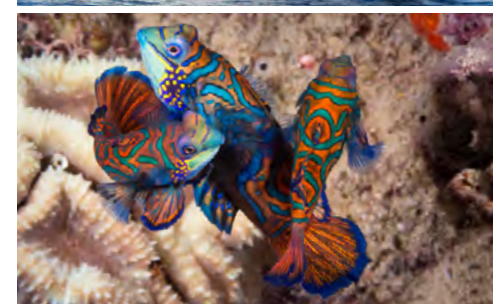






An experience without equal

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



"The reef systems here are some of the most pristine I have seen anywhere in my dive travels around the globe, and Wakatobi resort and liveaboard are second to none. The diversity of species here is brilliant if you love photography." ~ Simon Bowen



www.wakatobi.com

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A web magazine UwP111 Nov/Dec 2019

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Underwater Photography 2001 - 2019

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Publisher/Editor Peter Rowlands

www.pr-productions.co.uk

peter@uwpmag.com

www.uwpmag.com

Top heavy and needs to change

Welcome to another bumper issue of UwP but I'm acutely aware that it is "top heavy" and by that I mean that most of the reviews are of top end equipment both in terms of specification and price.

As a result I am reaching out to those readers who use less expensive systems and they don't even have to be current, to do reviews, or even mini reviews for UwP readers. My suspicion is that the a big majority of UwP readers are not full frame users and probably not even 4/3rds so that leaves an awful lot not being catered for.

The moulded polycarbonate housings for Sony, Canon and Olympus, as an example, are still available, are excellent value and the cameras they house are more than capable of excellent results so please get in touch with your suggestions and we can take it from there.

My first digital camera was an Olympus 40z in their plastic housing which together with the Inon WL165 wide angle lens produced images, admittedly taken in the clear Red Sea, which were quite ground breaking at the time and it was as easy as point and shoot.

I look forward to working with you.



Editorial

Close encounters

Mark Harris' excellent mini article about his encounter with a wild dolphin is an interesting read and could be the start of a new section in future issues of UwP.

Just as the Parting Shot page is aimed at a single image with a story so too could be 'Close encounters' but with a few more images to make a mini article but not enough and enough variety to justify a full blown article.

It could be the wrasse that followed you for the whole dive, the seal that took a shine to your fins or, if you had the cool headedness to take images of the titan triggerfish that was making a torpedo like beeline for your wedding tackle to defend its nest. You get the drift by now, I'm sure.

It only needs two or three images and a few hundred words but it would make for great reading and visual encouragement.

I'm pretty sure we've all had those special moments and taken a few snaps so it would be great to feature them here and, once again, I look forward to working with you.

YouTube

You don't need me to tell you what a phenomenon YouTube is. It's the go-to site for anything from entertainment to instructions to reviews and recommendations. It's also the perfect platform for you to display your talents be it a simple underwater video from a trip or an edited production with soundtrack and effects.

What may not be immediately obvious is that, just with terrestrial TV, full HD is often the highest quality and that means you don't need to have expensive equipment to produce videos. In fact full HD cameras nowadays, even comparatively inexpensive ones, can shoot at higher frame rates which produce gorgeously smooth, professional looking footage.

If you're a good story teller you could build up a following of subscribers which could well attract sponsors and thus become a life changing possibility and all of this without needing to 'invest' in the latest 4k monster.

Mobile phones

We all carry a camera with us in our mobile phones and as the manufacturers unveil their latest top of the line models it is often the photographic performance which is the must have feature.

The latest such feature is Night Mode which could obviously be very useful underwater in low light conditions with available light.

On the iPhone 11 for example when Night mode is engaged, the camera analyzes the available amount of light and then it chooses the number of frames needed to create a suitable image. The camera then takes a series of images for a set amount of time depending on the amount of available light.

The images are taken at different exposures, some with longer exposures and some with shorter exposures and this lets the iPhone pull out the best parts of the scene, highlighting what's important.

I look forward to seeing the images that this feature produces, especially in UK and temperate waters where light levels can be challenging.

Peter Rowlands
peter@uwpmag.com

News, Travel & Events



Underwater Photographer of the Year Competition 2020 is now open for entries

Entrants have until Friday 3rd January 2020 23:59 (GMT) to enter their images into the world's premier underwater photography competition.

Judging takes place on 4th - 6th January 2020 and every single image entered will be seen at least twice by our panel of judges.

British Waters 'Living Together'

sponsored by the Crown Estate
www.thecrownestate.co.uk

This new category from 2019 continues and is once again sponsored by The Crown Estate.

The Crown Estate play a

role in managing activities on the seabed around England, Wales and Northern Ireland, and wanted to create a category that showcases the co-existence of nature and human activities on the UK seabed.

We are looking for strong, striking images (both macro and wide angle) that show the value of natural and/or man-made habitats in British Seas, particularly offshore renewables. Open to all.

Marine Conservation Photographer of the Year

Marine Conservation
Photographer of the Year continues:

it is open to both underwater and "above water" photos. Open to all photographers (even those who are not underwater photographers).

This category has a separate entry system. This is a single image category and photographers may enter up to 5 images. Photos can be taken underwater or above the water but must highlight a marine conservation story (both positive and negative stories are eligible). Freshwater themed images are not allowed.

The winning photographer will be named Marine Conservation Photographer of the Year 2020, and will be promoted alongside the other UPY winners.

The Categories once again are:

1. Wide Angle
2. Macro
3. Wrecks
4. Behaviour
5. Portrait
6. Black & White
7. Compact
8. Up & Coming
9. British Waters Wide Angle
10. British Waters Macro
11. British Waters 'Living Together'
12. British Waters Compact

Arthur Kingdon 2019 British Waters Macro Winner



"I was delighted to win this fantastic prize and I very much look forward to using it. There have been numerous occasions when I have wished for the ability to switch from macro to wide angle, but without sacrificing image quality, and the MWL1 provides that. A big 'thank you' from me to Nauticam for their generous sponsorship."

www.underwaterphotographeroftheyear.com

Gregory Sweeney Photography Adventures



Underwater Safari in Baja, Mexico

A Striped Marlin & Baitball Frenzy with Shark Diving and Mobula Rays

Magalena Bay in Port San Carlos, La Paz, and Cabo Pulmo

www.GregorySweeney.com November 2020

Gregory Sweeney Photography Adventures



Tiger Shark Live Aboard Dive Trip

12 -18 October 2019

www.TigerSharkDive.com Feb & March 2020 Dates

Tiger Beach , Bahamas

Infiniti live-aboard

The internationally acclaimed Infiniti , India's pioneering scuba diving live-aboard after operating amazing journeys in the pristine Andaman Islands has now moved to the Philippines.



The Infiniti live-aboard was custom designed & specially constructed by divers for divers in Thailand [2013].

The Infiniti is a 39 meter (133 ft) all steel vessel with four decks and is classed & certified by RINA, Italy for unrestricted navigation in the open sea.

All inside areas are air conditioned.

Newly renovated, spacious guest rooms all with en-suite bathrooms, flat screen TVs, safety boxes, picture windows and plenty storage have been designed to maximize guest comfort and to make you feel right at home during your stay.

Delicious & nutritious meals and refreshments are prepared in the onboard kitchen & served buffet style in the large dining room. Fresh fruits , snacks, alcoholic and non alcoholic beverages (no extra charge) available.

There are multiple relaxation lounges including a large, beautiful

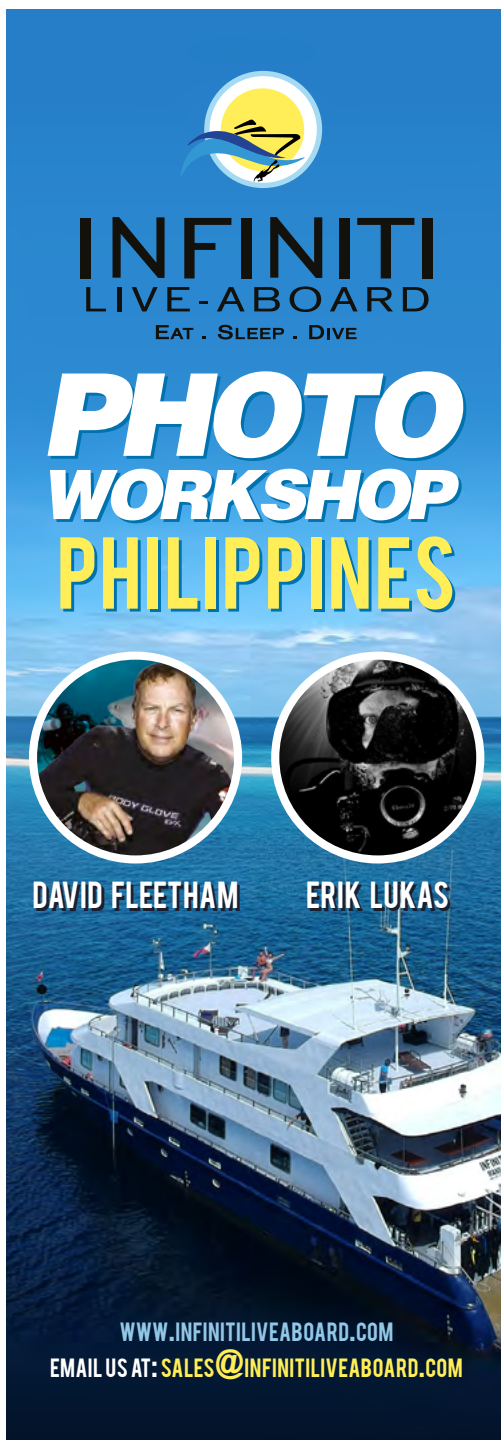
indoor lounge well stocked with entertainment, a huge sundeck with cushioned loungers and hammocks & an outdoor lounge with a self serve beverage bar!

A brand new camera room with several charging stations, and plenty of counterspace, shelves and drawers for camera equipment and your photography requirements.

The Infiniti is equipped with all facilities for scuba diving with a large shaded dive deck, personal diving stations, an expert dive team, a Nuvair Nitrox Membrane, Bauer compressors, top of the line scuba equipment, & two 5-meter RIBs (tenders).

We at the Infiniti strive to provide you with memorable diving and an extraordinary life experience.

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



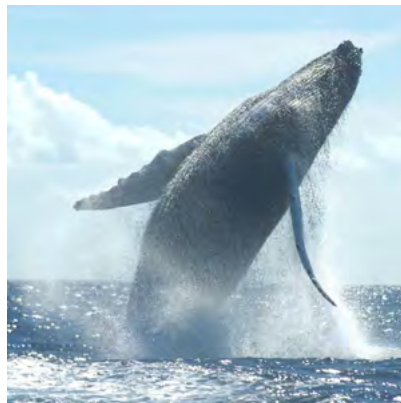
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EAT • SLEEP • DIVE

PHOTO WORKSHOP PHILIPPINES

DAVID FLEETHAM **ERIK LUKAS**

WWW.INFINITILIVEABOARD.COM
EMAIL US AT: SALES@INFINITILIVEABOARD.COM

Silver Bank Trip 2020 March 28 - April 4, 2020



Join us and the Turks & Caicos Aggressor II to snorkel with Humpback Whales. See them spin and play, and sense the power and grace of some of the most intelligent mammals on earth. It's a life-changing experience!

Designated as a Marine Sanctuary, the Silver Bank provides a safe wintering haven for the entire North Atlantic Humpback Whale population who gather here from January through April by the thousands to court, mate, calve, and rear their young.

This sanctuary, also known as the "Sanctuary for the Marine Mammals of the Dominican Republic" is one of three places in the world where humans can swim and snorkel among the whales.

www.bluewaterphotostore.com

Lembeh Photo Workshop with Doug Sloss, Mike Veitch and Luca Vaime July 25- August 1 2020

For the 8th consecutive year, Doug Sloss, Mike Veitch and Luca Vaime are teaming up to announce another awesome workshop at the best photo resort in Lembeh Strait, NAD Lembeh.

The package includes seven days of incredible diving, 2:1 guest to guide ratio, one-on-one underwater instruction to help improve your shooting techniques and informative lectures throughout the day to hone your photo skills and post processing prowess. A limited number of participants gives you plenty of personalized attention above and underwater, as our instructors do not take their cameras underwater.

Our workshops are for everyone! Each year we have a mix of brand new photographers and people who have been shooting for years. With three coaches on hand, we are able to customize the learning experience for everyone. We work individually with



LEMBEH STRAIT
PHOTO WORKSHOP 2020
WITH THE UNDERWATER TRIBE AND DOUG SLOSS
BACK FOR THE 8TH CONSECUTIVE YEAR!

25 JULY - 1 AUGUST AT
NAD LEMBEH RESORT

- 7 nights / 17 dives
- 2:1 Guest to Guide ratio
- One-on-one underwater instruction

Looking for more diving?
Join us for an additional Photo Fun Week with no official instruction but a whole lot of fun and diving starting on July 20th.
We have packages available from the 7 night workshop up to a 12 night/32 dive package

Prices start at \$ 1,875 per person based on double/twin share poolside room. Seaview bungalows and single accommodation available as well as trip extensions.

Package includes:

- 7 nights/17 dives
- 17 Nitrox tanks
- Return airport transfers
- 3 meals a day, coffee, tea, snacks
- In-water tuition, photo tuition and digital copies of presentations

For more information go to www.underwatertribe.com

Contact Us Today: info@underwatertribe.com
info@underwaterlightroom.com

each participant underwater in order to master new skills. The friendly and relaxed atmosphere throughout the week is full of laughter and new friends. We have many repeat guests who return to join us in Lembeh.

NAD is one of the top photography resorts in the world. With incredible guides who understand photography, a large camera room, and a maximum of 2 guests per dive guide, NAD is truly a photographers resort.

www.underwaterlightroom.com

www.uwpmag.com



www.bunakenoasis.com
info@bunakenoasis.com



Set in the world-famous Bunaken National Marine Park, Bunaken Oasis offers a truly luxurious diving experience.

Exceptional air-conditioned cottages with sea-view balconies. Chill-out bar, and gourmet panoramic restaurant.
 Custom-built spa with qualified therapists.

Panoramic freshwater infinity pool

From water-makers, with UV treatment, to black water treatment, Oasis was designed to minimise any impact on the environment.

5* PADI-affiliated dive centre, designed for photographers, and dive boats that are second to none, with freshwater deck showers, toilets and, above all, space.



Sealife Collection is a collaborative internet project which collects, organizes and shares photos and videos of all the underwater species of the world.

It is a project set up by Alive Fundació in partnership with the World Register of Marine Species (WoRMS).

Alive Fundació is a private foundation whose aim is to promote and disseminate knowledge and awareness of the environmental sciences in order to contribute to the conservation of the natural world for future generations. To achieve this vision Alive Fundació is developing the Sealife Collection, uniting the underwater photography community

and the wider scientific world, exploiting the synergies generated by collaboration. Alive Fundació is an official non-profit organization under supervision of the Catalan government, which ensures its future not-for-profit status and management.

WoRMS is an organization based in the UK, formed by a highly qualified and methodical group of taxonomists that keeps the only up-to-date and reliable database of marine species.

The Sealife Collection is a not-for-profit project, and does not sell any form of merchandise or image rights. The project is funded entirely by private donation.

<https://sealifecollection.org/about>

www.uwpmag.com



Dive Guangzhou 2020

🕒 May 10th-12th, 2020

📍 China Import and Export Fair Complex

2019 Ocean Art Underwater Photo Competition

The Underwater Photography Guide is proud to announce that it is accepting entries for the 8th annual Ocean Art Underwater Photo Competition.

Ocean Art is one of the most prestigious underwater photo competitions in the world. A long list of prizes valued at over \$80,000 also makes it one of the best endowed, attracting amateur to pro photographers across the globe.

This year we are making some very exciting category changes! Due to recent advances in mirrorless technology, we have decided to merge the mirrorless and “open” categories, while expanding our novice categories and adding two new specialty categories - Blackwater and Underwater Conservation.

Ocean Art 2019 consists of 16 categories total, including Novice Wide-Angle, Novice Macro, and 3 compact camera categories, giving underwater photographers of all levels a chance to win a great prize. Unique categories include Supermacro, Cold/Temperate Water, Blackwater, Underwater Conservation, and



Nudibranchs, while the more traditional categories include Wide-Angle, Macro, Marine Life Portraits and Marine Life Behavior. The Underwater Art category encourages creativity in post-processing.

Winners from each category will be able to rank the prizes they would like to receive, making it more likely that each winner will receive a prize they desire.

Judges include world-renowned underwater photographers Tony Wu, Martin Edge, Marty Snyderman and Scott Gietler.

Photos must be submitted before the deadline of 23:59PM PST on November 30, 2019.

We look forward to your participation.

✉ grand.fa@grahw.com

☎ (+86)188 9869 2801

www.uwphotographyguide.com/ocean-art

www.uwpmag.com

FIJI 2020 with Diving4images

April 4th to 14th 2020



Only one last cabin available!

The best dedicated dive boat in Fiji that's been operating the longest, has the most extensive knowledge and has always been the most reliable at offering a superb mixed itinerary of diving.

Fiji has always been a hot destination for it's lush soft corals, big fish and we have one double cabin available.

Price

US\$5973 per person twin share room.

Included in price

Including tax, transfer from Nadi airport (NAN) and hotels within the Nadi area to the boat and back to Nadi after the charter, all meals and

accommodation onboard, all non-alcoholic beverages, complimentary wine served with dinner, tanks, NITROX (will be included on this trip, weights and unlimited diving. We will also include trekking and village tour to experience the Fiji culture.

Excluded in price

Gratuities, alcoholic beverages (other than the house wine served at dinner), gear or camera rentals, and sundry personal purchases from the ship's store.

www.diving4images.com

Ikelite Ambassador Brandi Mueller



Ambassador Brandi Mueller has a hard time keeping her feet on the ground, but in a good way. She has been constantly indulging her travel obsession over her 16 years as a scuba instructor and underwater photographer, visiting and working in over 65 countries and counting.

Brandi also caught the wreck diving bug which has resulted in a regular gig captaining the Truk Odyssey and literally writing the book on the sunken WWII warbirds of Kwajalein Atoll.

She also manages to head up the annual Roatan Photo Fest, run photo workshop expeditions, write for

numerous dive publications, and relax in the occasional hammock.

Brandi has used Nikon cameras and lenses in Ikelite housings from the beginning. Starting with a D90 and working her way through pretty much each and every new release. Currently she is shooting a Nikon D850 and D500 in Ikelite's dry lock housing with dual Ikelite DS161 strobes. Her lens collection includes a 16-35mm, 10.5mm fisheye, 105mm, and 60mm. For super macro she loves the ReefNet Subsea diopters and she also occasionally experiments with fluorescent lights and filters.

Try to keep up with her travels on Instagram.

https://www.instagram.com/brandi_underwater/



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- Guided by Marine Biologists
- Scientific Research Programme

Sea Shepherd's Operation Virus Hunter



Operation Virus Hunter is Sea Shepherd's science-based campaign aimed at revealing the impacts of open net-pen salmon farms on wild salmon and marine ecology in the uncaded waters of British Columbia, Canada.

The RV Martin Sheen supports independent and university-based scientists studying the viruses, pathogens and parasites spilling from these farms and the correlated decline of wild salmon populations. This campaign simultaneously recognizes the leadership and voices of the First Nations peoples of this area, offering the boat as a tool for research, activism and media.

By eating farmed salmon, we hurt ourselves, other animals, and the ocean.

Salmon farms are not contained systems, which means they get all their water "free" from the ocean and all waste generated by the farmed fish and the farm itself runs directly into the surrounding marine environment.

This "free" water and waste disposal means these farms can claim "low environmental" running costs, but at an unthinkable cost to the health and diversity of the whole marine environment.

www.seashepherd.org

www.uwpmag.com

Sea Shepherd Operation Jairo 5

Sea Shepherd Conservation Society is proud to announce the return of Operation Jairo-Nicaragua. returned to Padre Ramos, Nicaragua. They will spend the next three months protecting nesting sea turtles and their eggs from poachers.

Operation Jairo is named after Jairo Mora Sandoval, a Costa Rican turtle defender who was brutally murdered on May 31, 2013, while attempting to protect leatherback turtle nests. Our work continues his legacy, as we continue to defend sea turtles around the world.

This is our second campaign in Nicaragua. Last fall our crew worked along-side Sea Turtle Rescue, a local organization, for three months rescuing Olive Ridley sea turtles. Sea Shepherd relocated 3,906 eggs to a local hatchery where the hatchlings safely incubated until their release date, resulting in thousands of lives saved.

According to the IUCN Red List of threatened species, six of the seven species of sea turtles are listed as threatened or endangered. Sea turtles are threatened by human actions and lifestyles including ocean pollution, global warming, entanglement in fishing gear, coastal development, consumption, and illegal trade.

Operation Jairo 5 will focus on



multiple species including hawksbill, olive ridley, and green sea turtles. Each night, our crew of ten volunteers will conduct nightly patrols looking for nesting mothers, as we continue to relocate nests to the hatchery where they can incubate safely. We have a biologist on staff from the Sea Shepherd Science department that will be assisting in the hatchery and on patrols to ensure the highest level of care for the sea turtles.

www.seashepherd.org



Issue 111/12



DIVERS

a resort where diving is passion



DIVE RESORT

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INDONESIAN SEAS

www.alor-divers.com

FIRST LOOK

SONY ALPHA a7R IV

[READ MORE](#)



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New Products

Aquatica housing for the Sony A7rIV available Dec. 2019



Aquatica, one of the pioneers in the underwater photo industry will soon be shipping their underwater housing designed specifically for the Sony A7rIV 61.2MP full frame mirrorless camera. Earning a Gold Award and a high score or 91% from the internet's leading camera review site, DPReview.com, the Sony A7rIV is sure to be a powerhouse for underwater digital imaging in both stills and video use.

The Aquatica A7rIV housing is one of the smallest yet most ergonomic housings on the market. The housing's design is centered on the user being able to concentrate more in the creation of their image rather than how to use the system. There will be much less figuring out of where controls are.

All the controls are set to be self centering and are spring loaded. The user only needs to set the camera on the tray and slide it into the housing, no alignment needed.

Our designers utilized a new method to access the new joystick (crucial for selecting any one of the 567 AF points on the sensor). All of the buttons and dials on the housing are easily accessed without having to let go of the handles. Not that you'd want to as our grips are one of the most comfortable in the industry and they are included in the purchase price of your housing! Since the camera is easily user customizable and the buttons mapped for any almost any purpose, everything is literally at the user's finger (or in this case, thumb) tips.

Of significant note, Back Button AF is fully supported with the housing. The AF-On control (6) is easily reached by the user's right thumb while the shutter release (2) is simultaneously reached with the user's forefinger. This lets the user continually track the subject in full auto focus and then fire the camera at the peak moment.

