditions require the use of a flash. The team solved both problems with red, green, and blue LEDs. When the camera captures an image, it shines a red LED light and then captures the shot. It then repeats the process with its green and blue LEDs. While the image appears black and white, when the image data is reconstructed later, a color image can be built. 'When we were kids in art class, we were taught that we could make all colors using three basic colors. The same rules follow for color images we see on our computers. We just need red, green, and blue — these three channels — to construct color images,' Adib said.

'To recover color images with a monochrome sensor, the camera alternates between activating three LEDs—red, green, and blue. (A) The top figures show the illuminated scene, while the bottom figures show the corresponding captured monochromatic images, which are transmitted to a remote receiver. (B) The figure shows the color image output synthesized by the receiver using multi-illumination pixels which are constructed by combining the monochromatic image output for each of the three active illumination LEDs. (C) A side view of the camera prototype demonstrates a larger dome which houses the CMOS image sensor and a smaller dome which contains the RGB LEDs for active illumination. The structure is connected to a piezoelectric transducer. (D) The circuit schematic demonstrates how the imaging method operates at net-zero power by harvesting acoustic energy and communicating via backscatter modulation. (E) The plots show the power consumption over time. The power consumption peaks during active imaging and drops when the captured images are being backscattered.'

Once images are captured, they're encoded as bits and sent to a receiver one bit at a time using a process called underwater backscatter. The receiver transmits sound waves through the water to the camera, and then the camera reflects them. The camera either reflects the wave or changes its mirror to absorb, such that it doesn't reflect. A hydrophone next to the transmitter senses if the camera sent a signal or not. If there's a signal, it's a bit-1. If not? It's a bit-0. The binary information is then used to reconstruct and post-process the image. There's only a single switch, which requires significantly less power than typical underwater communication systems.

The camera has been tested in several underwater environments. 'The researchers tested the camera in several underwater environments. In one, they captured color images of plastic bottles floating in a New Hampshire pond. They were also able to take such high-quality photos of an African starfish that tiny tubercles along its arms were clearly visible. The device was also effective at repeatedly imaging the underwater plant Aponogeton ulvaceus in a dark environment over the course of a week to monitor its growth,' wrote MIT.

The next step is to improve the camera's range to be more practical in real-world settings. As of now, data has been transmitted successfully over 40 meters. The research has partly been supported by the Office of Naval Research, the Sloan Research Fellowship, the National Science Foundation, the MIT Media Lab, and the Doherty Chair in Ocean Utilization. To learn more, view the full research paper published at Nature Communications.

https://www.nature.com/articles/s41467-022-33223-x

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Photographing dwarf minke whales in the Great Barrier Reef

By Matt Curnock

Each austral winter dwarf minke whales migrate to the northern Great Barrier Reef. When they arrive, they aggregate in the vicinity of the Ribbon Reefs, north of Cairns, most likely for breeding purposes. The timing and location of this aggregation is remarkably predictable from year to year, and many of the same individual whales are resighted in multiple years in the exact same locations. Their behaviour, too, is remarkable, and they are perhaps the most inquisitive and 'friendly' species of whale on the planet.

As a researcher with the Minke Whale Project, I've been fortunate enough to swim with and photograph dwarf minke whales in the Ribbon Reefs near-annually since 1998. I first learned about underwater photography by taking whale pictures for photo-identification purposes, and by picking the brains of numerous professional photographers with whom I've shared dive trips over the years. In this article I am passing on some key tips and tricks, learned over 25 years of photographing minkes, to help you get the best results from your Great Barrier Reef minke experience and underwater photography.

To learn more about the whales and the research program that studies them, please visit www.minkewhaleproject.org.

Choosing a trip

It's important to note that swimming with dwarf minke whales in the Great Barrier Reef requires a Marine Parks permit. As of July 2022, only eight dive tour operators hold these permits. These operators are required to follow strict management guidelines and contribute to monitoring of their whale interactions. Be sure to check that the operator you choose holds one of these permits (you can also search https://www.gbrmpa.gov.au/access-and-use/permits/current-permit-application-and-decisions to verify).

- Trips depart from: Cairns or Port Douglas, Queensland, Australia
- When to book: 90% of minke whale encounters in the Great Barrier Reef occur in June and July, and the number of encounters peaks in late June and early July. Booking around this time gives you the best opportunity to see more whales, for longer. Booking at the margins of the season (late May or early June; late July or early August) can be hit or

Nikon D90, Patima housing, Tokina 10-17mm at 10mm. 1/160th f10. 200 ISO

miss. Some of the operators' trips are sold out many months in advance – so book ahead as early as possible to avoid missing out.

- Day trips or live-aboard dive vessel? I strongly recommend choosing a live-aboard dive trip, to spend at least a couple of days in the vicinity of the Ribbon Reefs. Some day trips from Port Douglas occasionally see minkes, but due to their itinerary and location, such encounters are usually fleeting.

Pre-trip preparations
What to pack?

- Staying warm: The water temperature in the Ribbon Reefs during June and July usually varies between 26° and 22° C. This might not seem cold for folks used to diving in temperate waters, but some encounters with minke whales can last for several hours, and in this time you can lose a lot of body heat. I recommend wearing a 5mm steamer

Nikon D90, Patima housing, Tokina 10-17mm at 13mm. 1/200th @ f9. 200 ISO

wetsuit with hood, to allow you to spend as much time in the water with whales as possible. Note that many of the permitted operators have good quality wetsuits available for hire.

- Mask, snorkel, fins: BYO recommended, but also available for hire from most operators.
- Scuba gear optional: You don't need to be a scuba diver to swim with and take great photos of minkes, and from experience, the best interactions and photos tend to occur on snorkel. However, the live-aboard itineraries do include visits to a number of superb dive sites, so if you can, you should!
- Sundries: Packing light is always advantageous, but I'd suggest including a rain jacket in your travel kit, and seasickness medication, if needed (it's usually windy at this time of year, with occasional showers).

Camera equipment:

- Wide angle, or course! Fisheye lenses work really well with these whales, and the usual corner distortion isn't apparent when the background is blue sea. Some folks prefer the look of a rectilinear lens, and I've seen some great photos from these – but if/when a whale comes super-close, the wider the better I reckon. I use a trusty old Tokina 10-17mm fisheye zoom lens paired with a Nikon D7200 in a Nauticam housing, with dome ports of various sizes. A 45-degree magnifying viewfinder also helps immensely with neck comfort during long in-water interactions on snorkel.
- Strobes not required: The Code of Practice for swimming with the whales specifies no flash photography. You can bring your strobes for dives, but switch them off or leave them on the boat when the whales arrive. They won't improve your whale photos. The whales are too big and usually too far away to illuminate, and their skin is highly reflective.
- Topside camera: Bring it if you have it – a telephoto lens can help you capture minke surface behaviours and occasionally glorious sunsets.

One more (unusual) item:

- A quick-release tether (see photo above): Constructed of a bicycle tube, some climbing rope and a 25-30mm stainless steel snap-shackle. This device allows you to hold your camera with both hands whilst remaining safely connected to a surface rope, and the boat. Wear the tube around your waist, snap the shackle onto the rope, and hey presto! Your hands are now free to steady your camera in choppy seas, and you won't drift away from the boat. The quick-release shackle is critical, in the very unlikely event of a whale catching onto the rope and dragging you underwater. Note that the dive crew won't let you use such a device without a functioning quick release mechanism, due to this risk.

Nikon D90, Patima housing, Tokina 10-17mm at 10mm. 1/250th @f7.1. 200 ISO

Nikon D7200, Nauticam housing, Tokina 10-17mm at 10mm. 1/200th @ f5.6. 100 ISO

Camera settings

As mentioned above, the best results are achieved with natural light only, near the surface, and usually on snorkel. Lighting conditions can vary suddenly (bright sun, passing clouds), which is why I tend to use the shutter priority auto-exposure mode. The whales' natural colour markings vary from pure white to a dark metallic grey, with lots of intricate patterns, particularly around their shoulder region. The white patch on their shoulder and pectoral fin tends to overexpose in a lot of photos. For this reason, I use my exposure compensation to deliberately underexpose by a half-stop, or even more in bright sunny conditions. Newer cameras with high dynamic range might not need to do this. In any case, a low or base ISO setting will help you to get a more balanced exposure through the brighter hours of the day.

If you prefer to shoot in manual mode and are unsure where to start, here are some settings to begin with:

- Shutter speed: A minimum of 1/125s is recommended to avoid blurry photos. In full sun, I'm usually at 1/250s and am happy with the results.
- ISO: 100 through most of the day, bumping it up in the early morning or late afternoon.
- Aperture: Mine is usually on auto (shutter priority mode), and will vary from f7 to f11 depending on the light level. If you're shooting manual with a crop sensor camera, f8 is a good place to start, or f10+ for folks with full frame sensors and rectilinear lenses behind a dome, to improve corner sharpness.
- Shoot in RAW format: To capture images with the highest possible dynamic range, and for subsequent editing flexibility.

Getting the best results in-water

- Follow the Code of Practice: Don't chase or swim towards a whale. It's illegal, they'll swim away, and your fellow passengers will get mad at you for ruining their minke experience. For the best experience and the best photos, simply chill out on the snorkel rope and let the whales come to you. This may be the laziest whale swim experience in the world. Just lie there and wait!
- Patience, patience, patience: If you want to get

Nikon D7200, Nauticam housing, Tokina 10-17mm at 10mm. 1/200th @ f5.6. 100 ISO

Another example of the healthy coral reefs that can be dived during a minke whale trip . Nikon D7200, Nauticam housing, Tokina 10-17mm at 10mm. 1/250th @ f11. 100 ISO

good photos, be prepared to spend a long time in the water. In-water interactions with minkes can often last several hours, so you don't need to rush to be first in the water. However, "interesting opportunities" can sometimes happen for those who stay in the water until the very last minute, when everyone else has returned to the boat.

- Watch and learn from their behaviour: They'll be watching you, too. Some whales will become bolder and approach more closely over repeat passes. If there are several whales around, one may sneak up behind you. Whatever happens, enjoy the experience, and be ready to hit the shutter with a split-second notice.
- Snorkel really does get better results than scuba: Scuba divers are noisy and move around in three dimensions, so the whales tend not to approach them as closely. Snorkellers holding a rope on the surface, who are relatively still and predictable, tend to be approached much more closely.
- Bonus points for: dramatic lighting (e.g. sun rays in the late afternoon), multiple whales in the frame, close-up eyeball, cool poses (e.g. in mid-turn, arched back), and behaviours (e.g. bubble blast, belly presentation, head-rise, gulping, pirouetting – see https://minkewhaleproject.org/ to learn more)

Post processing

I won't offer too many tips here, as there are lots of different ways to do this with different software. Using Lightroom (v.6) I usually start by white balancing from the white shoulder/flipper patch. Then perhaps add a touch of clarity, pull back the highlights, remove a bunch of annoying spots and scatter, maybe bump up the whites and darken the blacks a bit, season to taste, et voilà!

