



# AQUATICA™

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## Digital



Coming soon...



**A7IV**

# AZ9



**AGH6**

All Aquatica housings come standard with moisture alarm, vacuum valve and pump as well as your choice of **strobe connectors\***

(\*OPT strobe version includes flash trigger)

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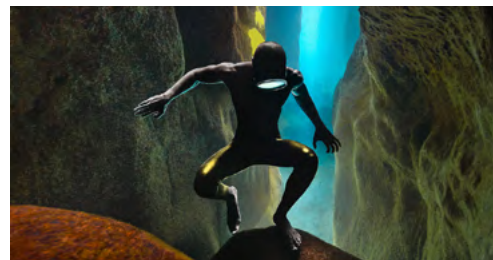
# Underwater Photography

A web magazine

UwP126 May/ Jun 2022

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Underwater Photography 2001 - 2022

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Publisher/Editor Peter Rowlands

[www.pr-productions.co.uk](http://www.pr-productions.co.uk)

[peter@uwpmag.com](mailto:peter@uwpmag.com)

Cover shot

by

Phil Rudin

As a fan of both ROVs and drones it's obvious (to me) why I chose to include the 'Finding Endurance' and 'Tagging Whales' articles in this issue because they are great examples, in marine terms, of how far our reach is becoming extended by remote technology.

Take The Endurance, for example; the images were shot at a depth of 3008 metres. In old money that's just under 10,000 feet which, in terms I can physically relate to, is not far short of two miles down. Quite amazing, really, and a heart warming reminder of an incredible story and the images provided a sort of closure and a good example of how we need targets to test our range and technology.

And then there's the positive take on how drones are starting to provide us with unprecedented data access into the lives of the planet's biggest creatures and the conclusion is that their digestive 'technology' is perfect for carbon storage in a very large scale win/win way. True, there wasn't one underwater image in the whole article but it's a great example of how the environment we love to immortalise in images, still and moving, is such an important part of the balance of nature.

Don't ya' just love technology?

## Basic equipment

A few issues ago I bleated on about how top heavy we were equipment-wise in UwP but this issue is levelling the boat somewhat with Matthias Lebo's GoPro setup, Peishan Tan's lovely Maldives photos and Eric Engbretson's take on things. But there is also a less noticeable use of some compact shots by Anita Verde and Peter Marshall interspersed with other 'large format' ones.

They are all excellent shots but when you check out the captions I think you will be surprised that some of the stand out images were actually shot with an Olympus TG-4.

Agreed it had the benefit of an additional wide angle supplementary lens but the current Olympus 'Tough' camera is the TG-6 so the TG-4 is two models old and still very capable of keeping up with the big boys/girls/etc/ etc.

## Freshwater

Eric Engbretson's excellent website [www.underwaterfishphotos.com](http://www.underwaterfishphotos.com) reminded me how little coverage we give to freshwater subjects in UwP and I'd definitely like to redress that particular imbalance. The backgrounds may not be as colourful or glamorous as their marine big brother/sister/ etc/etc but the fish are the stars and what an eclectic bunch they are from the delicate minnow to the majestic salmon and a myriad of shapes and sizes in between. Maybe even a whole new section could be on the way.

## Traveling again

It seems as if life is getting back to some sense of normality now that travel restrictions are slowly being lifted and that is reflected here in two articles about recent travel. It's all great for everyone right through from the individual to the resort and the economy as a whole but don't forget your backyard which gave you so much surprising enjoyment over the past couple of years. Like a faithful buddy, there are always there.

## Parting Shot mailing list

Parting Shot enthusiasts will notice that I had to sharpen my quill for this issue as, once again, the PS cupboard was bare. Now I'm pretty sure that there are a lot of readers who, every issue, go 'Doh' when they read PS and are reminded that they have a great one but have never got round to submitting it and there are those who every now and again think 'That would make a good PS'.

Well in order to try and get a more steady stream of PSs in each issue, if you'd like to express your interest, I will add you to a list for me to contact you when the cupboard is low and see if we can't get a bigger and more consistent PS section in each issue of UwP.

**Peter Rowlands**  
[peter@uwpmag.com](mailto:peter@uwpmag.com)

# News, Travel & Events

## Sali Bay Resort, South Halmahera



South Halmahera as part of the Moluccas is truly a diving paradise off the beaten track. Sali Bay Resort, being the first dive resort in the South Halmahera made us more knowledgeable of the area and gave us the advantage of discovering new dive sites.

The brand new 3-Stars Plus resort is located in a protected bay in the Northern part of Maluku (Moluccas), in the Sea of Halmahera – Indonesia.

Sali Bay is a unique resort in this part of Indonesia. It has been built in

two years, in order to offer our guests an unforgettable scuba diving holiday experience in North Maluku.

Enticing diving spots are within a stone's throw by boat and many more are still to be explored.

The 600 metres house reef offers amazing snorkeling and diving adventures. The world highest marine biodiversity is here in South Halmahera to reveal its pristine and unspoiled beauty.

[www.salibayresort.com](http://www.salibayresort.com)

## Finding threshers in the Philippines 2nd-9th June 2022

Photojournalist Simon Rogerson is hosting a dive trip in search of thresher sharks this June. The trip, supported by Dive Worldwide, will focus on the island of Malapascua in the Philippines, from 2 June and offering 20 dives over seven days.

The group will stay at the informal Tepanee Beach Resort, diving with Thresher Shark Divers. The nearby Monad Shoal is widely regarded as the best place in the world for sightings of pelagic thresher sharks, and there are more world class dives to be found at Gato Island.

“The star of the show is the mysterious oceanic thresher shark, but there are beautiful reefs, coral walls, and some excellent critter sites to explore,” says Simon. “This is a mainstream escorted trip rather than a photographers’ workshop, but I will be available to advise and collaborate on anyone’s photographic needs. Everyone will receive a set of bespoke photographs at the end of the trip, to use as they wish.

“The idea is to choose a variety of sites and tailor the trip as closely as possible to the group’s needs, so everyone can make the most of their holiday. Recent news from Malapascua is that thresher sightings are through the roof, and the seamount has also acquired a resident tiger shark. There’s no better time to visit.”

The trip is priced from £2,345, including flights from UK airports, eight nights b&b accommodation and up to 20 boat dives, covering a range of marine habitats.

[www.diveworldwide.com/group-tours/malapascua-dive-adventure](http://www.diveworldwide.com/group-tours/malapascua-dive-adventure)



# Engbretson Underwater Photography

Unlike many of our native animals, we rarely see fish in their natural state. We can go outside and observe birds, deer, squirrels and other wildlife going about their day and doing the things animals do: Eating, mating and raising their young. But fish live in a world that's largely invisible to us, so when we do see them, it's usually when they're far removed from their natural environment and behavior.

Because we only see fish at the end of our fishing lines or on our dinner plates, we tend to view fish only for the utilitarian value they offer us instead of appreciating them for their ecological and intrinsic value.

By photographing them in their natural habitat, our goal is to communicate to the world the inherent natural beauty of freshwater fish and the uniqueness of the freshwater environments where they live. By documenting fish and their world, we hope to inspire you to join us in protecting the freshwater ecosystems that we love.

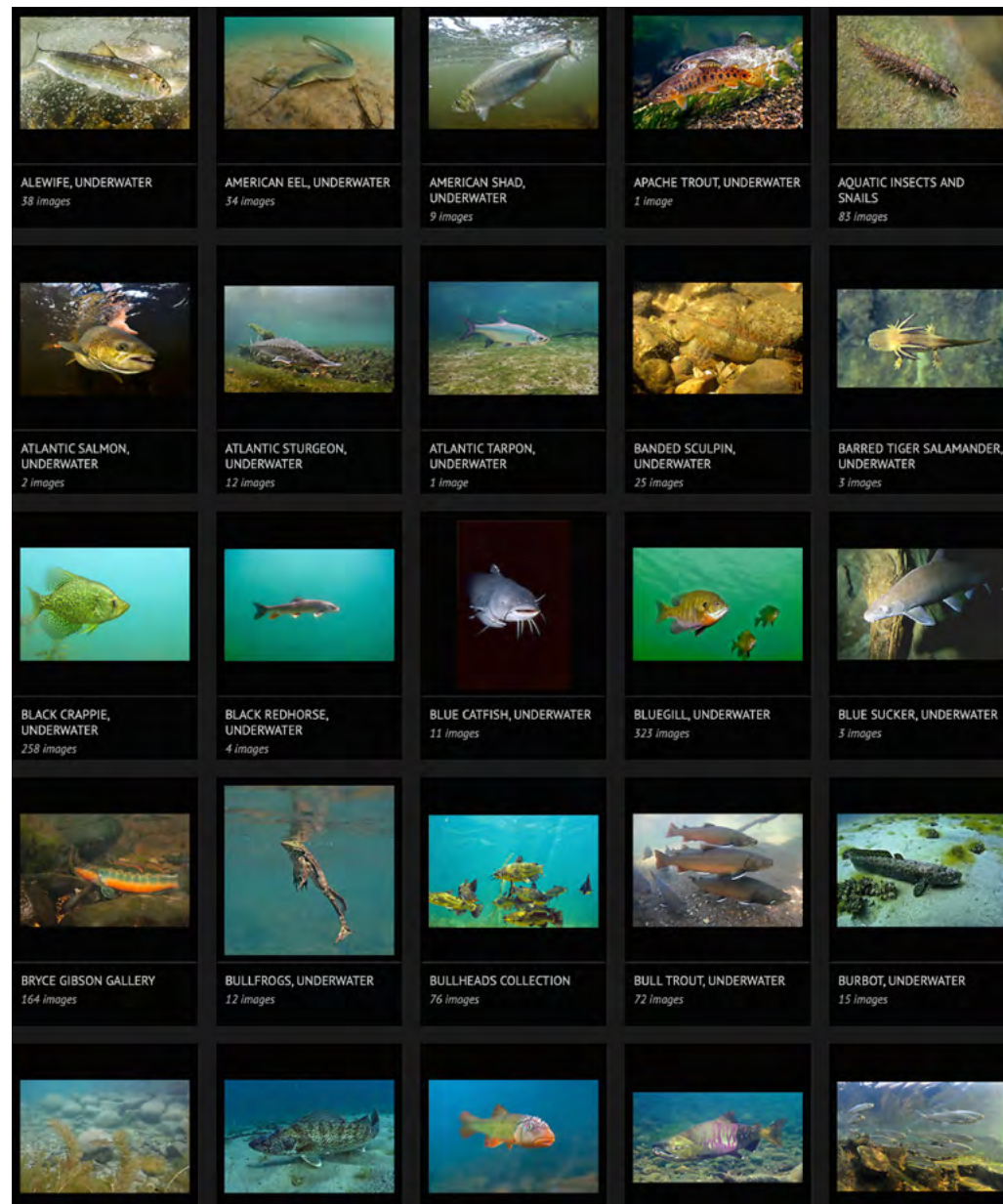
Engbretson Underwater Photography licenses professional photography and video for editorial, publishing, advertising, corporate and other uses. We've been supplying quality stock photography to industry

professionals since 1993.

Known in the business for our exceptional underwater fish photography, our images can be licensed for a wide variety of applications. We're eager to work with your company or agency to supply you with the unique kind of fish imagery you simply won't find anywhere else. No other stock photo agency can provide you with the variety and depth of coverage in this niche that we offer.

Our specialty is freshwater game fish native to North America, but we also have a growing library of non-game species. We're continually adding to an image library of thousands of pictures of largemouth bass, smallmouth bass, walleye, northern pike, musky, panfish (perch, crappie, bluegill), catfish, trout, salmon and many other species.

Please feel free to browse the fish galleries of selected images and phone or email with any questions and let us know about your specific photo needs. We have over 7,500 images on this website available for high-resolution download. We have over 12,000 additional photos in our stock files. If you don't see what you need here, we may have additional images in our files.



[www.underwaterfishphotos.com](http://www.underwaterfishphotos.com)

GregorySweeney.com Photography Adventures

Baja, Mexico  
*Striped Marlin*

Isla Mujeres, Mexico  
*Whale Sharks*

Magalena Bay, La Paz, and Cabo Pulmo Park

November 2022 July 2022

## Underwater Tribe Advanced Photo Course, Bali



For those familiar with the basics we offer an Advanced Photo course that introduces many of the secrets of the Pros!

“Taking it to the Next Level” is a two day, 4 dive advanced photo course that concentrates on a variety of techniques such as: Over/Unders, Playing with Light, Using Filters, Diving with a Model, and Super Macro (depending on the student and equipment).

For this class we work with you via email before your arrival in order to learn what subjects you would like to improve on and tailor the course to fit your needs. Once again we keep the class to a maximum of three participants in order to spend individual time with each student.

In order to maximize your time

and learning, we suggest students stay on location at one of our beautiful partner resorts in the Tulamben area. This cuts out the drive to and from south Bali each day and will allow students the opportunity to do late afternoon dives and/or night dives as well as spend more time with the instructor.

If you would like to continue diving before or after your photo class we are more than happy to create a tailored itinerary for you with a private guide for your group. This is a great way to continue practicing your photography techniques while exploring and experiencing one of the best diving locations in the world.

[www.underwatertribe.com](http://www.underwatertribe.com)

## USPS Eugenie Clark stamp

The United States Postal Service (USPS) has announced the release of a “Forever Stamp” celebrating the life of Eugenie Clark. The stamp features an image by David Doubilet. There will be a first day of issue event at the Mote Marine Laboratory, Florida on 4 May 2022.

Affectionately known as the “Shark Lady,” pioneering marine biologist Eugenie Clark (1922-2015) spent her career working tirelessly to change public perception about sharks as well as to preserve marine environments around the world.



[www.usps.com](http://www.usps.com)

## Learn to create incredible Underwater Pictures Online!

Hi, I'm Romina and I will be your underwater photography instructor.

I know from experience how hard it is to create great underwater images! For years I have struggled! But it doesn't have to be that hard.

I have created "The Secrets of Underwater Photography" to share my learnings with you and teach you exactly what you need to know, so you can start creating stunning underwater pictures on your next dive trip!

In this online course I am sharing my insights with you, give you clear guidance, hands-on tips, and specific exercises that will help you create underwater images that you are proud of!

Learn how to take stunning underwater images on your next dives!

With this online course, you will be ready for your next dive trip & come back with amazing images. Contents of the course:

- Module 1: Getting started with underwater photography
- Module 2: Lighting Underwater
- Module 3: Macro Photography
- Module 4: Wide-angle Photography
- Module 5: Post-Processing with Adobe Lightroom
- Exam



What's included in the course?

Free consultation before the course- you can book it right here: <https://calendly.com/oceansnaps/15min>

Unlimited access to the online course, including 5 modules with more than 5 hours of video content plus additional learning materials

Practical assignments + downloadable PDFs so you can get into the action with your own camera on your next dives

Certification upon graduation  
Donation (10% of all profits) towards two amazing marine conservation organizations: Manta Trust and Utila Coral Restoration.

All this for just €249.

[www.oceansnaps.com](http://www.oceansnaps.com)

## Reef Photo Blue Heron Bridge workshops 2022

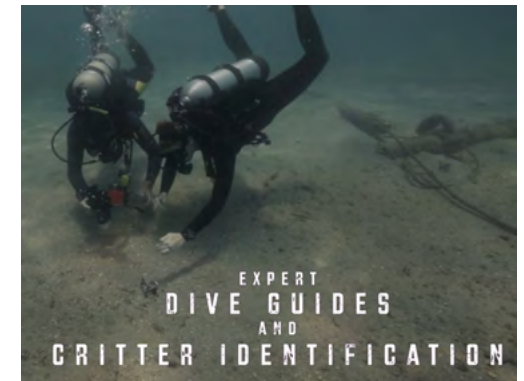
Take advantage of one of the finest macro sites in the world, our own Blue Heron Bridge, located in West Palm Beach, FL.

This 3 day clinic focuses on macro photography, and there may not be a better setting anywhere to hold this kind of class. The bridge is actually located on the intracoastal waterway, inshore. This protected area has great tidal exchange, protection from two bridge structures, and an island (Phil Foster Park).

The diversity of macro life at the Blue Heron Bridge dive site is unlike anything else in the tropical Atlantic. Unusual critters like seahorses, frogfish, pipefish, sea robins, batfish, stargazers, nudibranchs, and flatworms, are common sightings.

In addition to photo instruction, this class includes a dive guide for every 2-3 divers. Our guests can focus on taking pictures, and we'll lead you from subject to subject. No stress about dragging around a dive flag, navigation, or boat traffic; just relax and take pictures!

Classroom topics will start with macro camera settings, focus strategies, and exposure tips. Once you've got a grasp on the basics, more advanced lighting, composition, and creative effects can be explored.



