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At Wakatobi, we take great pride in providing the ultimate in exclusive and personalised service. Our dive staff and private guides ensure your in-water experiences are perfectly matched to your abilities and interests. While at the resort, or on board our luxury dive yacht Pelagian, you need only ask and we will gladly provide any service or facility within our power. For all these reasons and more, Wakatobi takes top honors among discerning divers and photographers.



"Simply put, it doesn't get any better than this. Everything is about service and maximizing your diving experience. The dives were amazing, and the dive and hotel staff are first class. They will accommodate any request, but you hardly need to make any since they have thought of essentially everything!"

Dr. Jim & Laurie Benjamin



www.wakatobi.com

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by Phil Rudin



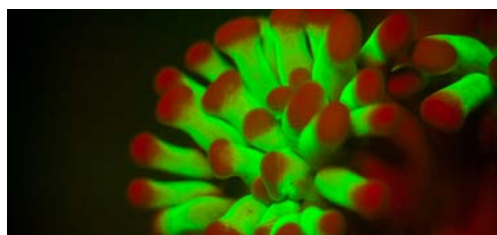
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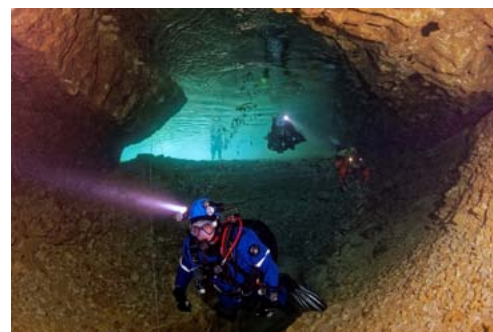
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Underwater Photography

A web magazine UwP91 Jul/Aug 2016



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Cover shot by
Bassem Jamour

Underwater Photography 2001 - 2016
© PR Productions
Publisher/Editor Peter Rowlands
www.pr-productions.co.uk
peter@uwpmag.com

4k stills

I have something in common with Chuck Nicklin in that one of the first cameras I used was a Rolleiflex in a RolleiMarin housing. The only difference was that he used his in the 1950's whereas I was in the 1970's.

It was a superb piece of engineering and design but it was limited to just 12 shots per roll. Yes, that's right. I said 12. So that made you think very carefully before pressing the shutter.

In the 1960's expensive motordrives were available as an optional accessory. The Nikon F version for example blazed away at 3 fps and with a 36 exposure film cassette this meant you had to rewind and load a new film after 12 seconds.

Nowadays with small mirrorless cameras you can shoot 4k video at 30 frames per second. "But I don't shoot video" I hear you say but each of those frames is an 8mp still image which you can pause/extract and use as a high quality still image. Ah, now you're interested all of a sudden!

Just imagine for a moment that the Rolleiflex could shoot at 30 frames per second. That would mean that each roll would last just 0.4 seconds.

We've come a long way, haven't we?

Editorial

People power

Sorry to keep harping back to the days of film but it is relevant here for when you only had 36 exposures you did your darndest to make sure that every frame counted so there was an element of 'Do whatever is needed' to get the shot.

This led to underwater photographers getting a justified reputation for damaging marine life to get that better angle or moving marine life to a more suitable photographic location.

Add the element of a competition and you pumped up the 'Must get the shot' mentality to a frenzy of justification.

But like so many things nowadays times pass and attitudes change but sometimes it takes a trigger to start that change.

There was a high profile competition recently where the 2nd placed Macro contestant complained to the organisers that the winning photographer had moved the subject to a more attractive background.

His complaint was met with a tirade from the Competition organiser and he was belittled and accused of being a sore loser.

His response was to reply in a calm, reasoned and logical way that competition organisers have a duty to encourage more responsible UW photo behaviour and delete any entries that show obvious signs of such activity.

Now in the days before the internet, this discussion would have been by letter and postage stamp, one to one but with the internet and, in this case, Facebook, the same correspondence was being seen by the whole community.

The response letters became more aggressive but the contestant felt that there was a principle at stake here and he stood his ground. Gradually supporters of the contestant's principles started to come out of the woodwork from all around the world and a healthy to and fro of messages ensued; the majority being

in agreement that such practices are no longer acceptable.