Whatever happens – it's all up to the whales

Following the advice above will give you the best chance to get good photos from your minke whale encounters. But remember – these are wild animals in their natural environment. They are free to do their own thing, and there are no guarantees

that they'll approach you or put on a show for your benefit. It's amazing that they show any interest in humans at all. If you only get a fleeting glimpse of a whale, you can still appreciate the experience of seeing a four-ton, six-metre, free-ranging, high-speed, oceanic, enigmatic, migratory rorqual whale that remains taxonomically undescribed and about which scientists still know astoundingly little. Enjoy!

Matt Curnock is an environmental-social scientist and whale nerd, based in Townsville, Australia. You can see more of his underwater photos on Instagram: @matt_curnock.

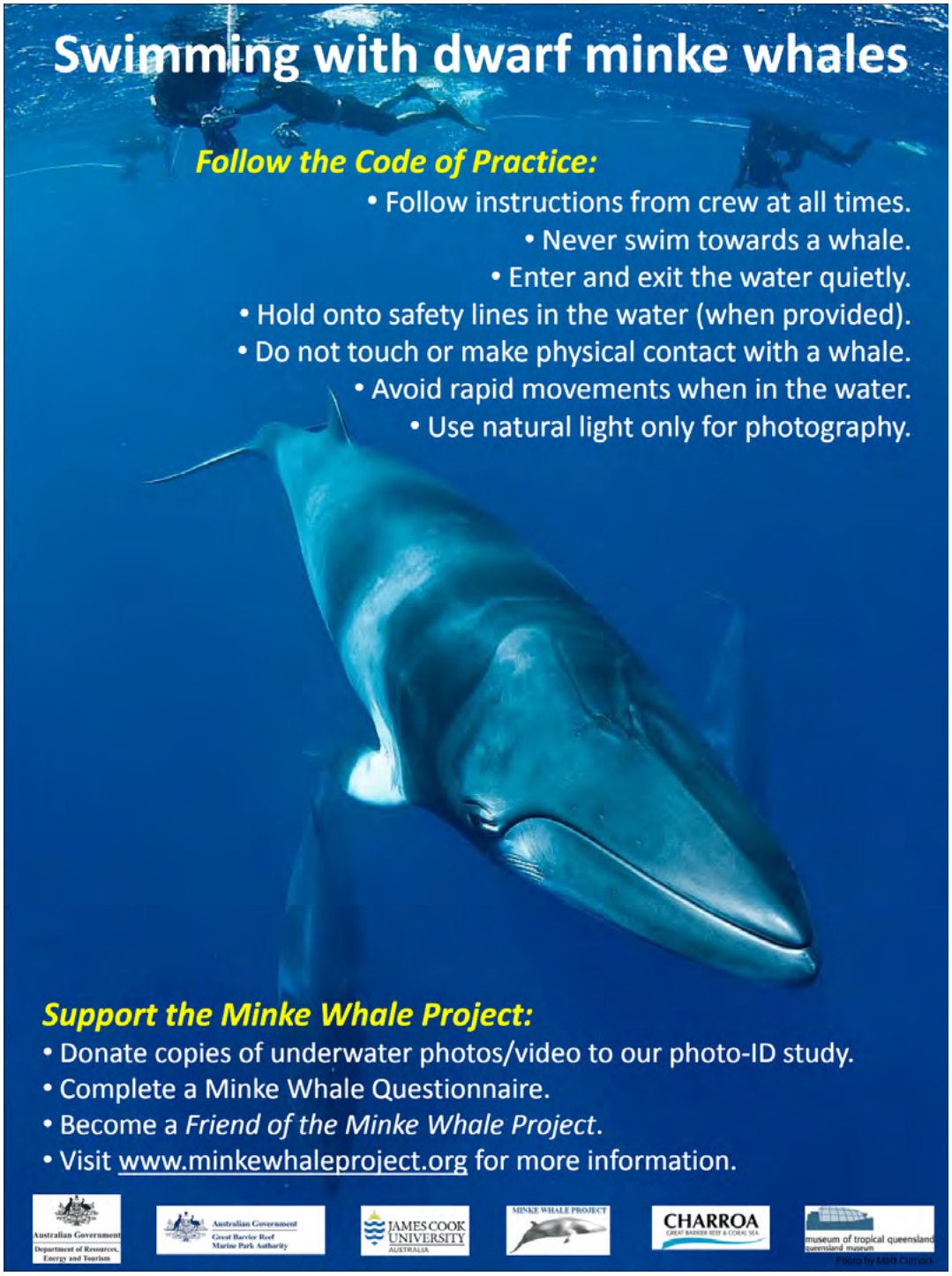
This article was first published on Divephotoguide

www.divephotoguide.com

Share the love

- You can donate copies of your minke photos to the Minke Whale Project, and the researchers can identify the individual whales using their natural colour patterns. How cool is that?
- You can also join our beloved Facebook community of whale nerds in the group "Friends of the Minke Whale Project" and share stories, photos and highlights from your minke experience.

Matt Curnock
www.minkewhaleproject.org



Tigers of Fuvahmulah

By Saeed Rashid

I remember when I first started diving and I was obsessed with sharks. I would travel to some amazing locations to try and find them only to get a distant glimpse of a tiny silhouette way out into the blue. But that was exciting – I got to see a shark!

After a while, I got fed up with not having the close-up and personal encounter I wanted. I knew by spending most of my dive hanging out in the blue I was missing out on other great experiences and vowed to myself that I would never go to a destination just looking for large animals such as sharks, dolphins or whales. Instead, I would make sure I enjoyed all that the underwater world has to offer and that's also when I took up photography. Many years on and I've been very fortunate to see some incredible delights underwater including a very sharky one early this year but I have my reservations about it.

You may remember that Fourth Element team diver Shaff Naeem recently completed a 50-hour continuous scuba dive in the Maldives where I was the photographer. In the run-up to the event we were lucky enough to be invited to dive around the area. The Maldives has to be one of the most picturesque locations you can think of but there is so much more to this beautiful country than sun, sand, and 5-star resorts. Away from those pampered resorts catering to your every need there are some very special places and one of those is the island

As we jump in a tigers glides past on his was to the feeding area
Canon 7D mk 2 in a Nauticam housing with Inon z330 strobes. 1/4sec f22 ISO100

Picture postcard Fuvahmulah

of Fuvahmulah, recently becoming famous for its tiger sharks. Fuvahmulah is at the most southerly point of the Maldives and is what is described as a "local" island, mostly meaning this is where Maldivians actually live with

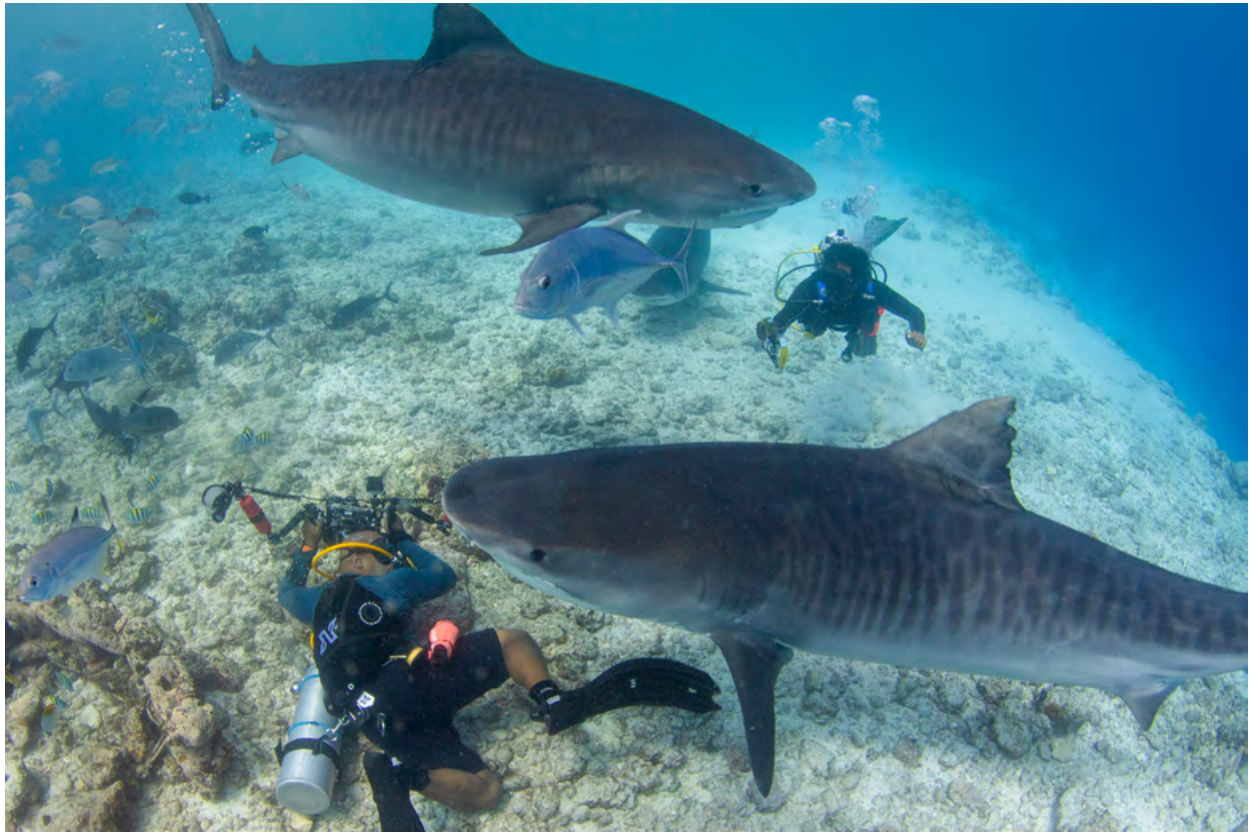
few internationally owned resorts and mostly locally run guesthouses. It has the feel of the genuine Maldives from maybe 30 years ago.

Sitting just to the south of the equator, the geography of Fuvahmulah makes it one-of-a-kind in the Maldives and having no other landmasses close by its subjected to lots of deep-water currents which attract a variety of pelagic sea life. Big waves batter its coastline and until the harbour was built in 2005, transit to the island was incredibly difficult. The new harbour not only made it easier to bring goods and people to the island but it also gave a new home to the local fishing fleet and this had an interesting side-effect. The fleet's fish waste was originally dumped over the harbour wall attracting big sharks and with this the shark diving industry was born.