Right below the AF-On button is the Video Record button, this ergonomic placement is so the user will have no problems in accessing the still or video capture button.

What was previously an optional accessory, we are now including our field proven Surveyor Vacuum System (Pump, Valve and Sensor) as standard.

www.aquatica.ca

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"The Aquatica monitor expands my creativity, giving me clear vision to shoot a variety of low angles and imaginative shots that are otherwise done blind." - Jill Heinerth

Deep down you want Aquatica
www.aquatica.ca



AZ6/7 Housing for the Nikon Z6 & Z7 Aquatica A5HD monitor

AZ6/7 Housing

- ✳️ Stainless steel self-centering controls, just close and shoot!
- ✳️ Supports new Z-mount lenses and FTZ adapter
- ✳️ Ergonomic controls
- ✳️ Full access to camera controls
- ✳️ Machined 6061 T6 aluminum

Retail: \$2,995 USD

Includes surveyor valve & pump

A5HD Monitor

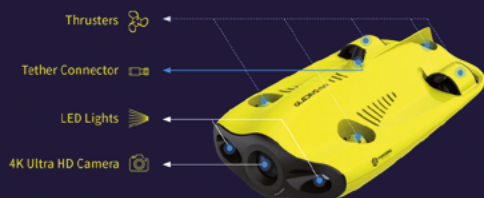
- ✳️ Full HD 1920x1080
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- ✳️ Accepts 4K HDMI Input
- ✳️ Up to 4 hours running time*
- ✳️ Peaking focus & false color tools
- ✳️ Available in black or red

Retail: \$2,195 USD

**Battery and charger not included*

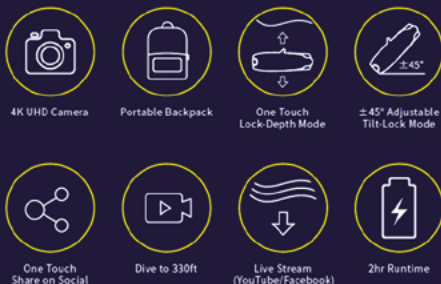
WE ARE UNDERWATER PHOTOGRAPHERS JUST LIKE YOU!

4K UNDERWATER DRONE WITH 100M CABLE



GLADIUS MINI

is the first five thruster minisize underwater drone in the world. Equipped with a 4K ultra HD camera, it can dive up to 330 feet deep and is perfect for underwater photography and exploring. The submarine-like five thruster design ensures stable underwater footage. Any underwater exciting moment can be recorded and ONE-STEP shared to your families and friends. With a backpack, you can start your trip right away. Whatever adventure you go on with friends or family, the GLADIUS MINI is a highly entertaining and unique underwater drone for everyone to enjoy.



Ikelite Sony Alpha a7R IV housing



The Sony Alpha a7R IV is a pleasure to shoot with 5-axis image stabilization and a powerful hybrid autofocus system. Images are captured using a brand new 61 megapixel full frame BSI-CMOS sensor. Sony advertises the camera as having 15 stops of dynamic range for vivid color gradations and detailed image capture. For videographers, the a7R IV is capable of oversampled 4K/30p video with real-time eye AF.

Sony gave the IV a much deeper grip and redesigned and repositioned the controls for better topside ergonomics. These changes prevent the IV from operating in housings made for earlier models.

The camera's CIPA battery life is 670 shots using the LCD or 530 using the electronic viewfinder.

This housing features our robust Dry Lock (DL) port system. "Dry Lock" refers to the placement of the o-ring on the outside of the port

mount. This improves visibility and reduces the chances of water dropping onto your precious camera sensor. DL ports are the lightest on the market, yet robust and capable of standing up to rough surf. Attachment is quick and secure. A system of extensions can accommodate a huge variety of lenses with ease.

A vacuum valve is installed on the side of the housing. It is designed to be low profile to avoid interference with controls.

Most popular zoom lenses and select lens focus rings can be engaged using simple gearing that puts adjustment right at your fingertips. A large, soft-touch knob on the side of the housing makes fine tuned adjustments a breeze. Zoom and focus gears differ depending on which lens you are using. Zoom gears sold separately.

www.ikelite.com



Nauticam NA-D850 for Nikon D850



"The Next Frontier"

Proving that speed and resolution can indeed coexist, the Nikon D850 is a multimedia DSLR that brings together robust stills capabilities along with apt movie and time-lapse recording. Revolving around a newly designed 45.7MP BSI CMOS sensor and proven EXPEED 5 image processor, the D850 is clearly distinguished by its high resolution for recording detailed imagery. Nauticam is the market leader in build quality, ergonomics, and reliability. Built on a foundation of innovative product design and modern manufacturing technology, NA-D850 is the ultimate accessory for the exciting new Nikon D850 camera.

www.reefphoto.com

BACKSCATTER OLYMPUS TG-6 PACKAGES



PACKAGES FOR ALL SKILL LEVELS

Nauticam NA-A7RIV housing for Sony Alpha a7R IV

The Sony a7R IV is the company's fourth generation, high-resolution full-frame mirrorless camera. The 61.0-megapixel full-frame Exmor R CMOS sensor combined with BIONZ X imaging engine delivers unprecedented resolution, fine gradation, and low noise. Relative to previous generations, it promises more robust build quality, refined controls, the company's latest autofocus.

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-A7RIV continues this tradition. Essential camera parameter changes are made from the handles, without awkward reaches.

The NA-A7RIV housing inherits the core design elements from the Nauticam pro DSLR range, and bundles them in a more compact package. A patented port locking lever allows lens changes to be made



in seconds. Opening the housing for quick battery and media changes is fast and easy with the locking housing latches. All aspects of the system are a seamless extension of the camera.

New features of the NA-A7RIV include a M24 accessory port for HDMI 2.0 output connection, two more accessory ports on the rear housing: M14 x1, M16 x1 and increased zoom/focus gear ratio on the housing, which means faster and more precise control of the lens for video.

There is also a new N100 to N120 35.5mm Port Adaptor II, (37305) featuring a gear box, for faster zoom and more focus control.

www.nauticam.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-A7RIV continues this tradition.

www.reefphoto.com

NA-A7RIV

Sony A7RIV Camera



For more information about set ups and port chart, please visit our website_ www.nauticam.com

Nauticam
innovation underwater

FIX Under Warmer vest



Japanese manufacturer Fisheye have announced their FIX Under Warmer Vest for use under wet and drysuits.

There are three models all rated to 100 metres - SD, DX and PRO. The SD is for wetsuits only with a wired controller, the DX has a back heating element while the Pro has elements front and back and both are wirelessly controlled.

There are two battery versions available - 2.6ah (Type 2600) and 5.2ah (Type 5200). All three models have three power settings - Low, Medium and High providing 45, 50 and 55°C respectively and the Type 2600 battery, for example, gives 5.2, 3.2 and 2.6 hours respectively at those settings. Times for the Type 5200 battery are twice as long.

The PRO version with its two

heated panels can only be used with Type 5200 batteries.

Tropical divers may question the need for such garments but to temperate and cold water underwater photographers these FIX Under Warmers will mean greatly increased comfort as well as extending the diving season to throughout the year.

A warm body allows you to hold the camera still for longer exposures so these FIX Under Warmers can be thought of as an extra form of image stabilisation!

The prices start at \$399 and UwP is doing a review in a forthcoming issue after diving with one in the UK over the winter months when the temperature dips down to around 8°C.

www.fisheye-jp.com

www.uwpmag.com

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Nauticam NA-A7RIV housing
for Sony A7R IV camera



Nauticam NA-R housing
for Canon EOS R camera



Nauticam NA-Z7V housing
for Nikon Z7 and Z6 cameras



Nauticam NA-G7XIII PRO Package
for the Canon G7X III compact camera

WE ARE UNDERWATER PHOTOGRAPHERS... JUST LIKE YOU.

Anchor Series 189 “All Singing All Dancing”

All in one dive light for Photographers, Cave Divers and Divers who want the best.

New Features

Wide Warm (CRI 85) and Separate Wide-Cool (CRI 75 /) Functions. Wide Warm is aimed at creative underwater photographers.

8 Degree Spot – An even more intense spot than our 10 degree spot. Aimed at cave divers / search and recovery for signalling and all divers for looking under rocks or wrecks during the day.

The ability to optionally run both Wide and Spot together at the same time.

As there are a large number of modes, we have implemented a memory function where the light turns back on at the same feature that it was turned off in.

UV Wavelength of 420nm increased from 385nm. This ensures both Hard and Soft Corals can be illuminated.

Goodman / Helmet mount – enables divers to connect our goodman handle or cave helmets direct to the light head itself making it more balanced and easy to use despite the larger head size.



All Series (modular) Anchor Dive Ability to turn off the battery status indicator switch to enable photographers to take long run time shots without interference from the blue switch.

Not strictly a new feature but the light head is modular and works with existing canisters and video lights.

Strobe Spot and strobe wide – Strobe wide can be used as a shot line marker and strobe spot can be used for attracting attention from large distances away.

€695.00 – €770.00

<https://anchordivelights.com>

www.uwpmag.com

GoPro Hero8 Black



The most versatile, unshakeable HERO camera ever. A streamlined design makes it more pocket-able, and swapping mounts takes just seconds, thanks to built-in-folding fingers. It's small, rugged design is waterproof to 10m, making it the perfect action camera. Capable of shooting 12MP still photos with RAW Photo Capture.

HyperSmooth 2.0

A radical enhancement to HyperSmooth, HyperSmooth 2.0 now has multiple levels of stabilization—including Boost—and game-changing in-app horizon leveling.

TimeWarp 2.0

Get that surreal TimeWarp effect you love—now with automatic speed selection. Or just tap to speed it up or slow it down.

SuperPhoto + Improved HDR

Crank up the contrast, kill the blur and shred. The revamped algorithm delivers awesome action shots with detail you never thought possible.



LiveBurst

LiveBurst mode captures 1.5 seconds before and after you hit the shutter—so you can pick the perfect shot from 90 still images. Or, share a 3-second 4K video clip.

Night Lapse Video

Harness that nighttime magic in 4K, 2.7K, 1440p or 1080p and watch the scene come alive with epic detail.

www.oceanleisurecameras.com

Nauticam NA-E2 housing for Z cam E2

The NA-E2 sets the standard as 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-E2 uses the N85 port system, shared with Nauticam's other MFT platform cameras which allows for easy transition to the NA-E2 from other MFT Nauticam systems. The N85 system also provides access to Nauticam's line of professional premium optics such as the WWL-1 and CMC-1/2.

A dedicated record lever is located within easy reach of the adjustable ergonomic handles. 1/4"-20 size mounting threads are located on the top and bottom of the housing for easy mounting of cinema accessories.

The E2 supports Sony NP-F series batteries and the NA-E2 matches this compatibility up to and including the FP-970.

As with the NA-BMPCC2, the NA-E2 allows for the internal



mounting of a Samsung T-5 SSD drive making the transition from capture to edit seamless.

The Z Cam E2 requires an external monitor and Nauticam produces several options for both SmallHD and Atomos monitors. The NA-E2 features both an M28 and two M-16 bulkheads supporting both HDMI 2.0 (M28) and HDMI 1.4 (M16) connections.

www.nauticam.com

NIKON
Z 7
FULL FRAME
MIRRORLESS



BACKSCATTER

UNDERWATER
CAMERA REVIEW

Chasing Dory

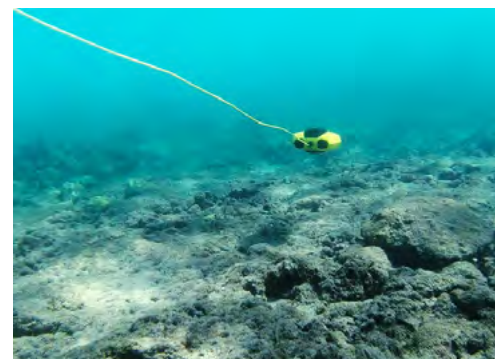


Dory Invites You to Explore The Underwater World

Chasing suggests that you use Dory in calm waters. Stay away from swift currents and waters with heavy surges. Dory's Wi-Fi Buoy connects wirelessly to your mobile device or tablet for up to 50 ft away. And with a 50 ft tether between drone and the buoy, you have plenty of freedom to explore.

Smaller than a standard sheet of paper, Dory can fit into a backpack and be easily transported wherever you want to use it. Dory is 56% lighter and 65% smaller than our previous prosumer drone Gladius Mini

Point Dory down or up to capture amazing angles of underwater



life. This feature guarantees the best angles you can get underwater.

The GPS Wi-Fi Buoy provides precise readings, so you always know your location. With our amazing Anti-lost warning feature, you will never lose Dory

With Depth Lock, you can maintain underwater stability at the precise depth you choose.

www.uwcamerastore.com/chasing-dory-underwater-drone

EUROPE'S NR. 1
UNDERWATER CAMERA STORE



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HOUSING FOR GOPRO HERO 8 BLACK

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HERO 8 VERSION



THE T-HOUSING IS DESIGNED TO USE YOUR GOPRO CAMERA WITH THE FRONT LENS INSTALLED. THIS GIVES YOU DOUBLE THE PROTECTION AGAINST ANY WATER DAMAGE.



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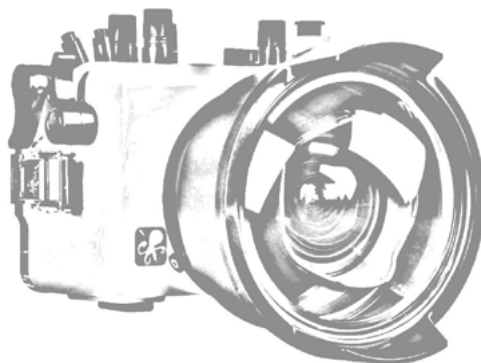
SONY RX100VI



UNDERWATER CAMERA REVIEW



Ikelite Housing for Olympus OM-D E-M5 Mark III



We are planning to offer a housing for this new compact mirrorless micro four-thirds camera from Olympus. We do not yet have enough information to determine whether it will work in an existing housing, or when a housing for it may be available. We expect to have more information in December 2019.

If you would like to receive an email when we make an announcement about this camera, please sign up for notifications below.

www.ikelite.com

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SEA&SEA STROBES
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BLACKMAGIC BMPCCII 4K / 6K

Nauticam NA-BMPCCII goes beyond just housing the Pocket Cinema Camera 4K & 6K. It includes additional batteries capability, portable SSD slot and the use of external monitors or recorders.

For more information, please visit our website_

www.nauticam.com



Nauticam
innovation underwater

Scubalamp(SUPE)



Scubalamp(SUPE) is a specialist in designing and manufacturing scuba underwater photography equipment.

New models were developed based on the feedback from professional photographer around the world. Being committed to manufacturing high-end, precise, safe and functional Underwater Photography Equipment with understanding the actual requirements in detail to ensure safety & fun while diving, and ability to provide the lights needed for taking outstanding pictures and videos.

Scubalamp models are tested in a hydraulic laboratory, as well as by a dedicated deep sea diving team. All Scubalamp models and products have been rigorously tested and confirmed reliable up to 100 meters before can



be released to market.

Our mission is to be the most trusted brand in the field of underwater photography equipment.

www.scubalamp.com

T-Housing for Hero8 Black



The T-HOUSING is made of a high quality aluminum alloy for maximum stability. The buttons are made of A4 stainless steel. All housing parts are individually machined from one single block of aluminum using state-of-the-art CNC machines. The assembly and subsequent testing of each housing is carried out under the strictest quality requirements in Germany.

Production starts very soon and features 250m tested, a Macro, magenta and redfilter similar to the DJI case... with a strong magnet for secure storage

The price is expected to be 250 EUR

OPTIMAL PROTECTION

The extremely sturdy housing protects your valuable camera from water and the hardest blows. The replaceable zinc anode protects your case in case of damage.

OUTSTANDING FUNCTION

Due to the optimal heat dissipation of the aluminum housing and a thermal bridge from the semiconductor industry to the camera, this is safe from fogging on the front lens - clear view without desiccant! Integrated in the front glass are neodymium magnets, which ensure easy and flexible filter assembly.

www.uwcamerastore.com

www.uwpmag.com

EUROPE'S NR. 1
UNDERWATER CAMERA STORE



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WITH SNOOT AND COLORED LENSES

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THE SMART FOCUS 1000 LIGHT HAS AN OPTICAL CABLE CONNECTION FOR 100% RELIABLE AUTO-OFF FUNCTIONALITY EVEN WITH STRONG AMBIENT LIGHT OR WHEN YOU WORK WITH SNOOTS ON YOUR STROBES.



WE ARE UNDERWATER PHOTOGRAPHERS... JUST LIKE YOU.



Issue 111/24

Dome Port for Olympus FCON-T02 Lens and Adapter Kit



The Olympus Tough TG-series cameras already shoot out of this world super macro, but haven't really been ideal for ultra wide angle in the past. This special dome port is designed for use with the Olympus Tough TG-6 with the special Olympus FCON-T02 Fisheye Converter Lens and CLA-T01 Adapter attached.

The Circular Fisheye Converter provides a circular fisheye perspective when the camera is set to 24mm, and diagonal fisheye capabilities when the camera is zoomed. The resulting image quality is spectacular-comparable to a Canon or Nikon 8-15mm Fisheye lens on a full frame DSLR body. It's the perfect combination for ultra wide angle, close focus wide angle, and over-under underwater photography.

This dome port cannot be removed and replaced underwater.



The dome port may be used with or without lens attached. Without the lens attached some reflections may be present when shooting towards a bright light source (like the sun).

Compatibility

Ikelite Housing for Olympus Tough TG-5, TG-6 # 6233.06 / 6233.07 / 6233.08 / 6233.09 / 6233.11

This port is not compatible with the Olympus FCON-T01 lens.

www.ikelite.com



Nauticam NA-RX100VII for Sony DSC-RX100 VII



"The Pocket A9"

The Sony RX100 VII is the newest iteration of the popular compact rx100 series. It has a new stacked CMOS sensor created with the idea of faster, more accurate autofocus and high speed photographing without any blackout that, before now, was only offered on their high-end mirrorless cameras.

The NA-RX100VII has an interchangeable m50 port system that provides the ability to utilize the RX100 VII's full 24-200mm zoom range with the standard port and various m67 accessories with the N50 short port.

www.reefphoto.com

www.uwpmag.com



Nauticam NA-RX100VI for Sony DSC-RX100 VI



"Close in on the Action"

With the sixth iteration of the RX100 series, Sony has continued to add features to this workhorse compact camera and Nauticam is also adapting with the new NA-RX100VI housing. The

NA-RX100VI housing provides the ergonomics, build quality, and innovative feature set our customers demand in a tiny, travel friendly package with the addition of an interchangeable port system to accommodate the longer zoom lens of the Mark VI. Nauticam designs are always improving, and new features are integrated into each new release. The ergonomic experience has been tailored for a photographer's right hand on the side of the housing, placing key controls literally at the users finger tips.

www.reefphoto.com

Ikelite 200DL housing for Canon EOS 90D

The Canon EOS 90D replaces the EOS 80D at the top of Canon's APS-C DSLR camera line. Released in late 2019, it features an all-new 32.5 megapixel sensor, an updated metering system, and quick Dual Pixel AF.

The EOS 90D is capable of capturing 4K video using either the full width of its sensor, or using a cropped portion for greater detail. A CIPA battery life rating of 1300 shots per charge is impressive for a camera of this size.

Movement of camera controls and lens placement prevent this model from operating in housings built for prior generation Canon cameras.

200DL Underwater Housing
Features

- 200ft (60m) depth rating
- Extendable shutter release lever
- Extendable AF-ON thumb lever for back button focus

Interchangeable Dry Lock (DL) port system including flat ports with 67mm threads and ultra-light 8" dome ports

- Corrosion-proof ABS-PC construction is lighter than aluminum
- Clear view back with laser



engraved control markings

- Ergonomic, field serviceable direct-drive controls with premium soft-touch knobs

- Manual flash hotshoe with ICS-5 bulkhead

- Optional CT3K TTL converter for fast and accurate strobe exposure (coming soon)

- Built-in vacuum valve
- M16 accessory port for third party accessories

- Optional top grips
- Made in the USA

www.ikelite.com



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Leo 3 Smart housing

Leo 3 Smart is the first housing in the world, universal for all smartphone models, whether iOS or Android.

- The smartphone communicates with the housing through a wireless connection. All you need is the Easydive application (app) available in Apple Store or Google Store.

- Inside the housing there is a battery pack 9000 mAh.

- The smartphone is connected by cable to a power supply system that keeps the phone battery always charged during your dive.

- The housing supports the use of the full potential of the camera phone (Adjust Time, ISO, HDR, White Balance, Focus Auto or Manual).

- It's possible to switch between Photo Mode to Video mode by simply pressing one single button.

- The "Selfies" button allows you to use the front camera of your Smartphone underwater. Finally you can take great pictures in the foreground, looking directly to the display, or record a video in which the user becomes the star.

- The display, in high definition and with the considerable size of the new Smartphone, provides incredible control of the shot during the diving.



leo³ smart

PRO MAX

PRO

11



iPhone 11

NOW COMPATIBLE!!

- Made of a full aluminum block
- Compatible with the vacuum system and hydrophone.

- The housing is guaranteed up to 150 meters in depth.

- Like all Easydive housings, we grant, also for Leo 3 Smart, a lifetime warranty.

<https://www.easydive.it>

www.uwpmag.com

MIRRORLESS MIRRORLESS ON THE WALL



WHO HAS THE LARGEST SELECTION
OF THEM ALL?



THATS WHO.

Fantasea Hybrid Vacuum Safety System



Fantasea proudly introduces the Hybrid Vacuum Safety System M16A, an optional pre-dive vacuum test and leak detector safety system. The system is now available and accepting orders!