As a result, and again aided by the internet, a poll was set up at change.org and to date there are over 750 supporters. Our community was standing up and making its views known to competition organisers, magazine publishers and anyone in a position of influence including at grass roots level the dive guides who in the past were put under pressure by clients wanting rarer and rarer subjects.

I am pleased to say that this poll is already having a positive effect in that dive guides in the hot spots such as Lembeh and the Phillipines are being asked less and less to find rare subjects and that the majority of visiting underwater photographers are much more concious of their behaviour and performance underwater.

They are just visitors but they must leave everything as they found it for the next visitors.

Hopefully the tide has turned and should anyone witness bad behaviour they should feel empowered to approach the perpetrator to nip it in the bud there and then.

<https://www.change.org/p/competition-organisers-more-ethics-in-uw-photography/c>

Peter Rowlands
peter@uwpmag.com

www.uwpmag.com

News, Travel & Events

UPY display at the Fox Talbot Museum, Lacock Abbey, Wiltshire 16th July until 24th September 2016

UPY organisers are delighted that the winning images from UPY 2016 are to be on display at the Fox Talbot Museum in Lacock Abbey, Wiltshire, UK.

The exhibition will be on display from 16th July until 24th September. Admission is free but normal admission charges apply for the venue.

The exhibition is on the first floor of the museum with a choice of either stairs or a lift to access it. Lighting is low gallery level.

The Abbey is located in the picturesque village of Lacock, Wiltshire. Built on the old foundations of a former Nunnery the building's unique character and architecture styles is one of the places to visit in the county.

In addition to the UPY 2016 images, visitors can expect to find great examples of Medieval rooms, Cloister court & a Tudor Courtyard.

Two of the Harry Potter movies were filmed at Lacock Abbey and as you wander through the corridors and rooms you can see why it was chosen.

The Museum itself celebrates



the achievements of a former Lacock resident, William Henry Fox Talbot who is famous for his important contributions to the invention of Photography. Fox Talbot is considered as one of the founders of modern photographic processes.

In 1835, Fox Talbot created the first ever photographic negative. It was taken of a small window at his

home, Lacock Abbey.

There is much to see at the Fox Talbot Museum, you can learn about the man, William Henry Fox Talbot and his work with Photography. The Museum has an extensive collection of historical photographs and often has exhibitions showcasing various photographers work.

www.nationaltrust.org.uk/events/a4296a95-6d87-4796-a95f-a8de1dd7c6a0/pages/details

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Explore from pole to pole with BigAnimals Expeditions to experience polar bears, narwhals, orcas, leopard seals, and much more.

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From polar bears, narwhals, and orcas in the frigid North to leopard seals, penguins, and whales in the icy South, each moment will bring you closer than you have ever been before to becoming part of wild nature.

We pride ourselves on leading intimate groups on adventures that are carefully planned around the best



environmental conditions and are ultimately respectful of the animals' natural behaviors.

Our expert expedition leaders will guide you on epic journeys to engage with our planet's threatened ocean giants and help you create photographic narratives that are sure to inspire hearts and minds.

Enjoy the adventure, expand your horizon, and change your perspective with BigAnimals Expeditions

www.biganimals.com

www.uwpmag.com

Travel Photographer of the Year 2016 opens for entries

Entries are now open for the 2016 international Travel Photographer of the Year awards (TPOTY). Amateur, semi-pro and professional photographers of all ages are invited to enter until the closing date on October 1st, and TPOTY has a range of categories and themes to challenge their skill and creativity.

This year's TPOTY competition features three portfolio categories, three 'One Shot' single image categories, a 'Smart Shot' category for images taken on a mobile phone or tablet, Young TPOTY, a 'New Talent' award and an HD video category.

The TPOTY 2016 sponsors - Fujifilm, Genesis Imaging, Hurtigruten, Páramo Directional Clothing, Photo Iconic, Plastic Sandwich and StaaG - have provided a prize package worth around £30,000, and the winning photographers will see their work displayed at TPOTY exhibitions, including one at the University of Greenwich in London's magnificent Maritime Greenwich UNESCO World Heritage Site.

www.tpoty.com

Alex Tyrell Photography Philippine Siren 17th-23rd June 2017



A talented and widely published underwater photographer, Alex began diving in 2001 in the chilly waters of the UK.