There are now believed to be at least 200 tiger sharks in residence and where there are sharks there is money to be made. A study by the Australian Institute of Marine Science concludes that sharks are worth far more alive and swimming, approximately US$2 million in their life time. According to the scientific journal Biological Conservation, the Bahamas who have been big shark supporters for some time, receive over US$114 million a year into their own economy from shark related dive tourism. These are huge numbers but are there hidden costs to the sharks, the environment, and the diving industry?

In Fuvahmulah the tigers are attracted to the shallows by baiting the water with old fish scraps from the market. They are opportunistic feeders eating all kinds of fish, marine mammals and reptiles. Their diet also includes flotsam, jetsam and carrion giving them the nickname of "garbage bins of the ocean" so they are generally very easy to attract.

Baiting on its own is a controversial subject but if we didn't put bait in the water then it's likely you wouldn't see many sharks. Graham Buckingham from Bite Back made an interesting comment when I asked him about this practice, "The oceans should have plenty of sharks for each diver to see naturally but instead we are systematically exterminating them making a shark an extremely rare commodity…Baiting is now one of the only ways we can guarantee seeing these magnificent creatures and as long as it's done safely for the sharks and divers then a lot of good can come from the experience." But there is the concern of what would happen if it wasn't done safely and that may undo all the good that has been done.



Shaff had sharks coming towards him from every direction
Canon 7D mk 2 in a Nauticam housing with Inon z330 strobes. 1/200 sec f10 ISO200

People always want to see and photograph apex predators. In Africa, you can sit several hundred metres away from a pride of lions and watch them through your binoculars but as we all know underwater visibility is considerably less so you have to get much closer. This means having to encourage the sharks to you and by using bait in Fuvahmulah you can certainly get very close to some of the biggest predators

The snatch and grab, tiger makes off with a tuna carcass at the feeding area Canon 7D mk 2 in a Nauticam housing with Inon z330 strobes. 1/200 sec f14 ISO320

A beautiful tiger sharks comes in close to check me out Canon 7D mk 2 in a Nauticam housing with Inon z330 strobes. 1/200 sec f10 ISO200

you possibly will ever encounter.

Interestingly, in a conversation with a representative of The Tourism Ministry of the Maldives I was told that shark feeding/baiting is illegal in there although he wouldn't comment on the tigers of Fuvahmulah. So if illegal, why does it happen? In my opinion, money talks and with the obvious draw of being able to get up close and personal with large tiger sharks it's great publicity for the area. I did ask a few different sources about this and the subject was quickly changed.

Fuvahmulah is now thought of as one of the best places in the world to see tiger sharks but at the moment there is little regulation for dive operators with many new centres springing up all the time. Only a handful of years ago there was just one dive centre but now there are at least 6 with more on the way. At the moment each dive centre has 30mins with the sharks and you descend along the reef wall and then swim a few hundred metres to the mouth of the harbour. Here there is the only shallow flat sandy area around the island and this is where you meet the sharks. We dived with 3 different dive operators, all with slightly different procedures but all freely baiting the water as soon as the divers were settled. This is the process where the support boat throws fish carcasses in the water for the dive guides to grab as quickly as they can and bury under large rocks for the sharks to then 'hunt' out. While this is happening, sharks are patrolling the area. This whole process seems fraught with danger to me and although some dive centres seem to manage it well unfortunately others didn't. On one dive I looked behind me and a tuna tail was sitting on the sand right between my fins. Needless to say, I moved fairly quickly before it (and not I) was hoovered up by a shark!

Every dive centre boasts their own expert in shark behaviour. One likes to "arm" their divers with sticks, seemingly a good idea if used correctly. The advice is that if a shark approaches, hold the stick vertically and the shark bumps the stick then veers away. Another will say sticks can be incredibly dangerous if

misused.

A good friend once told me, “The shark you have to worry about is the shark that you don’t see,” meaning eye contact is vital and having someone cover your back is just as important. Most of the time we felt like there were plenty of eyes on the sharks but this didn’t always happen. At one point when I was moving position, Shaff had sharks coming towards him from 3 different directions and there was a huge tiger behind me which I only noticed when a massive tail swiped me around the face. That’s one way to wake up in the morning but where was my rear cover? I overheard one dive guide saying that they have taken Discover Scuba Divers (those on try dives) to see these sharks which is really quite extraordinary. Even without the sharks, the diving takes place in the mouth of an active harbour with constant boat traffic which can be scary for anyone let alone a completely inexperienced diver. It’s at times like these when accidents happen and we can all see the headlines.

Some kind of regulation is clearly needed. My hope is that there isn’t an accident at Fuvahmulah before rules can be brought in. Whether it involved a tiger shark or not the whole of this fledgling industry, potentially beneficial to sharks, would be in danger. When we met the current mayor of the island, Ismail Rafeeq, I mentioned my concerns. He said he was aware of current practices which he wants to change. Ismail would like to bring in global regulations for all and extra taxes on the divers to pay for things like an education centre and maybe shark rangers to make sure people are diving safely. These all sound like great moves forward but often relies on cooperation between competing businesses which isn’t always the easiest to get.

All of this said, the diving here was amazing and I have never been so close to such impressive animals. It’s an experience that I will definitely not forget and hope that increased regulation will allow Fuvahmulah’s resident tiger sharks to be protected and experienced safely by many more of us in the years to come.

An early morning slap in the face from a sneaky shark. Canon 7D mk 2, Nauticam housing, Inon z330 strobes. 1/200 sec f10 ISO200

Saeed Rashid
www.focusvisuals.com

Saeed is a well known photographer and journalist (underwater and on land). When he is not below the surface, he teaches photojournalism and is never happier than when he has a camera to hand. Saeed is also a fourth element Team Diver.

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Blackwater in Thailand

by Alex Tyrell

Blackwater diving is gaining in popularity at many dive destinations around the world, for one simple reason; it gives us access to marine life we simply would never encounter on a standard night dive. This makes blackwater photography a way of adding some unique images to your portfolio of rarely encountered deepwater and larval stage creatures.

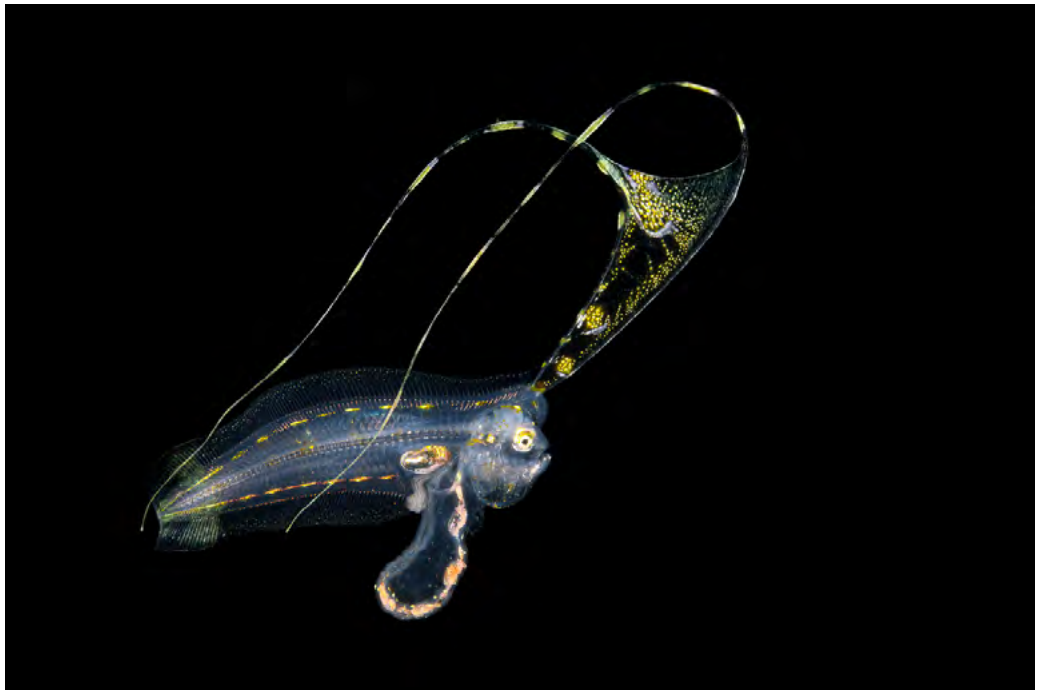
The critter-list has been revised and now extends to Blanket Octopus, Paper Nautilus, Diamond Squid, Ribbonfish and more. I would however like to offer a potential warning - it is also very addictive. Even after completing hundreds of blackwater dives, there is still a high level of anticipation every time I'm entering the water as you simply never know what you will encounter!

I got my first taste of Blackwater when visiting NAD Lembeh Resort in April 2016 when we completed what is now called a Bonfire Dive by placing a high-powered light/lights onto the bottom to attract creatures in, basically in the same fashion insects are attracted to the light cast from a bonfire. We didn't encounter any really special subjects that dive but I saw the potential and I couldn't wait to try it again.

Without any overseas tripped planned for the immediate future, I decided the best way for me to get shooting was to get my own high-powered light and test out my local waters of the Gulf of Thailand. We do not have any deep water close to Koh Tao, but I knew we must have larval stage creatures, so jumped on a dive boat and went out on a normal night dive. But instead of heading to the reef with everyone else, I swam off the dive site into the sand that surrounds it at about 18m, set the light on the bottom, Bonfire-style, and waited to see what would show up.

As expected, tiny Zooplankton were duly attracted to the bright light, forming a swirling ball around it, which in turn attracted plenty of shrimps, some post-larval reef fishes and a few different small squids to feed. This showed that there was some potential even without deeper water, so I went back out a number of times over the next few months trying a few different locations.

The next step was for me to get myself more lights and build a



Tonguefish (Cynoglossidae sp.)
All images taken with a Nikon D500 in Subal housing with a 60mm lens and Retro Pro Flashes set to TTL using the TRT-Electronics Smart Turtle LED Trigger.

Downline so we could get off the dive sites and into open water.

Downline Set-Up

The downline is a weighted line suspended beneath a buoy with lights attached to it, which is then left to drift. The set up I use, a combination of what I had seen used at NAD and with Mike Bartick at Crystal Blue Resort in Anilao, has the first light attached to the buoy at the surface, making it glow and therefore be visible from a distance allowing the boat to easily stay in contact. Then at 3m / 10ft I have a 5k Video Light facing up towards the surface in the hope of attracting surface-dwellers, like Flying-fish.

The next set of lights is at the safety stop depth of 5m / 15ft where I have a pair of Kraken Hydra 8k Video Lights facing downwards, but slightly angled outwards, and then the same at 10m / 30ft. The final set of lights

are at the bottom of the line at 15m / 45ft where I have one Kraken Hydra 8k plus a pair of Weefine 6k lights that shine a lot of lumens into the depths.