Our staff uses Adobe Photoshop Lightroom for image cataloging and editing, and a thorough digital workflow introduction is included.

<https://reefphoto.com/collections/workshops/products/blue-heron-bridge-photo-workshop-choose-dates>

Mermaid  
LIVEABOARDS

# KOMODO 2022 10% OFF



[www.mermaid-liveaboards.com](http://www.mermaid-liveaboards.com)

## Call for Entries: SDUFEX 2022

The San Diego Undersea Film Exhibition (SDUFEX) is accepting entries for its 2022 film festival. The event will be held in person on 1 October at the Qualcomm Hall in San Diego. Submission must have been received by the organizers no later than June 15.

For the first time in three years, we plan to hold an “in-person” film exhibition again! The film festival will be held Saturday, October 1, 2022, at Qualcomm Hall in San Diego. The festival will also be a hybrid event with some films available online.

All Films Must Contain at Least 50% Underwater Footage Films must be submitted via FilmFreeway no later than June 15, 2022

A maximum of two films (total) per filmmaker can be submitted. Films can be submitted in two categories:

- Up to 5 Minutes | No more than 5 minutes in length with at least 50% of the footage filmed underwater. The majority of films selected for SDUFEX will be in this category. We encourage filmmakers to submit the best version of their film, even if it’s well under 5 min. Many of our best films are only 2-3 minutes long – longer does not always mean better.

23RD ANNUAL  
SAN DIEGO  
UNDERSEA FILM  
EXHIBITION  
2022

# ENTER YOUR FILMS

2022  
SAN DIEGO UNDERSEA FILM EXHIBITION  
Submissions: March 18 - June 15, 2022

**SUBMISSIONS ARE OPEN**

Opening: March 18, 2022  
Regular Deadline: June 15, 2022

For submission info, awards, prizes, rules and terms, visit  
[filmfreeway.com/SanDiegoUnderSeaFilmExhibition](http://filmfreeway.com/SanDiegoUnderSeaFilmExhibition)

 [sdufex.com](http://sdufex.com)

- Up to 10 Minutes | 5 to 10 minutes in length with at least 50% of the footage filmed underwater. In this category, we are looking for films that tell a story. Films will only be selected for this category if they are narrated. Please note that a maximum of three films in this category may be selected.

For full details and to submit films please visit:

<https://filmfreeway.com/SanDiegoUnderSeaFilmExhibition>

[www.uwpmag.com](http://www.uwpmag.com)

## Baja Mexico Dive Safari including Magdalena Bay for Striped Marlin

Magdalena Bay at Port San Carlos in Baja Mexico is a hot destination during November to see the striped marlin and other ocean predators such as sea lions in action as they prey on the sardine migration. While Mag Bay is dream trip for photographers and action junkies, Baja has epic diving all over the peninsula that should not to be missed. After an offshore adventure snorkeling with the marlin and sea lions on the Pacific side of Baja, divers are rewarded with unique diving on the eastern side in La Paz and expansive natural beauty underwater in the pristine Cabo Pulmo National Park.

In November 2022 Photographer Gregory Sweeney will be leading this peak season photography trip to dive and photograph the best locations in Baja, Mexico.

We start in Port San Carlos where Magdalena Bay is host to the largest striped marlin migration in the world. Early starts on our own boat with excellent experienced crew rewards us with epic hunting action going on underwater. The sign to look for is dive bombing sea birds and a boiling of the surface as the sardine

bait ball is trapped at shallow depth. The marlins hunt in coordinated attacks as do the sharks and seals. Under the surface will be a frenzy of action as marlin maneuver the bait balls until one by one they attack and take their meal. We often get a static bait ball and stay in the water for over half an hour.

After the action and surprises (we might see humpbacked whales) in Mag Bay, We transfer to La Paz where we do a dive unique to La Paz: a night dive with mobula rays. Plankton are drawn like a magnet to our lights and schools of rays come swooping in to dive down to feed in the sand. It is non-stop swirling action at night. We also dive at a sealion colony where these friendly mammals swirl around us and interact.

We end in Cabo Pulmo National Park where protected marine habitat and pristine coral draws an enormous amount of tropical fish, seals, turtles, and more. Large schools of jacks are an awesome sight as the formation



pulses and morphs before us. We do dives specifically for bull sharks who lurk and patrol on the scattered remains of ship wrecks.

This unique and action packed trip showcases the best of Baja Mexico and has plenty of marine wildlife encounters and photo opportunities.

Contact Gregory Sweeney for more information

[info@gregorysweeney.com](mailto:info@gregorysweeney.com)

## Solomon Islands - Bilikiki Sept 17 - Oct 1, 2022



Join Backscatter's Berkley White and Adobe Lightroom expert Erin Quigley on a unique photo expedition to the Solomon Islands aboard the luxury live aboard dive boat Bilikiki. The Solomon Islands offer a stunning variety of marine life and plentiful wide-angle and macro photo opportunities. Erin and Jim will be on hand to assist with UW photo techniques, offer technical support, and teach post production workflow in Adobe Lightroom.

MV Bilikiki sailed as the first full service luxury live aboard dive vessel in the Solomon Islands in 1989 and has been exploring the region for over 25 years. She is 125 ft long, and has a 24 ft beam, making for a very large and stable ship with an immense sundeck, plenty of covered areas and air conditioned accommodations.

[www.backscatter.com](http://www.backscatter.com)

# New Products

## Aquatica AZ6/7 II housing for the Nikon Z6 II & Z7 II



In our never-ending quest to offer the latest and greatest possible equipment to the underwater photographer/videographer, we offer our housing for the Nikon Z6 II & Z7 II Mirrorless, Interchangeable Lens Camera!

Continuing in Aquatica's reputation for offering premium quality and at affordable prices, the AZ6/7 II housing has the finest ergonomics and control accessibility combined with the famed ruggedness of our all-aluminum construction and distinctive hard coating.

The housing supports not only the new Z-mount lenses but also the FTZ Adapter. The adapter can be

removed from the camera without first removing the camera from the housing. There is also a lens release for both F and Z mounts. As usual, all camera functions can be accessed by the housing. Two items of note that are specific to this housing:

The Sub Selector center press and AF-ON control's ergonomic placement (easily accessible with the shooter's right thumb) allows the user to lock exposure or focus and take pictures

The "+" and "-" buttons have been moved, for access by the left thumb, next to the playback button. This allows the user to quickly zoom and check if the image is in focus.

All housing controls are spring loaded and self centering where needed. The user simply needs to install the mounting tray on the camera and slide the tray on the stainless steel guide rails. In order to protect your expensive electronic gear from the elements, our Surveyor Vacuum System (valve and pump) is now included as standard equipment with all AZ6/7 II housings. The vacuum system will provide that extra layer of security since the user can verify that if air is not seeping into the housing the water definitely will not either.

\$3,199.00 USD

Price includes your choice of strobe connectors & our complete vacuum, sensor & pump system:

- Double Nikonos
- Single Ikelite - Manual
- Dual Optical - Flash trigger included

[www.aquatica.ca](http://www.aquatica.ca)



## BACKSCATTER THE BEST UNDERWATER MIRRORLESS CAMERAS



**CLICK HERE FOR OUR  
IN-DEPTH REVIEW & VIDEO**

**BACKSCATTER**

**THE BEST BANG FOR YOUR BUCK**

**OLYMPUS E-PL10**

## Nauticam NA-OM1 Housing for Olympus OM-1

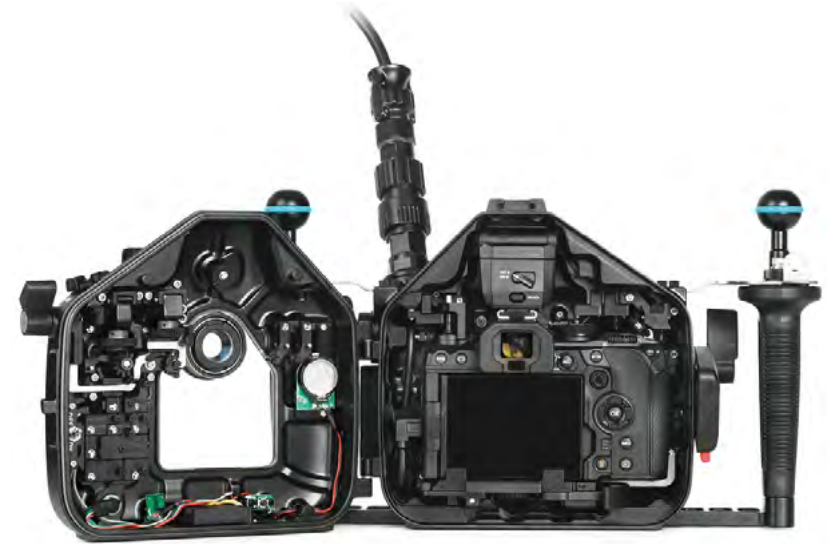


The OM System's OM-1 is the first high-end Micro Four Thirds mirrorless camera from OM Digital Solutions which purchased the Olympus camera division. The OM-1 features a 20MP quad-pixel AF stacked CMOS sensor. It is paired with the latest TruePic X processor to deliver 3x faster processing speeds and is capable of 120 fps shooting with the electronic shutter. The O-M1 can also capture 4K UHD or DCI at 60p in the OM-Log profile with 10-bit color and maximum dynamic range for post production.

The Nauticam NA-OM1, similar to the OM-1 is a refinement of its predecessors. Nauticam has produced housings for a wide range of Micro Four Thirds offerings from both Olympus and Panasonic. Throughout the evolution of Micro Four Thirds cameras, Nauticam has adapted our design to help image makers take

full advantage of every camera advancement. More than a simple waterproof case, the NA-OM1 integrates with the OM-1 to adapt and improve upon the camera's features for underwater shooting.

A camera system is only as good as the optics placed in front of it. Nauticam's extensive line of dome and flat ports support a wide variety of Micro Four Thirds lenses. For even higher image quality and versatility, the NA-OM1 can be used in conjunction with Nauticam's lineup of Water Contact Optics. For example, with the Olympus 14-42mm f/3.5-5.6 EZ Lens, the Nauticam WWL-1 provides a full zoom through ultra wide-angle 130° field of view.



Dimensions  
307mm(W) x 179mm(H) x 118mm(D)  
Weight in Air TBD  
Weight in Water TBD  
Depth Rating 100m  
Port Mount N85  
\$ 2,786.00

[www.nauticam.com](http://www.nauticam.com)

# EUROPE'S NR. 1 UNDERWATER CAMERA STORE



**NAUTICAM RAPTOR HOUSING**  
FOR RED DIGITAL CINEMA V-RAPTOR 8K VV

**KELDAN 18XR 30.000LM RC READY**  
VERY POWERFULL AND LIGHTWEIGHT UNDERWATER VIDEOLIGHT



COMPATIBLE WITH THE RC1 REMOTE 50 METER UNDERWATER RANGE!



**GATES PRO ACTION HOUSING**  
COMPATIBLE WITH:  
RED DSMC2, RED DSMC, ARRI ALEXA MINI, AND RED DSCM3 V-RAPTOR.



WE ARE UNDERWATER PHOTOGRAPHERS... JUST LIKE YOU.

## AOI Olympus OM-D E-M1 II & III Housing UH-EM1III

The new UH-EM1III underwater housing for the Olympus OM-D E-M1MKIII takes it to the next level. Integrated with a new and improved optical trigger, it is compatible with the RC Flash mode of the E-M1 MKIII. Allowing users to capitalize on one of the key features of the camera when underwater - Super FP mode.

Due to the limitations of sync speed and underwater strobes in general, most photographers are stuck with shutter speeds of 1/200 or 1/250. But with the new and improved optical trigger, photographers are now able to use Super FP Mode, TTL, or Manual.

### What is Super FP?

Super FP is a special flash mode that allows shutter speeds to be used faster than the x-sync capability of the camera-flash system.

When do you use Super FP flash mode?

When you need a wide aperture for shallow depth of field, such as when shooting macro and a bokeh effect is desired.

Or

When you are shooting fast-moving animals, the fast shutter speed will prevent motion blur due to the subject moving.

By being able to utilize these modes, photographers no longer have



to work around these limitations.

The design of the new housing reflects the wants and needs of mirrorless users. By keeping the housing compact and ergonomic, it makes it easy to handle and travel. Although small, the buttons and knobs are sensibly laid out and intuitive to the user.

To ensure that everything works as it should, the housing is pre-installed with a Vacuum Analyser & Wet Detection System.

[www.backscatter.com](http://www.backscatter.com)



## Nauticam NA-A6600 for Sony Alpha a6600



**"The Best APS-C Sony Ever"**

Sony has hit a home run with best-in-class AF, huge battery life, rugged build and amazing all-around performance. This is a mirrorless DSLR shooters can love; in a travel friendly size.

Installed in the new Nauticam NA-A6600, it allows ultimate versatility, lens compatibility, ergonomics and superior wet lens compatibility.

[www.reefphoto.com](http://www.reefphoto.com)

# EUROPE'S NR. 1 UNDERWATER CAMERA STORE



## QYSEA FIFISH PRO W6

INDUSTRIAL GRADE ROV  
PLATFORM  
POWERFUL & PRECISE,  
ADVANCED ADD-ONS,  
EXCEPTIONAL STABILITY,  
SUPERIOR BATTERY



## BARLUS CCTV 8MP IP CAMERA

Stainless steel network  
camera for  
continuous operation.

## QYSEA FIFISH V6 PLUS

More powerful in functions  
and simple in operation,  
FIFISH V6 Plus creates  
a new way of underwater  
operations.



WE ARE UNDERWATER PHOTOGRAPHERS... JUST LIKE YOU



Issue 126/14

## Pictures in pitch black: The Duovox Mate Pro

Duovox has launched its new Duovox Mate Pro night vision camera on Kickstarter. It promises to be 'the most advanced true-color night vision camera' and comes equipped with a next-gen Sony STARVIS 2 CMOS image sensor.

The backside-illuminated sensor promises sensitivity down to 0.00001 lux. This illuminance (lux) corresponds to a moonless, overcast night sky. As a reference, a clear night with a full moon is between 0.05 and 0.3 lux. Unlike many night vision cameras, the Mate Pro is a full-color camera.

The 1/1.8-inch type sensor is only 5MP, so its pixels aren't densely packed. The pixels are 244 percent larger than those in the Sony a7S III full-frame mirrorless camera.

As you capture photos, you can view them on the built-in 3-inch LCD, which has 1.3M dots. The camera can transfer images over Wi-Fi and even live stream 2K footage. For example, you can use the camera as a live security or game camera. Additional shooting modes include motion detection start, timelapse video, instant recording, loop mode, delayed



stop, way back recording (this allows you to capture up to 25 minutes of footage before you press record), facial recognition capture and more.

The Duovox Mate Pro has a built-in F0.9 lens, although the focal length isn't clear. The sensor has a 4.9x crop factor. Video (1080p and 2K resolution) is recorded at 30fps. The camera records JPEG and RAW photos and .MP4 videos with H.264 codec to a microSD card. The camera promises up to 4 hours of battery life.

As of writing, the minimum pledge to get the Duovox Mate Pro is \$599, which is 50% off the anticipated retail price of \$1,200. The camera should start shipping in October. For additional information on the camera and different backing options, visit Kickstarter.

[www.kickstarter.com/projects/duovox/duovox-mate-pro](http://www.kickstarter.com/projects/duovox/duovox-mate-pro)



## Nauticam NA-R5 for Canon EOS R5 Camera



### "The Professional Powerhouse"

Few cameras can provide the technical prowess, for stills and video, that the Canon R5 provides.

From 8K video to 20 FPS stills this camera shines. Paired with the innovative NA-R5 housing, there are no boundaries to the creative possibilities for pro or enthusiast. Unleash your potential with the latest technology from Canon and Nauticam.

[www.reefphoto.com](http://www.reefphoto.com)

[www.uwpmag.com](http://www.uwpmag.com)

**BACKSCATTER**

# FLIP

## UNDERWATER GOPRO FILTERS

**NO FILTER**

**WITH FLIP**

**COMPATIBLE WITH**

Gopro 5 Gopro 6 Gopro 7 Gopro 8 Gopro 9 Gopro 10

## Remote Controllable Keldan 8XR 20000lm CRI86

After the big success with the 18XR and 24XR remote controllable lights in 2021, Keldan has announced the release of the 8XR

At first glance, the 8XR looks identical to the Video 8X. What makes it special is the option to use it along with the Keldan RC-1 Remote Control, just like its big brothers 18XR and 24XR can do.

“The big thing was really to get all technical things inside a rather small space in order to make it remote controllable. It makes us happy having finally engineered it and release a 100% RC-1 compatible and reliable 8XR Compact Video Light”.