The Hybrid Vacuum Safety System M16A is an optional pre-dive vacuum test and leak detector safety system. The system allows confirming the watertight seal of the housing prior to the dive using the vacuum system and monitoring the housing seal during the dive using the moisture detector.

www.fantasea.com

Kraken Olympus TG-6 and TG-5 Underwater Housing



Kraken's new housing for the Olympus TG-6 (or TG-5) cameras allows for full control of the Olympus camera underwater and is made of anodized aluminum for rugged durability. A 52mm threaded lens port fits a wide variety of wet lenses from wide angle to macro. Easy to use buttons with laser engraving lets you clearly see what you're pressing. A built in vacuum port and pump confirms water-tightness before entering the water and a green light on the vacuum port illuminates to confirm that a vacuum seal is made.

www.opticaloceansales.com

www.uwpmag.com

Don't settle for 2nd best



Film - No Filter No
White Balance



Digital - No Filter Manual
White Balance



Magic Filter Manual
White Balance

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

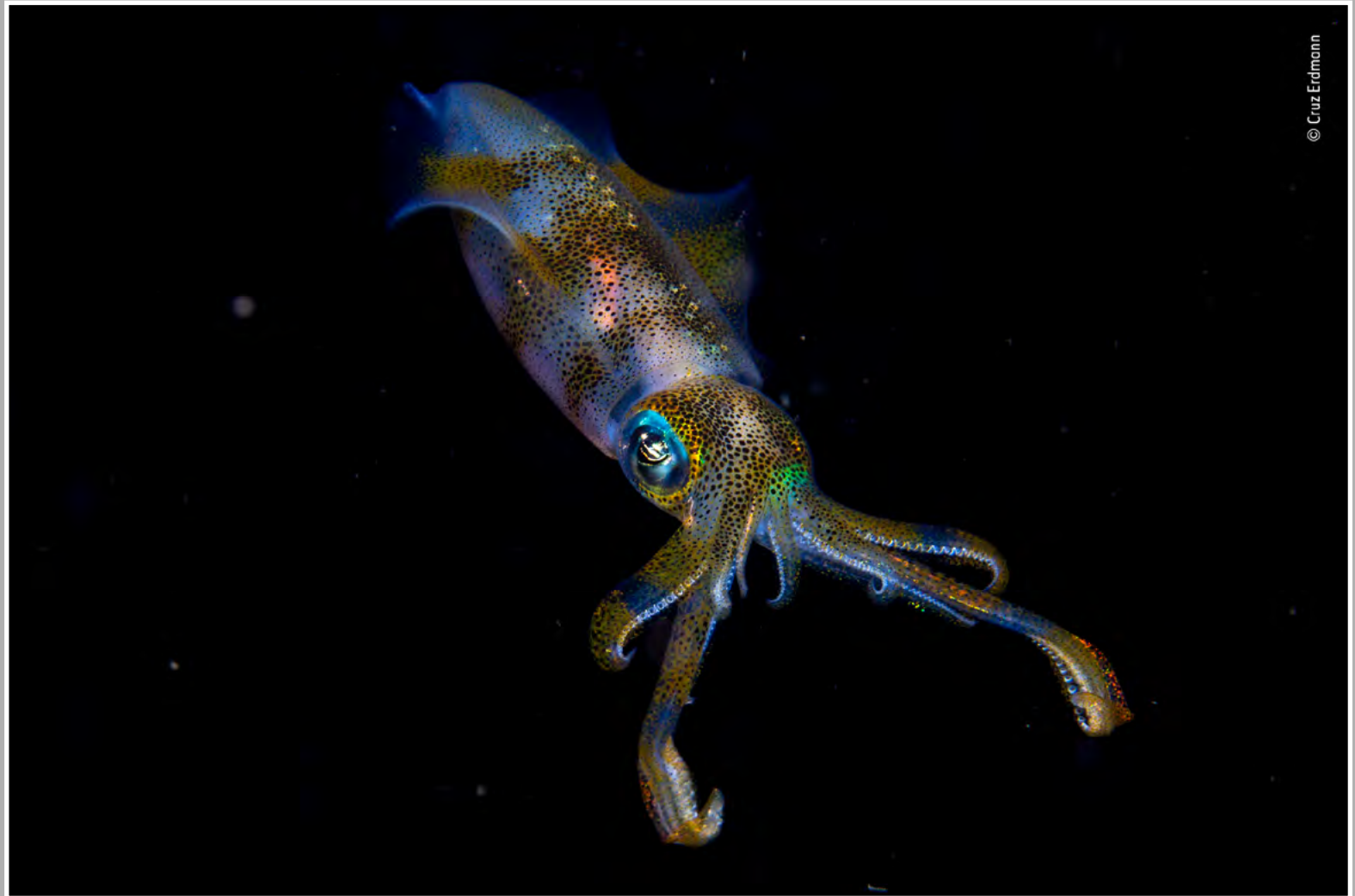
www.magic-filters.com

Wildlife Photographer of the Year 2019

Young Wildlife
Photographer of the Year
Grand title winner:
Night Glow
by Cruz Erdmann,
New Zealand

Cruz was on a night dive with his dad when he saw a pair of bigfin reef squid in the shallow water. One swam off but Cruz quickly adjusted his camera and strobe settings, knowing that the opportunity was too good to miss. He shot four frames of the remaining squid before it too disappeared into the inky blackness.

Bigfin reef squid are masters of camouflage, changing their body colour and pattern using their reflective and pigmented skin cells. They also alter their appearance to help them communicate. During courtship, males and females display complex patterns to indicate their willingness to mate.



*Canon EOS 5D Mark III + 100mm
f2.8 lens; 1/125 sec at f29; ISO 200;
Ikelite DS161 strobe; Aquatica 5D Mk
II Pro housing*

<https://www.nhm.ac.uk/visit/exhibitions/wildlife-photographer-of-the-year.html>

Wildlife Photographer of the Year 2019

Behaviour: Amphibians and
Reptiles:

Winner

Pondworld

by Manuel Plaickner, Italy

Every spring for more than a decade, Manuel followed the mass migration of common frogs. He took this image by immersing himself and his camera in a large pond where hundreds of frogs had gathered. There he waited until the moment arrived for the picture he had in mind – lingering frogs, harmonious colours, soft, natural light and dreamy reflections.

Rising spring temperatures bring common frogs out of their winter shelters. They head straight to water to breed, often returning to where they were spawned. Though widespread across Europe, their numbers are thought to be declining due to habitat degradation from pollution and drainage of breeding sites.

*Canon EOS 5D Mark II + 17–40mm
f4 lens at 20mm; 1/640 sec at f8 (+0.7
e/v); ISO 800; Seacam housing*



<https://www.nhm.ac.uk/visit/exhibitions/wildlife-photographer-of-the-year.html>

Wildlife Photographer of the Year 2019

Under Water:
Winner

The garden of eels
by David Doubilet

The colony of garden eels was one of the largest David Doubilet had ever seen, at least two thirds the size of a football field, stretching down a steep sandy slope off Dauin, in the Philippines – a cornerstone of the famous Coral Triangle.

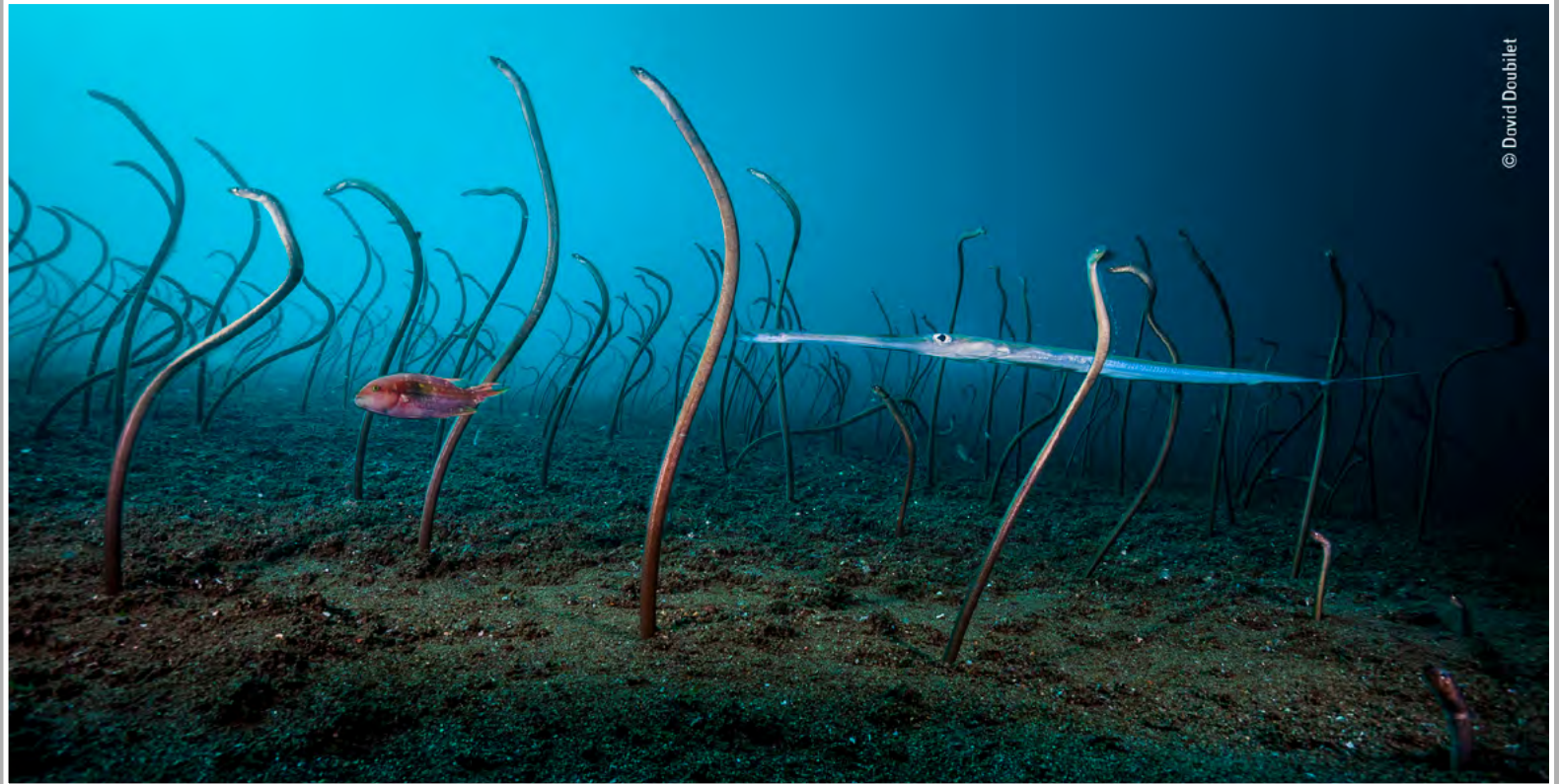
Doubilet rolled off the boat in the shallows and descended along the colony edge, deciding where to set up his kit. He had long awaited this chance, sketching out an ideal portrait of the colony back in his studio and designing an underwater remote system to realize his ambition. It was also a

return to a much-loved subject – his first story of very many stories in National Geographic was also on garden eels.

These warm-water relatives of conger eels are extremely shy, vanishing into their sandy burrows the moment they sense anything unfamiliar. David placed his camera housing (mounted on a base plate, with a ball head) just within the colony and hid behind the remnants of a shipwreck. From there he could trigger the system remotely via a 12-meter (40-foot) extension cord.

It was several hours before the eels dared to rise again to feed on the plankton that drifted by in the current. He gradually perfected the set-up, each time leaving an object where the camera had been so as not to surprise the eels when it reappeared. Several days later – now familiar with the eels' rhythms and the path of the light – he began to get images he liked. When a small wrasse led a slender cornetfish through the gently swaying forms, he had his shot.

Nikon D3 + 17–35mm f2.8 lens at 19mm; 1/40 sec at f14; ISO 400; Seacam housing; aluminum plate + ballhead; remote trigger; Sea & Sea YS250 strobes (at half power).



<https://www.nhm.ac.uk/visit/exhibitions/wildlife-photographer-of-the-year.html>

2019 Monterey Shootout Results

Backscatter Underwater Video & Photo again hosted the largest annual gathering of underwater photographers in the USA. The Monterey Shootout is a four-day weekend of diving, educational seminars, celebration, and a chance to win over \$40,000 in prizes even with the simplest of underwater cameras. This year, 172 participants brought their friends and families to share the fun and see what amazing images can be made in a tight 36-hour window of contest diving and a full four days of fun. We were blessed with pancake flat Monterey Bay and again the Breakwater produced the most award winning videos and photos. For 30+ years divers have gathered to this event in Monterey to photograph invasions of jellies and kelp inhabitants, but this year went to the birds with diving cormorants stealing the spotlight. Frisky sea lions were everywhere and the classic fringeheads and nudibranchs continued to win top honors in the macro category, yet our feathery friends the cormorants were the spectacle underwater.

Hanging out on the beach, parking lot, and boats with like-minded divers gives us cold-water enthusiasts a real sense of community.

After two days of diving, over 200 people gathered back to the Backscatter mother ship for a night of celebration and drinks stiff enough to heat up the most waterlogged diver. This is the most welcoming and enthusiastic group of underwater photographers in the USA!

\$40,000 IN PRIZES FROM OUR AMAZING SPONSORS

The Monterey Shootout is primarily a social and educational event, but the serious level of prizes is what drives us all to envision photographs weeks in advance and feel the motivation from competition nipping at our heels. Thus, it's with great thanks that we honor the generous support of all of our great sponsors. Thank you sponsors for motivating our cold-water image-makers to new personal bests!

COMMENTS FROM THE PHOTO JUDGES

This year's photo judges included Chuck Davis, Berkley White, Sterling Zumbrunn, and Becca Boring. The photo judges were presented with over 600 underwater



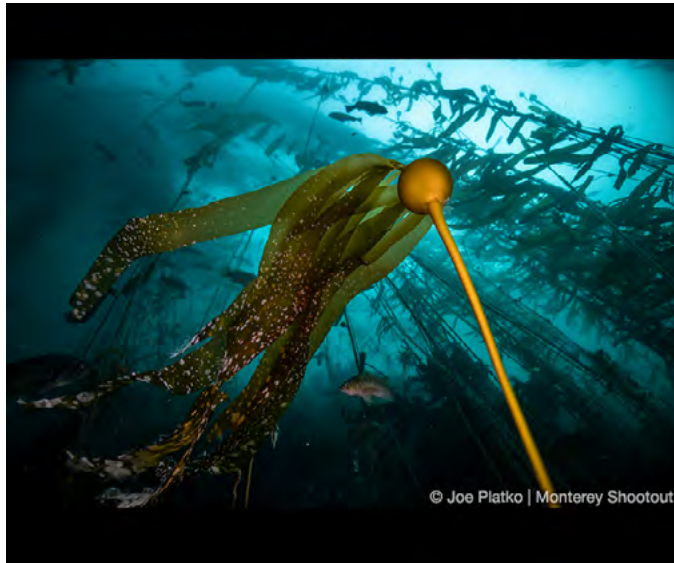
CHUCK TRIBOLET BEST OF SHOW AWARD

Chuck was a brilliant engineer by day and the de facto mayor of diving Monterey via small boats by weekend. He introduced many of us to early GPS systems, ocean weather sleuthing, and helped pioneer diving in Monterey. He was a major advocate of marine conservation and facilitated the judging of the Monterey Shootout and California Beach Photo Competition for over 20 years. Long live Chuck!

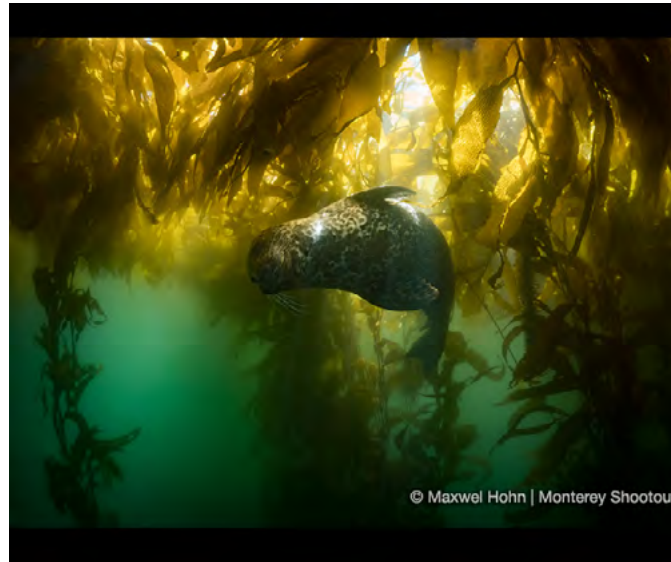
photographs to select their favorites within 4 hours. The rule in the photo judging room was “would I put this image on my wall?”. Most judges preferred a great wide angle scene, but appreciated a snoot lit macro photo. If you want to compete, get a snoot for macro and learn to use ambient light as your primary light for wide images.

Many of the best wide angle images didn't use strobe and the photographer became a hunter of natural light in less than 10 feet of water. Shallow water produces the most dramatic light, more subject options, and you can even stay longer.

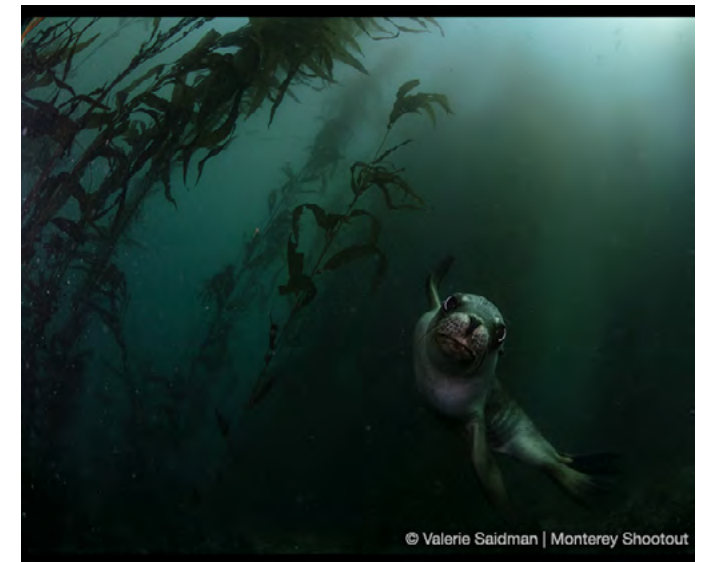
ADVANCED WIDE ANGLE TRADITIONAL



ADVANCED WIDE ANGLE UNRESTRICTED



BEGINNER WIDE ANGLE UNRESTRICTED



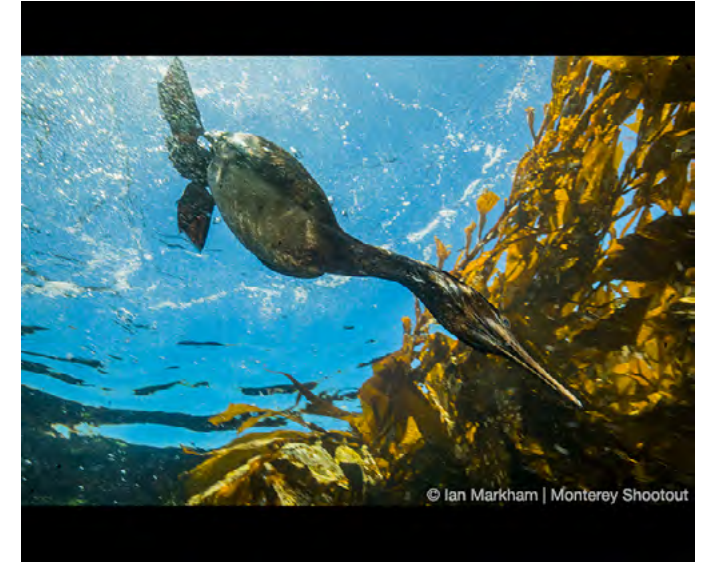
COMMENTS FROM THE VIDEO JUDGES

In the video judging room, our judges Carl Miller, Jim Decker, and Rusty Sanoian had a similar challenge to watch 78 videos in a brief window. As with previous years, the judges had a difficult time giving weight to story telling vs. image quality. The judges were happy to see great story telling efforts, but great stories suffered from poor image quality. This years best of show went to a video that told a story with stunning images without saying a word. While a crudely shot video can tell a story and go viral, our judges decided that viral type videos can go stale over time. High quality imagery with a dash of story will win the day and become something you want to watch over and over years later. The judges recommend to tell a story, but spend more time on the quality of your B roll footage. If you're A roll is just so so, your're B roll should be amazing.

ADVANCED MACRO UNRESTRICTED



INTERMEDIATE WIDE ANGLE TRADITIONAL



36 HOURS 172 UNDERWATER PHOTOGRAPHERS AND THE BIRDS

<http://www.montereyshootout.com/event-results/2019.php>

Sony A7R MKIV and Nauticam NA-A7R IV Field Review

By Phil Rudin

Sony has recently introduced the Alpha A7R MKIV 61MP full frame mirrorless camera body. This is a fourth generation of Sony camera which started with the release of the Sony A7, A7r and A7s in early 2013. These were the first mirrorless interchangeable lens cameras to feature a full-frame (35MM) sensor in a mirrorless camera body the size of the current Olympus E-M1II & E-M5III mirrorless cameras.

The A7R IV is a refinement of the highly successful A7R III introduced in Oct. 2017 and reviewed by me in uwpmag.com issues 102 and 103 using Aquapazza and Ikelite housings. At this time the A7R IV is the most technically advanced high resolution full frame camera on the planet.

In my 2017 review of the A7R III I said that Sony had made it quite clear that they intend to surpass Canon and Nikon in the Pro/Prosumer market by focusing heavily on full-frame mirrorless cameras and high quality lenses.

Sony's advanced innovation over the past six years has paid off

with the A7R IV at the top its class of cameras in DPReviews Semi-Professional Full-Frame category of cameras. With an overall score of 91% and the Gold Award this ranking is higher than any of the current Canon, Nikon or Panasonic cameras in its class.

The A7R IV is robust, covers a broad range of needs and is extremely customizable to allow quick and reliable operation. Sony has continued to add to its line of lenses with fifty-five native full frame lenses like the new 400mm F/2.8, 600mm F/4 and 200-400mm tele lenses for sports and wildlife shooters.

After market manufacturers like Rokinon/Samsung, Sigma, Tamron, Tokina, Venus Optics, Zeiss and more have also jumped on the Sony bandwagon with Sony FE full frame direct mount lenses bringing the total of available lenses too over 290. Sony has still not added a fisheye or fisheye zoom lens to its lens lineup. Adapted lenses like the Canon 8-15mm fisheye zoom work well but Sony needs to step up and offer a fisheye.



Sony Alpha A7R MKIV camera

Sony's A7R IV full frame mirrorless camera includes excellent sensor based in-body image-stabilization with a CIPA rating of 5.5 stops of stabilization. Resolution has been increased to a maximum of 9504 x 6336 from the 61MP sensor in the native 3:2 format. Many readers are familiar with the A7R III and I would like to point out some of the upgrades in the A7R IV that will be useful for underwater shooters.

The A7R IV autofocus system now has 567 phase detection points covering over 75% of the width and 99% of the height of the 35mm full frame format. The A7 III has 399 across the sensor area. Both cameras also have 425 contrast detection points. The new sensor is a back-illuminated structure with the copper



wiring layer below the photodiode substrate which gives a significant advantage in terms of transfer speeds, image quality and heat transfer.