With no references in open water, the illuminated downline forms the centre of the dive site, that then expands outwards in 360° as far as visibility allows the downline to still be visible, and then down as deep as you feel comfortable while keeping it safe. You need to ensure that you can always see the lights of the downline, as if you can't, and don't know what direction to swim then, then you are lost and need to ascend for a pick-up. Bad visibility will increase the chances of lost divers, as does having underpowered lights that are only visible from a closer proximity.

So with a new set of lights attached to the downline, speedboat chartered and divers ready, it was time for Blackwater Koh Tao. The dives proved to be much better than the bonfire dives on the actual dive sites, and we started to see larval stage flounders, phronima amphipods, larval stage anemones, comb jellies, sea butterflies, larval mantis shrimps and crabs, plus lots of squid and a few post larval octopus. It wasn't as good as what I had previously experienced in Anilao or Lembeh, but it was on my doorstep so I could get out anytime I could round up enough divers to cover the cost of boat rental.

We tried various different spots around the island to see if any proved more productive, but I knew the Gulf of Thailand didn't have deep water, Navionics was showing I might hit close to 60m, but the majority of the time we would be diving in 40-50m. The generally flat, featureless bottom of the gulf (apart from the dive sites) means there are no formations that would create upwellings, so my strategy was to go out before it was dark to look

Post-Larval Mantis Shrimp

Larvel Flounder

for current lines on the surface that indicated there was some water movement. My theory was that any current would suck in the plankton and less able swimmers, and therefore diving in the current would give us the best possibility of finding them. This proved to be a better approach than the random drop points that I started with, but it can still be a bit 'hit or miss'; some nights there's loads of action, other nights not so much. But that's nature for you!

Phase 2 in my Thai Blackwater Exploration was to get over to the west coast of Thailand where there is deeper water on offer, potentially providing the opportunity to see some different creatures.

So in early 2021 I put together a short liveaboard trip aboard the Smiling Seahorse that I'd chartered, and after explaining the logistics of blackwater diving to the owners, said they were happy to try it out. So in early March the trip went ahead that I had filled with fellow underwater photographers/videographers.

The itinerary I had scheduled was to hit only the three best sites; Koh Bon and Koh Tachai for chances of Manta Rays and Richelieu Rock that, for me, is the most photographically productive site in Thai waters.

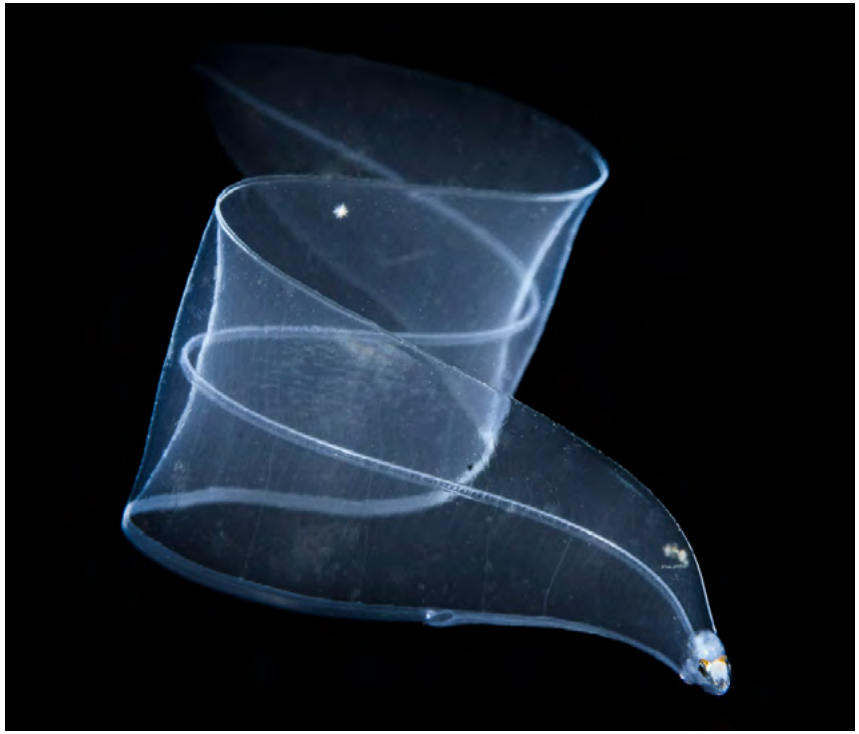
After some amazing dives at Richelieu we headed west towards Koh Tachai and deeper water. This is where I wanted to conduct the blackwater dive and where we jumped in the bottom was approx 80m / 260ft below us.

The visibility was great and the marine life varied, so everyone had a great dive encountering a pelagic sea snake, larval snake blennies, a variety of juvenile box and pufferfish, plus the cruise director and owner Franck saw a larval Tripodfish.

The highlight was that everyone saw at least one of the many juvenile Sailfish that showed up, which I had been hoping to see for some time. Following the success of the first blackwater dive in deeper water, the owner Franck who is also a very keen photographer, asked if I could come back on board on a subsequent trip to conduct more blackwater dives. So a week later we managed another three dives and right at the end of the last one, with only Franck and I left in the water, I spotted the familiar shape of a female Paper Nautilus at the top of the downline. It was fairly co-operative, allowing both Franck and I to shoot it, which I'm pretty sure resulted in the first photos of a female Paper Nautilus taken in Thai waters.

Over the two trips we managed to conduct five blackwater dives and the area certainly looked promising for more exploration. Luckily the now 'Blackwater Addict' Franck, was well up for it, and wanted to offer a blackwater dive on every trip for the following season. So I set up a line for the boat and they invested in a batch of high-powered lights so we were ready to explore in different areas of the Andaman Sea.

We were however restricted to specific nights on each cruise where we would be in an area suitable for blackwater diving, so it only gave us one opportunity per trip, possibly two on the longer cruises. This would obviously mean it would be slower to work out the best spots, tides and moon phases, in comparison to a resort based operation doing the equivalent that could go out on a nightly basis. But we had the whole season running from October to April that gave us lots of time.



Larval Garden Eel (Heteroconger sp.)

Veliger Gastropod

Over the course of the 2021/22 season we did manage quite a few blackwater dives in deeper water, mainly in the north Andaman closer to Koh Tachai and Koh Bon, plus the northern Similan Islands, and we also did a few down south closer to Koh Haa and Hin Deang / Hin Mueng.

As expected, some dives were slow, others started slow then picked up as the dive progressed, and the odd few had action throughout. How productive it was appeared to be more to do with the tidal state rather than moon phase, which is a more traditionally indicator of the optimum times for blackwater diving. The run up to the New Moon and the period after, basically when there is less moonlight, is generally considered to be best, however we didn't really see this to be the case. An incoming tide was generally more productive for us and for our trips where, for logistical reasons, we needed to dive between 7-10pm, the incoming tide tended to fall in this window around the time of the full moon.

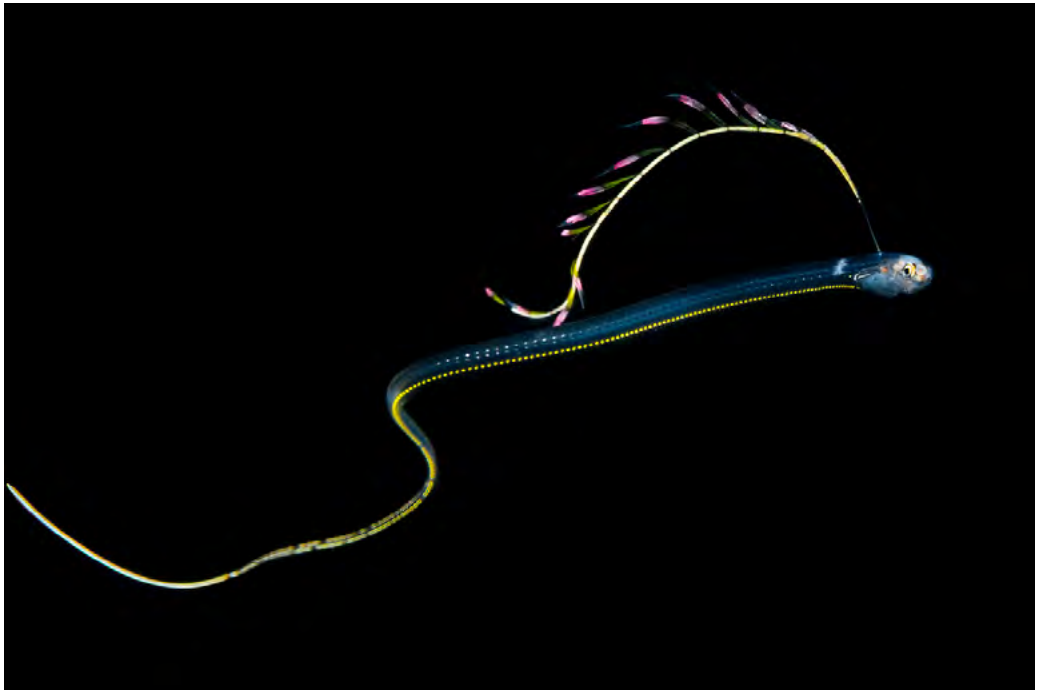
All of these locations we dived had been in a depth range of approx. 70-80m. The water depth closer to the islands/dive sites maxes out around 60m and then the seafloor is a gentle slope gradually dropping off to 70-80m as you headed west into the Andaman Sea. However, the charts showed a ridge running from north to south where it then dropped off to 200-300m, and from what I had ascertained from both Mike Bartick at Crystal Blue and Simon

Buxton at NAD Lembeh who have extensively explored their respective local waters, these steeper depth changes cause currents to upwell, bringing plankton up from the depths and, in turn, this also brings along with it the creatures that feed on the plankton, and the creatures that feed on them. And these were what we were hoping to see, so it seemed sensible to head out to the drop-off to check it out.

The only issue was it the approx. 3-hour steam from Koh Tachai or Koh Bon, so we needed good weather to venture out into open water at night that far from land.

There were a number of trips that we had planned to go, but frustratingly had to cancel with the waves being too big to safely dive. It wasn't until March 2022 that we finally made it out to the Drop-Off. Using a combination of the nautical charts and the depth sounder to get us to around the mid-point of the slope in a depth of approx. 200m, but with the incoming tide we should gradually drift eastwards to shallower water.

As soon as we entered the water it was immediately obvious that the marine life was richer, the dive was productive from start to finish, the visibility was better and there was that feeling of increased odds that a special subject might make an appearance. The following trip the weather allowed us to get back out to the drop-off and once again the dive was great.