Apart from being Remote controllable, the light now comes with 20’000 Lumen and a CRI of 86.

The apparent advantages of the remote control option are:

No more swimming back and forth to adjust lighting when light up a scene

Fast and easy Remote control your lighting from within a distance of 50m



Place the lights wherever you want and adjust brightness from the Remote Controller

Connection works around the corner and through walls

Guaranteed new and more creative ways of shooting that were not possible before

Saves tremendous battery life as you can remotely turn lights On or Off at any time (individually or all at once)

The 8XR is now available from Official Keldan Dealers.

[www.keldanlights.com](http://www.keldanlights.com)



## Nauticam NA-A7RIV for Sony a7R IV



### “Resolution Rethought”

Sony, has come up with yet another addition to their a7 line that is sure to impress. This fourth edition of the a7R sees the inclusion of an updated 61MP

Exmor R BSI CMOS sensor and enhanced BIONZ X image processor. Despite its high resolution, it can shoot at up to 10 frames per second with full autofocus and shoot 4K video either from the full width of its sensor or from a Super 35 crop. The NA-A7RIV underwater housing provides fingertip access to all key camera controls in a rugged and reliable aluminum underwater housing. Ergonomic camera control access is one of the defining strengths of a Nauticam housing, and the NA-7RIV continues this tradition.

[www.reefphoto.com](http://www.reefphoto.com)

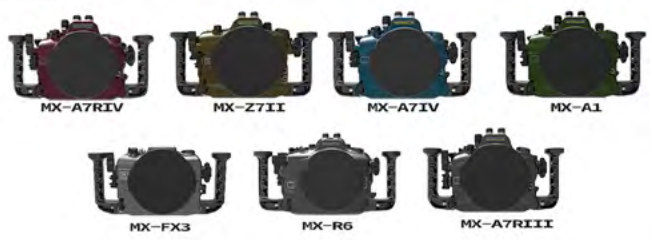
MIRRORLESS CAMERA

- MX-A1
- MX-A7RIII
- MX-A7RIV
- MX-A7IV
- MX-R5**
- MX-R6
- MX-Z6II/Z7II
- MX-FX3



**MX-R5**  
For Canon EOS R5  
Mirrorless Digital Camera

- CUSTOM COLORS**
- Shark Blue
  - Black
  - Macho
  - Burgundy
  - Olive Green
  - Yale Blue



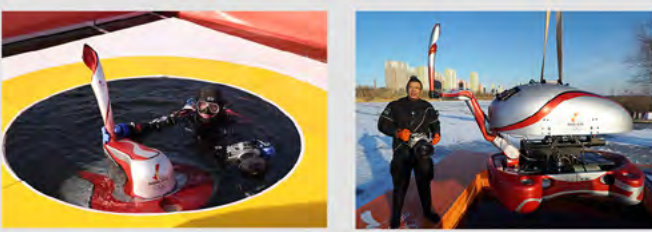
Marelux Housing: Best-in-class design, Compact and lightweight. Made by uniquely anodized aluminum, Superb scratch resistance with multiple color options.



**MX-Mini LF**  
for ALEXA Mini LF/ALEXA Mini  
Cinema Camera

**SOFT**  
SMART OPTICAL FLASH TUBE

SOFT can be used on various popular strobes, with an aiming light automatically switching off when strobe flashes.



Marelux housing in underwater torch parade for Beijing winter olympic.

AMBASSADORS



Renee Capozzola



Aleksander Nordahl



Scott Portelli

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Hugyfot housing for Nikon Z6/7



Hugyfot has announced housings for the Nikon Z6/7 and Z6/7 II. It ships with the Hugycheck vacuum system, one M16 and two fiber optic ports. It is compatible with Hugyfot ports and, uniquely, is coated with the Cerakote thin film coating.

All Nikon Z6/7 II camera controls can be accessed (on/off, shutter release, shutter speed, aperture, program dial, main dial, push buttons, lens release ,FN1, FN2).

The Hugyfot housing for the Nikon Z 6/7 series will be shipping soon. Please consult your local dealer for delivery times and pricing.

[www.hugyfot.com](http://www.hugyfot.com)

Seacam Ninja V Housing



Seacam are shipping their housing for the Atomos Ninja V and V+ recorder/monitors. Rated to 80 meters (260 ft.), it has HDMI in and can accommodate batteries up to NP-F970 size. It can be optionally equipped with an angled plug, second HDMI, or vacuum system.

The Seacam Housing for Ninja V/V+ is shipping now, priced at €2,450.

[www.seacam.com](http://www.seacam.com)

[www.uwpmag.com](http://www.uwpmag.com)

**NA-OM1**  
17819 NA-OM1 Housing  
for Olympus OM-1 Camera



**NA-R5C**  
17337 NA-R5C Housing  
for Canon EOS R5C Camera

**SHIPPING NOW**

## Sea&Sea vacuum leak detection system



Sea&Sea has announced their new vacuum leak detection system for their MDX housings. Once activated and vacuum pumped, the temperature compensated circuit offer continued monitoring of its status via LEDs. The circuit can be installed by Sea&Sea.

An alarm unit that prevents water leakage by creating negative pressure inside the housing and monitoring the change of pressure. The air pressure sensor and leak sensor function doubly. On land, the waterproof properties of the shield can be checked when the camera is set. In water, the leak sensor reacts and issues alerts with an LED indicator if water leaks into the housing.

Advanced function installed!  
Measures air pressure and occurrence or non-occurrence of water leakage in the housing every 0.2 seconds (200ms). It constantly monitors the inside of the housing.

Judges the air pressure value by converting the temperature to 20°C.



It does not allow malfunction caused by pressure fluctuations due to heat generated by the camera or changes in water temperature.

Battery life is about 250 hours when the power is on. One battery charge enables long-term usage.



**Certified Service Center**  
Professional workshop with pressure tank and trained engineers



**Worldwide shipping**  
Mega assortment in stock  
Fast shipping with UPS / DHL



## Nauticam NA-E2F Underwater Cinema Housing for Z CAM E2-S6/F6/F8 Cinema Camera



The Z Cam flagship series of cameras continues to impress the cinema world with up to 8K resolution, 12-Bit ProRes RAW, and an incredibly affordable price. The compact and modular nature of the Z Cam lineup combined with the Nauticam housing has resulted in one of the smallest and most travel friendly cinema cameras currently on the market.

The NA-E2F follows suit with the original NA-E2 as one of the lightest and smallest raw-capable cinema housing ever produced. Nauticam has been a leader in cinema housings with offerings for RED, ARRI, Canon, PhantomFlex, Sony and now Z Cam.

The NA-E2F uses the N120 Cinema port system which allows for easy transition to the NA-E2F from other N120 Nauticam

systems. The N120 system also provides access to Nauticam's line of professional premium optics such as the WACP-1/2 and SMC-1/2.

The Z Cam E2-M4 can be used with either the Z Cam EF Mount or using the native MFT mount with Metabones EF-MFT Speed Booster Ultra 0.71x Adaptor. When using the Metabones Speed Booster, the mounting position of the camera tray must be adjusted by the user.

Dimensions (with handles) 336 mm (W)x 185 mm(H) x 242 mm(D)

Weight in Air 3.58 kg

Weight in Water (incl. camera and battery) -0.27 kg

Depth Rating 100m

Port Opening N120

\$6,398.00



**IKELITE 200DL HOUSING FOR PANASONIC GH6**



**ISOTTA HOUSING FOR SONY A7S III**



**NAUTICAM HOUSING FOR CANON R5C**



**NAUTICAM HOUSING FOR OM SYSTEM OM-1**

**EUROPE'S NR.1 UNDERWATER CAMERA STORE**

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/  
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### Seacam housing for the Nikon Z6 II and Z7 II



Seacam is shipping their Silver housing for the Nikon Z6 II and Z7 II mirrorless cameras. It offers compatibility with or without the FTZ adapter and Seacam's port system. It can be equipped with S6 flash sync sockets, HDMI out, or a vacuum.

Dimensions

260 x 170 x 150 mm (without port, viewfinder and handles)

Weight

2250g (without port, viewfinder and handles) neutral under water depending on port and viewfinder.

Operation Depth

80m / - 260 ft. (deeper operation depth upon request.)

The Seacam housing for the Z6II and Z7II is shipping now, priced at €4,350.

[www.seacam.com](http://www.seacam.com)

### Ikelite housing for the Panasonic LUMIX GH6



Ikelite is shipping their 200DL housing for the Panasonic LUMIX GH6 camera. Constructed from the company's signature ABS-PC acrylic, it has the option of an M24 port for HDMI 2.0 out, along with an M16 accessory port. The housing uses Ikelite's DL port system.

Ikelite products are designed, built and tested in the USA. We use locally sourced, top-grade materials. Our housings are built by hand and individually tested for fit and function. Every unit is water pressure tested to 200 feet (60m). We back our products with over 50 years of experience and the best reputation for service within the dive industry.

The Ikelite 200DL housing is shipping now, priced at £1,595.

[www.ikelite.com](http://www.ikelite.com)

[www.uwpmag.com](http://www.uwpmag.com)

# How To Assemble a Complete Ikelite Underwater Camera System



Have you ever wanted to learn about Ikelite underwater housing, strobes, and accessories? In this video we break down everything that underwater photographers need to know about the Ikelite product line, and how to fully set up an Ikelite underwater camera system.

Intro  
About Ikelite  
What's In The Box?  
Accessories & Configurations  
Underwater Controls  
Getting Ready to Dive  
Adding a Right Handle & Control  
Extensions  
Opening the housing and Installing  
Viewfinder

Installing the TTL Hot Shoe &  
Camera on Tray  
Attaching a Lens and Zoom Gear  
Attaching a Port and Extension Ring  
Installing the Camera in the Housing  
Sealing the Housing  
Attaching Strobes and Function  
Testing  
Pulling a Vacuum

[www.backscatter.com/videos/ikelite-how-to-assemble-a-complete-underwater-camera-system](http://www.backscatter.com/videos/ikelite-how-to-assemble-a-complete-underwater-camera-system)

Explore the Ikelite line of products:

<https://www.backscatter.com/brand/Ikelite>



Over 200 episodes of discussion, news and information for underwater image-makers  
<https://www.youtube.com/c/Wetpixel-live>

# Nikon Z7 II Underwater Camera Review

by The Backscatter Team

Can Nikon continue to build on the momentum and success of their first foray into the full-frame mirrorless world? The answer in this case is a solid YES.

The second generation of Nikon's full-frame mirrorless camera line is here with the Nikon Z7 II. It uses the same fantastic image sensor to produce excellent photo quality just like the first Nikon Z7, which shot some of the best photos we've ever seen from a Nikon. This outstanding image quality is now powered by dual processors for even more under-the-hood power and speed. The Nikon Z7 II is priced competitively compared to other full-frame mirrorless cameras making it an outstanding value for its shooting performance. We can easily put the Nikon Z7 II on a pedestal next to our favorite DSLR of all time, the Nikon D850.

## What's New?

The most impressive new specs that the Nikon Z7 II gains are a faster processor that allows for up to 4K 60p video, faster 10 frames per second photo shooting, and a larger

shot buffer of up to 77 RAW images. Basically, this generational upgrade is all about faster shooting while maintaining the same great photo quality that we've come to expect from Nikon full-frame cameras. It also brings a new dual card slot option for shooters who want to be able to back-up their files in real-time or split their photo and video media between two different sources.

Nikon Z7 II Main Specs:

- 45.7MP Sensor
- Native ISO 64
- 4K 60p video at 93% coverage of the sensor (about 1.08x crop)
- 5-axis in-body stabilization (3-axis with adapted F-mount lenses)
- 10fps burst shooting with single-point AF
- 3.69M-dot EVF, 3.2" 2.1M-dot rear screen
- -3 EV autofocus (with f2.0 lens)
- 1 CFExpress / XQD card slot, 1 UHS-II SD card slot
- New EN-EL15c battery, rated to 420 shots (LCD), 360 shots (EVF)
- Compatible with new MB-N11 battery grip (topside / out of housing only)



Nikon Z7 II  
Ikelite Housing



Nikon D850  
Ikelite Housing



Nikon Z7 II  
Nauticam Housing



Nikon D850  
Nauticam Housing

*Size and weight savings between mirrorless and SLR are pretty much nonexistent after adding a housing and port.*



*Photos captured by the Nikon Z7 II hold tons of detail in super-sharp resolution. Notice the underexposed band at the bottom of the frame due to having the shutter speed set at 1/250 second. The max flash sync speed is 1/200 second.*  
*Nikon Z7 II | Nikon 8-15mm | 1/250 | ISO 100 | f22*

## Super Sharp Shots - Again

Image quality is what the Nikon Z7 II is all about - it's the standout reason one would want to make this their primary underwater imaging rig. The 45.7mp sensor produces images that are effectively identical to those produced by the Nikon D850, which has been one of our benchmarks for top-tier image quality over the past few years. The sensor of the Nikon Z7 II is the same as that found on the original, so we're pleasantly unsurprised that the same great image

quality carries through to this version.

This level of resolution is also equivalent to that produced by the Canon EOS R5 making each of these current full-frame mirrorless cameras pretty squarely matched for overall still image quality and sharpness.

## Dynamic Range Detail With ISO 64

The Nikon Z7 II has a native minimum ISO value of 64, two-thirds of a stop lower than any other current full-frame mirrorless camera with



*The competitive price of the Nikon Z7 II compared to other full frame mirrorless cameras, combined with its super sharp image quality, make it one of our picks for Best Mirrorless Camera of the year.*  
*Nikon Z7 II | Nikon 8-15mm | 1/200 | ISO 200 | f11*

a base value of only ISO 100. This allows it to preserve more dynamic range detail by retaining image quality in the brightest highlights and maintaining low noise in the shadows. Backlit sunball scenes held dynamic range detail extremely well and looked better than similar shots from other full-frame mirrorless cameras.

## Accurate & Vibrant Colors

We were pleased with the vibrancy of colors produced in wide angle scenes. Open water blues

looked rich while brighter colors in the foreground were nicely saturated and accurately reproduced.

We noticed a very slight amount of banding in blue water background transitions from light to dark that was more noticeable on the Nikon Z7 II than on comparable shots from the Canon EOS R5, but unless one was comparing the two side-by-side under scrutinous detail the banding would likely go mostly unnoticed.



*Colors produced by the Nikon Z7 II are well saturated and really pop when lit with strobes.*

*Nikon Z7 II | Nikon 8-15mm | 1/200 | ISO 160 | f16*

## 1/200 Flash Sync Speed

We would have preferred to have a maximum flash sync speed greater than 1/200 for ultra-bright sunballs, but that is the limit on the Nikon Z7 II. This is the same limit found on the Canon EOS R5, so both cameras are somewhat hobbled when knocking down the background ambient light with a fast shutter speed while balancing the foreground with strobes.

The camera will allow you to set a faster shutter speed than the flash sync limit of 1/200, thus resulting in

underexposed areas at the bottom of the frame due to catching the shutter travel. In practice, there were times that we had the shutter speed set faster (1/250) than the max sync speed by accident, and shutter travel was noticeable in the image.

One would have to step up to either the Nikon D850 or one of the Sony full-frame mirrorless cameras to gain a faster flash sync speed (up to a maximum 1/400 on the Sony a1) so sunball shooters and/or those who find themselves shooting in shallow,



*A maximum flash sync speed of 1/200 means that you'll have a little less exposure range to knock down natural light when shooting with strobes. This shot was taken at 1/250 creating an underexposed band at the bottom of the frame.*

*Nikon Z7 II | Nikon 8-15mm | 1/250 | ISO 250 | f16*

bright conditions frequently should take note.

## Up To 10 Frames Per Second

The Nikon Z7 II gets a speed boost up to a maximum of 10 frames per second RAW shooting, though it can only do this in single-point autofocus, not while tracking autofocus. This impressive spec can really only be taken advantage of when shooting exclusively with natural light because strobes cannot keep up with that rate of fire.

While we like the new and improved faster frame rate, we also feel like the ability to continuously track focus on your subject while shooting at 7 frames per second on the Nikon D850 is a major advantage that the Nikon Z7 II does not have.

## Electronic Viewfinder

The resolution of the electronic viewfinder is the lowest compared to other current full-frame mirrorless cameras but the dynamic range detail it presents actually makes



***Fire away and pick the perfect frame later by buffering up to 77 RAW shots before the camera slows down.***

***Nikon Z7 II | Nikon 8-15mm | 1/125 | ISO 320 | f13***

us prefer this viewfinder to others. All electronic viewfinders pale in comparison to the level of dynamic range detail that an optical viewfinder can present, but among them the Nikon Z7 II does the best job in our opinion. We also felt like the viewfinder of the Nikon Z7 II presented a larger view than other cameras did, providing an easy user experience.