The A7R IV has a new imaging processor and autofocus algorithms which include realtime tracking in AF-C. This auto focus system works so well that I have abandoned back button focusing and AF-S relying instead on the Lock-on AF Expanded Flexible Spot in AF-C mode. This combination allows me to lock focus with a half press of the shutter and then drag the focus point around the frame while maintaining the original

focus area. This means I can focus on an animal's eye in the center of the frame then drag the eye around the frame for the best composition without losing the tack sharp focus on the eye.

Lock-on expanded flexible spot also allows you to adjust the speed that you drag the focused point around the frame. I have changed the factory default setting and sped up the movement to meet my needs. Another subtle but very useful update in the A7R IV is that the focus area box which can be reduced or enlarged in size can also be set to white or red for ease of use.

For those who have used earlier versions of the A7 cameras and tried to locate the flat gray focus box underwater or in bright light I feel your pain. I have the A7R IV focus box set to RED and it is now near impossible not to see it as soon as you look into the electronic viewfinder.

On the subject of the electronic viewfinder it has now jumped from the 3.6 million dot panel on A7R III to 5.7 million dot panel for A7R IV. The new adjustable refresh rate goes as high as 120FPS giving a life-like view of the scene through the viewfinder. Once you have mastered using this EVF you will never want to go back to a DSLR viewfinder.

The LCD screen for the A7R IV is unchanged at 1.44M dots and three inches with touch sensitivity control. In this area Sony could do much better, the lions share of both EVF and LCD panels used for all camera brands are made by Sony. As a blackwater photographer I find the LCD screen invaluable for locating very small subjects in near zero light. A better LCD panel would enhance the ability to see fine detail.

Many readers have asked me about the new implementation of animal eye autofocus. With

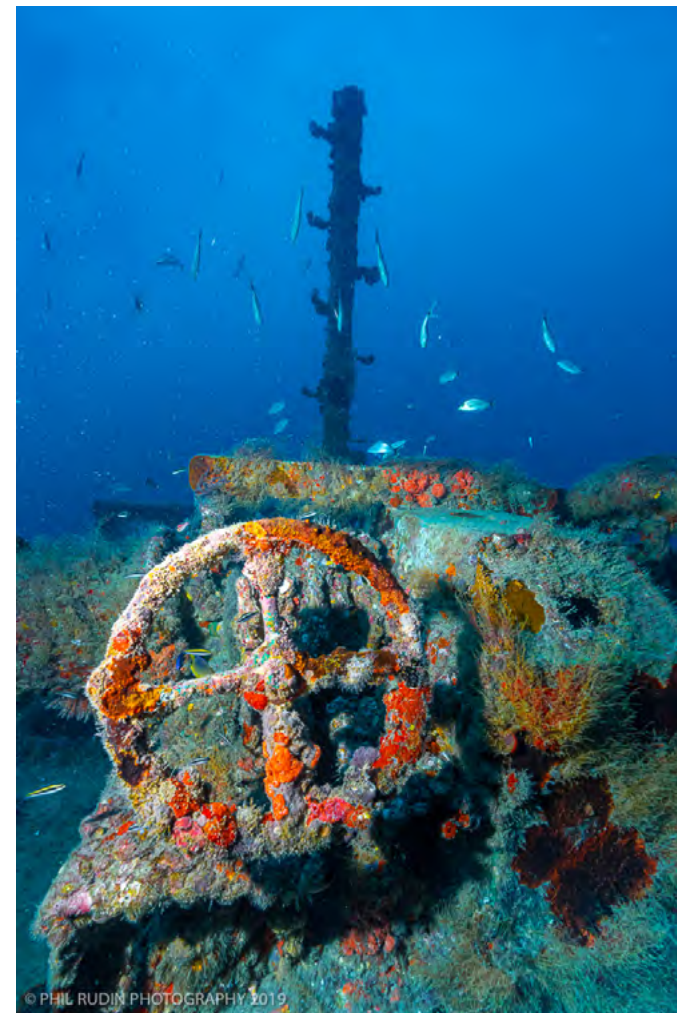


Caribbean Spiny Lobster, Sony A7R IV, Sony FE 90mm F/2.8 macro lens, Nauticam NA-A7RIV Housing, Two Inon Z-330 strobes, ISO-100, F/20, 1/250th sec.

Ana Cecilia Wreck, Palm Beach, Florida, Sony A7R IV, Sony FE 12-24mm F/4 lens at 12mm, Nauticam NA-A7RIV Housing, One Inon Z-330 strobes, ISO-640, F/13, 1/80th sec

limited testing I have found the animal eye AF is more than a bit hit and miss underwater. At this time it does not work in conjunction with lock-on expanded flexible spot because the idea with eye AF is to find the animal/human eye regardless of where it is in the frame and lock onto the eye. You can even choose between the right or left eye and select one person's eye out of a group of people in the frame.

I have used the human eye AF shooting models both underwater and while doing splits and it is spot on. For pets like cats and dogs animal eye AF works very well too. I had great success using animal eye AF for horses and a cow but it is still not ready for prime time for most marine life and some birds.



That being said Sony's eye AF for both humans and animals is leaps and bounds ahead of any of the other manufacturers attempts to compete on the same level. The eye AF has also been added to video and can be used with or without the touch screen.

The A7R IV has a larger more ergonomic grip which adds 8 grams over the A7R III. The A7R IV also has a more user friendly redesigned rear dial and a lock for the exposure compensation dial. The AF-ON and multi-selector buttons have also been



enlarged and redesigned making them much easier to find without taking your eye away from the viewfinder while shooting above water. This is important for using the AF-ON button to magnify an image in the viewfinder without having to take your eye away. The magnified image enlarges to cover the focus point so that you can immediately see if focus is correct.

I have been able to review and enlarge the image in the Nauticam housing without removing my eye from the 45 degree optical viewfinder as well. This feature definitely speeds up workflow and the new EVF panel lets you see that your images are tack sharp. The EVF & LCD panels also allow you to see a live histogram and a four color histogram in image review.

The memory card door is now a push to open and close rather than using the locking device found on the A7 III. The new arrangement improves

weather-sealing and prevents the card door from opening accidentally which has happened to me several times with past A7 models. The dual card slots have now been reassigned with the #1 slot now at the top and the #2 slot at the bottom which makes more sense. The A7R IV also accepts UHS-II SD high speed memory cards in both card slots where the A7 III only allowed one.

The A7R IV now shoots 10-FPS in compressed RAW and 6-FPS in uncompressed RAW with the mechanical shutter. The Sony A7R IV now offers tethering to a computer or tablet which is mostly used in studio work, USB-C and WiFi transfer options and a new headphone port. The A7R IV also offers pixel shift with four and sixteen captures up to 240MP's. Because the camera needs to be rock steady to use this feature it would be of no real use underwater

since everything is in motion.

The Sony menus have improved over prior models but are still one of the favorite items for reviewers to bash. My take is that this camera has over 100 menu features to select from and many of those features have multiple subsets. I have selected the menu features that I use most and moved them into the super menu accessed via the Fn function button. I can open that small subset of items underwater and easily change them using the arrow pad and OK button.

If I am shooting in TTL with the S-Turtle flash adapter I can just go into the super menu and easily change +/-flash compensation. Another A7R IV feature is that stills and movies have separate super menus so you can set up to twelve menu functions for each. I have also assigned custom key functions which are useful for me like the C3 button is assigned so that I can toggle quickly between the EVF and LCD. I have the AEL button assigned to quickly toggle between full frame and the very useful APS-C mode.

The A7R IV still uses the same NP-FZ100 battery as the A7R III but manages to capture a few more frames per charge. The A7R IV also has very robust new weather sealing which is expected with a camera of professional quality.

The A7R IV is also a capable video camera with full frame 4K

movie capture and roughly APS-C size crops for both 4K at up to 30p and 1080p, log profiles including HLG, zebras and peaking, real-time AF tracking for face and eyes, continuous shooting without time restrictions and more. My take is that the main function of the A7R IV is to shoot high quality stills first and video second so I will confine the rest of my review to shooting stills.

The most endlessly discussed feature of the new A7R IV in forums and chat rooms is its 61MP full frame sensor. Who is it for, why does anyone need so much resolution, will I need a new computer to handle the file sizes and on and on.

The 61MP A7R IV provides exceptional image quality with plenty of dynamic range and an ability to do large crops. In APS-C mode the focus points cover the entire frame and produce an excellent 26.2MP image larger than most current APS-C cameras. This matters to me because I get a faster work flow and additional options when shooting.

The Sony FE 90mm F/2.8 macro lens is a must-have for underwater macro shooters and a one push toggle to APS-C gives an AOV equivalent of a 135mm macro lens extending my lens range. I have already found this to be quite useful with the Sony FE 90mm and FE 50mm macro lenses. I am aware that I can just crop the

FF image to achieve APS-C or other format sizes. However what I see in the viewfinder in APS-C mode is exactly what I get giving me two cameras in one with all of the additional features of the A7R IV system.

While the 61MP sensor continues to be the hot topic it is only a sidebar to the outstanding new features found in the A7R IV. File sizes run from around 118mb in uncompressed RAW full frame to 59mb compressed FF and 26mb compressed in APS-C.

Viewed as a complete package the A7R IV is the best full frame camera available in today's market for overall performance. If you are not looking to produce exceptional prints up to billboard size this camera should still be on your short list because of all the other things it does so well. If you think 61MP is just overkill read my past uwpmag.com review for the Sony A7R III 42MP which can now be found new for around \$2500/£2500. At a rollout price of \$3500/£3500 I think the Sony A7R IV is still a bargain considering all it offers.

Nauticam NA-A7R IV Housing and Ports

The Nauticam NA-A7R IV is the fourth generation of housings for the Sony full frame line of mirrorless cameras. Nauticam has always continued to improve with age because as their mission statement says they “Think beyond what has been done before and never rest on past accomplishments”.

My first Nauticam NA-NEX5 housing review for uwpmag.com dates back to 2010 and I am always amazed to see the subtle improvements introduced with each new generation of housings



and accessories.

The latest N100-N120 35.5MM port adapter II (for A7RIV) is one example. The new housing extends further to accept the larger battery grip on the new A7R IV so the prior N100-N120 adapter for Sony A7 II & III cameras no longer fits. In addition to the redesign which retains the same 35.5MM length the port locking device has been moved to the top of the adapter making it easier to align and lock ports. The adapter also has a new redesigned gearbox with an increased zoom/focus gear ratio which means a faster and more precise control of lenses for video. This new gearbox is also found in the new NA-A7RIV housing zoom/focus control wheel.

The new NA-A7IV housing now features M14 & M16 mounting point on the rear housing plate for vacuum valve, flash sync ports and more. An M24 accessory port has been added to the front left side of the housing for HDMI 2.0 output connectivity.

Other new features include a new O-ring sealing design for the LCD window and new handle brackets designed to enhance stability underwater. All of these subtle improvements help the user to focus less on the equipment and more on the creative process.

The NA-A7IV housing has the same excellent twin locking system used on all of the Nauticam DSLR housings. This secures the front half of the housing to the rear by turning the locking device 90



degrees. To unlock push in the two red safety locking buttons and turn the locks.

The housing has corresponding levers, push buttons and control dials for every function on the camera body. These controls are very well placed and should be easy to use even with thick gloves.

The rear half of the housing has a large LCD window and a quality optical glass pickup finder for the outstanding EVF. I always replace the Nauticam pickup finder with their excellent 45 degree optical viewfinder. This is at least the seventh Nauticam housing I have used with the same 45 degree optical viewfinder. Switching between the pickup finder and the 45 degree viewfinder takes me less than a minute and does not require any tools.

Once installed the larger viewfinder really helps those of us with ageing eyes who are seeking better critical focus and composition. Nauticam also offers an optional 180 degree optical viewfinder which works very well for wide angle and motion shots. Both of the viewfinders

have a plus & minus diopter control which can be adjusted underwater.

The signature Nauticam red port locking lever is on the front lefthand side of the housing and the lens release button is on the right viewed from the front of the housing. This allows you to remove the port or port adapter and install or remove a lens without removing the camera or even opening the housing.

The housing even has a blue reset switch for the vacuum system if you change ports without opening the housing. This is a very useful feature because larger lenses like the Sony FE 12-24mm F/4 zoom must be mounted from the front of the housing.

The switch to turn on the vacuum system electronics is located in the rear half of the housing along with the audible alarm, LED warning light and battery mount. The vacuum system is an accessory I highly recommend since the housing already comes with all of the electronics and a flood alarm built in. The M14 or M16 vacuum valve kit with the vacuum pump and tool for user installation cost around

\$250.00. I average over 100 dives a year and I change the alarm system battery once a year as routine. I also recommend carrying spare batteries for all of your needs when traveling just to be on the safe side.

The rubberized handgrips are removable and include the newly designed stainless mounting plates to reinforce the stability of the handgrips. The handgrips are very comfortable, they adjust depending on your hand size and the thickness of the gloves you may be wearing. The grips include standard ball head mounts for strobe and video support arms as well as other accessories.

I have added two additional ball mounts to the housing over the support brackets for things like focusing lights, additional strobes, video lights and more. The top of the housing also features two threaded fiber optic ports with caps for optical sync cords. Compatible strobes are triggered using the optional Nauticam flash trigger for Sony Alpha 7-series cameras and Nauticam universal fiber optic cables.

The Nauticam Mini flash for Sony Alpha-7 (\$250.00 USD) triggers a verity of strobes with fiber optic compatibility including Inon Z-330, Z-240 type4, S-2000, D-2000 type4, D-200 as well as Sea & Sea YS-250, YS-D1 and YS-01 strobes (will not trigger S&S YS-D2) with more being added. The Mini is a manual flash trigger and has NO TTL function. The Mini flash trigger is sold with two batteries that provide thousands of flashes to reduce the drain on the camera battery associated with on-board flash recycling.

The Mini flash trigger also recycles much faster than an on-board camera flash allowing you to shoot between six and ten frames a second if your external strobes can keep up. After market products like the S-Turtle flash trigger can also add TTL flash operation using fiber optic sync cords.

If you are making the move from the NA-A7RIII housing to

the NA-A7RIV housing remember you will also need the new Nauticam N100 to N120 by 35.5 mm port adapter II for A7RIV.

All of your additional ports and accessories can be carried over with no problems. Nauticam and Zen Underwater have a verity of port options for the NA-A7IV housing using both the N100 mm and N120 mm DSLR port mount options. This will allow owners moving over from Nauticam DSLR housings to use some of their ports and to migrate some DSLR lenses by using the Metabones EF or Sigma MC-11 lens adapters.

The Nauticam NA-A7IV housing retails for \$3050.00 USD and the N100-N120 port adapter II for NA-A7RIV (part #37305) retails for \$525.00

It is not hard to imagine that an A7 IV in the 24-30MP range is in the works and that it will be built on the same chassis as the A7IV. Having one housing, one lens set and one port set that will work with two quite different camera bodies is a remarkable advantage for working photographers. I used the A7 III as a backup to the A7R III underwater and also as my go to land camera and hope I will be able to do the same with an A7 IV.

Field Testing the Sony A7R IV/NA-A7RIV System

Let me start by saying that Sony has definitely arrived and that the A7IV system is no longer a work in progress. While the A7IV is a huge improvement over the A7RII I reviewed in 2017 Sony is still filling in its lens lineup which is



incomplete compared to Canon and Nikon DSLR's but much improved since the 2017 review. Sony has been concentrating on the full frame premium lens line and each new release has been very well received.

For this review I selected the Sony FE 90mm F/2.8 macro G OSS lens which easily handles the larger A7RIV 61MP sensor and is without question the best macro lens I have ever used with any camera. The 90macro was paired with the dedicated Nauticam N100 macro port with 67 mm threads. This allows you to add a flip adapter and closeup lenses while shooting in full frame or APS-C formats.

I also used the super wide (12-84 AOV) rectilinear Sony FE 12-24mm F/4 G zoom. This lens was paired with the Zen Underwater N120 mount 230 mm optical glass dome port and the Nauticam N120 40 mm port extension. All of the N120 ports require the new N100 to N120 35.5 port adapter II referenced above.

Simple physics require full frame lenses to be made larger than lenses for sub full frame cameras, this is true for both mirrorless and DSLR cameras. But while lenses like the Sony 12-24mm F/4 zoom may be about the same size the weight difference can be noticeable. The Sony 12-24 F/4 weighs in at only 565g while lenses like the Canon 11-24 F/4,



Ana Cecilia Wreck, Palm Beach, Florida, Sony A7R IV, Sony FE 12-24mm F/4 lens at 12mm, Nauticam NA-A7RIV Housing, One Inon Z-330 strobes, ISO-640, F/13, 1/80th sec.

Nikon 16-35 F/4 and Nikon 14-24 F/2.8 weigh-in at 1180g, 680g and 1000g respectively. Sigma's 12-24 F/4 "art" lens for Canon and Nikon weights in at 1150g. Not apples to apples but about as close as I could get within the AOV range.



Dusky Jawfish, Sony A7R IV, Sony FE 90mm F/2.8 macro lens, Nauticam NA-A7RIV Housing, Two Inon Z-330 strobes, ISO-100, F/20, 1/250th sec.



Dusky Jawfish, Sony A7R IV, Sony FE 90mm F/2.8 macro lens in APS-C same distance to subject, Nauticam NA-A7RIV Housing, Two Inon Z-330 strobes, ISO-100, F/20, 1/250th sec.

In addition the Nauticam port charts indicate that the 230 mm port gives the most well optimized results for the Sony 12-24 F/4 zoom while the Canon 11-24 F/4 and Nikon 14-24 F/2.8 zooms need to use the Nauticam N120 250 mm dome port for the most optimized results. These lenses also require longer port extensions.

Sony has yet to announce any FE fisheye lenses so I have been using the Canon 8-15mm F/4L Fisheye with a Metabones IV lens adapter. This Fisheye lens is paired with a Nauticam N120 140 mm Fisheye port with removable port shade and an N120 30 mm port extension. I am also experimenting with a port extension solution for the newly released Rokinon AF 14mm F/2.8 FE lens with the Zen 230mm dome port.

For macro I also used the Nauticam SMC-1 closeup lens and flip adapter with the 90mm macro setup. I used one RGBLue System 02-2 video light for focusing when needed on macro, night

Diver Ana Cecilia Wreck, Palm Beach, Florida, Sony A7R IV, Sony FE 12-24mm F/4 lens at 21mm, Nauticam NA-A7RIV Housing, One Inon Z-330 strobes, ISO-640, F/13, 1/160th sec.

and blackwater dives. For video I use two of the RGBLue system 02-2 lights. I own two Inon Z-330 strobes and most of the stills for this review are captured with two Z-330's with standard strobe diffusers or the 4600K and 4900K color dome filters.

I configure the 90mm macro lens with the focus limiter set from 1:1 to infinity in auto focus. On past Sony A7 cameras I always set the focus limiter from 1:1 to 0.5 meters which renders everything from life size, 1:1 to about 1:10 in focus. I find that most of the macro/closeup subjects I want to photograph fall well within that shooting range.

As I have said in past reviews it takes a few dives to get the hang of shooting within this rather



short focusing range. By using the focus limiter I find that the lens is less likely to hunt and that the lens acquires focus more quickly than when it is set from 1:1 to infinity. With the A7R IV set to AF-C with tracking flexible spot the camera does not hunt like it did with prior versions set to infinity.

I have also equipped the macro lens with a focus gear and switch from AF to manual in the super menu. This allows me to rack the lens out to 1:1 if I want and just leave it there when I



Caribbean Spiny Lobster, Sony A7R IV, Sony FE 90mm F/2.8 macro lens, Nauticam NA-A7RIV Housing, Two Inon Z-330 strobes, ISO-100, F/20, 1/250th sec.



Ana Cecilia Wreck, Palm Beach, Florida, Sony A7R IV, Sony FE 12-24mm F/4 lens at 12mm, Nauticam NA-A7RIV Housing, One Inon Z-330 strobes, ISO-640, F/13, 1/160th sec.

want to use the SMC-1 for greater magnification. Once I have a subject in focus at 1:1 I can add the SMC-1 and just move the port closer to regain focus in the viewfinder. I also use the SMC-1 with AF but some subjects are easier to acquire in manual.

The Sony 12-24mm F/4 with the Nauticam zoom gear has a buttery smooth zoom action and outstanding auto focus all the way to the dome

port. I found the best results for both depth of field and corner sharpness at F/13 or higher. Most photographers will be more than happy in the F/8 to F/16 range but for best corner sharpness F/13 or greater renders the best results. The F/13 and above aperture setting is my standard starting point across all full frame DSLR or mirrorless cameras with like AOV lenses not just the Sony

cameras.

For stills I used my two Inon Z-330 strobes with two 50 mm X 250 mm Nauticam float arms and two 200 mm double ball arms. The float arms and the 230 mm port seem well balanced and easy to control in the water. I use the same arm configuration with the macro port and 140 mm port.

For those of you thinking about moving from a sub-full frame system to a full frame system the reduced depth of field at any given F/stop over sub-full frame can present a few issues. First high megapixel cameras including the A7RIII and especially the A7RIV tend to highlight flaws associated with many lenses, so choose wisely when making lens purchases. Second the shallower DOF associated with full frame cameras requires more critical focus so taking a machine-gun approach to shooting may result in high numbers of poorly focused images.

In the water the NA-A7IV is well balanced and a dream to use. All of the controls fall easily at your finger tips and after a few dives I did not find myself having to look away from the

viewfinder to change any of camera my settings.

If you are seeking the very best in image quality and a full frame camera with quality lenses is within your budget the Sony Alpha A7R IV and Nauticam NA-A7RIV housing should be at or near the top of your wish list.

Thanks to the Nauticam USA (nauticam.com) team for assistance with equipment used for this review and to Pura Vida Divers (puravidadivers.com) for assistance during diving operations.



Phil Rudin

www.instagram.com/philrudinphotography

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Blackmagic BMPCC4K and Nauticam NA-BMPCCII

by The Backscatter Team

The Blackmagic Design Pocket Cinema Camera 4K (or BMPCC4K for short) is one of the best cameras ever for capturing cinematic 4K 60p video. It possesses a unique combination of Micro Four Thirds sensor/lens system and the ability to shoot RAW video, resulting in a camera that is portable, affordable, and produces some of the best video image quality that we've ever seen from a camera in this budget range.

There's also a companion model to this camera with an even higher resolution sensor: the BMPCC6K. The 6K version uses a Super 35 sensor and Canon EF Mount lenses, which overall offer more resolution and a wider variety of high-end optics to use. Our testing was only performed with the BMPCC4K, but we will include comparisons where relevant if considering the 6K option.