Larval Pearlfish (Carapus bermudensis)

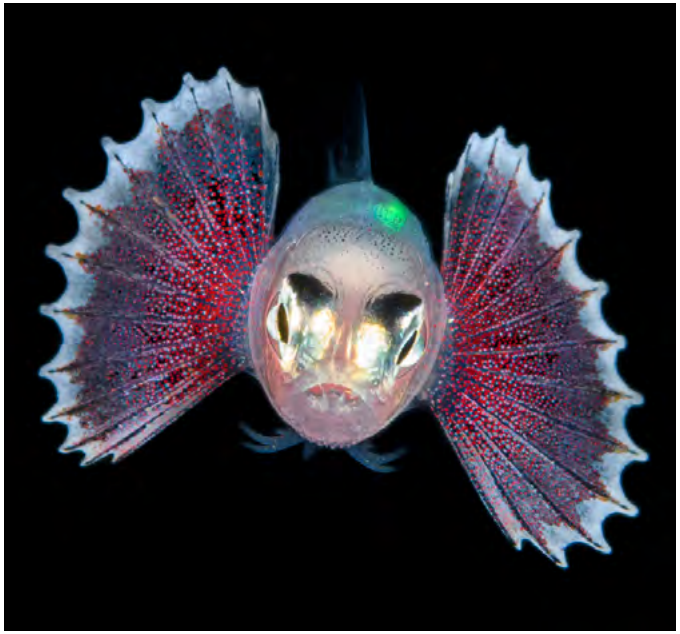
As soon as I descended I saw a Paper Nautilus at the bottom of the line and over the course of the dive saw another seven. We were also seeing a variety of other post-larval and juvenile fishes that we hadn't encountered in shallower water. Its seemed like we had found our spot! The only issue was the proximity. With 6 hrs of fuel consumption getting there and back, most operators would have weighed up the costs and decided that it wasn't financially viable. But having a passionate underwater photographer as the owner of the boat meant that Franck wanted to be out there as much, if not more, than everyone else. So we went anyway!

Over the course of the season we perfected the blackwater dive procedures, which needed to be a little different for a 25m liveaboard compared to entering from a small speedboat. Having a large group of divers around a single line isn't ideal, so if we had more than 10 divers total for a blackwater dive, we used two separate lines to avoid overcrowding. But whether we used one or two lines, the dive procedures were identical, the only difference was having the zodiac supervise one line, while the boat stayed with the other.

Paper Nautilus (Argonauta hians) - 1st Photo in Thai Waters

All of the blackwater dives were conducted as unguided, so divers would be in buddy pairs for this dive, but we always had staff in the water to keep an eye on things plus point out any cool critters they found.

Our entry procedure was to have the entire group ready on the dive deck, and when everyone was in their kit the downline would be deployed from the back of the boat and left to



Post Larval Blenny

drift. We would then ensure everyone was ready to enter the water, whereby we notified the captain we were good to go. He would then pull the boat up alongside the downline, maybe 10-15m away, and then signal it was safe to enter.

Once the divers were in the water they would swim at the surface away from the boat towards the downline, giving the boat space to safely move away, and then descend in buddy pairs.

We normally had a max. dive time of 60-70 mins, but if divers wanted to finish the dive early they could, they just needed to ascend next to the downline then swim 20-30m away from it before signalling to the boat for a pick up. The same procedure was completed at the end of the dive for pick-ups. This avoided a large vessel coming close to the downline that would likely be directly over divers.

During the dives visibility was generally good, letting you see the downline from a distance, but if you loose sight of the downline the first thing to do was cover your own dive light and then look for the glow of the downline lights in all directions.

With photographers in the water you had the added benefit of flashes going off, so these were also a good indicator to help you get back to the line. If you couldn't see either, then it was time to ascend for a pick up and if time/air supply and NDL's allowed, a drop back to the line.

The dive season all too soon came to an end, temporarily pausing our blackwater exploration. But will recommence as soon as the Smiling Seahorse kicks off for the 2022/23 season.

I won't be working on the boat this season though, but they will be offering blackwater diving to their guests on every trip. I do however have a special blackwater cruise planned for January 5th to 11th 2023 where we will dive the stunning sites of the Andaman Sea during the daytime and then complete a Blackwater Dive every night, heading out to the Drop-Off if possible. And the following trip I am running a Photo Workshop concentrating on the rich marine life of Richelieu Rock, with a few dives at Koh Bon and Koh Tachai in case the Mantas are out to play.

Obviously we'll squeeze in a couple of blackwater dives on this trip too. If you fancy joining one or both trips please contact me at email: alex@dive4photos.com or get in touch with The Smiling Seahorse direct quoting Discount Code: Dive4Photos.

Alex Tyrell
www.Dive4Photos.com
www.thesmilingseahorse.com

Inward lighting by Massimo Franzese

It was Christmas 2018 and my wife Helen hands me an envelope with an unexpected gift: two hours tuition with Alex Mustard (on land). Alex was travelling and I was busy with work so I only managed to get the session arranged in spring 2019. At that time I had just returned from a Hammerhead expedition in the Bahamas.

Prior to boarding the boat I did two days diving at Blue Heron bridge. I must admit shooting macro is not my favourite discipline but the shots were very disappointing: they all looked flat fish ID style images of various critters on the sea bed.

I showed the images to Alex who gave me a session on inward lighting for macro and we took several shots of coffee mugs or other widgets on his kitchen table. I wish I had had that session before going on that trip, but things never quite work as you want.

Since then, I have done mostly wide angle with the occasional macro or fish portrait. I have not really had the chance to give this technique a proper go. Inward lighting for macro requires to position your strobes behind the subject or in line with it and this is sometimes not exactly practical. The same technique, that had been initially introduced by Martin Edge, can be applied, with some changes, to close focus wide angle images.

During this summer I had the opportunity to visit the Sorrento Peninsula again and dive with the friends at Punta Campanella Diving Centre. On day one of diving, the plan was to visit the dive site called Banco di Santa Croce, a group of offshore pinnacles ranging from 12 to 50 meters depth where there is abundance of groupers, rockfish, anthias occasional eagle rays and plenty of gorgonians.

Visibility was pretty bad with murky green water and a high number of suspended particles and I had an 8-15mm zoom fisheye on my Panasonic GH5M2 (similar to a Tokina lens on APSC). All of a sudden, I see a large “scorfano” (rockfish a variety of scorpion fish) swimming over the reef to change its resting location.

I take the first shot [top right] trying to minimise backscatter. While the backscatter control worked reasonably well, I was faced with another fish ID style fish portrait with some ugly background: an overall anonymous shot, at least for my tastes.

At this point I thought of giving inward lighting another go even though I had a zoom fisheye lens and was attempting some kind of fish portrait, with the ambient around the fish looking quite ugly.

I moved the strobes in line with the focal plane of the camera pointing right at the handles and started with the strobes wide, getting closer to the housing until I got the level of light I wanted.

First attempt was quite dark [inward attempt1] but the image started to look more interesting. Eventually I got the light I wanted on the fish [inward correct] (next page) to make the image more interesting, trying to get some attitude out of this cooperative rockfish.

After a few attempts I managed to get the shot I wanted before the fish decided to

The environment : ISO 200, 8mm, f/5.6, 1/250

Inward attempt 1: ISO 200, 15mm, f/5.6, 1/250

swim away in a position no longer suitable for the composition I wanted.

As you can see, I kept quite a low f/number I wanted to make sure only the fish head was sharp and limit the depth of field through the frame. This is a fisheye zoom at 15mm on micro four thirds so f/5.6 still has some depth of field but not too much. In my opinion the position of inward strobes works particularly well with subjects that have depth and are not flat on the focal plane of the camera like in this example. The lighting creates very strong shadows and texture that gives the fish an attitude.

A few days later I am on another dive site shooting wide angle again and I notice a large hermit crab on the seafloor. I try a crossed strobe shot and with my horror I notice many large particles backscattering over the black background.

[Hermit backscatter] I change the strobe position for inward lighting wide angle and place myself so I would get some blue water in the background that would reduce the contrast of the particles.

The first repositioning works well: I get strong shadows and light more from one side as I wanted [Hermit Inward1].

Then the hermit decides to go for a wander, first it is repositioned so that I get a more frontal shot. [Hermit floaters]

Then it literally legs it so I get a shot that for me is quite funny, as you can see a group of breams swimming in the other direction against the blue water.[hermit on the run].

This technique has resulted in a few shots that are above average certainly not outstanding but decisively different that bring out the character of both critters in my opinion.

I want to try and provide some details and technical explanation of what I think is happening with the strobe positioning and the subject.

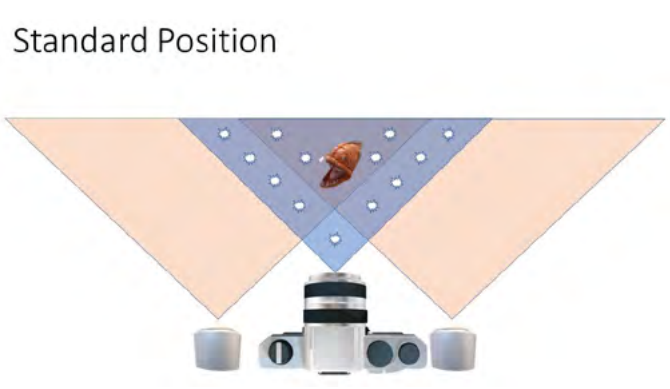
This is a standard position for close up frontal shots. From the diagram above you can see that the area where the lens and the strobes beams overlap

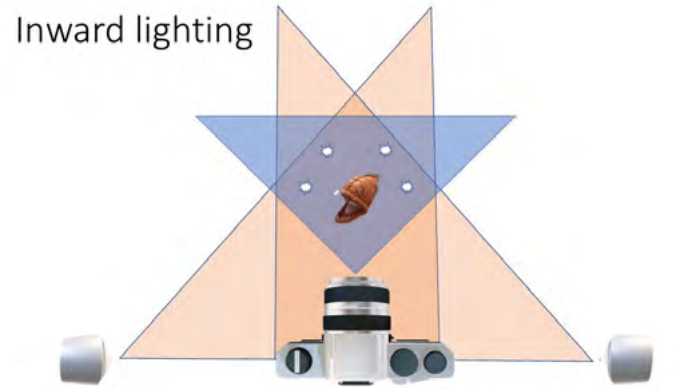
Inward correct: ISO 200, 15mm, f/5.6, 1/400

Hermit Crab Backscatter:ISO 200, 15mm, f/10, 1/125

Hermit Inward 1: ISO 200, 15mm, f/10, 1/125

Hermit on a run: ISO 200, 15mm, f/10, 1/80





can generate backscatter. As the strobes are aligned with the lens the phenomena can be really strong, as demonstrated in the first hermit crab shot.