His journey into underwater photography began in 2003 in the Red Sea and he has not looked back since. His career in diving has taken him to some of the top dive destinations in the world, including Indonesia, the Bahamas, and a number of years working as a photo pro in the Philippines, sharing his time between Dumaguete and Puerto Galera. During his time in the Philippines, Alex came to know the finest dive sites very well, including Malapascua's thresher sharks.

www.sirenfleet.com

Alor Divers is 10 !

Alor Divers is celebrating its 10th anniversary in June 2016! We are sharing joy with our loyal team and are thanking everyone who helped us build our image and reputation !! Located between Flores and Sawoe Sea, Alor Archipelago is one of Indonesia's last frontiers. Alor and Pantar are the main islands and the strait between the two is a world class dive attraction.

A long time considered too remote because of the lack of infrastructure, Alor and its capital Kalabahi are now much easier to access. Owing to the latest development of Indonesian airlines this paradise is just a small step further than popular destinations such as Bali or Java.

In the Alor region, the local government is carefully planning and developing ecotourism as a part of a conservation strategy. Aware of the potential of the Alor marine park, it is working closely with local communities, encouraging sustainable fishing techniques to keep Pantar Strait an authentic underwater paradise.

The Pantar Strait is free of destructive fishing practices like blast and cyanide fishing. Locals are using traditional fishing techniques (bamboo trap, fishnet, line) therefore



coral reefs remain virgin and marine life abundant.

This is what makes Alor a world class, precious and attractive diving destination. A share of our guests payment is used as contribution to conserve and protect Alor's marine legacy. Pantar Strait is already regionally recognised as a protected area and is currently in a process of becoming a National Park. This will give opportunity to future generations of divers to admire the underwater beauty of Alor.

www.alor-divers.com

The manta season has started in Fiji!



Soft Coral laden bommies where cryptic macro critters wait to be discovered; Fiji has it all. Fiji is renowned as being the ‘Soft Coral Capital of the world’, but Fiji also offers a whole lot more! Reef sharks, hammerhead sharks, big schools of barracudas and mantas!

You will be more than likely to see mantas all year round in Fiji, however, the true manta season is from May to October. Their favorite areas to hang out are Lion’s Den and Vatu Vai in the Wakaya Islands and Jim’s Alley and Anthias Avenue at Gau Island and the Fiji Siren crew can confirm this!! Since last month, they have reported seeing many mantas on each cruise!

www.sirenfleet.com

Anilao Photo & Video Workshop with Reef Photo April 1-8, 2017



This is a chance to learn and develop with professional instruction, unlimited support and a chance to be guided to striking imaging opportunities – every day.

We have lined up the industry’s leading experts in underwater imaging and equipment with Reef Photo’s own Kevin Palmer, and Nauticam’s Christopher Parsons together with freelance underwater photographer Tanya Burnett.

Aiyanar is one of Anilao’s newest and most beautiful resorts. The setting is serene - an artistically modern design carved into the hillside

with mature tropical trees, lots of natural materials, an infinity pool and lovely elevated al fresco dining area.

Diving will be mainly from traditional Banka boats (outriggers) which we find to be one of the most comfortable dive boat set-ups ever designed and the colorful craft make great photo ops too!

Getting the most from Anilao requires expert local guides who know where the current action is happening and how to spot it. Reef Photo and Video has already reserved eight of the most famous Anilao guides for this week; offering an amazing one guide



per every three to four photographers on the trip. This ratio will give everyone plenty of extraordinary photo opportunities during the course and groups will be divided to keep the sites less crowded.

www.reefphoto.com

An advertisement for Alor Divers Dive Resort. The top part features a stylized logo for 'ALOR' in white on an orange background, with 'DIVERS' written below it. Underneath is the tagline 'a resort where diving is passion'. The middle part shows a photograph of a tropical beach with turquoise water and a white boat. The bottom part is an orange banner with the text 'DIVE RESORT ALOR ARCHIPELAGO INDOONESIAN SEAS' and the website 'www.alor-divers.com'.