Ultimately, we still prefer (and likely always will) the optical viewfinder of the Nikon D850 to the

electronic viewfinder of the Nikon Z7 II. Comparing the two is truly “eye opening” in terms of realizing just how much shadow and highlight detail is lost when composing a scene through an electronic viewfinder. Think of it as the difference between looking at a sunset with your naked eye as compared to what it looks like on a smartphone camera screen - the phone will show nothing but black shadows in the foreground while your eye will be able to see plenty of detail.

On the other hand, an electronic



***Electronic viewfinders can struggle to display the same level of dynamic range detail as an SLR, but the Nikon Z7 II does a better job than others.***

***Nikon Z7 II | Nikon 8-15mm | 1/100 | ISO 250 | f14***

viewfinder provides focus peaking and exposure tools directly in the viewfinder which an optical SLR can't. They also allow you to review images directly in the viewfinder which is especially helpful when shooting macro so that you don't have to pull your head back from the viewfinder just to see your shot.

## No Blackout Viewfinder

The electronic viewfinder of the Nikon Z7 II pairs great with the improvements in shooting speed because there is no viewfinder blackout when the shutter is released. This means that you can rapid-fire during fast action without having to worry about losing your view of the scene during every shot - a necessity when shooting away furiously at 10 frames per second while trying to maintain composition.

## Improved Low Light AF

The autofocus system of the Nikon Z7 II has seen a performance boost too, thanks to the new internal processors. The camera can now focus accurately even in dark conditions down to -3 EV so this is a welcome improvement for our often dark underwater environments.

## Speedy & Accurate

Overall the Nikon Z7 II performed fairly well in the autofocus department, with good speed and accuracy. It wasn't quite as fast as a Nikon SLR but it still felt snappy and responsive. Those seeking the ultimate in hyper-accurate macro autofocus (such as continuous tracking even while shooting through a diopter) should consider the Sony a1.

The biggest thing to note about autofocus is that the Nikon Z7 II uses

an entirely new system for autofocus, both inside the camera and in terms of user control, so those migrating from a Nikon SLR may find it to be a little unfamiliar at first, but ultimately easy to adjust to and use. The Nikon Z7 II has both single and continuous autofocus modes, with controls and focus points being easily accessible through the 'i' menu.

There is a Phase Detect Autofocus subject tracking mode, but it's not the same as the 3D AF Tracking Mode that we have in the Nikon D850 and Nikon D500. While this feature does a good job on the Nikon Z7 II, the accuracy, intelligence, and speed of the 3D tracking on the Nikon D850 is a high bar to meet. There is definitely a noticeable difference between the two when compared side by side, with the Nikon D850 taking the top spot.

We look forward to comparing the Nikon Z7 II & Nikon D850 autofocus performance overall to the newest flagship Nikon Z9 upon our first chance to test it underwater.

## No Autofocus Tracking at Max Speed

The lack of autofocus tracking while shooting at the maximum 10 frames per second spec is something that stands out as less than ideal, and may play a factor when shopping for cameras comes down to deciding

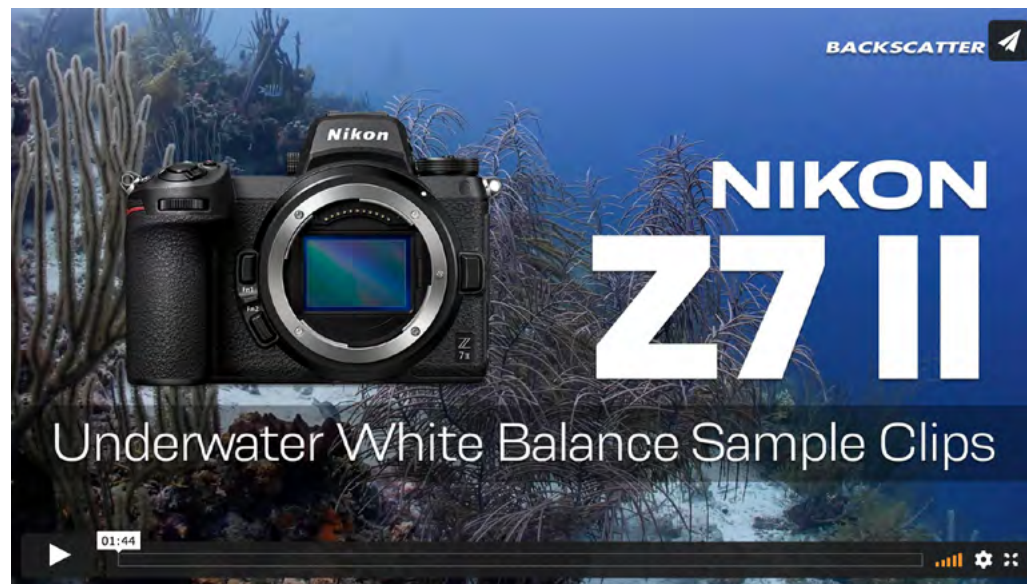
between the ultimate speed of shooting and ultimate autofocus tracking accuracy.

## Small topside, SLR-Sized Underwater

The camera body itself is relatively small as full-frame mirrorless cameras go, and it's very lightweight making it convenient for topside use when not in a housing. When sealed in the housing and fully set with a port to accommodate the full-frame optics, the final rig size really doesn't come out any smaller or lighter than an optical SLR. This is basically true of all full-frame mirrorless cameras, so it's not so much a drawback as it is a fact of life for underwater photographers.

## Video Upgrades

While the show-stealing specs of the Nikon Z7 II are primarily photo-based, there are some decent upgrades in the video department. The biggest video upgrade is the jump to 4K 60p internal recording, bringing the Nikon Z7 II up to par with most other current cameras' UHD video specs. If using an external recorder, it can output 10-bit N-Log or HDR footage for maximum dynamic range and color depth. For those that are really into post-processing their footage there is also the option (again, on an external recorder only) to output RAW video



*Watch Video: The Nikon Z7 II produces a purple-ish hue at depths greater than 40 feet (12m), but it can make an interesting video. This video has no color correction and was shot with ambient light, no filter, and a manual white balance performed at each capture depth.*

in 1080p from the full width of the sensor or in 4K from an APS-C sized sensor crop.

## White Balance Limited to Shallow Water

The Nikon Z7 II is fine for photographers who want to pick up an occasional video clip, but it's really not the strong point of this camera. The biggest reason for this is the relatively shallow natural light white balance limit of about 40 feet. Even in ideal clear, high-vis water conditions, the deepest we could get the Nikon Z7 II to look good was about 40 feet.

Beyond that, the blue water developed an uncorrectable purple hue that got progressively worse the deeper we went. Anything above 40 feet looked pretty great, so casual shooters shouldn't stress over this too much, but serious video shooters will need natural light white balance capabilities with deeper range.

## No Meter Makes Judging Exposure Difficult

It's difficult to judge proper video exposure in bright ambient light by looking at the LCD image alone. Nikon cameras unfortunately don't

display an exposure meter on the LCD making it quite frustrating to judge exposure in real-time. In difficult lighting situations advanced shooters use the meter to underexpose the scene by two thirds or a full stop for saturated colors. New video shooters with the Nikon Z7 II will find it best to use Auto ISO and an Exposure Compensation of -0.7 to -1.3 for best results.

## Who Is This Camera For?

We recommend the Nikon Z7 II for Nikon shooters who are looking for excellent image quality, with only a passing interest in underwater video. It's a great choice for a smaller-than-an SLR camera body without sacrificing image quality or camera controls and photo capabilities to rival those of the Nikon D850.

The Nikon Z7 is an excellent full-frame mirrorless choice for still shooters. It produces an awesome image quality on par with the Nikon D850 thanks to the insanely sharp 45.7-megapixel resolution and a native ISO value of 64 for outstanding dynamic range.

The Nikon Z7 II is priced lower compared to other full-frame mirrorless cameras, coming in at about \$500 less than its most closely-spec'd competitor. Full-frame still shooters seeking the most bang for their buck should start looking at this

camera before any others.

It has the best electronic viewfinder that we've seen yet for dynamic range detail. The autofocus was fast and accurate overall, though we do wish the Nikon Z7 had the same autofocus system and operation as the Nikon D850. While the body itself is smaller and lighter than an SLR, the overall underwater system size is about the same.

This is not a camera made for video shooters. Despite the Nikon Z7 II's 4K 60p video specs, the white balance limits are lagging behind what other more video-centric cameras can do. Additionally, the lack of a meter makes judging exposure accuracy way too difficult. If your primary interest is shooting video, then it's worth looking at Sony or Canon over Nikon for the best in-camera natural light color at depth, but for those who want to primarily shoot stills and also be able to roll some video that looks great down to 40 feet then the Nikon Z7 II is a fair choice.

## Z7 II or D850?

The Nikon Z7 II is great for its smaller body when walking around topside, but If you want a bit more out of your camera image quality and autofocus-wise, then get the Nikon D850.

When comparing ultimate image quality we have to give the top spot -

albeit by a thin margin - to the Nikon D850. The difference in quality is minor and may go unnoticed to the casual eye, but pixel peepers will be able to discern enough (especially in the color banding of open water backgrounds) to potentially sway their decision in favor of the Nikon D850.

The most noteworthy and practical shooting advantage that the Nikon D850 brings to the table is the 3D Tracking Autofocus mode. This mode is massively better than what the Nikon Z7 II uses in both execution and performance. If camera body size is a concern when shooting topside, then by all means the Nikon Z7 II isn't a bad choice in terms of pure autofocus performance, but all things being equal underwater where the full rig size difference is negligible, we prefer the Nikon D850 for the overall better autofocus system.

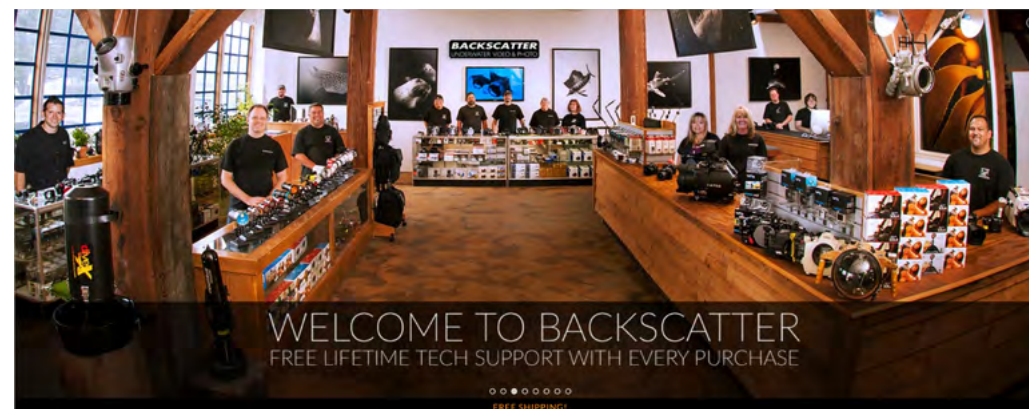
It's also important to consider the faster flash sync speed of 1/250 found on the Nikon D850, which opens up

more exposure range when shooting with strobes.

The Nikon D850 also has the benefit of an optical viewfinder for superior visible dynamic range detail - the value of which cannot be understated when composing wide angle shots.

If you've read this article and reached the conclusion that you want "just a little more camera" than what the Nikon Z7 II offers, consider that the Nikon D850 is the same price and other than the topside weight/size-savings advantage it's better in basically every way.

**The Backscatter Team**  
[www.backscatter.com](http://www.backscatter.com)



# Backscatter Color Filter System

by Phil Rudin

Backscatter Underwater Video & Photo is a Monterey, California based US company with a second showroom in Derry, Hampshire USA. For over twenty-five years Backscatter has been providing excellent retail sales and service to the underwater photography community. They sell and service a large selection of UW photography equipment for compact, mirrorless, DSLR, GoPro, pro video, lighting, hardware, and more, also providing photography trips and training classes.

## Backscatter Mini Flash MF-1 and Optical Snoot OS-1

The Backscatter Mini Flash 1 or MF-1 and Optical Snoot 1 or OS-1 were introduced at the DEMA in November of 2019. I now have a pair of both the flashes and snoots, they have become my Go-To kit for all of my macro needs. I did a full review of both the MF-1 flash and the OS-1 snoot for the Jan/Feb 2020 issue #112 of this magazine which can be found in the back issues on the home page.

The focus of this review will be field testing of the Backscatter

Color Filter System for the MF-1 flash and OS-1 snoot system plus the Backscatter Macro Wide 4300 video light described below.

## Backscatter Macro Wide 4300 Video Light

The Backscatter Macro Wide 4300 underwater video light MW-4300 has 4300 lumen smooth wide beam with a 1400 lumen custom macro mode. The light uses two interchangeable 21700 Li-Ion batteries sold separately and retails for \$499.00.

The first question I am usually asked about the video light is 'will it work with the same batteries as the MF-1 flash' and the answer is 'no', the video batteries are larger and more powerful. The light also features a red focus light for night diving which I have also used to add color while cavern diving. The light also has a flashing beacon mode and it is rated to 100m/330ft. It includes both the one inch mounting ball and the YS mount.

The light is also compatible with the optical snoot OS-1 and the complete Backscatter Color Filter



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*Shot in a pool with the video light behind the subject using Bold Hot Pink filter with light green front lighting from MF-1. Sony A7 IV, Sony FE 90mm macro lens, Marelux MX-A7IV housing and macro port, ISO-100, F/10, 1/250th sec*



System which is the subject of this review. For more details on the 4300 video light checkout [backscatter.com](http://backscatter.com) for full articles and video reviews of this product.

## The Backscatter Color Filter System

The Backscatter Color Filter System bundle includes four items, the MF-1 flash and MW-4300 video light color filter holder interchangeable between both. The OS-1 snoot filter holder which works with both lights, the bold color filter set and pastel color filter set. Each color filter set has six different and distinctive colors held together in one unit which fans out to display the colors.

The Bold color set has Red, Blue, Purple, Green, Hot Pink and Dark Amber filters. The Pastel color set has Lavender, Light Blue, Light Green, Pink, Yellow and Turquoise filters. Once the filter holder is pushed onto the flash, video light or snoot one of the plastic color filters can be inserted into the filter holder. Once inserted the color filter snaps into place and feels very secure. I had no issues with the color filters moving or falling out of the holder. The color quality and even spread of light was excellent.

Prior to using the Backscatter system I had made my own color filters from photo quality color gels intended for land use. Securing these filters to the flash/video light and carrying a number of different colors



*Yellow Cup Coral, Hot Pink rear lighting MF-1 and Yellow front lighting with MF-1. Sony A7 IV, Sony FE 90mm macro lens, Marelux MX-A7IV housing and macro port, ISO-200, F/18, 1/250th sec.*

underwater was a chore to say the least.

With the Backscatter color filter system you have a stainless mounting point that can be attached to a clip or in my case strung over the wrist strap I use to carry the video light. With this system I am able to switch the filters between the strobe, snoot and video light with ease.

The lights work very well on or off the camera housing and I frequently mounted them on a tripod or just resting on the bottom. This

makes lighting the subject side, back, overhead much easier. I frequently use the video light with a color filter to light dull background areas while using white light or a different color filter for the closer foreground subject. The color configurations are only limited by the imagination and subject matter.

Like all filters light intensity varies depending on the opacity of the color filter, more light intensity with say a yellow filter over a purple or dark blue filter. This issue can

be addressed by raising or lowering the light output for the flash or video light to control over or under exposure. It can also be addressed by moving the light source closer to or way from the area you are lighting.

## Field testing

For my field test I used two MF-1 strobes with snoots and one 4300 video light with the Sony A7 IV camera, Sony FE 90mm macro lens and the Marelux MX-A7IV housing with macro port. At times I was only using one MF-1 flash with OS-1 snoot mounted on and off the housing.

Like most of my new equipment reviews I like to start out in a swimming pool where I can spread the equipment out on the bottom and see how it performs using a stationary macro subject. This helps with getting an idea of how well the focus light works with the snoot while targeting the subject. How the lighting looks as you move the lighting around the subject and much more.

Because of the compact size of the MF-1s moving through the water with the system was as easy as it gets with a full frame camera housing. The narrow beam angle of the MF-1 with and without snoots allows you to separate the subject from the background making the colors pop while maintaining a dark background or using a color filter to fill the background.

For blue water backgrounds the narrow beam reduces backscatter in the

ambient light areas. The MF-1 was extremely easy to move around the macro port on the housing allowing a wide variety of multiple lighting combinations like overhead lighting, extreme side lighting, back lighting, inward lighting and much more.