There are two issues with this positioning: first if the subject is sitting on the sea bed and you cannot get water behind you will see the background no matter how fast the shutter speed goes. Moreover If you try to close the aperture you will need to increase strobe power which will result in more backscatter.

(Top right) This is a position that I use for inward lighting when I use a wide-angle lens.

You can notice a few things. First is that the subject is only hit by the edges of the beam and only from one side of the strobe so the intensity of the light is greatly reduced. This can be a challenge if you have a true fisheye as you will need to have really strong strobes as you place them further away from you to cover a wider area.

The second is that the light beams are pointed to each other which in turn means strong shadows and a lot of texture on your subject.

Thirdly any suspended particles will reflect away from the incident angle of the lens resulting in attenuation, but of course not elimination, of backscatter effects.

Finally, the area behind the subject is not covered by the strobes at all and lends itself to either dark background or ambient light.

Here are some additional tips on the strobes. I personally use diffusers in this set up otherwise the position of the strobes needs to go forward and this can create backscatter at the edges or you could even see the strobes in the frame. Second you need several attempts to work out the distance vs power vs aperture equation.

If you are interested in a dark background you need to increase the shutter speed as far as you can but on the other end control the aperture so you get the visual effect you want, in my case open so that the background is not sharp in focus.

If you want to have the blue water background in the shot then you need to reduce the shutter speed and increase the aperture so you get plenty of depth of field to show as much as possible of the environment, this may result in your strobes working at full power just to paint your subject enough to standout. It takes a while to work out how to proceed and it is better to decide at the outset how you want to compose the shot so that you do not spend too much time doing trial and error as your subject may decide to leave the scene and interrupt the cooperation.

I have used a Panasonic GH5M2 with a Canon 8-15mm and Metabones smart adapter. My rig set up is described on this link. An APSC camera with a Tokina 10-17mm or a camera with a wet optics WWL-1 or similar or even WACP is adequate for shots like those described in this article. A full fisheye will have a much wider field of view and your subject may look very small or you may not be able to illuminate it correctly, a WAM (wide angle macro) solution may be better but that is an entirely different technique. I use a set of Sea and Sea YS-D2 despite the reputation for low reliability they have worked fine for everything I do until now. I am also convinced that shots like those described in this article can be taken with any camera type as long as you know how to and have adequate lenses and field craft, so if you have read up to now I recommend you give it a go and try and apply my suggestions adjusting the to your taste.

Finally, for who is interested in technical articles I recommend visiting my blog where there are many in depth technical write ups on various subjects over and beyond what would normally feature in a magazine.

Massimo Franzese
https://interceptor121.com

Massimo Franzese is a management consultant specialising in IT mergers and acquisitions. He is a PADI instructor and keen videographer, since his wife Helen stopped diving in 2014 he has also started taking photos underwater. Massimo is programme manager for New City Photographic Society in Milton Keynes and keen land wildlife, landscape and nightscape photographer. Follow his Instagram feed here.

Instagram

Mexico Whale Sharks 2022

by Dr Clare Preeble

I was very pleased to be part of the triumphant return of Aqua-Firma to Mexico this year to see the Yucatan Peninsula whale shark aggregation. Post plague, the logistics of the trip had changed slightly, and this was also the first time that both Charlotte Caffrey of Aqua-Firma and I had hosted the Mexico trip. What could go wrong!?

Spoiler alert – not much – it was actually amazing!

Team 2022 assembled at the Playa Mujeres beachfront, north of Cancún, at the decadent all-inclusive hotel that was to be our base for the next week. We were a Goldilocks-sized group of ten, with a diverse range of backgrounds and ages. Some had been trying for a decade to see whale sharks. Others were seasoned hands, having travelled to multiple aggregation sites worldwide. So, no pressure then…

Day one on the water was preceded by an introduction to our fearless boat captain and whale shark researcher extraordinaire, Rafael de la Parra. Rafael has been working in the Mexican Caribbean since 1988, and has been studying whale sharks there since 2004. So of course he's been captaining the Aqua-Firma trips to Mexico since they started in 2013.

Our first day was a scorcher, but the waves and the wind were in our favor and we reached the whale sharks after about an hour. All the sharks were frantically feeding at the surface, some at quite a pace. Everyone managed to get several swims with the sharks, along with a bit of a workout (helpfully counteracting the hotel meals). There was also a brief sighting of a dark melanistic 'ninja' manta, and a striped marlin. An excellent start!

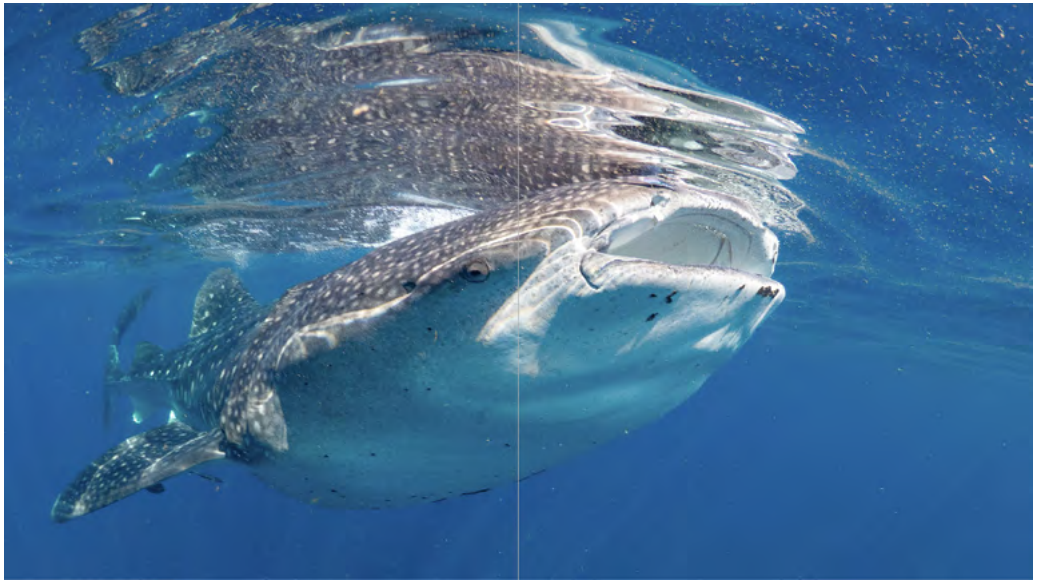
By day two, everyone had their sea legs and whale shark spotting eyes tuned. We were greeted by wonderful chaos as we arrived at the aggregation. Tens of whale sharks were clustered together surface feeding. We were even treated to some vertical feeding behavior as well. Once in the water, there was no need to swim anywhere. Whale sharks swooshed past us left and right, quite often at the same moment. This day was hence known as 'whale shark soup' day. Rafael was like a giddy child, exclaiming that it was the best day of the sea-son so far. He also told us that the world's most famous whale shark, Rio Lady, was amongst the throngs of sharks in the water. Rio Lady is a large ~7.5m female shark that has been tagged

multiple times, most recently off Isla Mujeres in 2018, traveling a record-breaking 19,000+ miles since then. She has been far out to sea in the western Atlantic and all the way south towards the coast of Columbia. Rafael informed us that her tag had transmitted a few days earlier in the Gulf of Mexico, and that she had now returned home to the Isla Mujeres Afuera aggregation.

After a well-timed rest day, the group set out on the calmest day yet. With the lake-like conditions, we spotted two whale sharks early in our journey toward the aggregation, and kept them both to ourselves! Clear water, relaxed whale sharks, and early morning light made for excellent photography opportunities and relaxed snorkeling sessions for everyone.

With everyone (almost) sated with whale shark encounters, our final day on the water started strong with several loggerhead turtles spotted on the surface and almost 45 minutes of a spotted dolphin pod activity in the wake of the boat.

On arrival at the feeding aggregation, it was clear that the whale sharks were very spread out and generally staying sub surface. Not wanting to add to the boat/shark ratio, and with the previous days' experiences in mind, the decision was made to head out towards Isla Contoy. Here, due to the upwelling and currents, the waters are cooler and murkier, but it's often the best place to spot manta rays. We did manage to spot some eagle rays, bottlenose dolphins, and got a quick glimpse of a manta ray. The leisurely journey around the island was stunning, but the slightly quieter marine life sightings reminded us all that the ocean can be unpredictable and highlighted how special our experiences were earlier in the week.



With smug faces and Vitamin D-enriched skin, the group all had a final dinner together to toast our luck and plan where to go with Aqua-Firma next – except one couple, who were smugly heading off on a magical whirlwind tour of the peninsula to see monkeys, flamingos, and magical forested Mayan temples. (I'm not jealous, you're jealous). Charlotte and I bade farewell and agreed that we were so lucky to have had such an easygoing group that marveled at the sea just as we do. Bring on Mexico, 22–28 Jul 2023!

Dr Clare Preeble

https://www.aqua-firma.com/experiences/mexico-whale-shark-research-snorkel-freediving-cancun-isla-mujeres

Wakatobi's House Reef Regulars

by Walt Stearns

Wakatobi's House Reef encompasses a vast area of seagrass meadows and shallow coral formations that lie between the beach and a precipitous coral rampart that plunges into the depths. Underwater photographers and critter watchers have been known to devote days and even weeks to exploring this expansive site, as it is home to a plethora of marine life. A complete listing of finds could fill a book, but for the sake of brevity, here are seven House Reef regulars that make for fascinating viewing and good photo ops.

The Odd Couple

A careful search of sand or rubble patches on the House Reef may reveal Wakatobi's own "Odd Couple." The Randall's shrimp goby (Amblyeleotris randalli) is a burrow-dwelling fish that isn't big on housework. Unlike jawfish and other species that dig their own dwellings in the seabed, this clever little fish lets its roommate do work. When you happen across one of these distinctively striped fish, you'll likely see a small shrimp by its side. It's this crustacean that takes on the responsibility of building and maintaining their shared underground abode. In exchange for burrow maintenance, the near-blind shrimp enjoys the watchful protection of the keen-eyed goby, which maintains a peripatetic scan of the surroundings while the shrimp toils at debris removal.