Many of the features that make the BMPCC4K so unique and powerful also carry some significant caveats and need-to-know workflow details, especially in the post-production stage.

ProRes for easy video, RAW for advanced

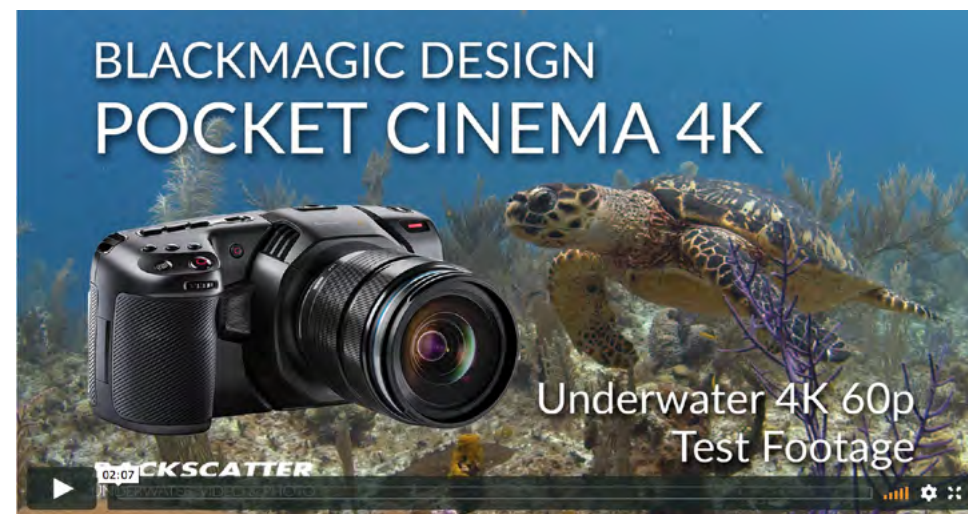
The BMPCC4K offers two options for video recording: ProRes and RAW. ProRes is awesome because it records uncompressed video, which may not offer as much latitude for editing and correction in post as RAW, but still preserves basically the highest level of image quality and allows for a less-intensive video editing workflow. RAW video is extremely powerful for non-degrading corrections to color and exposure. We take a deep dive into the RAW capabilities of the camera, as well as how we achieved ideal results from our test clips and what caveats users need to be aware of. Read on for a detailed breakdown of our workflow.

The clips that make up our test footage are an equal mix of RAW and ProRes, and after appropriate color correction and grading, the final product is basically indistinguishable. The only significant difference between recording in the two different codes is how much range for exposure and color correction there is during editing.



The BMPCC4K and the BMPCC6K. Our review focuses primarily on the BMPCC4K.

All of the necessary controls are right at your fingertips with the NA-BMPCCII



Take a look at our mesmerizing BMPCC4K Test Footage to see the cinematic power produced by this pocket-sized video platform.



ProRes clips don't offer as much correction range as RAW video, but they still hold up just fine when significant White Balance correction is required. Image captured from video.

Super sharp shadow and highlight detail

The BMPCC4K has 13 stops of dynamic range that provide a great level of detail in the brightest highlights and darkest shadows. This is some of the best low light and ambient light only performance we have ever seen from a camera of this sensor size. The BMPCC4K offers fantastic performance for a Micro Four Thirds sensor, which does not collect as much light as larger full-frame sensors, yet in this case still delivers results that significantly raise the bar.

4K DCI video at 60 frames per second

4K at 60 frames per second is the standard for pro-level video performance from a consumer camera. Many cameras can shoot 4K video resolution, but only a limited number

can do so at 60 frames per second (or 60p for short).

60p video is great (especially underwater) for slowing down to 24p or 30p playback for a slow-motion effect, which adds stability and doubles the duration of your clip.

At the time of this review, the only other 4K 60p comparable cameras are the Panasonic GH5 and Panasonic S1, and the Canon 1DX II - all of which capture 4K from a smaller portion of their sensors than the BMPCC4K does. The Panasonic GH5 is the only other Micro Four Thirds sensor camera, while the Panasonic S1 and Canon 1DX II are both full-frame.

The BMPCC4K takes 4K a step further by capturing 4K DCI resolution at 4096 pixels wide, which is wider than the more common 4K UHD resolution (3840 pixels wide). This provides a more cinematic aspect ratio, as well as additional



When shooting with only ambient light in a backlit scene the BMPCC4K produced fantastic details in the highlights and shadows. It produces outstanding natural light results. Image captured from video.

space to compensate with if digitally stabilizing clips in post. If shooting the BMPCC6K, you'll have about 1/3rd more resolution to work with, for an insane amount of latitude in post to stabilize, crop, and get creative with your footage.

Micro four thirds sensor and lens mount

The Micro Four Thirds (MFT) system is an industry-standard lens mount and sensor size system that allows for cross-compatibility of lenses that utilize an MFT mount. MFT will be familiar to mirrorless Panasonic and Olympus shooters, as

it was developed and is used by both camera makers.

The affordability, versatility, and great results produced by Micro Four Thirds lenses have made them very popular for underwater photographers, with lenses like the Olympus 14-42mm, Panasonic 8mm Fisheye, and Olympus 60mm Lens macro now considered standard lenses among current mirrorless shooters.

Our test footage was shot using the Panasonic 8mm Fisheye lens and the Olympus 14-42mm Zoom lens behind a Nauticam WWL-1 wide angle conversion lens.



A wide range of Micro Four Thirds lenses are available. We love these lenses for their portability and affordability compared to full-frame optics.

Olympus 14-42mm, Olympus 7-14mm Pro, Olympus 9-18mm, Panasonic 8mm, Olympus 8mm, Olympus 60mm Lenses

Touchscreen interface and controls

The BMPCC4K isn't unique only in performance. It is also a fairly unique body design compared to other current cameras, with a slightly wider and shorter body than similar mirrorless and SLR systems.

The 5-inch touchscreen on the back is very sharp and the touch controls are responsive and accurate. Colors look good on screen. The overall interface and menu navigation is very intuitive and easy to adjust to.

While the camera can be just about entirely operated from the touch screen itself, there are also dedicated function buttons for the most essential controls. There are dedicated controls for Record, Autofocus, ISO, White Balance, and Auto-Iris, as well as a single Command Dial.

By default, the command dial will control your Iris (or Aperture),

but it will take over when ISO or White Balance options are brought up on screen.

A beneficial cinema-like aspect of the camera is the ability to lock the shutter speed to a 180° angle. This guarantees a shutter speed that is always double our frame rate (typically 60p) so that our slow-motion footage maintains a natural sense of motion blur. In effect, this means that the shutter speed may be set once and never adjusted again, unless trying to achieve a specific look or exposure setting as desired.

The camera is powered by a single Canon LP-E6N style battery, but the runtime on this would be better to measure in minutes, not hours, because it drains extremely fast. Fortunately, the camera also offers a 12-volt power supply which we can utilize with an expanded power pack inside the underwater housing.



The 5-inch LCD screen is sharp, responsive, and produces good color.



Dedicated function buttons provide an alternative to the touchscreen for quick operation

Unique challenges and how to overcome them

There are several features that the BMPCC4K does not offer that are found on other 4K 60p cameras, like the Panasonic GH5, Panasonic S1, and Canon 1DX II. Fortunately, none of these are deal-breakers and once understood, pose very little drawback.

There is no in-body Image Stabilization (I.S.) on the BMPCC4K. In-body I.S. is commonplace among current mirrorless cameras, with some models (like the Panasonic S1) featuring up to 6 stops of stabilization. Video clips from the BMPCC4K do have noticeably more natural handshake than those from a camera with built-in I.S.

Fortunately this problem is easily compensated for. We applied a stabilizing effect in post and only lost about 1-2% resolution based on how little the clip needed to be cropped in. The 4K DCI resolution and the extra pixels it records provide most of the 1-2% resolution that we needed to achieve optimal clip stability. If using the BMPCC6K you'll have another 2000 pixels worth of resolution to work with when stabilizing in post.

The BMPCC4K does not have any continuous, tracking, or following autofocus modes. Single autofocus works great though, and some camera operators may also choose to utilize the manual focus ability for ultimate control. Many cinema cameras do not offer anything other than single autofocus, so while many mirrorless and SLR cameras have an advantage here, we cannot fairly hold this against the BMPCC4K. It should also be noted that the autofocus speed of the BMPCC4K was slowest among other 4K 60p capable cameras.

File sizes generated by the BMPCC4K, especially at best quality settings, are massive in comparison to just about every other comparable mirrorless and SLR camera. When shooting in either RAW or ProRes at the ideal settings for image quality the camera could record about 1 hour of media to 1TB storage device.

Even though the BMPCC4K can accept SD and Compact Flash cards, the huge file sizes dictate the use of a higher capacity media solution. The cool thing about this is that the camera can record directly to a Samsung 1TB SSD, which is relatively inexpensive, compact, and lightweight. It can even be mounted inside the housing ensuring the maximum amount of recording time without having to open the housing to exchange media.

Raw video for perfect color

The first rule of underwater video is that if the color isn't right, then nothing else in the clip really matters. Having the ability to correct the color (and exposure) of a clip on a metadata-level without incurring quality loss is one of the most beneficial abilities for the underwater videographer because it can allow for recovery of clips that had color and exposure slightly off in-camera.

A standout feature of the BMPCC4K is its ability to shoot RAW video. It does so using a proprietary Blackmagic Design video codec known as Blackmagic Raw, generating .BRAW video files. The power of RAW video is similar to that of shooting RAW photos; the exposure and color information within the image may be changed in post without causing damage or degradation to the original image.

This is a huge deal, because RAW video has



The NA-BMPCCII housing allows for a portable SSD to be installed, allowing the camera to record about 1 hour of RAW video before having to offload or swap media.

previously been locked behind 5-figure budgets on costly cameras like RED and ARRI. The fact that the BMPCC4K is only \$1,299 and manages to capture RAW video is just flat out awesome.

No other comparable camera produces video that even comes close to this level of editing power, giving the BMPCC4K hands-down the best video image quality in terms of color and correction.

The in-camera white balance value maxes out at 10,000K and has a maximum tint value of 50. During editing we can expand these values on a metadata-level to 50,000K and a maximum tint value of 150. This provides enough range to correct color on clips that were a little off the mark without incurring any detail or quality degradation.

How we handled the RAW video

The proprietary .BRAW files produced by the BMPCC4K cannot just be opened up and imported into any editing software. As a bonus to the camera owner, a free license for the Studio version of DaVinci Resolve is included with the camera purchase. DaVinci Resolve is an industry-standard for many professional editors and especially colorists. Many users prefer Resolve to other editing programs for its color correction and color grading tools and workflow.

REC 709 Color vs. RAW

Our eyes are used to seeing colors displayed on screen in a REC 709 color space. There's too much to cover about color space to go into detail in this article, but REC 709 can be quickly summarized as a more limited color gamut that has become the industry standard for the majority of TVs, monitors, and screens in our modern world.

When shot in RAW, the BMPCC4K is recording in a wider color gamut than REC 709 and is capturing much more color information than the limited spectrum that REC 709 allows. The downside to this is that the RAW image when displayed on screen appears very



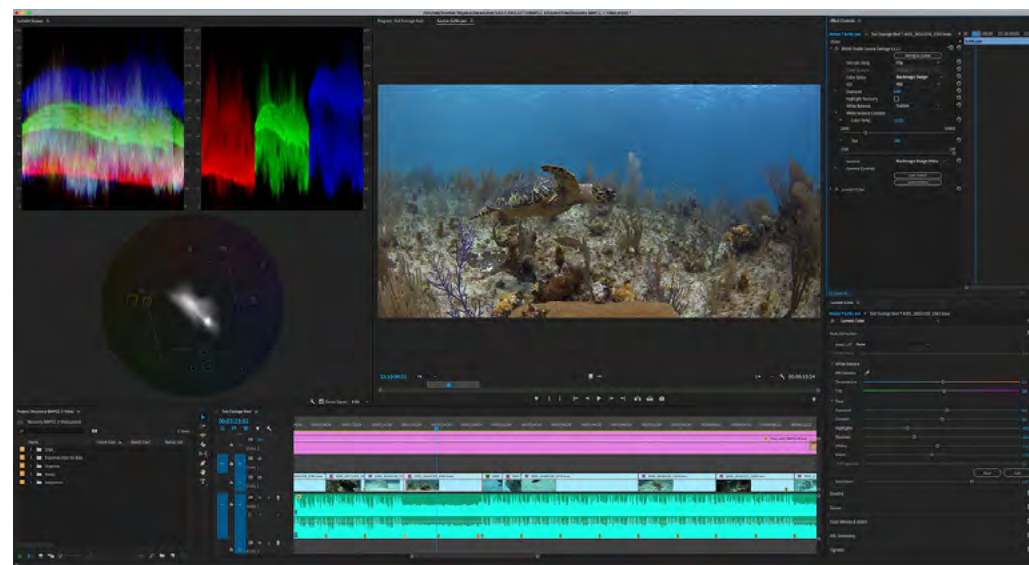
The BMPCC4K camera includes a license key for DaVinci Resolve Studio

neutral and flat. This is typical for RAW video previews but does not assist the shooter when determining color and exposure information. That is where a LUT comes into play.

Use a LUT (LookUp Table) to evaluate Color & Exposure

The easiest way to accurately evaluate color and exposure in-camera is by using a LookUp Table (or LUT). LUTs are an overlay on your image that transforms its look to one much closer to the final edited product. Shooting without a LUT is essentially shooting blind when it comes to exposure and color accuracy because the RAW image preview just doesn't provide enough info to us on its own.

You can even opt to have the camera "bake-in" the LUT you are using to your footage, making that specific look embedded directly into your video. This is good for turn-and-burn projects where you need to



It may look complicated at first, but color correcting and grading RAW footage from the BMPCC4K is easy once you get the workflow down

minimize time correcting color and exposure in post.

Getting the Look Right in Post

We found that the easiest method of obtaining good looking results in post was to use .BRAW 3:1 footage and apply a REC709 LUT. It's also possible to decode the RAW footage into a native REC709 color space, but this limits the colors and bit-depth available to work with on a metadata level, so why lose that info if we don't have to? Just apply your preset or custom LUT to the RAW clips, and then fine-tune the white balance and tint using the RAW editing panel. Further tweaks to exposure should be

performed using the Lumetri color effects. We found this to be the overall easiest and fastest way of getting great-looking results.

Housing Details - NAUTICAM NA-BMPCCII

At the time of this review, Nauticam is the only housing manufacturer producing a housing for the BMPCC4K. Their housing is the Nauticam NA-BMPCCII and we found it to offer some very practical advantages to this camera specifically for underwater use, where access to the camera body is restricted.

One of the coolest features is the built-in bracket for a portable Samsung SSD, allowing for 1+TB of



Four 18650 batteries greatly extend the runtime of the BMPCC4K

media storage directly in the housing. This is critical for having enough media storage to avoid having to do a card swap after every dive.

There is also an expandable battery holder which utilizes (4) 18650 batteries to significantly extend the runtime of the camera. This connects to the BMPCC4Ks AC power outlet, which the camera reads as being connected to wall power, so there is no percentage or battery level indication - only an AC power indicator. Our testing yielded at least two dives without the need for a battery swap, but err on the side of caution and recharge the batteries at least after every other dive to avoid mid-dive camera shut down.

The in-water operation of the camera is somewhat limited inside the housing because the camera relies so heavily on the touchscreen for operation. This is just fine because we have physical controls for all of the most essential functions: power, focus, exposure, white balance, and image review.

A dedicated control wheel on

the front is your primary interface for aperture/iris value, and as your scroll control for other options. There are controls for ISO, white balance, autofocus, and 3 custom function buttons all right at your fingertips. You also get a manual focus control wheel, a button to punch-in and magnify the image to check critical focus, and additional controls for auto-iris, high frame rate toggle, still photo capture, and the main menu.

The 3 custom function buttons are highly programmable, with a lot of different functions that come in handy. We switched between using Zebra Striping, Focus Peaking, False Color, Preset White Balance, and applying LUTs on these buttons to have even more control over the camera and our images while underwater.

It is worth noting that due to the lack of touchscreen control, media review is limited in the housing. Depending on the camera setting, it is only possible to either review only your last recorded clip, or play all recorded media in sequence. It's also impossible to delete or manage



All of the necessary controls are right at your fingertips with the NA-BMPCCII

clips in-camera, so once that space is recorded on your drive or card, it will be on there until you can connect to a computer. This is a very cinema-style feature, and while sometimes inconvenient, is still fairly in character with this style of camera.

A benefit of the BMPCC4K is that the 5-inch screen is so big, you don't need a monitor for a large, sharp image to review. It looks great on the built-in screen.

The N85 port opening is perfect for the smaller Micro Four-Thirds lenses and allows for a variety of dome, macro, and wide conversion ports to get the best shots underwater.

Nauticam also plans to support the BMPCC6K with an N120 port sized housing in the near future, and we will update this article with a link when it is formally announced.



Who should use the BMPCC4K?

Who is the BMPCC4K for? The underwater video enthusiast that wants to step up to the next level of video quality without a 5-figure budget. At only \$1,300, this system is insanely affordable for the image quality it produces.

This is hands-down the best video quality among all current 4K 60p SLR and mirrorless cameras, but it also requires the most work in post.

To make the most of it, you'll want to have some color correcting and grading experience in post, but even if you don't already have this, the BMPCC4K is a fantastic system to learn on. It's easier than most people think and you'd be surprised what you can learn with just a YouTube tutorial or two.

Altogether it's not that different than any other SLR or mirrorless camera because the color must still be captured accurately even when shooting RAW. The difference is that you have more dynamic range and color depth to work with and fine-tune without degradation or further compression and quality loss. In effect, you have more latitude to tweak your footage, but RAW is not magic and you still must pay attention to color and exposure while shooting.

Shooting RAW video is certainly not for everyone. While the results are fantastic, it will take you significantly more time to color correct every clip. If you'd prefer to keep your editing time to a minimum, cameras such as

the Panasonic GH5, Panasonic GH5s, and Canon 1DX II have much better underwater white balance allowing you to get your color right in camera.

If you already use a Micro Four Thirds system and have lenses that you have invested in, then they will carry right over to the BMPCC4K. This makes it an ideal upgrade path for Panasonic GH5 or Panasonic GH4 shooters that are ready to take the next step up in video quality.

Canon 5D shooters can also step up to the next level and carry over their existing lenses by considering the BMPCC6K with its Canon EF lens mount. If you are a Canon shooter that wants the video power of 4K 60P

RAW video then it makes a lot of sense to jump over to the BMPCC6K.

If you want the best image quality and most latitude in editing (most exposure/color correction, and grading) and you are on a tight budget, choose the BMPCC. The perfect tool for the ultimate video enthusiast without an extra \$20,000 laying around.

Pros

Best video quality from a handheld camera

ProRes for easiest results

RAW video for maximum editing range

Outstanding low and natural light

performance

Super affordable compared to other cinema cameras

Micro Four Thirds system maintains affordability and portability

Includes DaVinci Resolve Studio edition

Cons

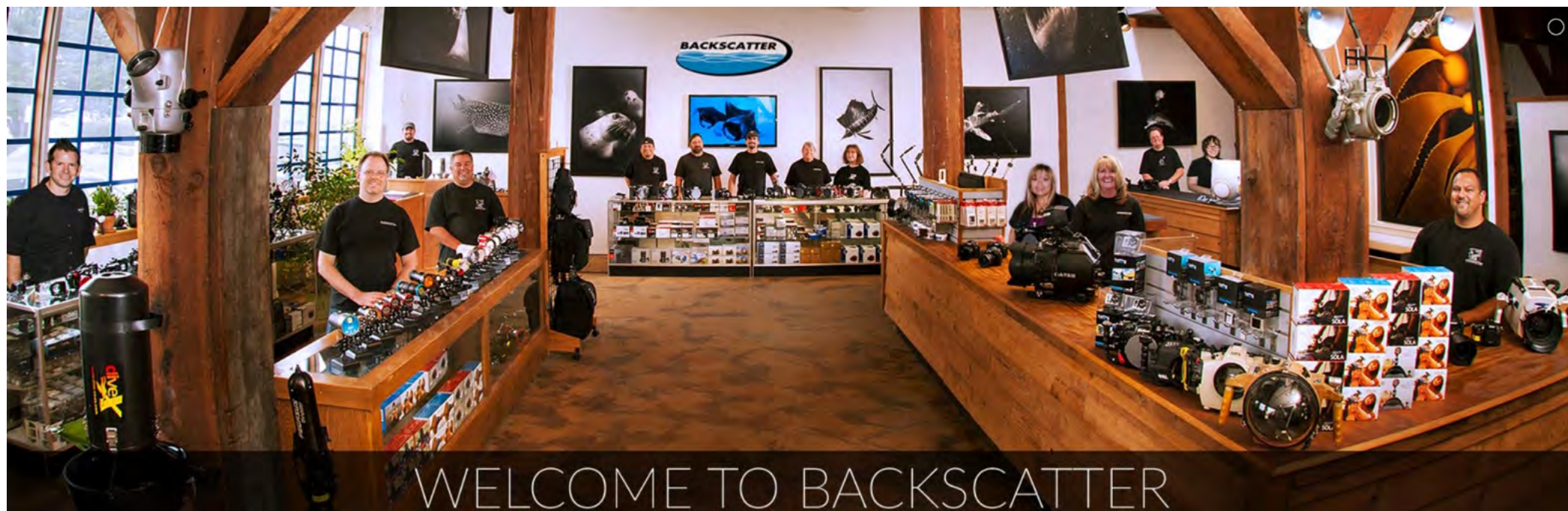
Complicated workflow to make the most of RAW video

No in-body image stabilization

Slow autofocus and no continuous AF

Produces very large file sizes

The Backscatter Team
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Sony FE 90mm F/2.8 Macro G OSS

by Phil Rudin

My most frequently used Sony lens is the FE 90mm F/2.8 Macro G OSS. This is a full-frame telephoto macro with 1:1 (life size) magnification that allows you to get very close to the subject.

This lens has an aperture range from F/2.8 to F/22 with a 27 degree angle of view and a minimum focus distance of 28 cm (11.02 inches). The optical design has fifteen elements in eleven groups with a front filter size of 62 mm. The direct drive super sonic wave AF motor internal auto focus system is fast, quiet and extremely accurate especially with the most current A7r III/IV and A9/II cameras.

The lens is 79 x 130.5 mm (3.11 x 5.14 inches) and weighs 602 g (1.3 Lb). It has exceptional image sharpness and the nine rounded diaphragm blades and specialized lens elements create a very smooth out-of-focus bokeh when shooting both macro and portraiture.

The fast F/2.8 aperture at or near life size allows for extremely shallow depth of field and a Nano AR lens coating helps to eliminate flare and ghosting associated with similar lenses.