THE SARDINE RUN
Shark & Shoal Diving Adventures

2016 Departures Still Available

www.TheSardineRun.co.za

Verzasca Foto Festival 1st to 4th of September 2016



The 2016 edition of Verzasca Foto Festival offers an underwater photography lab, which will be held from the 1st to the 4th of September in the Verzasca Valley, Switzerland.

An essential natural element of the valley, the Verzasca River with its crystal-clear turquoise and emerald green water is very much appreciated by the international scuba diving community for its spectacular granite riverbed, shaped and smoothed by the endless flow of water.

The lab is aimed at people who are interested in the unique experience of diving and photographing, and

would like to share their moments with other diving enthusiasts while deepening their own knowledge in this particular discipline.

The conditions for participation are a proven experience in scuba diving and photography, as well as having one's own equipment.

The workshop program includes scuba diving and theory sessions which will allow participants to show and discuss their pictures and experiences.

www.verzascafoto.com/sub

www.uwpmag.com

The leading online resource for
underwater photographers and videographers



TECHNIQUES

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

ARTICLES

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

GALLERIES

Browse the portfolios of the industry's biggest names in underwater photography and share your own work online with like-minded members

TRAVEL

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

NEWS

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

EXPEDITIONS

Journey with us to the hottest dive destinations on the planet and learn better technique from the most talented image makers in the scubaverse

DIVE PHOTO GUIDE

www.divephotoguide.com · contact@divephotoguide.com

Wetpixel Raja Ampat aboard Damai
15 to 26 September 2016



We have one space left for the Wetpixel Amazing Raja Ampat trip aboard the unbelievable Damai 1. The space is on the itinerary from Sorong to Sorong, taking in the north of Raja, and going to places like Waigeo and The Passage, before going on to Misool and to dive the south of Raja Ampat. In addition, we will visit the blue water mangroves. The dates are 15 to 26 September 2016.

Damai is well known as

being both very comfortable, but also technically capable of making sure that we get to maximize the photographic opportunities.

The diving is an exotic mixture of wide-angle and macro subjects, offering a truly staggering amount of amazing diving.

Like all Wetpixel trips, we aim to optimise the diving to suit the needs of image makers, and to make them as productive as possible.

<http://www.wetpixel.com/i.php/raja16/>

www.uwpmag.com

GregorySweeney.com *Photography Adventures*

Scuba with Sea Lions

April 2017



Sailfish Hunting Sardines

February 2017



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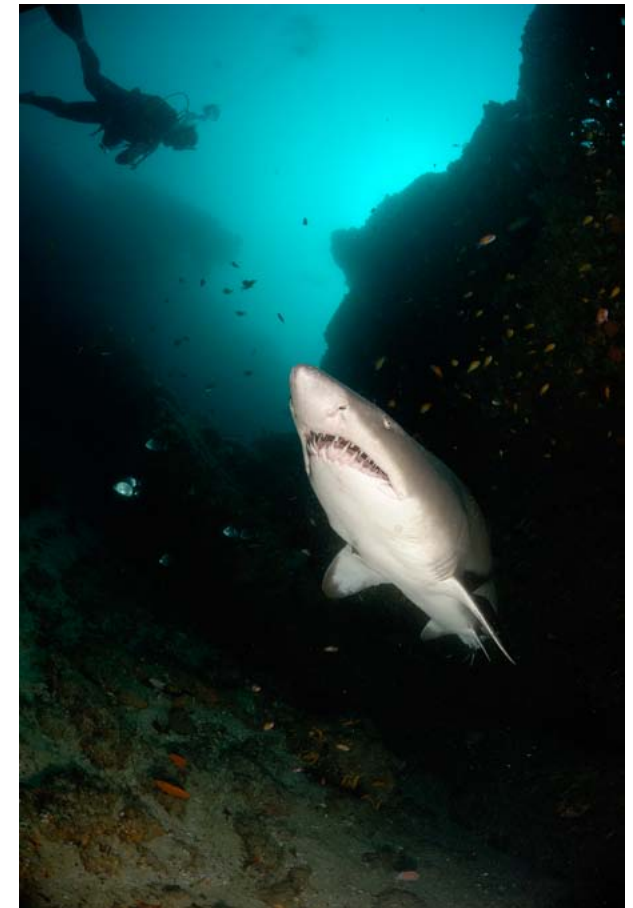
The Sardine Run 2016

The Sardine run in all its splendour lasts for only a few months or sometimes weeks. The Sand Tigers or as they are known locally “Raggies” arrive on Aliwal Shoal in late May and often hang out until November. Couple your trip to watch the “Greatest Shoal” with a series of dives at Aliwal Shoal.