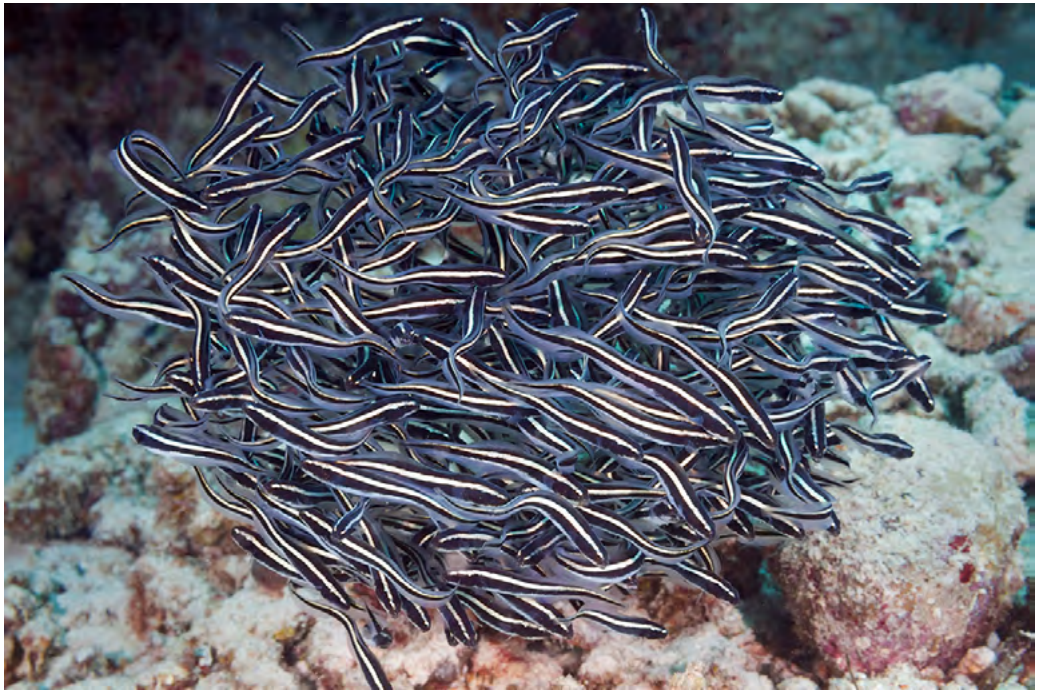
Dartfish Trifecta

Sporting a dazzling range of rainbow hues, dartfish are among the most colorful finds on Wakatobi reefs. But fish waters and photographers who approach too aggressively will soon discover the namesake trait of these easily-spooked bottom dwellers. At the first hint of trouble, dartfish will pop back into the borrows they excavate in sand or rubble seabeds.

Dartfish watchers have a trio of options at Wakatobi. Two-tone Dartfish (Ptereleotris evides) are typically found on shallow reefs, making them an ideal find for snorkelers. These fish are among

Fire dartfish. Nikon D850 / Nikon 105mm macro at 1/125 sec., f/38, ISO 200. Lighting: dual Retra Prime strobes in manual mode set at 50.

Randall's shrimp goby. Nikon D850 / Nikon 105mm macro at 1/120 sec., f/27, ISO 200. Lighting: dual Retra Prime strobes in manual mode set at 25.



Convict Blennies. Canon 7D mk II / Tamron 90 macro at 1/100 sec., f/18, ISO 200. Lighting: dual Sea & Sea YS-250 strobes in manual mode set at half power.

Bluestreak cleaner wrasses: shot with Nikon D850 / Nikon 105mm macro at 1/250 sec., f/16, ISO 200. Lighting: dual Retra Prime strobes in manual mode set at 50.

the largest species of dartfish, growing to lengths of up to 6 inches. Divers who venture into middle depths of 6 to 15 meters can look for the fire dartfish (Nemateleotris magnifica), which are often found in pairs, and sport a distinctive flame-like coloration from the mid-section to the tail. Deeper still are the decorated dartfish (Nemateleotris decora) which favor the sand-covered shelves and gullies on reef slopes at depths from 15 to 30 meters.

Convict Labor

The name convict blenny (Pholidichthys leucotaenia) may not seem like a suitable title for this small fish, but these bottom dwellers are quite engineering when it comes to building a burrow. You are most likely to encounter juveniles of this species, as they form schools numbering into the hundreds to swarm the reefs feeding on algae. These youngsters might be mistaken for striped catfish, as they mimic the markings of this highly toxic species in order to fool would-be predators. Adults are far more reclusive, spending most of their day peering from the mouth of the tunnels they excavate in the sand – hence the engineering reference. If you do happen to see an adult emerge, you'll understand the convict appellation, as mature fish take on eel-like profiles with distinctive white stripes on a black background, much like classic prison apparel.

The Cleaning Con

The upper expanses of Wakatobi's House Reef are covered in cleaning stations where cleaner wrasse dance and dart about to attract customers. There's a built-in degree of trust involved when a reef predator pauses with jaws agape, allowing a phalanx of small fish and shrimp to swarm over its body and into the mouth to remove parasites, dead skin, and troubling infections. But there is one devious denizen of the reefs that exploits the ethos of the cleaning

Crocodilefish. Canon 7D mk II / Canon 60 macro at 1/100 sec., f/32, ISO 200. Lighting: dual Sea & Sea YS-250 strobes in manual mode set at half power.

Palette surgeonfish: shot with Canon 7D mk II / Canon 60 macro at 1/160 sec., f/14, ISO 200. Lighting: dual Sea & Sea YS-250 strobes in manual mode set at half power.

station. The blue-striped fangblenny (Plagiotremus rhinorhynchos) mimics the appearance and behavior of a juvenile bluestreak cleaner wrasse. But instead of picking parasites, this fang blenny takes a bite of flesh. This fish's namesake fangs can dispense a pain-numbing venom containing morphine-like opioids that keep the victim from feeling the nip.

Luxurious Lashes

There's a stealthy hunter living on the reefs of Wakatobi, but most divers will swim right past this fish without noticing its presence. Like their namesake reptile, the crocodilefish is an ambush predator that spends most of its time lying motionless on a reef outcropping, waiting patiently for a meal to swim within range of a well-timed lunge. These fish are masters of camouflage and can adapt their body's coloration and patterning to match their surroundings.

Crocodilefish also overcome one of the more common giveaways that plague stealth hunters — the eyes. To conceal their keen-orbed countenance, these fish grow long, lash-like growths known as lappets. The irregular, lacy shapes of these lappet growths help to break up the dark, reflective contours of the eyes, which might otherwise alert potential prey to this predator's presence.

A Star Is Born

Hollywood made a star out of a small bright-blue fish named Dory. You can find her real-world counterpart on Wakatobi's House Reef, though you might be as confused as the cartoon character when it comes to names. Palette surgeonfish (Paracanthurus hepatus), doctorfish, regal blue tang, flagtail surgeonfish, and letter-six fish are just a few of the nearly dozen common names that this fish is known by. By any name, there's no mistaking the distinctive indigo and navy-blue color pattern sported by adults of the species. Equally iconic as its coloration is this surgeonfish's pointed, snout-like nose, small mouth, and dainty teeth. This diminutive

dental work is used to dislodge small bits of algae from corals and rocks, giving Dory's real-life relatives an important role in keeping corals free from algal overgrowth.

Claws of Fury

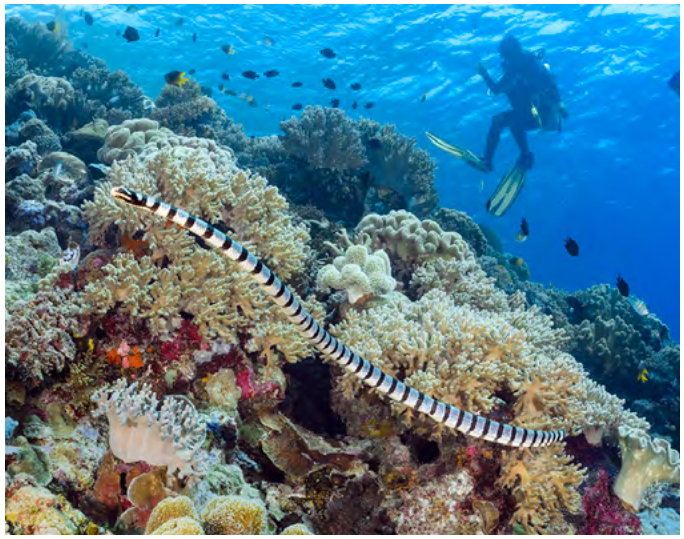
Their alien-like visage and iridescent stalk-set eyes make mantis shrimp a macro photo favorite. Most famous is the colorful peacock mantis, which can strike its prey with hammer blows that pack a punch equivalent to a 22-caliber bullet. But these lethal smashers aren't the only stomatopods prowling the House Reef. There's another member of the mantis clan that attacks with equal ferocity, and it's a slasher. Rather than smash open hard-shelled prey, the spearing mantis shrimp impales fish and other soft-bodied creatures with a lightning-fast deployment of its barb-tipped appendages.

Peacock Mantis Shrimp. Canon 7D mk II / Canon 60 macro at 1/180 sec., f/19, ISO 200. Lighting: dual Sea & Sea YS-250 strobes in manual mode set at half power.

Hiding In Plain Sight

The O. cyanea – big blue octopus – is also known as the day octopus for its diurnal behavior. And while exposing its soft and unprotected flesh to the light of day might seem a risky practice, this octopus has a plan: you can't eat what you can't see. While most all have a talent for visual deception, the day octopus is particularly adept at camouflage, able to change both the color and texture of its skin in short order in a near-perfect match of its surroundings. This ability serves both to foil would-be predators and to conceal the octopus from its own victims. Observers have recorded day octopuses changing their appearance more than 100 times over the course of a few hours.

Day Octopus. Canon 7D mk II / Tokina 10-17 fisheye at 1/125 sec., f/8, ISO 200. Lighting: dual Sea & Sea YS-250 strobes in manual mode set at half power.



Nikon D850/ Nikonos 13mm fisheye at 1/250 sec., f/11, ISO 400. Lighting: dual Retra Prime strobes in manual mode set at 25.

Really Don't Bite

Though often seen on some dive sites at Wakatobi, one of the most lethal hunters in the water isn't actually a reef dweller. Banded sea kraits are actually air-breathing reptiles that live ashore and make breath-holding hunts among the corals and seagrass beds. A sea krait can remain underwater for up to a half hour, when is plenty of time to locate prey and administer a lethally paralyzing bite.

The venom of a sea krait is ten times more powerful than a cobra's, but divers have little to fear. These snakes aren't aggressive — though it would be extremely unwise to poke a finger too close in a threatening manner. Wakatobi is also home to an imposter. Banded snake eels display the same distinct white-and-black bands of the sea krait, counting on this visual misdirection to fool would-be predators. A closer look reveals subtle differences, as the krait's body is more rounded, and it has a small, blunted head.

This is just a small sampling of what can be found on Wakatobi's House Reef. And as many underwater photographers who have experienced this menagerie of marine life can attest, it is truly deserving on its title as World's Best Shore Dive.

Walt Stearns
www.wakatobi.com

Book Review?

by Peter Rowlands

By a kismet trail of circumstances I was invited to Bob Reid's house, just over the water from me in Cornwall, where he has, what I think must be, one of the most complete collections of diving books, certainly in this country, if not the world.