The OSS designation stands for Optical SteadyShot image stabilization which works alone or in tandem with the IBIS (in body image stabilization) found in the Sony A7 and A9 series cameras. It features a focus limiting system with three options - Full which is 0.28 m (1:1) to infinity, 0.5 m to infinity (most useful above water) or 0.28 m to 0.5 m a very useful range for underwater macro and super macro because it reduces the amount of hunting the lens does especially with older versions of the A7 series.

The lens also has a large manual focus ring that slides back and forth to quickly shift between auto focus and manual focus. I have found this feature very useful above water, underwater you can easily shift from AF to manual in the camera's super menu when using a manual focus gear. The push pull focus ring is a feature of several Sony FE lenses

Juvenile Highhat, Sony A7R III, FE 90mm macro, Nauticam housing, S-Turtle in TTL, Two Inon Z-330 Strobes, ISO 50, F/4, 1/250th sec.



and it can be bumped from the AF to manual position when installing a lens into any housing with a dome or macro port. Be sure to do an AF test once the camera and lens are installed if you intend to use auto focus. The lens also has a focus hold button on the left hand side which can also be reprogrammed for things like Sony's stellar eye auto focus.

The lens also has professional quality weather sealing and ships with front and rear caps, a lens hood and a storage pouch. I prefer the slightly wider 27 degree angle of view and slightly shorter minimum focus distance of 28 cm on full frame to the 100mm 24 degree 30 cm and 105mm 23 degree 31.4 cm macro lenses.

Because the Sony 90mm macro can also be directly mounted to APS-C cameras such as the Sony A6100, A6400 and A6600 series the lens also has an equivalent focal length of 135mm with an AOV of 18 degrees. I have found this particularly useful with the new Sony A7R IV when switching between the full frame 61MP and 26.2MP APS-C modes. This gives me both a 90mm and 135mm macro on every dive by simply toggling between the two. You can find further details of how this works and sample images in my Sony A7R IV/Nauticam NA-A7RIV review in this issue of uwpmag.com.



Field testing the Sony 90mm F/2.8 Macro

I have tested this lens with Sony A7R II/III/IV camera bodies along with Acquapazza, Ikelite and Nauticam housings under a verity of shooting conditions including blackwater dives.

The newer Sony A7 III, A7R III/IV, A9, A9 II, A6400 and A6600 cameras have by far the best auto focus systems. With the current A7R IV I have been using the newest auto focus features.

I configure the 90mm macro lens with the focus limiter set from 1:1 to infinity in auto focus. On past Sony A7 cameras I always set the focus limiter from 1:1 to 0.5 meters which renders everything from life size, 1:1 to about 1:10 in focus. I find that most of the macro/closeup subjects I want to photograph fall well within that shooting range.

As I have said in past reviews it takes a few



(Left) Polka-Dot Batfish, Sony A7 II, FE 90mm macro, Nauticam housing, Two Inon Z-240 Strobes, ISO 200, F/11, 1/125th sec.

(Above) Yellow Headed Jawfish, Sony A7R II, FE 90mm macro, Nauticam housing, Two Inon Z-240 Strobes, ISO 200, F/14, 1/250th sec.



Greater Blue-Ringed Octopus, Sony A7R III, FE 90mm macro, Nauticam housing, two Inon Z-330 Strobes, ISO 200, F/18, 1/125th sec.

dives to get the hang of shooting within this rather short focusing range. By using the focus limiter I find that the lens is less likely to hunt and that the lens acquires focus more quickly than when it is set from 1:1 to infinity. With the A7R IV set to AF-C with tracking flexible spot the camera does not hunt like it did with prior versions set to infinity.

I have also equipped the macro lens with a focus gear and switch from AF to manual in the super menu. This allows me to rack the lens out to 1:1 if I want and just leave it there when I want to use the SMC-1 for

greater magnification. Once I have a subject in focus at 1:1 I can add the SMC-1 and just move the port closer to the subject regaining focus in the viewfinder. I also use the SMC-1 with AF but some subjects are easier to acquire with manual focus.

The A7R IV has a new imaging processor and autofocus algorithms which include realtime tracking in AF-C. This auto focus system works so well that I have abandoned back button focusing used with the A7R II & III and AF-S relying instead on the Lock-on AF Expanded Flexible Spot in AF-C mode. This combination



Pelagic Zoea, Blackwater dive, Sony A7R III, FE 90mm macro, Nauticam housing, ISO 200, F/13, 1/250th sec.

allows me to lock focus with a half press of the shutter and then drag the focus point around the frame while maintaining the original focus area. This means I can focus on an animal's eye in the center of the frame then drag the eye around the frame for the best composition without losing the tack sharp focus on the eye. Lock-on expanded flexible spot also allows you to adjust the speed that you drag the focused point around the frame. I have changed the factory default setting and sped up the movement to meet my needs. The A7R III with the latest firmware update and Sony A6400

and A6600 cameras also offer similar features.

I find blackwater diving to be one of the most challenging types of diving for an underwater photographer because of the near black lighting conditions and the constant movement of the subject, diver and camera. On my last blackwater dive in 680 to 700 feet of water we drifted over seven miles in an hour and a half dive. Trying to keep a one or two centimeters wide subject in view and in focus while drifting at over four MPH is more than a bit demanding!

I shoot most of the macro at F/11



Bubble Coral Shrimp, Sony A7R III, FE 90mm macro, Nauticam housing, two Inon Z-330 Strobes, ISO 200, F/18, 1/125th sec.

to F/22 at ISO 50 to 200 and shutter speeds from 1/60th to 1/250th. I like using F/2.8 to F/4 for very shallow depth of field and to separate subjects from a dull background. I have seen complaints on the internet about Sony FF cameras only shooting as high as 1/200th sec. This has not been the case for me I have found the 1/250th setting to be very reliable using a flash trigger and fiber optic cords. Perhaps issues with wired strobes or unsupported strobes may have caused these issues. I have also found the 5.5 stops provided by the IBIS in the Sony FF cameras to be very useful for

macro.

All of the housing systems I have used with the 90 macro have a direct mounted port system and offer manual focus gears to custom fit the lens. They also offer the 67mm port thread for mounting flip-adapters, closeup lenses, filters and more. I often use +5 to +15 C/U lenses to increased magnification. These closeup lenses should only be used to achieve super macro going beyond the 1:1 (life size) that the lens can do on its own. I frequently see photographers shooting from distances far beyond 1:1 while using a C/U lens which to me is



Mexican Tetra, Sony A7R II, FE 90mm macro, Ikelite housing, two Ikelite DS-161 Strobes, ISO-125, F/8, 1/250th sec.

defeating the idea of having a lens that focuses to life size in the first place.

For macro I am always using two strobes unless I am using a snoot and even then I may use more than one strobe. I have also used continuous light sources some with colors and a ring-flash. I find the lighting possibilities with two or more strobes to offer the highest number of lighting configurations.

If you own a Sony full frame camera system and have an interest

in macro photography the Sony FE 90mm F/2.8 is a must-have lens. Sony also offers a FE 50mm F/2.8 Macro in the \$550.00 range if larger fish portraiture are of interest.

The Sony FE 90mm F/2.8 Macro G OSS lens now retails for around \$1098.00 to \$999.00 on sale £1079.00 to £799.00 on sale at your authorized Sony retailer.

Phil Rudin

www.instagram.com/philrudinphotography

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Nauticam NA-EM1 - Long-term Review

by Oktay Calisir



Usually reviews are being made of brand new released equipment, I wanted to take the opposite route and make a review for a Nauticam housing which has been in use since the last few years, the good and bad, the wear and tear over the years...

Underwater housings are an expensive piece of kit we underwater photographers need to create our images, to rely on them and to take them with us all over the world.

This Nauticam Housing (NA-EM1) has travelled with me all over

the World, from the Caribbean to Europe and all the way across South East Asia. I have made since then a few hundred dives with this housing, have taken it cave diving, ocean diving, river diving, swimming pool sessions, it has been everywhere and in every imaginable condition. You can view images taken with this camera in my galleries.

I must say that I am still impressed with the quality Nauticam produces, touch wood, no housing flood yet...It had a few little hick-ups

but nothing major, more to this later but first I would like to add some pictures so you can see for yourself the condition it is now in...

Having a background in Mechanical Engineering and CNC Software Programming, I have always maintained and cleaned the housing after every dive, soaked it, rinsed with fresh water, blow dried and wiped it up...

The white lettering on the knobs and camera controls have faded and fell off partially twice which

I have replaced/filled with white permanent marker pen by Edding 751 – Permanent White, since the last ‘maintenance’ a year ago, another 100 dives and they letterings are still perfect.

I also use housing maintenance oil for general cleaning, time to time so the black anodised areas still look fresh. On the bottom of the housing I had some small scratches, minor marks which I always touched up with gun marker pens from Birchwood Casey – Super Black (they come in

two different versions – gloss and flat back) to prevent oxidation.

The screws on the handle bars and the main connections to the housing, they always become loose after 10-15 dives so I fixed them with Medium Strength Screw Stop (V-Tech Medium Strength Threadlocker Blue), preventing also water being trapped in there causing oxidation. The screws can always easily be screwed out and the compound replaced.

While in the Maldives my back button focus lever part inside the housing broke, Nauticam and Reef Photo & Video did a great job sending me replacement parts within a short period of time, that's what I call good customer services...

All in all, I am very happy with the quality of Nauticam and I am looking forward to use this housing in the future as well. With the right maintenance and care I think it is possible to extend the usability and lifespan of this expensive housings and make the most of them.

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Issue 111/56

THE SOURCE



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WETPIXEL

Wide angle with the SONY A7RIII

by Dr Simon J. Pierce

I recently wrote a post on my updated settings for underwater macro photography with the Sony A7rIII, so I thought I'd kick on and do the same for underwater wide angle too.

For the moment, this post focuses simply on my settings and tips for underwater wide angle photography with the Canon 8-15 mm fisheye lens (using a Metabones V adapter) on the Sony, housed in a Nauticam NA-A7RIII housing with a 100 mm Zen dome port.

Camera settings for all occasions

I've always shot uncompressed raw files so far. I'll switch to compressed raw for situations where I'm constantly hitting buffer limitations in future, though – dusky dolphins, I'm looking at you. The reduced file size increases the buffer depth and helps the camera clear the images (much) faster, so I can keep taking photos instead of swearing through my snorkel.

I've got the "Pwr Save Start Time" – i.e., camera sleep time – set

to one minute. I don't turn the camera off while I'm in the water, so this conserves battery during lulls.

I often shoot one-handed, so I use shutter-linked autofocus to make that easy. I use continuous autofocus (AF-C) so the camera can keep up with a moving subject, and "Lock-on AF: Wide" focus tracking... most of the time. Bear in mind that continuous shooting and tracking only work together properly at apertures up to f/8 in the A7rIII. Above f/8, it'll just stay focused on the first distance that focus was achieved. Not useful when an animal is approaching you. It's fine if you're just taking photos one at a time, rather than shooting in bursts.

I've set "Priority Set in AF-C: Balanced Emphasis" so that the camera will try to ensure focus has been achieved before it starts firing.

I set my white balance to "Cloudy". That adds a slight warming effect to underwater images to help counter the blue-green ocean.

I use "Multi" metering so the camera is considering the whole frame. The default setting is for exposure to be locked while the



Hawksbill sea turtle (Eretmochelys imbricata) eating a jellyfish at Nosy Tanikely, Madagascar, just off Nosy Be and Nosy Komba.

Geared up for wide angle at Nusa Penida, Indonesia I use a pair of dome diffusers. Note that you have to pull the strobes well back – with the front of the strobe slightly behind the handles – to avoid lighting up the sides of the image. (I'm writing this to remind myself, as they're never back far enough...) The strobes (and camera) are normally good for about three dives before I have to charge the batteries.





shutter is depressed, so I've switched that off ("AEL w/shutter: Off") so the camera is always evaluating even when I'm shooting a burst of images.

The "Creative Style" on the camera, applied to the embedded jpegs in the raw files, is set to Standard. I always post-process my photos in Lightroom (and occasionally Photoshop), so I don't want the camera to be adding its own edits.

I find it all too easy to bump settings in the boat or water, so I disable any buttons that I'm unlikely to use.

Shooting in natural light

When I'm shooting large, slow marine animals in natural light (like whale sharks) I use a High frame rate (8 shots per second). My standard settings are 1/320 sec and f/8, in manual mode, with Auto ISO (100 base, maximum 3200). I'll increase the shutter speed for fast-swimming animals like dolphins and sea lions, where I can get away with it, and decrease shutter speed in low light. Ideally, I'd probably use f/9 or f/10 for improved corners in the small dome port, but the tracking autofocus limitations above f/8 are too much of a trade-off most of the time.



Auto ISO is super helpful, particularly with Sony's great sensor, but I'm still working out the best way to use it in practice. I've been diving into the confusing subject of ISO invariance and my understanding is that, above dual gain kicking in at ISO 640, the A7rIII is effectively just increasing brightness. There's an argument, then, for just setting Auto ISO to 100–640, when using manual settings, and adjusting brightness in Lightroom later, thereby optimising data capture while protecting highlights. I haven't actually tried that though.

I rarely change these settings while I'm in the water.

Shooting with strobes

I use dual Sea & Sea YS-D2 strobes (now superseded by the YS-D2J) with Eneloop Pro batteries, a Sony flash trigger, and Nauticam optical sync cables. Note that YS-D2s previously weren't compatible with the flash trigger, but they are with the most recent Nauticam optical sync cables.t

I use a pair of dome diffusers. Note that you have to pull the strobes well back – with the front of the strobe slightly behind the handles – to avoid lighting up the sides of the image. (I'm writing this as a reminder to myself, as they're never back far enough...)



The strobes (and camera) are normally good for about three dives before I have to charge the batteries.

One of the great things about shooting mirrorless is the “what you see is what you get” when using the EVF or LCD. However, it’s helpful to switch this off (“Live View Display: Setting Effect OFF”) when shooting with strobes. Otherwise, the screen can be too dark to compose a shot easily.

Of course, you do want to see how your exposure settings are affecting your background, and there’s a neat way to accomplish this: program your AF-ON button (accessed via the thumb lever on the

Nauticam housing to “AF-ON Button: Shot. Result Preview“. That means you can quickly check your ambient light exposure by just pressing your thumb, rather than taking a photo and checking it. (Of course, that only works if you’re using shutter-linked autofocus.)

My starting settings are normally 1/160 sec, f/10 and ISO 200 (in Manual mode). I’ve set the AEL button to ISO, as it’s easily accessible on the housing, and I’ll often adjust exposure using ISO until that hits around 800 (see my note on ISO invariance above). At that point, I’ll start reducing shutter speed, and aperture if it gets really dark. I

quite like the cool motion blur you get from rear sync flash and slow shutter speeds, so I’ve got flash mode programmed to my C3 button on the left side of the housing. I normally use Fill Flash, with the strobes set to 22 as my initial setting.

I’ve been playing around with automating my exposure settings more. When we’re working with whale sharks in the Galapagos, in particular, we’re changing depth and ambient lighting at a speed that I find difficult to deal with manually. I’ve trialled using Auto ISO (base 100, max 800) and negative exposure compensation – conveniently accessed through a dial on the housing – and that works quite well as long as I keep an eye on the background exposure (using the thumb lever, as above). I still have to make adjustments, but it does get it approximately right in a hurry. I normally start with -1.0 exposure compensation and adjust it from there.

A few more miscellaneous notes:

I set Auto Review to 2 Sec, so I can check things by eye when required.

I’ve got Drive Mode set to Single Shooting. Otherwise the strobes can get out of sync due to minor variation in recycle times.

It’s easy to accidentally hit the movie lever. I normally switch that off and use a GoPro Hero 7 for video.

I’ve set my defaults to the MR 1 dial position, which saves most things, except shutter-linked autofocus and other button customisations.

Hope the above is useful – I’m still working things out as I go, but I do love the functionality and customisation opportunities with the Sony A7rIII, and how the Nauticam housing lets me access key options quickly and easily. Ergonomics count for a lot, peeps.

Dr Simon J Pierce
www.naturetripper.com

*Marine Biologist, Writer, Photographer
 Principal Scientist & Senior
 Photographer at the Marine
 Megafauna Foundation. Partial to the
 odd fish pun... just for the halibut.*



Macro with the Sony A7RIII

by Dr Simon J. Pierce

Mads and I just finished up a few days of muck diving at Scuba Seraya Resort near Tulamben in Bali – which I highly recommend. The trip gave me a few days to test and refine my gear configuration for macro, so I thought it'd be useful for Future Simon – and hopefully you too – to write up some notes on underwater macro photography with the Sony A7rIII camera, Sony 90 mm macro lens, and Nauticam NA-A7RIII housing.

This is my third macro stint (following Nosy Sakatia in Madagascar and Mafia Island in Tanzania last year) with my new(ish) Sony system after several years of using micro 4/3 cameras. I'm starting to figure out what works best – for me, at least.

Exposure settings

My default settings are 1/200 sec, f/16, and ISO 200. My Sea & Sea YS-D2 strobes are set on 22. I shoot with both the camera and strobes in manual modes. I've tried to increase my depth of field by using f/22 (and ISO 200, 1/200 sec) but the resulting photos were noticeably less sharp than at f/16, presumably due to diffraction.

To get a correct exposure at f/22 I also had to bump the strobe power up to their maximum, 32, which made the YS-D2s unhappy if I was taking several shots in a row. One of the strobes started flashing at me at one point, then stopped working – I presume it overheated. It was fine after I turned it off and gave it a short rest.

I wish the camera had a faster strobe sync speed – Sony advertises 1/250 sec, but it turns out that only works for certain high-powered flash systems. Dagnabbit. It would be nice to eliminate or minimise ambient light through a faster sync speed.

Dealing with crappy autofocus

The Sony 90 mm is notoriously slow to focus. This is definitely a thing, but you can deal with it. First, set the focus limiter on the lens to 28 – 50 cm. That helps. Setting the focus mode to AFS and “release priority” might help a bit more. Ultimately I've started using the DMF focus mode – Direct Manual Focus – which is super useful. Here's a great explanatory video by Mark Galer (my main guru





for Sony camera settings):

To get the best use out of DMF, decouple the shutter from autofocus. I've set my A7rIII to back-button focus using the AF-ON button. The dedicated thumb lever that Nauticam has on the housing makes this easy to use. When you press the AF-ON button with the lever, the camera uses AFS autofocus to get close(ish) to the correct focal plane. Once it's in the correct neighbourhood, you can release the button and use focus peaking to get the exact focus you need by moving the camera forward and back slightly.

What's focus peaking? It's the best thing ever. I've set my peaking

level to High, and red in colour. The LCD (or EVF, if you use it for composition) will then highlight everything that is in focus with a red fringe. The depth of field at f/16 is reeeeeeeally thin, so the peaking makes life far easier. Frankly, I'd find the 90 mm extremely frustrating to use without this focus aid.

I do own the manual focus gear for the 90 mm, but I didn't bring it to Indonesia because it takes up bag space. I thought DMF would be sufficient. That might have been a bad call. In practice, it's really hard to find the minimum focus limit using DMF. Some of the nudibranchs we found (and when I say "we", I mean

our guide or Mads, I'm useless) were teeny, so it would have been really useful to be able to quickly set my focus distance to 28 cm.

Next time, I'll try assigning the AEL button to AF / MF toggle, setting MF to the true minimum focus distance using the gearing, then toggling to DMF if I want to change the working distance. I'll update this post once I've tried that. If that doesn't work, I guess I'll have to start using a focus light.

Mark Galer did another video on speeding up low-light autofocus for Sony systems, which I found useful while I was working out the above settings:

Customising the camera

I tend to set the camera up for the specific shooting requirements I need for different projects. I've set all the above to memory recall 2 on the camera, although it doesn't save button assignments. Aside from the above, there are a couple more customisations I make for macro:

I tend to accidentally hit the movie lever quite a lot while I'm moving around, so I've turned the movie recording function off (I wish that button could be reassigned, but it can't) when I'm not in movie mode.

My AEL button is set to ISO at present, but see above – I may change



this around, as I don't alter ISO often during macro work, and I can still use the direction pad for direct control if needed.

I've set C3 to switch manually to "Super 35" (= crop sensor, APS-C) mode, which is a 1.5x digital zoom, as a budget supermacro. I only used it a couple of times at Tulamben, but it can make it easier to get exact focus and composition with particularly tiny subjects. The files are still 18 MP with the 1.5x crop (the joy of a high-resolution sensor), so they remain eminently usable – the lens becomes, effectively, a 135 mm macro.

At some point I'd like to buy the Nauticam SMC-1 for some true

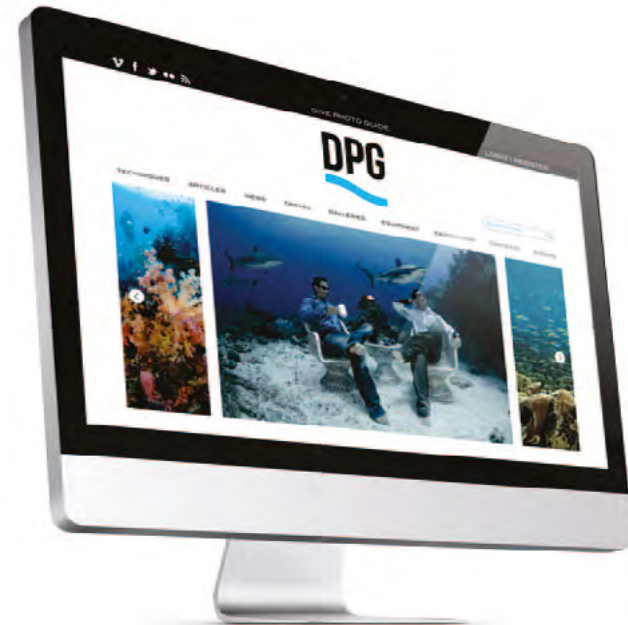
supermacro. But I digress.

Anyway, that's all very geeky, but macro is super fun! It's totally worth geeking out over. Hope this all helps someone out there... if you've got any questions or suggestions, I'd love to hear from you in the comments.

Dr Simon J Pierce
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Close Encounters

Macaron's Realm

by Mark Harris

A macaron is a small circular meringue biscuit, of French origin. The Bottlenose dolphin we made friends with off the west coast of La Réunion in the Indian Ocean, in all likelihood was known by another name. Seeing as he had a healed wound on his underside, about the same size as a macaron, I'm happy enough to name him that for now.

Myself, partner Laura Storm and three other underwater photographers hadn't made the lengthy journey from the UK to Réunion in search of dolphins. Eighteen months previous, we had started our planning to find and photograph Humpback whales. Réunion had the reputation as an area with an abundance of Humpbacks, in the right season.