Placing the flash or video light on a tripod off camera increases the possibilities with both a single light or combination of lights. I use a small stainless RGBBlue tripod for extreme side and back lighting.

I noticed that at the highest power levels the MF-1s are a bit slower recycling than my Inon Z-330 type II flashes. This is not an issue for me when shooting macro because I try to take my time with critical focus and composition especially when shooting full frame cameras. With the 90mm macro I shoot most of the time at ISO-100, F/13 to F/22 at 1/250th sec.

The system with two MF-1 flashes is a bit on the heavy side without some flotation or flotation arms.

***Small Conch, Bold Green side lighting with video light and front MF-1 flash with Lavender filter. Sony A7 IV, Sony FE 90mm macro lens, Marelux MX-A7IV housing and macro port, ISO-100, F/7.1, 1/250th sec***



© PHIL RUDIN PHOTOGRAPHY 2022



© PHIL RUDIN PHOTOGRAPHY 2022

*Seahorses MF-1 with Yellow filter front lighting and rear video lighting with Bold Blue to make the background more colorful. Sony A7 IV, Sony FE 90mm macro lens, Marelux MX-A7IV housing and macro port, ISO-500, F/11, 1/250th sec*

I used values from ISO100 to ISO500 at F/11-F/22 using MF-1 power levels from 2 to 6 while shooting in a range from about 6 to 18 inches from the subject.

Normally I place the strobes about flush with the front of the port or in close to the subject when using the lights off camera. The MF-1 flash has more power than the video light so does not need to be moved as close.

While I have not had any issues, it makes sense to use the attachment points on the flash and snoot to secure

the cords supplied with the system which prevent the snoot or filter holder from being lost if they fall off.

Doing 2 ½ to 3 hour macro dives shooting stills with the focus lights on low power I never reached the RED low power level. Recycle times remain the same at any given power level through the entire dive as well.

Shooting the flash on a small tripod off camera is best done with an extra long fiber optic cord or remote flash trigger. The flash and video light can also be used for wide angle shots

like wreck interiors were you want to back light a feature of the wreck or a person.

The possibilities with the small Backscatter MF-1 flash and video light do not end with macro. I intend to explore the possibilities using color filters for close focus wide angle in the future.

The MF-1 flash is extremely simple to setup and use for anyone familiar with shooting strobes using manual power settings. While I have tried to warm up to shooting macro and wide shots with TTL flash I still find the simplicity of selecting lighting ratios with multiple lights in manual mode to be easier for my workflow.

After each dive I rinse the flash, snoot and video light before removing the batteries then dry for storage. I also fan out the color filters, rinse them and dry well before storage.

If you intend to invest in the MF-1 flash and/or the 4300 video light I strongly suggest you consider purchasing the OS-1 snoot and color filter kit at the same time.

The video light, snoot and color kit sell separately for \$784.00 US, while the MF-1 flash, snoot and color kit sell separately for \$684.00 US. As a kit the 4300 video light, snoot and color kit sell for \$697.00 US an \$87.00 savings while the MF-1, snoot and color kit sell for \$598.00US

an \$86.00 savings. The battery and charger for the MF-1 add \$41.94 while the two batteries and charger for the 4300 video light add \$85.89.

I would like to once again thank Backscatter for product assistance and technical support for this review.

**Phil Rudin**  
Instagram  
[www.backscatter.com](http://www.backscatter.com)



# My favourite setup for the GoPro Hero 9/10

by Matthias Lebo

In this article I'll share with you my favorite setup for the GoPro Hero 9 when it comes to filming underwater but the same setup would be equally productive for still images. In addition, if you have the GoPro Hero 10 it should work with the identical setup.



As you can see it is slightly bigger than just having your GoPro and the 30 metre housing but it will make your whole use of the GoPro Hero underwater a lot more versatile and it will also increase the quality of footage/images that you can get from this tiny little camera. This is my complete setup but you don't have to buy it all at once; the following is a list of the components in my order of priority for image improvements.

The first component is a handle/s and tray which will make it much easier to manoeuvre the camera around and keep it more stable. I really like this one from Backscatter because it's got dual handles which are nicely padded and they're very



comfortable to hold.

The second piece of kit that I want to talk about is one that I think is very important and that is the use of filters with your GoPro Hero 9.

You can use a single filter in front of your GoPro Hero but Backscatter has come up with a Flip Filter system. It's a simple adaptor which sits in front of the camera and provides two attachment points for different types of filters. Different densities of filters are needed depending on the depth that you want to use them at so it makes sense to have more than one filter and you can switch as you go deeper.

The Flip Filter system is very simple to use and the filters lock into place very easily but can be swung out of the way when not needed.



Another way to use the Flip Filter system is to have it like mine with one red filter for blue water or a magenta filter for the greenish water here in Switzerland.

The second attachment point on the Flip Filter system can take a +15 MACROMATE Mini macro lens. It just clicks in front of the lens and enables you to take decent macro shots.

If you want to have the variety to shoot wide angle and macro on your GoPro Hero 9 I'd highly recommend you use one of the slots for a red or magenta filter and the second for a macro.



While we're talking about macro I'd strongly recommend that you do get yourself some sort of a tripod for more stable footage. It's very difficult to get stable footage handheld when you're shooting macro so I recommend getting something like a Gorilla pod. I find this type of tripod ideal for this scenario because they're lightweight, inexpensive and easy to use. They are not designed to support heavy weights but this GoPro setup weighs very little underwater, even with lights.

And speaking of lights I'm a big fan of using additional light underwater. They are the most expensive of these accessories but they will make a significant difference to the quality of your output.

I have chosen Backscatter's Macro Wide 4300 lights and I like them because they're very small, easy to travel with and have a decent battery life

of around an hour. They've got different power settings and have a regular 85° beam angle for wide angle and mid shots but they've also got a macro mode so by the push of a button you can change to a very narrow beam which will help you isolate your subject from the background and in combination with the +15 MACROMATE Mini macro lens will enable you to make some really cool macro shots.

I choose to use two lights for versatile lighting and extra power but you will still get a significant improvement with just one light to begin with and then add an extra one when finances allow.

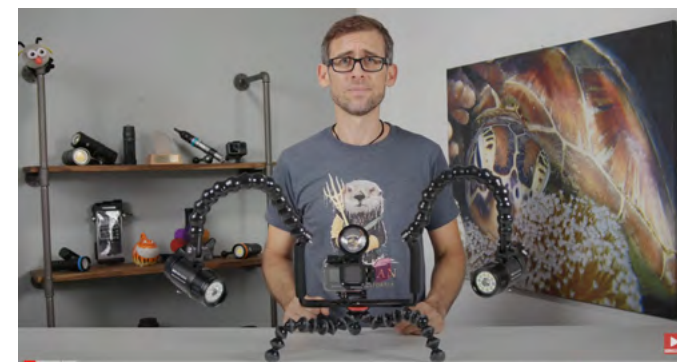
To mount the lights onto the the tray I like the Lock Line arm system. They are easy to use with a system like this and can be adjusted easily to have your lights coming from different directions but they're stiff enough to not flop around in a stiff

current.

Backscatter is not sponsoring or paying me but sent me all this stuff to use and test it for this review. I'll have to send it back unfortunately but I am grateful to them for facilitating this.

**Matthias Lebo**

<https://www.youtube.com/c/matthiaslebo>



# Endurance Found

by Dr John Shears and Mensun Bound

The Falklands Maritime Heritage Trust is pleased to confirm that the Endurance22 Expedition has located the wreck of Endurance, Sir Ernest Shackleton's ship which has not been seen since it was crushed by the ice and sank in the Weddell Sea in 1915.

One hundred years after Shackleton's death, Endurance was found at a depth of 3008 metres in the Weddell Sea, within the search area defined by the expedition team before its departure from Cape Town, and approximately four miles south of the position originally recorded by Captain Worsley.

The team worked from the South African polar research and logistics vessel, S.A. Agulhas II, owned by the Department of Forestry, Fisheries and Environment and under Master, Capt. Knowledge Bengu, using Saab's Sabertooth hybrid underwater search vehicles.

The wreck is protected as a Historic Site and Monument under the Antarctic Treaty, ensuring that whilst the wreck is being surveyed and filmed it will not be touched or disturbed in any way.

Donald Lamont, Chairman of the Falklands Maritime Heritage Trust, said:

"Our objectives for Endurance22 were to locate, survey and film the wreck, but also to conduct important scientific research, and to run an exceptional outreach programme. Today's celebrations are naturally tempered by world events, and everybody involved in Endurance22 keeps those affected by these continuing shocking events in their thoughts and prayers.

"The spotlight falls today on Mensun Bound, the Director of Exploration, and Nico

*Images © Falklands  
Maritime Heritage Trust /  
National Geographic*





*Menson Bound, Director of Exploration of Endurance22 expedition and John Shears, Expedition Leader, with SA Agulhas II in the background (Photo: Esther HORVATH / Falklands Maritime Heritage Trust)*



*Photo: Esther HORVATH / Falklands Maritime Heritage Trust*

Vincent, Subsea Project Manager. Under the outstanding leadership of Dr John Shears, they have found Endurance. But this success has been the result of impressive cooperation among many people, both on board the remarkable S.A. Agulhas II with its outstanding Master and crew, a skilled and committed expedition team and many on whose support we have depended in the UK, South Africa, Germany, France, the United States and elsewhere. The Trustees extend to them all our warmest thanks and congratulations on this historic

achievement.”

Menson Bound, Director of Exploration on the expedition, said: “We are overwhelmed by our good fortune in having located and captured images of Endurance. This is by far the finest wooden shipwreck I have ever seen. It is upright, well proud of the seabed, intact, and in a brilliant state of preservation. You can even see “Endurance” arced across the stern, directly below the taffrail. This is a milestone in polar history. However, it is not all about the past; we are bringing the story



of Shackleton and Endurance to new audiences, and to the next generation, who will be entrusted with the essential safeguarding of our polar regions and our planet. We hope our discovery will engage young people and inspire them with the pioneering

spirit, courage and fortitude of those who sailed Endurance to Antarctica. We pay tribute to the navigational skills of Captain Frank Worsley, the Captain of the Endurance, whose detailed records were invaluable in our quest to locate the wreck. I would



*The multi-role, 3000m rated, Saab Sabertooth is the world's only roaming and hovering robot that can operate in both fully autonomous and tethered modes, enabling fully flexible dual operations from a single platform fitted with cameras, sonars and tooling.*

like to thank my colleagues of The Falklands Maritime Heritage Trust for enabling this extraordinary expedition to take place, as well as Saab for their technology, and the whole team of dedicated experts who have been involved in this monumental discovery.”

Dr John Shears, Expedition Leader, said:

“The Endurance22 expedition has reached its goal. We have made polar history with the discovery of Endurance, and successfully completed the world's most challenging shipwreck search. In addition, we have undertaken

important scientific research in a part of the world that directly affects the global climate and environment. We have also conducted an unprecedented educational outreach programme, with live broadcasting from on board, allowing new generations from around the world to engage with Endurance22 and become inspired by the amazing stories of polar exploration, and what human beings can achieve and the obstacles they can overcome when they work together. We will shortly begin our return leg to Cape Town, after an expedition which it has been my great privilege and honour to lead. The Expedition team, and the officers



*Starboard bow. Image © Falklands Maritime Heritage Trust / National Geographic*

and crew of the S.A. Agulhas II, have been simply outstanding. I would also like to say thank you to The Falklands Maritime Heritage Trust, and all of our partners, especially in South Africa, who have played a vital role in the success of the expedition.”

Nico Vincent, Subsea Project Manager, said:

“This has been the most complex subsea project ever undertaken, with several world records achieved to ensure the safe detection of Endurance. State of the art subsea technologies have been deployed to achieve this successful outcome and I would particularly like to thank the subsea team for all of the





*The Endurance three-masted ship of Shackleton's 1914-1915 Antarctic expedition trapped in pack ice. Photo: Frank Hurley*

party, and achieved its objective, but at the cost of three lives lost. In the Weddell Sea, Endurance never reached land and became trapped in the dense pack ice and the 28 men on board eventually had no choice but to abandon ship. After months spent in makeshift camps on the ice floes drifting northwards, the party took to the lifeboats to reach the inhospitable, uninhabited, Elephant Island.

Shackleton and five others then made an extraordinary 800-mile (1,300 km) open-boat journey in the lifeboat, James Caird, to reach South Georgia. Shackleton and two others then crossed the mountainous island to the whaling station at Stromness. From there, Shackleton was eventually able to mount a rescue of the men waiting on Elephant Island and bring them home without loss of life.

### Scientific Research

Under the leadership of Dr Lasse Rabenstein, Endurance22's Chief Scientist, a world leading team of scientists from research and educational institutions successfully conducted hundreds of hours of climate change related studies over the duration of the expedition.

Representatives from the South African Weather Service, German firm Drift & Noise, Germany's Alfred-Wegener-Institute, German Aerospace Center (DLR), Aalto University in Finland and South Africa's Stellenbosch University researched the ice drifts, weather conditions of the Weddell Sea, studies of sea ice thickness, and were able to map the sea ice from space. Combined, these important studies will materially help our understanding of this remote region and how it influences our changing climate.

### Endurance22 education programme

Since the expedition was conceived, educational outreach was a key objective. The FMHT partnered with Reach the World, the US-based education organisation, and the Royal Geographical Society (with IBG) who have successfully connected with tens of thousands of children throughout the expedition via regular live stream interviews and material produced for classroom use.

### Expedition coverage and exclusive documentary

History Hit, the content platform co-founded by historian Dan Snow, award-winning digital content agency and media network Little Dot Studios, and impact driven production

company, Consequential, have produced a range of content covering the setting up of the expedition, the voyage and search, and now the discovery itself, as well as the history, science, and other themes that connect to the wider mission. Short-form content continues to be distributed to millions of subscribers, including with content breaking on TikTok. The team has also been filming for a long-form observational documentary chronicling the expedition which has been commissioned by National Geographic to air later this year.

Set to premiere this Fall 2022 as part of National Geographic's EXPLORER series, this documentary event will air globally on National Geographic in 172 countries and 43 languages before it heads to Disney+. Exclusive storytelling about the Endurance will be featured across National Geographic's digital and social platforms, including in the National Geographic magazine and the award-winning podcast, Overheard at National Geographic. An in-depth story about the finding of Endurance, including its historical relevance, is available on [natgeo.com](http://natgeo.com) now.

**Dr John Shears  
and Mensun Bound**  
[www.endurance22.org](http://www.endurance22.org)

[www.uwpmag.com](http://www.uwpmag.com)

engineering support, both on board the ship and throughout the months of planning, design and testing. All of them showed a huge commitment and resilience, worthy of the finest tradition of polar exploration. Saab provided the Sabertooth so I also want to thank them, including their ace team on board SA Agulhas II, and those who ensured the vehicles performed as well as they did."

### The Imperial Trans-Antarctic Expedition

It was Sir Ernest Shackleton's ambition to achieve the first land crossing of Antarctica from the Weddell Sea via the South Pole to the Ross Sea. The Ross Sea Party which was landed at Hut Point on Ross Island had the task of laying supply dumps for Shackleton's crossing

# We've got you covered!



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 £22.

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

[www.magic-filters.com](http://www.magic-filters.com)

# Tagging Whales From Above:

How Drones are Transforming Marine Research (Again)

By Malek Murison

Picture a scene that's synonymous with the climate crisis.

Maybe your mind jumped to the Amazon rainforest or the polar ice caps, where deforestation and rapid melting have long been rallying points for conservation efforts.

But the latest research suggests it's oceans that are key to tempering climate change. In fact, a microorganism you've probably never heard of captures 40 percent of Earth's carbon emissions and produces oxygen for two out of every three breaths you take. These microscopic algae are called phytoplankton. It's both the cornerstone of the marine ecosystem and a highly effective carbon capture system.

Phytoplankton depends on a steady supply of nutrients, including phosphorus, iron, and nitrogen. Fortunately, right at the top of the ocean food chain lives an incredibly efficient fertilizing machine: the whale.

Scientists have recently discovered that baleen whales eat far more than previously thought; the scale of their role as ocean fertilizers has been vastly underestimated. A

2019 study projected that if whales return to population levels they enjoyed before the era of commercial whaling, it would lead to a boom in phytoplankton and a staggering amount of carbon sequestering activity.

The bottom line? Nature has already perfected carbon capture. We just need to let whales eat, fertilize, and repeat.

Commercial whaling is all but over - in fact, conservation groups are using drones to gather evidence of illegal poaching. But these animals still face danger and disruption from fishing nets, ship strikes, and noise pollution. In order to put in place effective measures that conserve and encourage population recovery, scientists need to gather evidence to understand the full impact of human activity.