Bob got his first book (Cousteau - Shark) for Xmas 1963 from his parents and the collection is now just over 2500 books including a certain 'Underwater Photographer's Handbook' which had to be signed before I was allowed over the threshold.

As if this wasn't enough (the books, that is), he also has a complete collection of Nikonos cameras and accessories. He bought his first Nikonos (IVA) in Singapore on a trip to Perth in 1983 but the collection was really put together in the last 3 years when he got the idea he wanted a set of all five models but then discovered there were at least 13 types! He now has 18 in total and every standard lens.

I spent a nostalgic afternoon dipping into these amazing collections a few years ago and when Pat Baker (see UwP116) was over here from Australia, I thought he, too, would like a gander so we popped over the water recently for a mid morning coffee and reminiscences.

Now, by his own admission, Pat doesn't have as comprehensive collection as Bob but he does know what should be in one and I listened intently as he said "Have you got "So and so by what's his name?" and Bob would reply 'Yes. A first edition on that shelf to your left." "Wow" said Pat, and on it went.

After a career as an archaeological underwater photographer (including a stint on the Mary Rose), Pat asked the inevitable question: "OK. How about 'La Photographie sous-marine et les progrès de la photographie' by Louis Boutan?

" The books are arranged in alphabetical order by author's surname" replied Bob so Pat followed the shelves along until he saw a very old looking book protected from wear by a plastic bag.

"May I?" he asked. "Be my guest" replied Bob.

As Pat gently extracted the book from the shelf, he realised that he was touching (albeit through a plastic film) an original copy of the original underwater photographer's book. "I must have a photo of us together with this" and I gladly pressed the shutter and captured so many moments in one time.

Peter Rowlands
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Marshall's Mysteries 6

Do you know what these animals are, or what they are doing? Have a guess – answers on page 71.

A

© Colin Marshall / FLPA / Minden

Lembeh, Sulawesi, Indonesia — image about 4 cm across

B

© Colin Marshall / BluePlanetArchive

Amed, Bali, Indonesia — image about 2 cm across

C Match the juveniles (left) with the adults (right).

© Colin Marshall / FLPA / Minden

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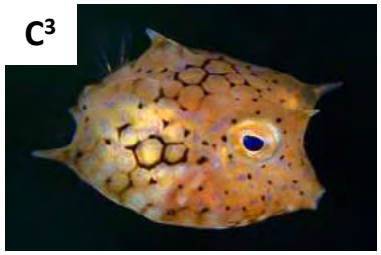

© Colin Marshall

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© Colin Marshall / Ardea

© Colin Marshall

D

© Colin Marshall

Lembeh, Sulawesi, Indonesia — image about 30 cm across

Guidelines for contributors

The response to UwP has been nothing short of fantastic. We are looking for interesting, well illustrated articles about underwater photography. We are looking for work from existing names but would also like to discover some of the new talent out there and that could be you! UwP is the perfect publication for you to increase your profile in the underwater photography community.

The type of articles we're looking for fall into five main categories:

Uw photo techniques - Balanced light, composition, etc
Locations - Photo friendly dive sites, countries or liveaboards,
Subjects -, Anything from whale sharks to nudibranchs in full detail
Equipment reviews - Detailed appraisals of the latest equipment
Personalities - Interviews/features about leading underwater photographers

If you have an idea for an article,
contact me first before putting pen to paper.
E mail peter@uwpmag.com

How to submit articles

To keep UwP simple and financially viable, we can only accept submissions by e mail and they need to be done in the following way:

1. The text should be saved as a TEXT file and attached to the e mail
2. Images must be attached to the e mail and they need to be 150dpi

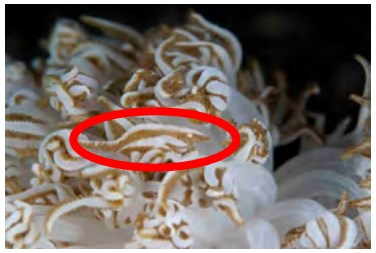
Size - Maximum length 20cm i.e. horizontal pictures would be 20 cm wide and verticals would be 20cm high.

File type - Save your image as a JPG file and set the compression to "Medium" quality. This should result in images no larger than about 120k which can be transmitted quickly. If we want larger sizes we will contact you.

3. Captions - **Each and every image MUST have full photographic details** including camera, housing, lens, lighting, film, aperture, shutter speed and exposure mode. These must also be copied and pasted into the body of the e mail.

Marshall's Mysteries 6 - Answers

A



Brilliantly camouflaged Two-stripe Soft Coral Shrimp, aka Xenia Coral Shrimp (Alcyonohippolyte tenuicarpus), in Xenia Coral (Xeniidae Family).

The mimicry is extraordinary - artful colouration replicating the host coral, ie not just bits of coral stuck to the shrimp. Patterns are hence variable for the species; the dentition of the rostrum (the carapace extension with serrated spikes which protects the eyes) can be used to accurately identify the species.

A "clean canvas" of a similar x Xenia Shrimp species, (Alcyonohippolyte commensalis), is shown below :

Lembeh, Sulawesi, Indonesia

These commensal shrimps can be found on page 33 of "Coral Reef Crustaceans from Red Sea to Papua" by Andrey Ryanskiy.

B

Drinking-straw Polychaete Worm (Hyalinoecia sp) dragging its protective tube across the sand.

The tubes are made of bits of shell, sand, and plant debris, stuck together with mucus.

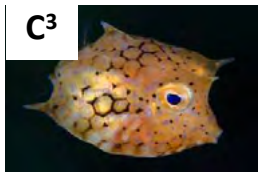
C

These are all Boxfish or Cowfishes. The juveniles and corresponding adults are shown below :

Yellow Boxfish
Ostracion cubicus

Roundbelly Cowfish
Lactoria diaphana

Thornback Cowfish
Lactoria fornasini



More detail on these Boxfish can be found on pages 1081-82 of Volume 3 of "Reef Fishes of the East Indies" by Gerry Allen and Mark Erdmann.

D

Giant Ball Coralimorph (Megacorynactis giganteus) predating a Blue Starfish (Linckia laevigata). The column can extend to a very long length; I have witnessed at least a meter.

The predation is more or less the opposite of a cheetah hunting a gazelle; everything moving in painfully slow motion!

Image of the "relaxed" Coralimorph is shown on the right, with the column retracted.

Lembeh, Sulawesi, Indonesia

More detail on this Coralimorph can be found on pages 412 -13 of "Indo-Pacific Corals" by Joe Rowlett.

If you think any of the identifications or information above is wrong, please let me know at colintrmarshall@yahoo.com. Feel free to send me any images of anything you'd like some help in identifying – any particularly interesting mysteries may be included in future Underwater Photography issues.

My Shot
by Peter Rowlands

iPhone 11 Pro in a SeaFrogs housing with a Greenwater Magic Filter. 1/120th F2.4. 125 ISO

In a round about way I have local Devon underwater underwater photographer Dave Peake to thank, in part, for this shot. Let me explain.

Dave had been telling me of this special place in the north of Cawsand Bay where there are very colourful formations of Cornish volcanic rocks on the shore so one day, when the tide was right and it was relatively calm, he, Peter Rustage and I went over there on my boat and anchored slightly offshore.

We swam inshore to the rocky area but the viz was quite turbid and, although we could see the rocks, and I could definitely see their photographic potential, it wasn't to be so, that day.

On our swim back to the boat we came across this area of string weed where the viz was just as limited but, once back in the boat, we all said how good it would be for potential images. When I asked them why they had not told me about this site they said "We have only shore dived the rocks so we never came out this way and never knew it existed!"

Suitably motivated, I made a plan to revisit it when the tide was high after a spell of calm, rain free weather. That particular combination didn't occur until a couple of weeks later when I dived the site with Marie Anderson as my patient model.

Once underwater we found the viz was still not perfect but certainly 'doable' so, armed with just my iPhone 11 Pro in a SeaFrogs housing with a Greenwater Magic Filter, I set about taking shots using the amazing 'Pano' feature.

For the uninitiated this involves starting the exposure and panning the camera across the scene from left to right. As the camera pans, the software takes vertical slices and stitches them together 'live' so you can see how the shot is developing; it is a most enjoyable photographic experience but it does not always turn out as envisaged. The camera can get fooled by open water but, no problem, just move slightly and retake the shot until it turns out better.

On this dive I took about thirty shots and I'd say just over half worked but the obvious advantage of digital is that it costs nothing to take the shots so , if at first you don't succeed etc etc.

We were in no more than five metres of water so the light levels were good and the somewhat basic iPhone Auto White Balance was able to give pleasing results with the help of the GreenWater Magic Filter of course :-)

The image was 'tweeked" (contrast/clarity) slightly in Lightroom and I'm not sure what caused the light streak at the top of the frame so it's 'warts and all!"

Peter Rowlands
peter@uwpmag.com

Do you have a favourite shot or an image/s which made a dive special.
E mail yours with some text to
peter@uwpmag.com
and yours could be the next My Shot/s

Parting Shot

Devils Den is a popular freshwater spring in North Central Florida. This location is unique as it is a karst window that opens into a vast air-filled chamber. Most karst windows are simply surface openings into our underwater river systems. An entrance, if you will, into a cave system where the water comes to the surface. Devils Den is different. A diver descends via a set of stairs starting at ground level and going down another 30 feet to the 'lake'. The ceiling is a dome of rock with a round skylight (the karst window) in the middle.

Rocks from the ceiling have fallen into the lake making this a dive site of swim throughs. Visibility is generally in the 40-foot range, but it is very dark as the only area illuminated by the sun is directly under the karst window. UW photos require strobes or video lights.

On this specific dive my dive buddy and model extraordinaire Soo Yon Ryu and I agreed to shoot in and around the rock passages. No caves, just areas that look like caves. Our dive time that day was just around an hour, and I felt like I had some good shots.

We surfaced under the skylight and I began to arrange my camera and strobes for the narrow stairs. I loosened all the joints on the strobe arms allowing the strobes to hand straight down. Final arrangement is easiest if everything is always in the same position when I begin the process.

I looked up and saw Soo Yon floating on her back looking up into the sunlight. It was magic! She looked like a nymph floating in a sacred spring. A Naiad out of mythology. I was able to lift the camera out of the water for a quick series of shots. If I hadn't let the strobes hang down I never would have been able to raise the camera out of the water and get this shot. My exposure settings were unchanged from underwater – light from my strobes being replaced by the sunlight.

Sony A7r IVa, Nauticam Housing, 35mm lens, ISO 1600, f16 @ 1/80

George Sharrard
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which has a story within a story?
If so e mail it with up to 500 words of text
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