The downside to long-term plans is that a lot can change in eighteen months. And it had. The first setback happened six months before our trip, when changes to regulations involving cetacean encounters came into force. Essential measures designed to protect the animals' welfare, the necessity of which we fully understood. But since we had already researched and storyboarded for photoshoots that we

knew to be ethical, non-intrusive and on the humpbacks' terms, the changes imposed additional considerations.

Boats could now be no closer than 100 metres from a cetacean. In the water, swimmers, freedivers and photographers had to be a minimum of 15 metres away. One boat could approach at a time with a maximum of 5 divers allowed in the water and for only 15 minutes. If there were more than three boats on the scene, then all in-water experiences were prohibited. Surface marker buoys had also become mandatory and in water, the group had to stay close to the buoy, a visual signal for boat traffic.

For encounters not involving in-water activity, and to control intrusion and noise from whale-watching boats, a total of five boats were allowed within a 300m range.

The reality is that these measures have generated a free-for-all mentality. On perpetual high alert, boat crews are in contact with each other the moment a whale has been sighted. And a bright red buoy



Sun setting on the west coast of La Réunion (along with the prospect of finding a humpback). iPhone 6, F2.2, 1/186s, ISO125



*He had a healed wound on his underside, about the same size as a macaron
Panasonic GF1 housed in INON X-2, lens Lumix G Vario 7-14mm at 13mm, no
strobes, F6.3, 1/100s, ISO400*



Macaron approaches bearing a gift. Panasonic GF1 housed in INON X-2, lens Lumix G Vario 7-14mm at 13mm, no strobes, F6.3, 1/100s, ISO400



Will you be eating the fish I've just given you? Panasonic GF1 housed in INON X-2, lens Lumix G Vario 7-14mm at 13mm, no strobes, F6.3, 1/100s, ISO400

bobbing about in the ocean is a dead give-away; triggering a mad scramble to get in on the action before the competition.

As our trip drew closer we received more bad news. The Humpback season was late, and when whales did finally arrive there were only a handful. Then, just before boarding flights, we discovered we were due for high winds soon after arriving. Things weren't looking great.

All the optimism in the world didn't change the more probable outcome. Grounded for three out of the planned 10 days. Humpback encounters on the other seven? L'oeuf. The big egg.

We had seen dolphins on most days at sea, but had chosen not to interact with them. Simply because there would typically be a queue of other boats nearby, and waiting our turn decreased the time available to scour the ocean for larger creatures.

By day six however, we accepted our fate and jumped into the deep, blue pool with the dolphins.

Our first encounter was with Spinners, who were quite focused on moving from A to B without wasting time with an audience. Seen it all before, no doubt. So that experience was short and sweet, and not particularly productive with the image capturing process.

On our last day we made an early start, and after half an hour or so, I

spotted a lone fin breaking the surface now and again, some distance away. We slipped into the water and within a minute or two, Macaron made his approach.

Clamped between his jaws were the remnants of a partially devoured fish. I have since discovered that Indo-Pacific bottlenose males often carry around half-eaten fish. Typically the bottom half. Possibly to show off their prowess as hunters to females and younger dolphins, although in this



Mark offers to return the fish. Canon EOS550D housed in Sea&Sea RDX550D, lens Sigma 15mm fisheye, no strobes, F8, 1/250s, ISO400.

Image courtesy of Laura Storm.

case Macaron was a lone entity.

He circled around a few times and then released the fish, right in front of us. In the past, I have spent time in the water with Atlantic spotted dolphin and seen similar behaviour with pieces of seaweed. This is where they play with it for a while, then release it for another dolphin (or human) to do the same. Unsure of Macaron's intent, I picked up the fish.

This triggered an immediate response. Clicks and whistles came forth, and encouraging head and

tail movements (from Macaron, not me). I sensed he was happy, but in hindsight it could have been a sign of frustration. I tried handing the fish back, but he wasn't having any of it. Then I remembered how dolphins give and receive - by letting go. So I did just that.

The next event I feel sure was a lesson. Macaron picked up the fish and started to gulp it down, tail last. Up until a point. He then regurgitated his half-eaten trophy and brought it back to me. Again he let go.



This is how to eat it! Panasonic GF1 housed in INON X-2, lens Lumix G Vario 7-14mm at 14mm, no strobes, F6.3, 1/100s, ISO400

The significance of his actions didn't immediately dawn on me, but I picked up the fish for a second time. Macaron must have felt his work was complete. Job done, good deed for the day. A flick or two of the tail and he disappeared into the depths. I really hope he didn't see that I let go of his fishy gift, and let it sink to the seabed. I'd already had a croissant for breakfast.

There can be different

interpretations of what happened that morning, and although mine is of a magnanimous dolphin donating his treasured catch, perhaps it was nature's way of sending a message. For years now our species have thrown fish at dolphins to get them to perform tricks for human entertainment, cruelly imprisoned in concrete enclosures. Let's stop doing that.

Douglas Adams put forward



Panasonic GF1 housed in INON X-2, lens Lumix G Vario 7-14mm at 13mm, no strobes, F6.3, 1/100s, ISO400

an interesting theory on dolphin intelligence in The Hitchhiker's Guide To The Galaxy. He wrote, "On the planet Earth, man had always assumed that he was more intelligent than dolphins because he had achieved so much — the wheel, New York, wars and so on — whilst all the dolphins had ever done was muck about in the water having a good time. But conversely, the dolphins had always believed that they were far more intelligent than man — for precisely the same reasons."

Was this then what it was all about?

Mark Harris

Mark is a freediving underwater photographer and author of 'Glass and Water' - the essential guide to freediving for underwater photography.

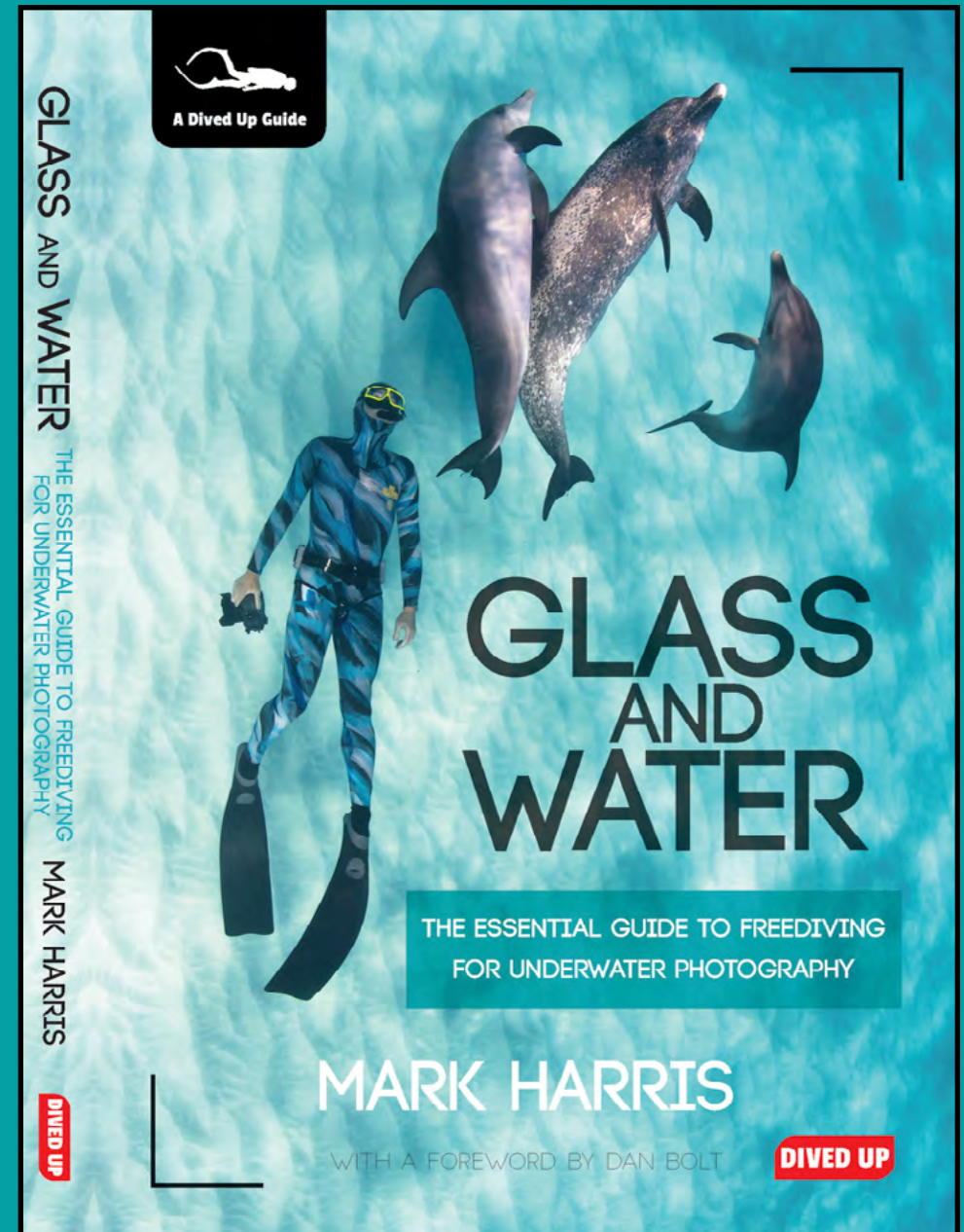
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Komodo and The Mermaid

by Anite Verde

Our driver weaves his way through the chaotic traffic leading to Bali's Benoa Harbor and pulls over, "we can get out here," he says. In a flash, our dive and camera gear are whisked down to the harbour by a friendly smiling Balinese gentleman, who I'm sure can't believe how much gear we've got as he struggles with our bags. We wave goodbye to our driver and make our way down to board our home for the next week, the MV Mermaid II. As we board, I remember I still have a banana in my carry on, I quickly eat it, everyone knows that taking bananas on boats is bad luck, right? At least that's what my dad always told me.

As we approach the Mermaid, her body glistening in the sun, the hustle and bustle of Bali begins to fade. We are on our way to Komodo, a land of Jurassic proportions, where rugged coastlines and hillsides of dry savannah stretch down to brilliant sandy beaches and delicate coral reefs.

As we board the Mermaid, we are greeted by our trip leader Montse who eagerly tells us about the exciting week of diving we're about to have. "Apart from the dragon" she says, "the mantas are the highlight

in Komodo". As we settle into our home for the next week, assembling our dive and camera equipment, we are thrilled to see that some Brazilian divers we met whilst diving the Alor Archipelago are also on board. It's going to be a fun week.

Located in the Lesser Sunda islands between Sumbawa and Flores, and bordering Indonesia's East Nusa Tenggara and West Nusa Tenggara provinces, Komodo National Park is a biodiversity hot spot both terrestrial and marine.

Founded in 1980, the original purpose of the park was to protect wild populations of the world's largest lizard, the legendary Komodo Dragon. But as the importance of the region's unique marine biodiversity was realised, 113,000 hectares of marine reserve was added to form what we now know as the Komodo Biosphere Reserve and National Park.

A UNESCO World Heritage site for good reason, the park is believed to be home to almost 6,000 dragons across the islands of Komodo, Rinca, Gili Motong and some areas of western and northern Flores. Getting up close (but not too close) and personal with the dragon is one of the





many reasons' visitors come to the region. Yet while Komodo's top side attractions are certainly worthy of the effort, we came for the magic that lies beneath.

After a very thorough on-board safety briefing, we leave the chaos of Bali far behind as we cruise into the sunset on route towards Sumbawa. We spend this time socialising and getting to know our diving companions and crew for the next week. There are 17 guests on board the Mermaid, although she can take 18. With divers from all over the world, the boat is full of excitement for the week of

diving that lies ahead.

As my stomach starts to signal dinner time, our first meal magically appears - a delicious prawn curry and numerous side dishes served buffet style. When you're diving four times a day food is super important and can be the difference between a good and bad trip. After the first meal, I'm happy to say that chef Bruno and his team are up to the challenge.

As late evening approaches, we retire to our cabin; complete with double bed, its own air conditioning, bathroom and good storage space. It takes us a while to settle into the

rhythm of the sea and familiarise ourselves with the pulse of the Mermaid's engines as she moves her way through the open water. Regardless of how cosy we feel, the promise of tomorrow's diving means we're too excited to sleep well.

The following morning, we awake moored at Moyo Island for our first dive at Angel Reef. While we're not even in the Komodo National Park yet, the calm, clear waters below us are full of promise. On submersion, my tired eyes are now wide open as we explore the reef's beautiful steep wall adorned in its kaleidoscope of

soft corals. It's a vision so majestic, that I find myself unconsciously edging backwards as if that would somehow help me fit the entire reef into my field of view. With reef sharks, shoals of small fish and bigger species, like batfish, bannerfish and red tooth triggerfish dancing around us, this is a magical way to start our trip.

Unless you've been living under a rock somewhere, you'll undoubtedly be aware of the celebrated diversity of Indonesia's reefs. Komodo's waters provide a safe environment for hundreds of species of coral, sponges



and bony fishes along with crustaceans, turtles, dolphins, whales, manta ray, sharks and numerous invertebrates - all attracted by its nutrient rich waters and often ferocious currents.

Over a mouth-watering lunch which I added a regrettable mountain of chilli sambal, dive guide Yeray tells us that there are over 50 dive sites in the Komodo area. “There’s an astounding diversity of marine species here” he explains. “Almost anywhere you get in the water is an amazing dive site”.

With food in our bellies we retire to the sundeck for a quick nap. The soft breeze and warm sun is the perfect recipe for relaxing. As I begin to drift off to sleep someone shouts “dolphins”. Dragging ourselves up off the deck we approach the railing and peer over. Actually, it’s not dolphins, but mobula rays dancing at the surface. We watch them as they hunt a bait ball of small fish and wait in anticipation for their cheerful acrobatic display - but not today.

It’s not long and we’re back in the water searching for pygmy seahorse, before cruising two hours to Satonda Island for our first sunset dive at Satonda Sandy. We head to the dive deck and gear up. With quiet seas and the sky on fire we board our



dive tender. Yes, it’s as good as it sounds.

While the Komodo region can be dived via land-based operators out of Labuan Bajo in Flores, the absence of land-based operators in the National Park itself means long boat rides can be necessary to reach the park’s best dive sites. The region therefore lends itself well to a dive safari boat which ensures jaw dropping topside scenery and superior access to the park’s impressive dive sites.

Although most dive safari boats base themselves in Labuan Bajo, being ‘liveaboard virgins’ we chose to board the Mermaid II for its size, reputation and convenient Bali - Komodo - Bali itinerary.

Exploring Indonesia’s waters for almost



20 years, the Mermaid II is an impressive dive safari boat catering to 18 divers in deluxe accommodations. A large comfortable dive deck



and dive platform provide easy exits and entries to the dive boats, and as photographers, we were thrilled to see the dive deck was complete with camera setup and rinsing stations making it easy to keep our equipment maintained and clean.

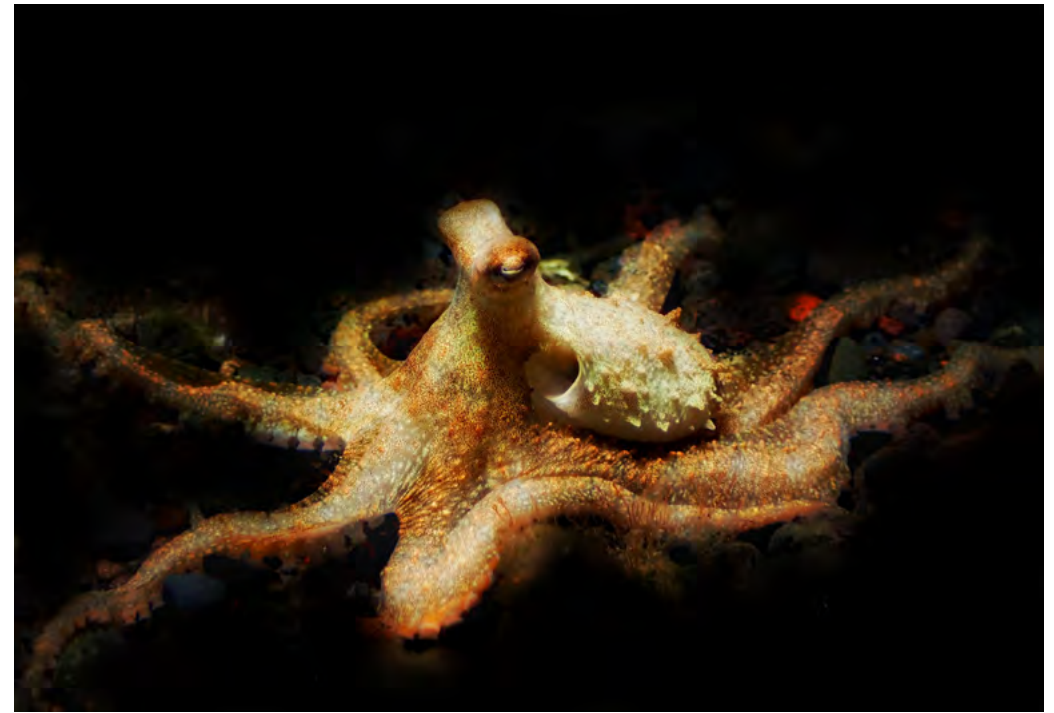
Naturally, being our first liveaboard trip we were slightly apprehensive at first, but as we eased into the rhythm of the sea we actually loved being on board. I'm not sure if it was a side effect of the sea sickness tablets, but it was as if the Mermaid floated wherever it liked, and I wondered if actually a giant octopus

was gently carrying it around for reasons lost to time.

Each day on the Mermaid went something like this: eat, dive, eat, sleep, dive, eat, sleep, dive, eat, sleep, repeat. And while the daily naps weren't mandatory, we'd certainly recommend them.

Whilst it would take a lifetime to explore all of the dive sites around Komodo's islands, we spend the next few days enjoying some of the most famous sites in the National Park.

At Castle Rock huge schools of fusiliers and surgeon fishes seduced giant trevallies and Spanish mackerel.



White tip and black tip sharks also patrolled the area, alongside eagle rays, blue spotted rays and hawksbill turtles.

Cannibal Rock's stunning corals were home to sea apples, devil scorpion fish, pygmy seahorse, octopus and many varieties of nudibranch and flatworms, alongside large schools of fish, including big eye snapper and yellow-mask surgeon fish.

With low visibility because of its southern location and nutrient rich waters, Secret Garden appeared as a magical emerald underworld with masses of striking soft corals, cuttlefish, blue spotted stingray,

frogfish, leaf scorpion fish and schools of five-lined snapper and fusiliers.

When you're diving, it's easy to always focus on the majesty of the ocean, after all that's what we were here for right? It's only as the day of diving ended that I remembered to look around me to see the magnificent Padar Island. We board our dive tender, approach the island and surrender to the allure of land. As we climb to Padar's impressive view point, Komodo's rugged coastline is bathed in a soft glow. By the time we reach the top, a riot of colour confirms its status as one of Indonesia's most magical landscapes.

The Mermaid's eight-day,



seven-night itinerary included a total of 20 dives with the added highlight of walking with the dragons. Found nowhere else in the world, the Komodo Dragon as you may remember from its debut in James Bond's Casino Royale is known for its impressive size, formidable appearance and astonishing ability to devour very large animals. As we step foot on the island of Rinca our ranger Benny stands proud with a large forked stick. "Just in case they get a bit close" he explains. "But if they start to get aggressive, then get ready to run". He goes on to tell us that the

dragon's saliva contains bacteria that will eventually kill another animal. "The dragon bites the buffalo and then stalks it, sometimes for up to a week until it dies and it can be devoured" he says. Needless to say, our friendship with the dragon is somewhat aloof.

Before getting back on board, an impromptu game of football begins. Typical, you can always trust Brazilians to find a football!

The next morning, we attempt the most anticipated dive of the trip, the Shotgun. As we descend down and make our way towards an area known as the Cauldron, we are welcomed

by a large school of huge bump head parrot fish cruising the water like the coolest kids in school. We cross the Cauldron and approach a narrow passage of water; this is the Shotgun. When at its entrance, I expel the air from my buoyancy vest in anticipation of being shot headfirst and up towards the surface. Our dive guide Angela signals "one, two, three" and a gun with her hand as we feel the current lift us up and accelerate us forward. As we fly along, tumbling like a grain of rice in a boiling pot they appear; the most vulnerable, intelligent and enigmatic creatures in our oceans,

the manta ray. Gently flapping their pectoral fins, they hover in the strong current. Like huge fighter jets, their mouths are wide open as they enjoy the nutritious plankton rich waters. It's as if we have entered a manta mega restaurant! We continue to shoot the passage, passing more and more mantas as we go. I do my best to stay up current and enjoy an intimate moment with them. As always, these amazing creatures left a lasting memory that no camera could ever hope to capture.

Our exhilarating dive at Shotgun is followed by a dreamy dive at

Crystal Rock, where we spend most of the dive marvelling at turtles, rays and dancing with huge schools of jack fish.

That afternoon we begin to motor our way back towards Bali stopping off at the Sangeang Volcano. Every thirty minutes or so, a gust of ash rushes from its crater, a humble reminder of this strange rock that we live on. I was surprised to see that at the base of the volcano lay a small village settlement, Bontoh village - yes people actually live here!

Today's afternoon dive is located at the base of the volcano and is appropriately named Hot Rocks. As we descend down, I immediately make my way to the black sandy bottom to play in the bubbles caused by the persistent rumbling deep within the volcano's bowels. As I move closer to the bubbles and lay my hand on the black sandy bottom, I feel a significant rise in temperature. A good reminder of where we are! As we move through the dive, the bubbling black sandy area gives way to a huge concentration of delicate soft corals in a myriad of colours.

We make our way back to the boat for a quick snack before boarding



our dive tender to visit Bontoh village. On the shoreline, the children play by simple outrigger canoes painted in cheerful colours.

As we approach, my eyes strain in disbelief as we witness what looks like a huge ark being built on the village's black sandy shores. It turns out that the people here are actually descendants of the seafaring Bugis people from the Indonesian island of Sulawesi of whom were specialist boat builders and instrumental in the world's spice trade. The village here has been building ships for generations, but this is their biggest yet. It's for a Chinese client and is destined as a cargo ship. A handful of goats alongside the odd chicken guard the ship's hull. We gaze in amazement at the workmanship of this wooden ark, and wonder how on earth they will ever manage to launch it to the



sea.

Bontoh village doesn't have much, its square shacks cobbled together from a jumble of materials gestured a very simple life. But what they do have, is a world-class muck diving site which we were itching to explore.