## “Healthy Whales, Healthy Oceans, Healthy Humans”

That's the motto of Ocean Alliance, a marine conservation organization pioneering the use of drones in whale research.

The relationship between DJI and



Massachusetts-based Ocean Alliance goes back to 2015, when CEO Dr Iain Kerr and his team began using drones to collect biological samples from whales. Instead of taking an invasive physical biopsy, the researchers wait for the mammal to surface before flying a Petri dish-laden DJI Inspire through its blow - a cloud of exhalation that provides insights into the mammal's hormones, DNA, and habitat. Naturally, they named the

concept SnotBot®.

SnotBot was the answer to a question that's faced whale researchers for decades: How do you gather decent whale data without chasing the animals in a boat and shooting them with a biopsy dart? (A method Kerr has described as the “world's most expensive game of whack-a-mole.”)

But biological data only tells part of the story. To better understand



***Dr. Iain Kerr has a Bachelor of Education Degree from the University of London and a D.H.L. from the University of Southern Maine. Iain began his career at Ocean Alliance as a volunteer and has grown with the organization over the last 30 years. He is listed as author on over 35 scientific papers and has ensured that Ocean Alliance messages reach the general public through international television and films.***

***In 2013, Iain recognized that drones could be the future of whale research and conservation.***

whale behavior researchers need to observe their movements. No mean feat for animals that spend more than 80% of their time beneath the surface.

This year, Ocean Alliance has developed and tested a new data collection aid that could once again revolutionize the work of whale researchers. Just like with SnotBot, the solution uses an adapted DJI drone to avoid an expensive, dangerous,

and stressful game of whale whack-a-mole.

### **A non-invasive way to tag whales**

For decades, marine scientists have used data tags to track whales underwater. One common type of tag is fixed using suction cups and can carry a range of sensors - including a hydrophone, an accelerometer, and



***“There are enormous challenges facing humanity but it’s never been a more exciting time to be involved in this field. The tools DJI are developing are changing the game - not just in how we collect data and what can be collected, but in terms of who can collect that data. This is just the beginning.” - Dr. Iain Kerr, Ocean Alliance***

a camera. The data these tags collect provides researchers with insights into a whale’s hunting patterns, kinetics, acoustics, and even social interactions.

Just as with the collection of biological samples, tagging has traditionally been a dangerous and costly process. A team of experienced scientists across multiple vessels will spend countless hours chasing whales. It’s inefficient at best.

With the help of drones, things can be different. On an expedition in the Gulf of California in February 2022, Ocean Alliance became the first team in the world to successfully

use flying robots to revolutionize the tagging process. The innovation could have huge implications for whale science and marine conservation more broadly.

The Ocean Alliance team used modified DJI M210s to drop suction cup tags on Blue and Fin whales. There was no chase, no close approach, and no 20ft pole. Only successfully placed tags on more than twenty whales - many of which were 500m from the boat. They even had a 100% success rate with Fin whales, dubbed ‘the greyhounds of the ocean’.

“You don’t expect the first time

you try something like this to keep hitting home runs,” says Kerr. But that’s exactly what happened.

This success shouldn’t come as a complete surprise. The Ocean Alliance drone program, led by engineer, lead pilot, and whale snot collector-in-chief Chris Zadra, is now well established. No other team in the world has this much experience piloting drones above whales.

He explains that each tag drop follows the classic SnotBot approach, flying in behind the whale as it’s about to exhale. When the animal’s back arches above the surface, the tag is released by the pilot. It’s kept upright during the descent with the addition of some 3D-printed attachments. Once the device is in place, the pressure induced by the whale’s dive ensures it’s secure. The tags are released with fixed timing mechanisms that allow the researchers to track and collect them a predetermined number of hours later.

Not only is this new solution non-invasive and relatively stress-free for all involved, it’s smarter, faster, and cheaper than the traditional approach. Kerr believes it will be a gamechanger in parts of the world where there are whale populations researchers have never been able to get close to, such as Iceland and Madagascar.



## Developing a tagging solution

A key Ocean Alliance aim is to democratize access to whale conservation efforts. That means devising cheaper, more accessible solutions and sharing those with the wider research community.

“There are a couple of things we look at when deciding what idea to pursue,” explains Zadra. “We’re not a big engineering firm, so the first thing is that it needs to be simple. Then we look at what tech is available. Ideally, we’re taking something off the shelf, modifying it, and using it in a way to accomplish whatever goal we’re aiming for. Every drone solution is meant to make a current form of marine mammal research either easier, cheaper or more accessible. Tagging was a perfect combination of all that.”

The development process started in August 2021, when a conversation between David Wiley from NOAA and Iain Kerr turned a



long-held ambition into a viable next project. OceanX agreed to fund the development process and the team got to work.

Although a drone was always going to be central to the solution, the exact method of tag attachment was up for debate. “We had half a dozen ideas that we wanted to try, but we started with the most simple: just dropping the tag,” says Kerr.

Typically solutions like this become more complex with each iteration. But the method and equipment required actually simplified as time went on. Students from the University of Michigan were tasked with calculating the amount of pressure needed; the force of the drop and the weight of the tag proved enough to hold the suction cups in place. Zadra prototyped a frame and a range of 3D-printed attachments to ensure the tags fell at the right angle.



*Chris joined Ocean Alliance to help with the development of SnotBot™ and the Drones For Whale Research Program after receiving his Master’s in Engineering from Lehigh University. His skills in rapid prototyping, software development and entrepreneurship help Ocean Alliance develop new, noninvasive tools for oceanographic research and whale conservation. He’s also one heck of a drone pilot.*

3D-printed attachments keep the data tags horizontal as they drop. The tags are released by a radio-controlled pin mechanism that sits on the underside of a DJI M210.

After successful testing at Ocean Alliance headquarters, the team rented out a nearby warehouse to try the solution on a moving target. Ballistic gel was used to mimic the body of Walter (the wannabe whale).



Over 200 test flights later the concept was ready for the real thing. In late February 2022, the Ocean Alliance team left for Mexico to test the new tag deployment technique in the wild.

### A budget-friendly flying research vessel

When you're studying whales, special permits and permissions are required. When you're testing new ways to study whales, there are even more complications.

It's here that drone technology offers priceless capabilities. In theory, the DJI M210 can track a whale, collect its snot, drop a tag, document the process, and film the animal's reaction (or lack of) with its onboard cameras. It's a flying research vessel

that provides not just groundbreaking research capabilities, but a way to verify those capabilities and assess their impact.

A case in point is the footage Ocean Alliance gathered while dropping tags on whales in the Gulf of California. The team is still in the process of analyzing the footage from the test drops, but from their small sample the whales showed no detectable response to being tagged. And that's empirical evidence that can be shared with the relevant authorities, rather than an account of what happened.

The aerial perspective also provides insights that would otherwise be missed. "From a boat, it can just look like a whale doing whale things," says Zadra. "But from the drone you

can see all of these tiny behaviors that you wouldn't otherwise recognize." These range from the raising of a fin to a burst of deceptive speed.

There are financial benefits, too. One of the most significant barriers for marine researchers is cost. Tagging expeditions typically require tens of thousands of dollars in funding - in part because several boats and a large team of international experts are needed. Using DJI drones, the Ocean Alliance team has demonstrated an alternative way to collect data that is drastically cheaper and less resource-intensive.

"Generally speaking, having a team and a boat that has to get within 15 feet of a whale is highly inefficient," explains Kerr. "Most of our deployments were on whales 500

meters away. Pole teams wouldn't even have tried. For a marine biologist, we look at the cost/benefit analysis: how much is it going to cost us to collect that data? Using drones the cost per successful tag is radically cheaper. It's a transformational tool."

These savings don't even account for the extra data a drone enables versus a standard tagging mission.

The Ocean Alliance team is unique. They are builders, innovators, and pioneers, but they are also rigorous scientists aware of the responsibility that comes with researching protected species. As a result, official findings from the tagging expedition will be published later this year. What can be shared until then is limited.

Kerr hopes the new solution

will inspire and enable marine researchers around the world. "I'm trying to break the stereotype of what a scientist is," he says.

There's also hope that conservation could become an established sector in the drone industry, and that companies around the world can build research-focused hardware and applications to go alongside the enterprise platforms and SDKs available at the moment. As Kerr points out, "wildlife conservation is a multibillion-dollar industry. People care about our oceans and about climate change. They just need access to the information."

With each new study we learn more about the importance of whales to carbon capture and the ecosystems they sustain. The adoption of drones by Ocean Alliance means researchers around the world can research these animals in greater depth and help restore their numbers. There will likely be a wave of data gathered thanks to the organization's latest findings. Developing an efficient way to tag whales may seem like a drop in the ocean, but it's a necessary step if we are to safeguard the future of the planet.



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# Chat Shot

## 'Antihero' by Tony Myshlyaev

by Henley Spiers

This shot by Tony Myshlyaev stopped us in our tracks, an unusual feat in a world where we are bombarded by imagery from all sides. It's a particular source of fascination to learn about the process of underwater photographers who come to the discipline with professional training in photography itself. As Tony shares the story behind the creation of 'Antihero' with the Shot Chat team, we get a clear glimpse of his dedication to detail, light, and the crafting of an image.

### *Is this image and composition something you planned in advance?*

Tony Myshlyaev: This image in itself was not planned. I don't think images like this can be planned as the natural light is too dynamic and shifts too quickly. So as the light changes, the location, pose, composition changes with it. I have a background in studio photography and light theory and that knowledge was my tool in accomplishing this photograph. My friend and I are both huge anime fans so we were inspired by cartoons and action heroes for this pose. A lot of

people say it looks like Spiderman.

### *Who or what are your photographic influences?*

I learned studio lighting from school. I had access to as much equipment as I wanted so I tried everything. It made me appreciate natural light a lot more because I knew how long it took to make any kind of set up. In regards to my inspiration - I would say suahutica is definitely my inspiration and he was also my instructor. He has an artistic background whereas I have a technical background.

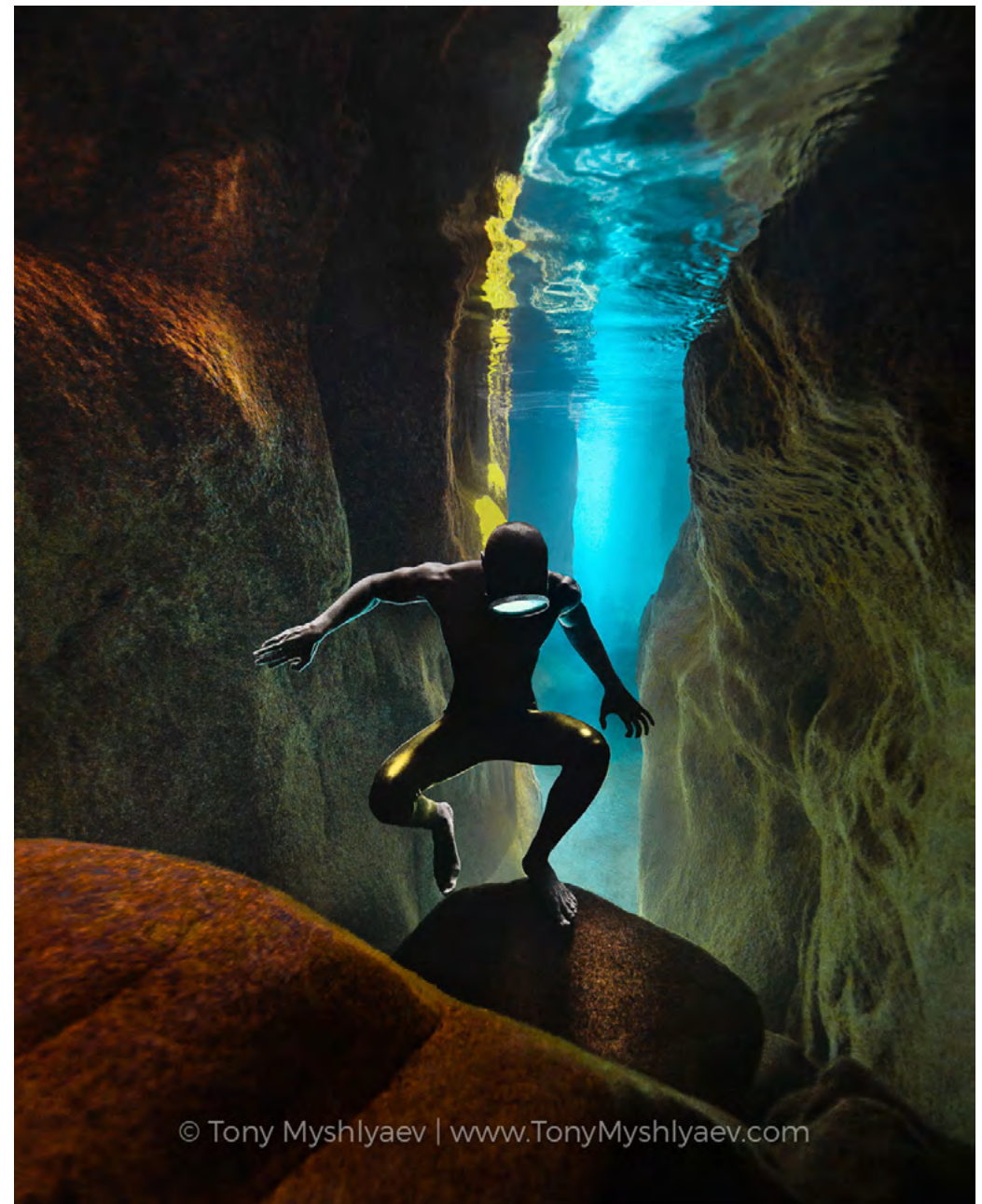
### *What equipment did you use and where did you shoot it?*

Equipment: Subal housing with a Nikon d500 camera

Location: Koh Tao, Thailand

Water conditions: Water conditions were 30 degrees tropical with no waves. It was about 1.5 - 2m deep. you can see the surface at the top of the frame

Help: The model is my friend Alexander Widing (@mrwiding on Instagram)



© Tony Myshlyaev | [www.TonyMyshlyaev.com](http://www.TonyMyshlyaev.com)

Settings: f/5.6 - 1/400 - iso 200.  
Manual mode  
I exposed the light correctly and

froze the image. I guess I could say low ISO was my top priority.

### ***What's the background story?***

My friend hired me to do a photograph where he had a cape and a golden wetsuit to look like a superhero. After about 30 minutes of trying photos with the cape, I could tell it wasn't going to work. There was a cool cave nearby that has a 30 minute window every day when the light shines into it. I knew this ahead of time and made sure we were there the first moment the light started to enter the cave. The light kept moving so I kept trying different things. Playing with the light anyway that I could. There are many holes through which the light can shine. I tried not to get fixated on any one lighting situation and kept trying out different things. The main challenge was thinking quickly as the light enters this crack and keeps changing. So we only have a few minutes to discuss an idea, try it, refine it and move on. I am good at talking with models so I had to get him trusting me, comfortable and ready to express himself through poses that would make a bystander chuckle, but he obviously had to trust me. Most of the poses from this shoot involve him climbing onto a rock. But this was a happy accident of a moment that he lifted his second leg above the rock and had this very unique unorthodox pose.

I love this "cyclops mask" as I call it amongst myself and I my clients. It catches the reflection in a very lovely way and has a "timeless adventure" kind of feeling. It did not fit his face very well but I talked him into it by forcing him to deal with its discomfort and showing him the results hahaha. We caught the reflection in the sand behind him. It was definitely unplanned but had a big influence during the image selection process.

### ***Any advice on how to communicate and work well with models?***

Ah that's a good question. One of my favorite teachers from my program was a fashion photographer, Lurenda Mastromonaco - that was during back in the film era of the 90s. In my program she was always drilling us about being quick and communicating with the models and building up their confidence as much as you can. It is so important to build that trust and I like to do it by letting them know, in any way that I can, that they are doing an incredible job. The hope is to get them to a point where they can really imagine what you want them to do. Most times the best photos are the ones where they forget the camera, even if it is just for a split second, and relax into a truly natural pose. So I'll often ask them to do things on the surface but most of the time the best poses are something a little "off script"

### ***Did you know you had something special in the moment?***

After shooting this photo, the lcd lit up and I was definitely happy with what I saw but I did not think too much about it because there is always an opportunity to refine and make something even better. I was only looking for flaws in lighting, posing and composition.

Do you think you could repeat the shot? Is there any aspect of the shot which you think could be improved? If you were trying again today, is there anything you'd do differently?

"I think one famous painter said "art is never finished, it is only abandoned.""