After purchasing some traditional handmade wooden free diving goggles from one of the village's residents (and yes, they actually seal!), we make our way back to the Mermaid to gear up for what will be our last night dive and also a highlight of the trip.

In pitch black darkness, our

dive tender brings us to an area just off the village's shoreline. We turn on our torches and after a "one, two, three" back roll into the darkness. I descend to a max depth of around 8 meters and everywhere there is life. We explore the site for over an hour photographing crazy critters - crocodile fish, shrimp, octopus, hunting napoleon eels, nudibranch, soft coral crabs, scorpion fish and frog fish, all in great numbers. Now we understand why everyone said this was the night dive not to miss.

When to dive Komodo

While Komodo can be dived all year round, the best time to dive is generally considered to be between June and October when visibility is at its best (25-35 meters). From December to March, operators tend to dive only the southern dive sites where water temperatures are cooler and visibility is around 10 - 15 meters. We visited at the end of September and experienced calm seas and fabulous visibility on most sites. Water temperatures in the northern sites at this time are around 27 degrees, while southern sites are considerably cooler at around 24 degrees.

The Mermaid's Bali- Komodo-Bali itinerary provided the opportunity to dive both within and outside of the Komodo National Park, taking in dives at Moyo Island and Sangeang Island off the coast of Sumbawa, Satonda Island, and of course the Komodo National Park itself.

How to get there

Joining the Mermaid II is easy with the boat departing and arriving at Bali's Benoa Harbour. Bali is serviced domestically by Garuda Indonesia and Lion Air from Jakarta and numerous other Indonesian cities. If choosing a land-based option, your point of entry

to Komodo will be Labuan Bajo. For the adventurous island hopper, there are also several passenger ferries operating in the East Nusa Tenggara Island chain.

So now that we're no longer 'liveaboard virgins', I'd have to say that this type of scuba travel has won us over. A boat full of like-minded people passionate about the ocean and photography, great food, jaw dropping scenery, incredible diving and almost all the comforts of home - what's not to like? Oh, and did we mention you can duel with dragons?

For more information on diving Komodo aboard the Mermaid II contact mermaidliveaboards.com. A weeks diving Komodo aboard the Mermaid II will set you back around \$2,700 Euros per person.

Anita Verde

www.summitstoseas.com

www.mermaid-liveaboards.com



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Basse Terre, Guadeloupe

by Jean Michel Machefert

In June my wife and I decided to go back to Guadeloupe in the French West Indies. We are quite familiar with Guadeloupe having visited it quite frequently since 2000. Guadeloupe is convenient to reach from France since there are a lot of direct and not too expensive flights from Paris to Pointe à Pitre.

Guadeloupe is an island looking like a butterfly with 2 sub islands: the first one almost flat in the north east named grande terre and the second one in the south west built from volcanic mountains (the highest volcano is the Soufrière (altitude 1407m)) is named basse terre.

Guadeloupe is also well known for diving spots all around the coast of both of the islands and the most famous is the “reserve Cousteau” in Malendure (on the west coast of basse terre). The reserve Cousteau is the place where Captain Cousteau performed the first tests at sea of the diving saucer SP 350 in 1959, and because of some technical problems during the tests the team of Cousteau had plenty of time for diving and found the location very interesting with a lot of fauna.

Now the reserve Cousteau is still a nice place for diving but crowded with more than 60,000 divers every year. More over some other activities such as cruises with glass bottom boat (almost over the divers!), and a dedicated police looking at the divers for preventing damages to the coral and the fauna (divers can be fined if they go “too close” to the bottom or to the coral (estimated by the police through a glass window from the surface! and so

this is not really easy for macro photographers!) makes the place less and less attractive for experimenting divers and photographers.

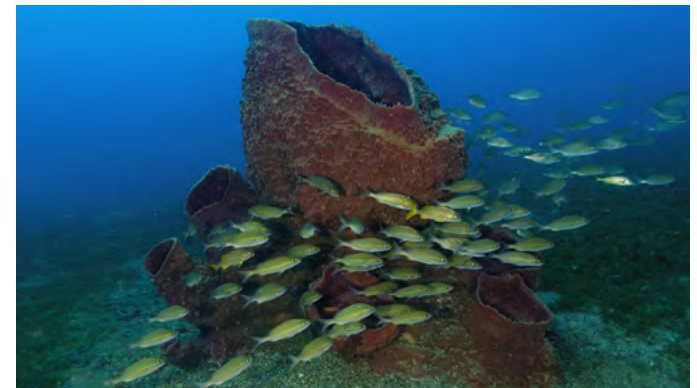
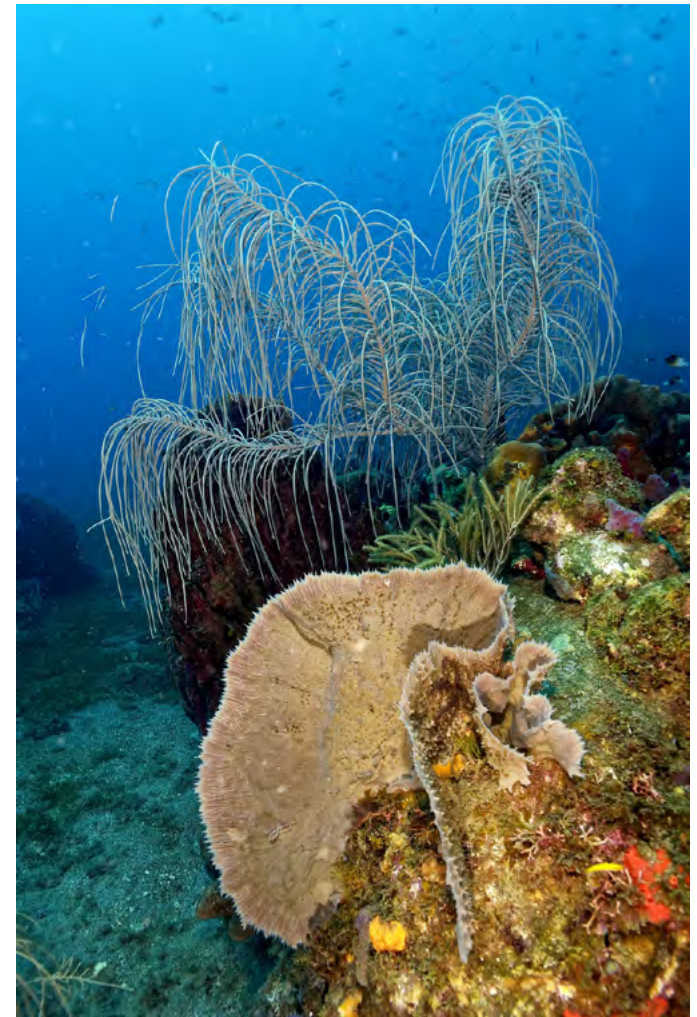
So this year we decided to explore the south part of basse terre in Vieux Fort.

Why ? because Vieux Fort is located along the channel between Guadeloupe and Dominica and several rivers and plenty of nutriments are coming from the mountains right over Vieux Fort so we can expect a lot of life under water. More over close to Vieux Fort on the Caribbean coast there is an impressive dive along a deep cliff named “sec Delgres” showing beautiful scenery and all the fauna of Guadeloupe from 10m down to 140m.

There are also some wrecks a little bit to the north acting as artificial reefs concentrating a lot of life. Vieux Fort is also by far less crowded than Malendure and the diving club “inspiration plongée” managed by Jean Philippe Dufayet offers us a perfect small service (max 8 divers on a comfortable RIB designed for 20 persons!) for photographing and exploring the south part of Guadeloupe.

Vieux Fort, general view of the reef Nikon D2x, housing Aquatica sigma 17-70mm at 17mm, 1/125s, f8, ISO400. 2 strobes nikon Sb 910, Patima housings, 1/2 and 1/4 power

Vieux Fort, fish and barrel sponges Nikon D2x, housing Aquatica sigma 17-70mm at 17mm, 1/125s, f8, ISO400. 2 strobes nikon Sb 910, Patima housings, 1/2 and 1/4 power



For the first dive let's go to the "sec Delgres". 20 minutes from Vieux Fort harbour and we are on site ready to dive. 10m under the RIB on the top of the cliff is a sandy plain inhabited by hundreds of garden eels and not too shy for a picture. The water is clear but not crystal clear as in some other locations in the Caribbean sea; this is due to a river flowing down from the volcanic mountains surrounding the site, but as said before it's better for the fauna.

Going deeper we follow an impressive vertical cliff covered by many sponges looking like trees with interconnected arms and also white sea fans and black corals and of course plenty of colourful fishes.

Time to time big turtles are coming close to us, and they stay with us for several minutes without being afraid. This is perfect for a portrait!

By going deeper the big white sea fans are more and more impressive and scenery is more dramatic than in shallower water. In some places there are some remains of fishing traps covered by fixed life



such as sponges, corals... Along this cliff as soon as there is a support the life is there and also clouds of fishes gathered in shoals or hidden under the sponges or sea fans.

For the next dive we go to the wreck of the Augustin Fresnel a little bit to the north of Vieux Fort close to Bouillante and the "Anse à la barque".

The Augustin Fresnel is a 53m long freighter built in the late 40's in



The wreck of the Augustin Fresnel, general view of the deck. Nikon D2x, housing Aquatica, Nikkor 10.5mm, 1/160, f10, ISO 320, 2 strobes nikon Sb 910, Patima housings, 1/2 and 1/4 power

sec Delgres, the life is growing on all the supports Nikon D2x, housing Aquatica sigma 17-70mm at 17mm, 1/100s, f8, ISO320. 2 strobes nikon Sb 910, Patima housings, 1/2 and 1/4 power

Canada and used in the Mediterranean sea until 1990 and then in the Caribbean sea until 1994 by the French administration in charge of the lighthouses. In 2003 the Augustin Fresnel was sunk as an artificial reef to attract life. She now lies 30m underwater.

As soon as we enter the water and going down the rope we can see almost immediately the huge shape

of the wreck lying on a sandy seabed. We begin the dive just in front of the bow with a classical but always impressive picture of the front part of the wreck as a dark silhouette surrounded by deep blue water (we are still at 30m and in the morning the water is darker than at noon) and then we continue to dive along the edge of the wreck down to the stern.

The deck is covered with



Vieux Fort, angel fish on the reef, Nikon D2x, housing Aquatica sigma 17-70mm at 38mm, 1/60s, f7, ISO200, 2 strobes nikon Sb 910, Patima housings.

colourful sponges and corals growing on the metal. There is no space free and it looks like a healthy Caribbean coral reef and of course there are shoals of small fishes everywhere.

It is also easy to enter inside the wreck taking care of the steel edges sharpened by the coral and the view from inside is also nice and quite unusual for the West Indies since the wreck still looks like a ship and is not collapsed as they often are.

The dive continues down to the stern with 2 big propellers also covered with sponges and corals surrounded by plenty of fishes. In the

shadow under the stern some black corals looking like white ropes can also be seen.

It is time to go back to the surface and the best option consists of going along the deck up to the bow. The deco stops can be done along the rope marking the wreck. The rope is also fully covered with sponges and soft corals. This is also beautiful for some pictures during the stops but quite aggressive for the hands. Here in the Caribbean sea any support is covered by life in a short time.

Close to the shore in Vieux Fort at few hundreds of meters from the



The wreck sec Delgres, shoal of fishes under the boat Nikon D2x, housing Aquatica sigma 17-70mm at 17mm, 1/100s, f8, ISO320, 2 strobes nikon Sb 910, Patima housings, 1/2 and 1/4 power

harbour in shallow water (less than 10m) the seabed is a typical Caribbean reef covered with all kinds of corals going along the coast line. Because of the big amount of nutrients at this place (we are still close to some rivers coming from the mountains and also Vieux Fort is located in the channel between Guadeloupe and Dominica named "canal des Saintes" with a constant flow of water coming from the Atlantic and going to the Caribbean sea).

The dive site can be reached either after a very short trip by boat or from the shore. It could also be a perfect place for beginners, since there is almost no current in the small bay of Vieux Fort.

Here all photographic options can be done: macro photography on all the small inhabitants of the reef, wide angle for the scenery with bushes

of corals and shoals of fishes, and all the intermediate lenses for portraits of fishes. Everything is possible and comfortable at this place.

For this dive I decided to go with a 17- 70mm lens allowing me some macro pictures some portraits and some scenery. This is a perfect choice.

Just after entering into the water there are shoals of fishes between boulders covered with sponges and sea fans. There are even sea fans and soft corals in the barrel sponges! The barrel sponges are quite big and usually in Guadeloupe we need to go deeper in order to see such big sponges. By looking closer at the surface of brain corals growing on the boulders some are covered by Christmas tree worms and by looking even closer it is sometimes possible to see some very small fishes living in the holes inside the structure of the

*The wreck of the Augustin Fresnel
view from the top. Nikon D2x, housing
Aquatica, Nikkor 10.5mm, 1/160, f
7, ISO 320, 2 strobes nikon Sb 910,
Patima housings, 1/2 and 1/4 power*

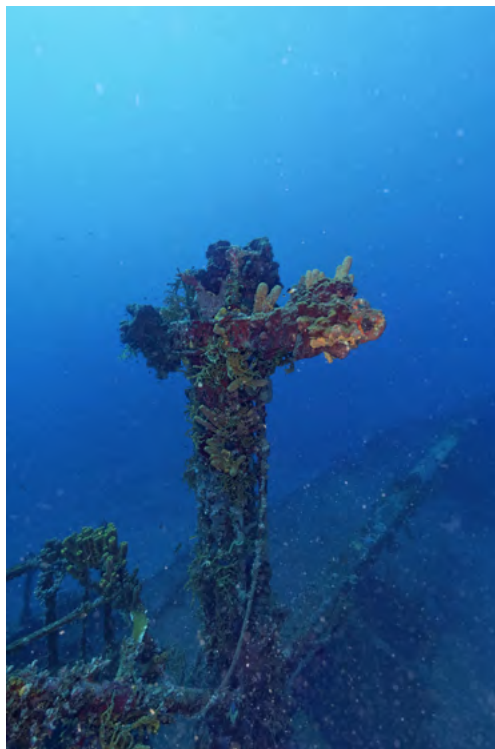
brain coral.

So to conclude we spent a wonderful and unusual diving week in Guadeloupe and we were very happy to discover a new location not crowded in a place we go quite often and supposed to be well known to us.

This week offered us plenty of new diving spots in Guadeloupe and we hope to come back soon and discover more promising possibilities offered in the south of Basse Terre.

Jean Michel Machefert
www.jmfrog.com

Jean Michel began to dive in caves, lakes and the oceans in 1987. He started underwater photography in 1992 using a Nikonos IV. After shooting many years with a Nikon D70 he now uses a Nikon D2x in an Aquatica housing with 2 Nikon SB910 strobes in Patima housing. Some pictures can be seen on the website: www.jmfrog.com regularly updated with new diving destinations and also surface pictures of the nature.



Rebreathers and photographers are
welcome in the south of
Guadeloupe at inspiration plongée

FWI

Inspiration plongée, Anse Dupuy, 97 141, Vieux Fort, Guadeloupe,
French West Indies

Tel : + 33 (0)6 90 28 88 56

Web : <https://inspiration-plongee.com>

email : inspiration.plongee@gmail.com



Issue 111/77

Book Review

'LOOKING FOR WHALES'

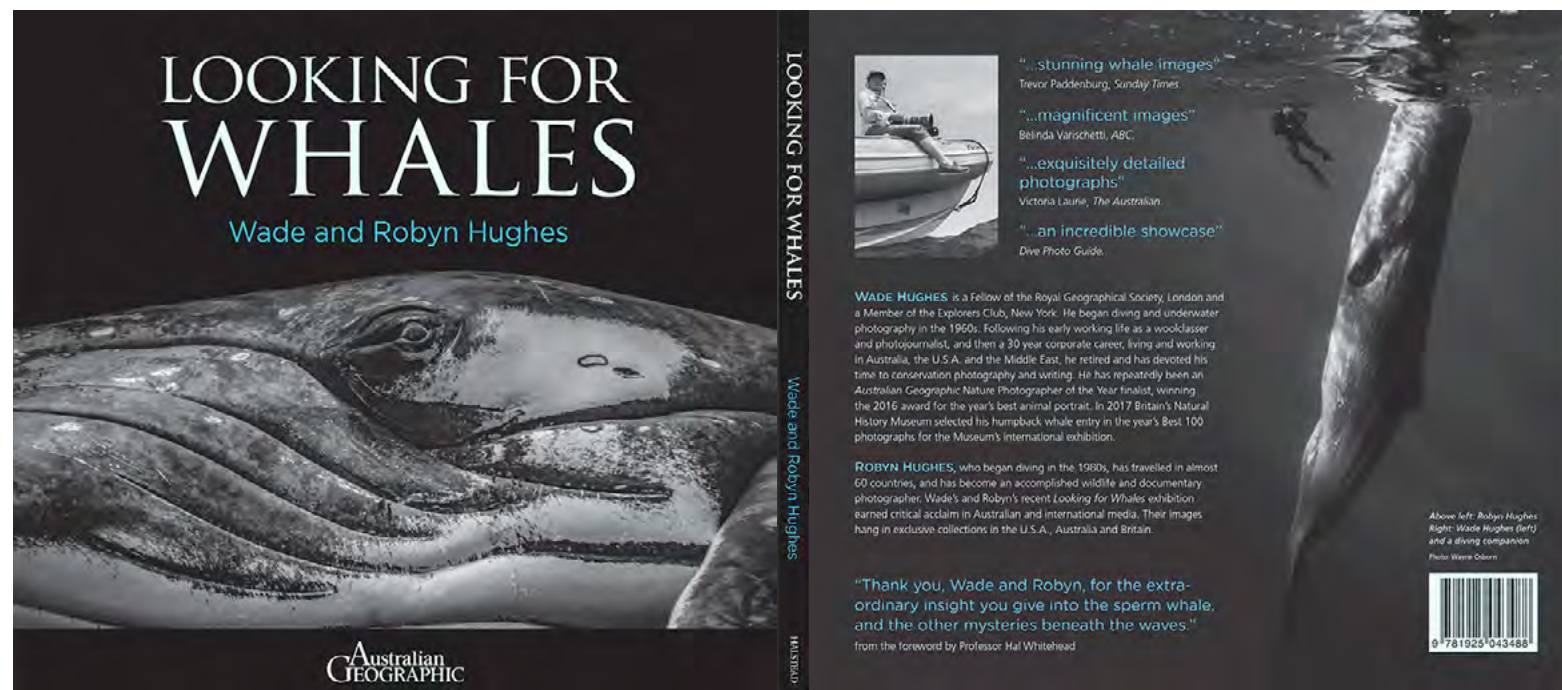
by Wade and Robyn Hughes
by Peter Rowlands

Keen readers will be familiar with Wade and Robyn's whale images in several back issues of UwP and it has been a pleasure to work with them over the years, to feature their special images and to keep in touch intermittently with news of trips or just feedback and opinions.

I have been a great admirer of their work and how they operate so I was delighted to accept their request to write a Preface for their book 'Looking for Whales' and also to review it for UwP.

As an electronic publisher I am obviously a fan of the pdf format both for presentation and delivery so I was more than happy to receive a pre launch electronic version to review on an iMac 27" 5k screen - as good if not better in some ways than the printed product, lacking the tactile page turning perhaps but having no annoying centre spine.

Having been kept abreast of the development of this book I began to eagerly anticipate it and when I was sent the file and opened the Contents page I knew that my anticipation was deserved.



I could tell from the Contents page alone that I was going to be taken on an armchair journey to experience the reality of a whale watcher's life - the highs, the lows, the shows, the no shows, the births, the deaths. The text puts you there; enough to inform and enthuse but never so much to overwhelm and stifle.

The images are nearly all extraordinary and wisely reduced to black and white which concentrates the eye so. They not only record the subject but capture the character, the relationships, and the lives in a world which we can only sample fleetingly

with hard earned encounters.

Having had the good fortune to go on a few whale watching trips in the Azores and Dominican Republic I knew how Wade felt after his first eye to eye encounter which opens this book. It changes your life.

'Looking for Whales' will appeal to absolutely everyone - those who want to remember encounters, those who want to say "This is why I do it", those who want to fulfil dreams and those who simply want to say Happy Christmas; to name just a few.

'Looking for Whales' costs \$39.95AUD and copies should be available in bookshops soon but for sales direct via Halstead Press follow the link below:

Peter Rowlands
peter@uwpmag.com

<https://www.wadeandrobbynhughes.com/book/>

Guidelines for contributors

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

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

Uw photo techniques - Balanced light, composition, etc

Locations - Photo friendly dive sites, countries or liveaboards,

Subjects -, Anything from whale sharks to nudibranchs in full detail

Equipment reviews - Detailed appraisals of the latest equipment

Personalities - Interviews/features about leading underwater photographers

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

How to submit articles

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

1. The text should be saved as a TEXT file and attached to the e mail

2. Images must be attached to the e mail and they need to be 150dpi

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

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

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

Parting Shot

Having had no Parting Shot submissions for this Issue, you've got me again :-)

Not long after I'd moved down to the westcountry of the UK in 2006 I started diving with a local group of longtime friends whose main interest was, shall we say, not photographically aligned. Their idea of equipment that needed to be handed up after a dive was a ferrous laden goody bag and the idea of finding somewhere safe to put a delicate namby pamby underwater camera with protruding dome port took a while for them to get used to.

The boat banter was fast and quick witted, the dive gear was deliberately minimal and kitting up was made to look effortless. Putting on tried and tested equipment was second nature and the banter continued throughout.

Underwater the mission began. No "Are you OK?" signals on the surface, just a pair of fins disappearing down the shot line. Once at the shot a reel line was attached so that they could always come back to and up the shot.

The reel line was very useful for me because by the time I'd taken my dome port cover off, turned the camera on and done a manual white balance, that was all there was to indicate that I had a dive buddy. Following the line meant I'd find a subject to photograph so off I went.

Whilst the reel line was the first indication of where my buddy was, there was also an audible signal coming from a hammer on metal sound.

Having caught up with him I realised it would be pointless asking him to pose - a little more to the right, please. No, up just a little and now breathe out when I give the signal. Forget it. It had to be one shot timed for when they looked up to check who the hell is that and before they got back down to the metal matter in hand.

I did get it in one with a Nikon D70 in a Subal housing with a Nikkor 10.5mm Fisheye. F2.8 @ 1/10th sec. 400 ISO. Available light with a Greenwater Magic filter.

Underwater photographers are always a pain in the arse for 'ordinary' divers until they see the image and say "I'd love a copy of that".

Peter Rowlands
peter@uwpmag.com

**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