Yes, I could repeat the lighting in the shot - perhaps only for another week or so before the alignment of the sun in the sky shifts so much



so that the light doesn't shine into the cave for another year in the same way. But repeating the same pose and feeling would be very difficult, even for the same person. Because this was a dynamic unplanned moment. I think the shot can always be improved. I think one famous painter said "art is never finished, it is only abandoned."

I don't know what I would try different in this photo, I have tried to stop thinking about images that way. I'd rather see the circumstances as "I did the best I could while shooting and I did the best I could while editing." Otherwise I think I would eat myself up about why "this precious moment was squandered." I think a perfect photo needs to



have some imperfections which gives it that human element.

***Can you describe the programmes you used, and what you did please?***

As far as editing goes, I just use Adobe Bridge for organization and Adobe Camera Raw (ACR) + Photoshop for editing. I do most of my editing and white balance adjustments in ACR and then open up to clean up and do localised enhancements in Photoshop - just meticulous things that make my OCD act up. I like to take my time and usually I'll spend a day or so working on a photo. Resting my eyes and coming back to look again. This is only

possible when I really like a photo that I shot. Otherwise there is no way I can dedicate myself to it for that long. Honestly I did some clean up but this location was pretty amazing and most of the work was done by being at the right place and the right time.

I prefer a warmer white balance in caves to try and distinguish myself from other photographers - nothing special there. I don't use any filters/skins/plug-ins. Just Photoshop. I don't know exactly what I did, I don't remember. Just anything I see that bothers me, I like to fix up. Make the exposure nice and even and colours all nice and tidy. I don't really know what to add beyond that. It's more a matter of perspective and planning than any real Photoshop magic. I love colours so I studied colour theory a lot. It does have a comic book kind of vibe but it's not something I can recreate everywhere I go, it was just the way the light worked in that one special moment of the day (during that special time of the year) that allowed me to exploit it in Photoshop.

I still use an APSC camera so it's definitely not the gear. I just am obsessed with natural light and white balance and I spend 5/7 days shooting, thanks to the easy logistics I have in Koh Tao. For every 1 photo you see, I edit many more. So it's a lot to do with my selection process. Behind the scenes, it's always a big stressful mess figuring out which is the best shot. I just play around with a ton of raw files until one feels fun. I try to put out 1 photo every 4 days so it does take a lot of commitment!

***What has the reaction to this image been?***

I think this is a photographer's photo - those are the people that have appreciated above all else.

In general, it's been received well by the western audiences. The people in Thailand that like it are mainly those that operate cameras because there is a different aesthetic standard here. It definitely has not gone viral because of it's Low Key (shadow dominant) thematics. That's quite normal and I expected the reaction to be mixed but overall I've been really grateful for how it has been received

Thank you for sharing your story with the Shot Chat!

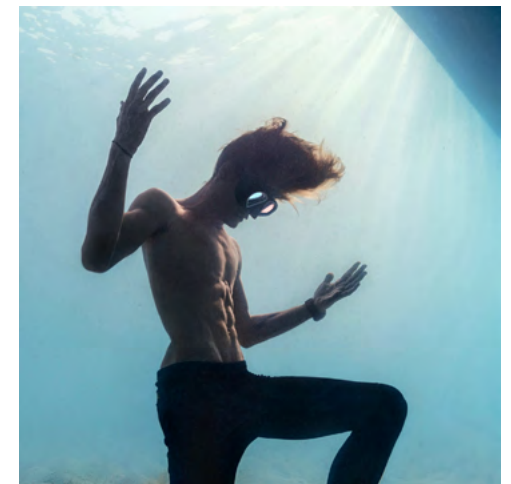
**Henley Spiers**  
[www.henleyspiers.com](http://www.henleyspiers.com)

**Tony Myshlyaev**

Perhaps better known as Tones of Blue, Tony brings seemingly simple elements: water, light, and people, together to create frames which consistently turn the eye.

He works as a freediving instructor and photographer in Thailand and you can explore more of his work via the link below.

[www.tonymyshlyaev.com](http://www.tonymyshlyaev.com)



[www.uwpmag.com](http://www.uwpmag.com)

## Kit for sale

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### FOR SALE – Nauticam Na-d800 Housing for Nikon D800

Nauticam Na-d800 Housing for Nikon D800 Excellent condition. Full overall by Nauticam in December 2017, not in the water since. Vacuum check; electronic monitoring circuit installed, no vacuum system. 2000 euros + shipping ... [More >](#)



### FOR SALE – Nauticam flat ports and lenses Sony 28mm and 90mm

Nauticam flat port for Sony 28mm + sony lens 28mm +Nauticam flat port for Sony 90mm + sony lens 90mm+Nauticam trigger flash for sony. SOLD Can be sold separately. Total price 1260€ (does not include insurance and shipping) ... [More >](#)



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This one year old set of equipment is in excellent working condition and will serve great to a new owner. The reason for sale is a switch to a new equipment. Nikon D500 (19k clicks). Sigma 10mm F2.8 Fish Eye. 128Gb XQD Lexar ... [More >](#)

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# Sali Kecil

## A Hidden Diving Paradise

By Anita Verde

Photographs by: Anita Verde and Peter Marshall

We divers are an opinionated lot, and although we don't often agree, there's generally a consensus amongst us that the Asia Pacific region takes first prize when it comes to incredible diving. So when we were deciding where to spend our first international diving vacation post covid; where could be better than somewhere half way between Raja Ampat and the Lembah Strait?

Ok, see if you can guess. Lush volcanic peaks framed by swaying coconut palms, coarse sandy beaches extending to submerged coral gardens, and a mysterious atmosphere like no where else. Where you mistake the sound of a flock of Hornbills for that of a helicopter, and you'd almost swear the water was Gin, it's that clear. We're talking about Sali Kecil, a tiny island located in the Strait of Bacan. Ok, be honest, you've probably never heard of it, and even if you have you've only got a vague idea of where it is.

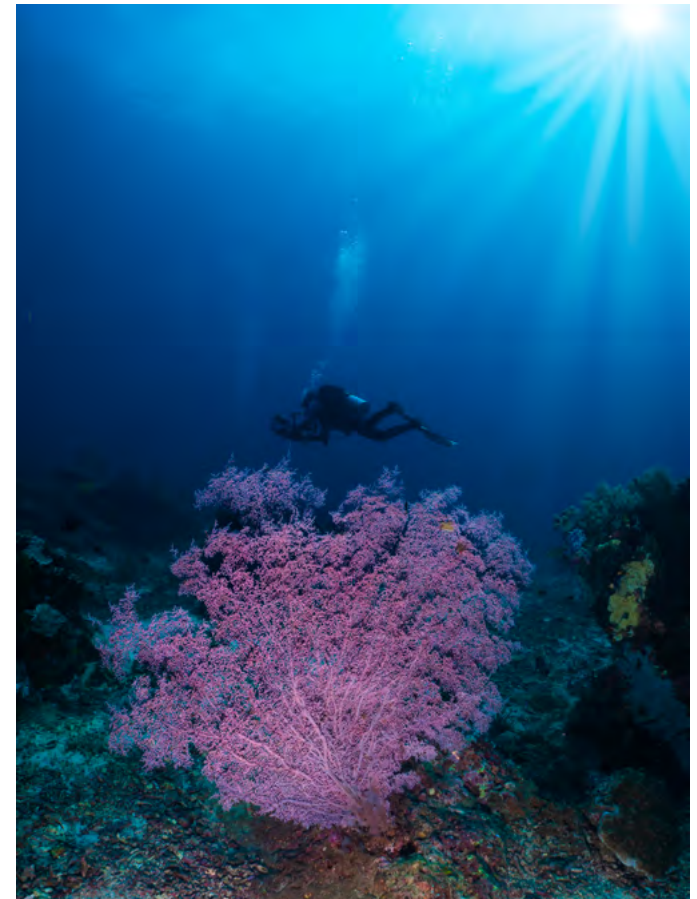
It is not our first time here. We were here in early 2020; just before the world and travel as we know it came to the ultimate stand still. And although a lot has sadly changed in Indonesia over the past 2 years; with many resort's being forced to close; the sea here is the same biodiverse epicentre it always was. As some of the last International guests to leave pre covid; and the very first two people to arrive back; we couldn't have been happier!

Located in the rarely visited waters of the southern reaches of the Indonesian island of Halmahera, and enviously located between the Lembah Strait and Raja Ampat, the waters around this sparsely populated island are amongst the most impressive of all marine biodiversity hot spots. The waters remain uncharted, and despite its location amidst the richest seas on earth, the area remains remarkably un-noticed, even for the most intrepid of wanderers.

With the sea full of promise we are fuelled with anticipation as to what the diving here this time round will bring. Upon submersion, we find ourselves yet again amidst pristine coral gardens, complete with the unpredictable currents that characterise the region.

The islands of Sali Kecil (the small one) where the resort of Sali Bay is located, and Sali Besar (the big one) are smack bang in the middle of the strait between Bacan and the main island of Halmahera. This location means that careful planning and selection of dive sites is required for safe diving. If you get it wrong, it's all 'washing machines' and 'mission impossible' photography.

*Panasonic GH5 in a Nauticam housing with Sea and Sea YSD2 strobes, Lumix G X Vario 14-42 mm power, plus the Nauticam WWL-1, 1/125 sec @F9, ISO 200*  
© Peter Marshall

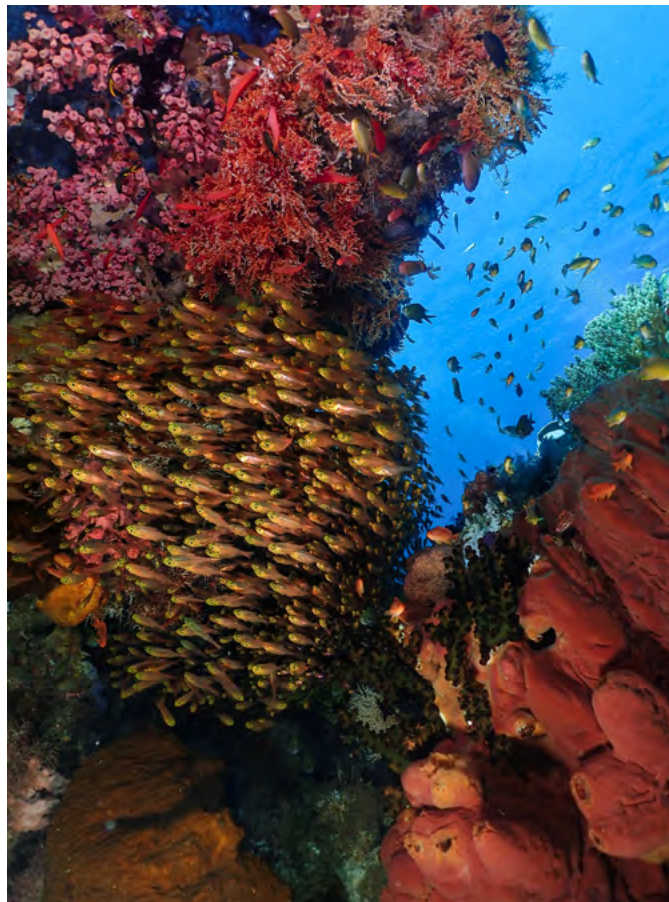


But the currents also mean the corals here are colossal. On each dive, we are dwarfed by gigantic gorgonians, brain corals, elephant ear and barrel sponges. Table corals and large gardens of cabbage coral are also prevalent. When the current is lively, delicate soft corals in a fury of pink and orange also reveal themselves, providing a safe haven for numerous species of juvenile fish.

The resort's remote location means access to 60 known dive sites, and given much of the area is yet to be explored there is also the opportunity to add to this list with additional exploratory diving. We managed to visit 25 sites during our stay, all of which were uniquely breathtaking. It would take a lifetime to discover all of the dive sites in the area, a challenge we hope to continue to undertake.

Whether your exploring the areas's many sloping reefs, drop-offs or delicate coral gardens, wandering in the blue or getting down in the muck, you'll find healthy populations of reef sharks, turtles, batfish, rays, bumphead parrotfish, napoleon wrasse, and more strange critters than you can begin to identify.

Given its envious location, it's not surprising that the biodiversity of marine life here is outstanding, yet its remoteness combined with a lack of marine survey data means the region is literally a 'black box', with very little understood. The only significant indicator of the region's potential are the impressive results from a survey undertaken in 2005 in the south-western part of Halmahera, where renowned ichthyologist and marine zoologist Dr Gerald Allen recorded a total of 803 species of reef fish over 37 hours underwater at 28 locations. This is impressive given he recorded 828 species in Raja Ampat during a similar survey conducted over 60 hours in 2001. So maybe it's not



difficult to suggest that the region's biodiversity could be comparable to that of Raja Ampat.

You'll see almost every species of pygmy seahorse here, they star on every dive, and in 2013 a new species of walking shark was also discovered, *Hemiscyllium Halmahera*. Also known as the bamboo shark or long tail carpet shark, these sharks prefer to walk rather than swim by wriggling their bodies and pushing with their pectoral and pelvic fins. Relatively small, the species here is believed to reach a maximum of 70 cm in length. Seeing this shy creature is easy as it's made a home in the

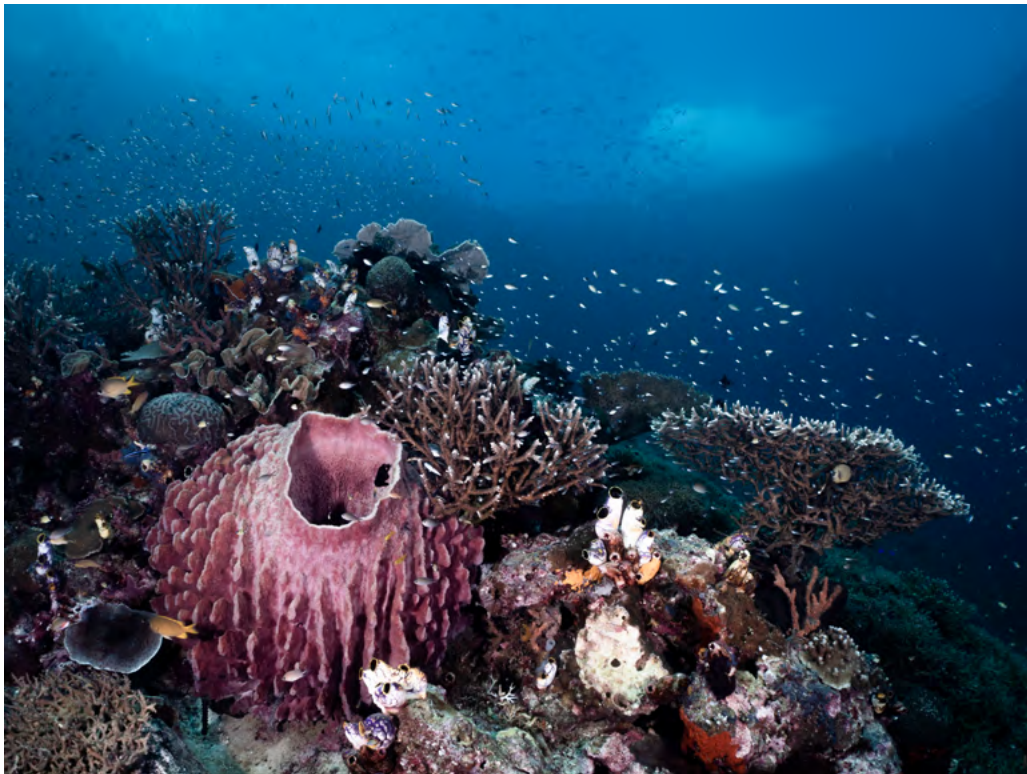


*(Above) Panasonic GH5 in a Nauticam housing with Sea and Sea YSD2 strobes, Olympus M Zuiko Digital ED 60 mm f2.8 macro lens, plus the Nauticam CMC-1, 1/200 sec @ F11, ISO 200 © Anita Verde*

*(Left) Olympus TG-4 with AOI UWL-04A wide lens, 1/30th @ F9, 100 ISO © Peter Marshall*

shallow waters just off the the resort's jetty. A dive in the late evening will give you the best chance for an encounter. We were lucky to see one during a night dive on the resort's stunning house reef. Shy but curiously it peaked out at us from under a coral boulder before slowly shuffling backwards into the darkness. No photograph could ever hope to capture the intimacy of the encounter.

All of this, alongside incredible macro photography opportunities, the chance of seeing of dolphins and numerous species of whale, makes the region a very enticing dive destination. The topside



*Olympus TG-4 with AOI UWL-04A wide lens, 1/30th @ F9, 100 ISO  
© Peter Marshall*



*(Above) Panasonic GH5 in a Nauticam housing with Sea and Sea YSD2 strobes,  
Olympus M Zuiko Digital ED 60 mm f2.8 macro lens, plus the Nauticam CMC-1 ,  
1/200 sec @ F11, ISO 200 © Anita Verde*

scenery doesn't disappoint either, with lush volcanic peaks and dense jungle vegetation, free from deforestation and inhabited by numerous species of bird and monkey.

The owners of the resort, a consortium from Italy and Switzerland are committed to protecting the marine environment and are currently working with the Indonesian government to protect the region's unique biodiversity through the ambitious establishment of a marine

park. To date, talks have been lengthy and are ongoing, but something tells me their passion for the region will help them succeed.

Want to dive here? Sali Bay Resort is located on the island of Sali Kecil in a protected bay in the Southern reaches of the island of Halmahera (North Maluku) Indonesia.

The resort caters to guests in twelve beach front deluxe villa accommodations nestled delicately on the shoreline with direct access to the

sea. Larger groups can also book the Diver's Lodge, located at the end of the bay and consisting of four rooms with private bathrooms and a wide veranda facing the sea.

Custom built dive boats and experienced guides take divers on challenging exploratory dive trips in the remote Halmahera sea, and underwater photographers are well catered for with a dedicated camera room and facilities. Twelve litre

aluminium tanks with DIN and INT valves are provided and Nitrox is available.

The resort is also a paradise for snorkelers, and has the most beautifully intact and healthy house reef we've seen. A fresh water pool, intimate spa and fabulous food tops off the experience. Italian, German, English, Indonesian and French are fluently spoken by staff.

Although the official wet season





*Anita Verde and Peter Marshall have a passion for the planet's wild places, and through their images and narratives hope to inspire better appreciation and protection of the natural world. Based in Melbourne, Australia, they have professional backgrounds in tourism strategy, environmental sustainability, and government relations. When they are not underwater or on a mountaintop, they also work professionally as strategic consultants, advising governments and industry on sustainable destination planning and development, investment attraction, government relations, brand strategy and marketing.*

[www.summitstoseasphotography.com](http://www.summitstoseasphotography.com)

is considered to be November to March, Sali Kecil is protected by the islands of Ambon, Halmahera and Bacan, and therefore receives very little rain. We visited in March and experienced clear sunny skies and calm seas.

### Getting there

Halmahera is not an easy travel destination, and a visit to these uncharted waters should be considered not only an adventure but a privilege.

Sali Bay Resort is a 20 minute overland trip followed by a 50 minute boat ride from Pulau Bacan's Labhua

airport. Labhua airport is serviced daily from North Sulawesi's capital Manado with a stop over in Ternate. Singapore Airlines' subsidiary Silk Air runs flights from Singapore to Manado four times per week. Note: that flight schedules have been significantly disrupted over the past 2 years, and at the time of writing were just beginning to re establish their frequency to pre-pandemic levels.

**Anita Verde**

[www.summitstoseasphotography.com](http://www.summitstoseasphotography.com)

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# A week in the Maldives

by Peishan Tan



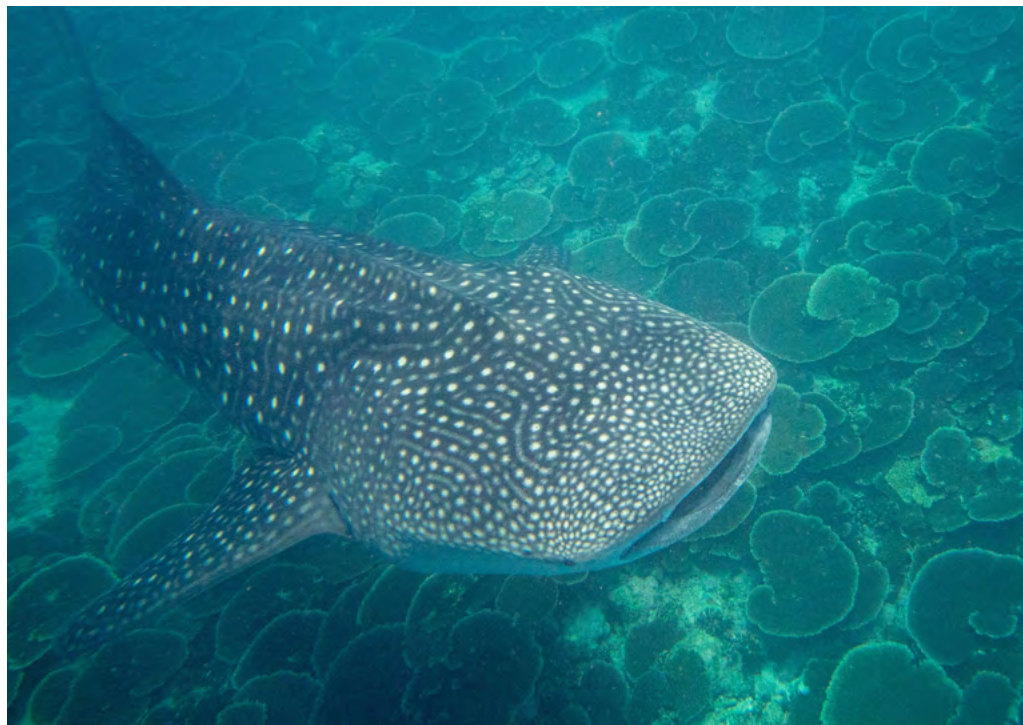
We'd originally planned to go to Maldives in 2020, but of course, the pandemic put a halt to the plans. As soon as flights there were greenlighted by the Singapore government, and quarantine restrictions were lifted, we booked in our trip. Up until we actually set foot on the island though, I was constantly trying to tamp down my anticipation.

What a glorious week it was! I'd picked well selecting Villamendhoo as our resort island of choice. For its over the water villas, but most importantly, for its raved about house reef. We debated long and hard about bringing our own SUP boards, so we could go for a paddle at sunrise. Ultimately though, the strict seaplane baggage limits caused us to drop that idea, and we easily filled our days from dawn to dusk everyday on the water anyway, either snorkeling or diving.

The diving was outstanding – the dive center put up dive boat excursions to various reefs for the next day every evening, and we'd go eagerly up to the boards outside the dive center to choose our new adventures – anywhere from full day affairs on long haul trips up north to see the mantas, down south to spot whale sharks, to exciting dawn dives at the nearby thias, the Maldivian word for underwater mountains. We signed up for most of them.

The diving highlight was spotting the magnificent whale shark – not on our dives, but during the surface interval between our first and second dives. The captain heard on the radio that one of the other boats had spotted the creature, so we gunned for the spot. As soon as we neared the area – we could see a mass of people just swimming excitedly en masse towards us. We jumped in, and started paddling towards them, though initially we couldn't see anything on the ocean floor but the beautiful gigantic plate corals. Then, just as the water surface started roiling with the frantic splashing of arms and legs, I spotted a dark silhouette looming rapidly towards me. I had just a moment to admire the distinctive white spots of the whale shark when the crowd was upon me.

Haha, thankfully, the guides had warned us about the enthusiasm for the crowd, so I was prepared for it, and willing to give as good as I got. The snorkelers' fins had nothing on my dive fins, and I easily broke my way to the front of the crowd again, through desperate hands that tried to pull me back. But I kept easily ahead, just abreast of the creature swimming placidly and regally below, ignoring the excitement at the surface. I swam with it for long minutes, until it moved towards deeper waters and its brilliant white spots merged



into the darker blue. At that time, I finally looked back, and saw that most everyone was already out of the water, and my own dive boat was back in the distance.

The snorkeling was stellar too. With my underwater strobe malfunctioning, I couldn't get magnificent colors in the deep, but the shallows provided a ton of interest. Along the house reef on our daily leisurely and languid swims, we spotted grey reef baby sharks, white tip sharks, marble rays, grey sting rays, eagle rays, mobula rays, turtles, lobsters, octopuses, and tons and tons of fish – triggerfish, fuisiliers, angel





some water. I didn't even open a book once that week haha.

We spotted dolphins twice during the week. Once at a surface interval dive up north, and another time during a sunset cruise near our resort. Always fun to see these playful creatures

We're already trying to plot a return next year.

**Peishan Tan**  
[www.ptanphoto.com](http://www.ptanphoto.com)

fish, banner fish, Napoleon wrasses, golden blue-striped snappers etc. What a feast for the eyes!

Certainly one of our most active but also most restful vacations. We'd be up around 5am every morning, to catch the sunrise on the eastern end of the island. If we had an early morning dive, we'd then grab breakfast before going to the dive boat. Otherwise, we'd take a 2 hour snorkel around the island. We'd be on the water until sunset, whereby we'd hit the tennis court, or grab a pre-dinner cocktail. By 930pm, we'd be hitting the bed already. And unlike my fitful sleeps back home, I'd get up just once in the middle of the night maybe, to drink



*All images taken with a Sony RX100 in a Recsea housing*

# 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.

# What makes a captivating image?

Imagine you've invited some friends over for dinner. You spend all afternoon preparing and cooking a well-planned meal. After dinner they proclaim it was one of the best meals they've ever eaten and then they ask "What kind of stove did you use?" In this context, it would be a nonsensical question but as a photographer, I'm frequently asked what kind of camera I use when well-meaning admirers view my images

The implication is that all the magic happens inside the camera, and the photographer is merely the lever puller who simply manipulates the marvelous technology that's really responsible for creating the magical images. The question usually comes from novice photographers who are looking for a shortcut to propel their own photography to a higher level and it may seem like an innocent and relevant question, but it fails to identify the secret that's the real foundation of stunning images.

Thirty years ago when I first began taking underwater pictures, I was consumed by the same quest. If I could just find a great underwater camera, I'd be able to take pictures for National Geographic just like the pros did. Every few years I would buy a better camera, a faster lens or a more durable housing. While that did

make a difference to the quality of the pictures I took, something was missing that took me years to detect. In my case, with underwater photography, I had some of the best equipment I could afford, but what was lacking was sufficient knowledge of my subjects.

This wasn't something I was aware of decades ago. Instead, it was a shortcoming that has only revealed itself in retrospect. Over time, as I learned more about the lives of the fish I was photographing, my images of them became more appealing and more penetrating. I began to study their behavior and their body language and I began to notice how my own body language, movements, and behavior affected them. In time, a kind of communication developed. I became able to recognize subtle cues from timid fish and learned how to approach them in non-threatening ways. I also learned how to send out my own signals which fish could decipher that would put them at ease.

My office bookshelves that were once filled with photography books began to be populated with books about fish and fish biology. As I learned more and more about my subjects, not only did my appreciation and knowledge for them grow, but my photography of them improved



dramatically.

Reading about fish was invaluable, but my real education came from the fish themselves. As I spent more and more time underwater observing and interacting with them, they divulged more and more about themselves. Over time and one by one, all their habits, routines, and individualities that weren't discussed in fish books were revealed like a cascade of unmasked secrets. I make no apologies for anthropomorphizing fish when I talk about their personalities. When you've spent as much time with them in their underwater habitats as I have, these conclusions feel not only justified but

undeniable.

Today, when young photographers ask me what kind of camera I use, I ignore the question entirely and instead encourage them to learn all they can about their subjects. In all areas of wildlife photography, if you fall in love with your subjects and let them teach you, it will be impossible for your images to not mirror that love and appreciation. And I think that single element, one that admittedly can't be quantified precisely, is what makes a captivating image.

**Eric Engbretson**

[www.underwaterfishphotos.com](http://www.underwaterfishphotos.com)

## Marshall's Mysteries

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

**A**

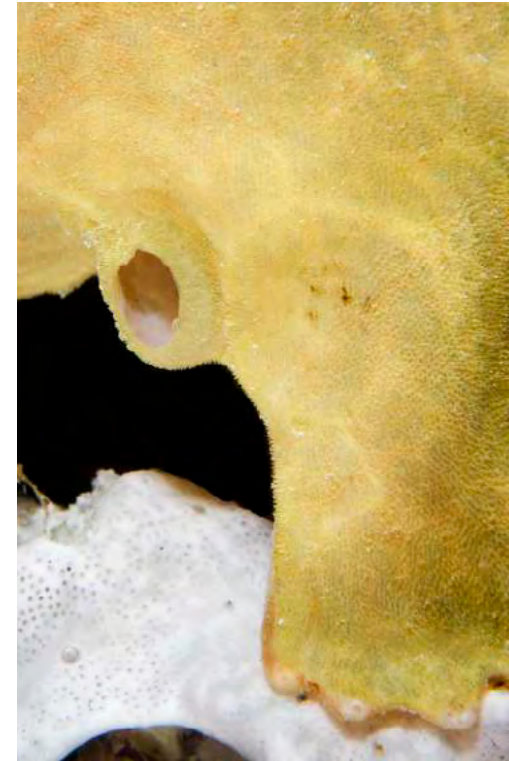
© Colin Marshall



Candidasa, Bali, Indonesia

about 1 cm long

**B**



© Colin Marshall

Sulawesi, Indonesia

animal about  
20 cm across

**C**

© Colin Marshall / Blue Planet Archive



Amed, Bali, Indonesia

about 2 cm long

**D**



© Colin Marshall

Banda Neira, Indonesia

about 7 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](mailto: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 - Answers

A



Free-swimming cyprid larva of a Barnacle (Cirripedia Subclass), looking for a home before attaining sessile (ie no longer mobile) adulthood.

Amusing to those with a childish sense of humour, ie most men, sessile adult barnacles require exceptionally long penises to mate. They have the largest penis to body size ratio of any animal – up to 8 times the body length...

The gills of another frogfish species, a Warty Frogfish (*Antennarius maculatus*) can be seen below on the right (gills also circled in red) as it swam away.

© Colin Marshall



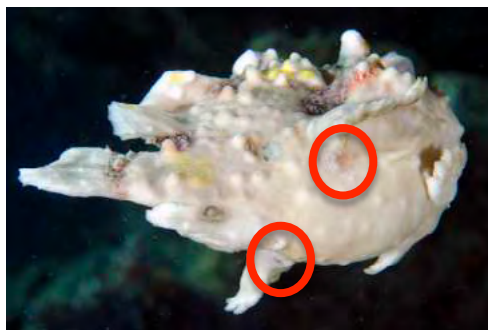
More detail on these Frogfish can be found on pages 145-147 of Volume 1 of "Reef Fishes of the East Indies" by Gerry Allen and Mark Erdmann.

B



Gill (circled in red) of Giant Frogfish (*Antennarius commersonii*). Full image of this frogfish is shown below on the left, but gill not visible.

© Colin Marshall



C



Anemone Hermit Crab (*Dardanus pedunculatus*). This juvenile has lost some legs (pereiopods), likely a consequence of temporarily being without a protective shell.

The image below shows the same crab but with the abdomen tucked up in a normal hermit crab posture.

The adult below on the right, protected by a scavenged shell, has added Anemones (*Calliactis polypus*) on the shell for extra camouflage & protection.

© Colin Marshall / Blue Planet Archive



This Hermit Crab can be found on page 53 of "Coral Reef Crustaceans from Red Sea to Papua" by Andrey Ryanskiy.

D



Coral Killing Sponge (*Chalinula nematifera*). This sponge envelopes living coral, dissolves their tissues and takes over their living space.

This sponge can pose a threat to corals, especially when introduced to new environments by shipping "fouling".

The white streaks on the purple sponge are a symbiotic fungi.

© Colin Marshall / Ardea



If you think any of the identifications or information above is wrong, please let me know at [colintrmarshall@yahoo.com](mailto: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.

# Parting Shot

by Peter Rowlands

On a recent dive in my backyard of Plymouth, UK, I came across this charming lobster and went to take a photograph, only to find that my woeful lack of camera preparation became immediately apparent when I discovered that my flip in colour correcting filter (Magic, of course!) had jammed so I reverted to Plan B only to find that my small video light was not charged. Talk about “All the gear and no idea!”

Anyway, undeterred, and thinking that any image was better than none, I took a few shots and moved on.

It was only when I got home and had fixed the flip filter and put my video light on charge did I remember the excellent app Dive+ which provides a one click solution to restore

the colour and the result shown below is straight from the app. It's probably a bit too colourful for most tastes but there is a slider adjustment to wind the colour back a notch or two to suit individual preferences.

This clever app can also restore colour from video clips too :-)

As an unashamed supplier of Magic Filters I obviously advocate them as the best way to restore colour whilst underwater but if you ever find yourself in a similar situation always remember this back up app which can save the day.

**Peter Rowlands**  
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<http://dive.plus>

**Do you have a shot  
which has a story within a story?  
If so e mail it with up to 500 words of text  
and yours could be the next Parting Shot.**

[peter@uwpmag.com](mailto:peter@uwpmag.com)