This reef system which is a series of fossilized sand dunes was rated as one of Jacques Cousteau’s top 10 dive sites and boasts stunning biodiversity with year round pelagic shark and other animals such as Manta’s, migrating Humpbacks and many more. It is also one of the few places on earth where tropical, temperate and cold water species are found in one location.

We cater for photographers with dive guides who are well versed on the Sardine Run, baited shark diving and the hidden wonders of the Shoal. We will work with you to obtain the shot you want. Our dive centre is also rebreather/technical diving friendly and we have free nitrox on site.

A unique feature of our Sardine



Run trips is that they are not set departures, you can come for one day or stay for 30. This saves on down days while groups change.

For more information on our pricing and accommodation packages please contact

info@thesardinerun.co.za



Underwater Housing for

Nikon D500



Find an Authorized Ikelite Dealer at Ikelite.com.

New Products

Nauticam NA-D500 housing for the Nikon D500



Nauticam is pleased to unveil NA-D500, the latest release in the world's finest line of underwater camera housings. Nauticam is the market leader in ergonomics, build quality, and reliability. Built on a foundation of innovative product design and modern manufacturing technology, NA-D500 is the ultimate accessory for the exciting new Nikon D500 camera. And it's available now...

The new Nikon D500 may be a reboot of the popular segment last featuring D300s six years ago. It could be the D400 that never came, or it might be an entirely new product segment. Regardless of classification, there has never been a Nikon DX camera with this level of autofocus and continuous shooting performance before, and D500 provides a

compelling alternative to pro bodies for fast action capture in remote environments.

Nauticam housings are evolutionary marvels, with advancements from previous sixteen Nauticam for Nikon systems providing the foundation that this new model was built from. Customer feedback is integrated at every possible opportunity. The cumulative experience of the Nauticam user base provides constant inspiration for innovation, and is a key strength of the brand.

The entire external flash triggering system has been reworked from the ground up in NA-D500, increasing ease of use, setup convenience, and reliability. A new LED flash triggering system is



standard in every housing!

The new Nauticam NA-D500 housing further enhances the market leading Nauticam ergonomic experience with improved control placement, a new more sophisticated flash triggering system (with optional TTL upgrade), and reduced size / weight thanks to cutting edge manufacturing processes.

www.nauticamusa.com

The advertisement for the Acquapazza APSO-A6300 underwater housing features a large blue housing with a lens. A red circle with the text "NEW TYPE" is in the top right. Below the main image, it says "Coming soon!" in red and white, followed by "Underwater Housing for the Sony alpha 6300" and "APSO-A6300" in large white letters. At the bottom, there are four smaller images showing different views of the housing: a top-down view, a side view, a close-up of the lens, and a close-up of the flash triggering system. The background is dark with a splash of water at the bottom.

ACQUAPAZZA

NEW TYPE

Coming soon!

Underwater Housing for the Sony α 6300

APSO-A6300

<http://www.acquapazza.jp/en>

Nauticam
innovation underwater



NA-A6300 Housing
for Sony A6300 Camera

www.nauticam.cn

Nauticam 蓝天海

Intova Adventure Camera Series

The Marine Adventure Series will shed a light on all your adventures – day or night. Our two latest waterproof cameras feature an ultra-bright 150 lumen video light and flash combo.



The HD2 waterproof action camera is the first in its class to include a built-in flash + video light. This camera is built tough to handle the harsh conditions in a marine environment. Capture high-definition 1080p video and stunning photos in low-light, evening or night-time settings.

The groundbreaking X2 is one of the best action cameras on the market. It allows you to capture high-definition 1080p video at 60fps for those ultra-smooth slow motion shots. The X2 also takes ultra-sharp photos at a resolution of 16MP. It also features WIFI capability so you



can connect and control it remotely through your smart phone.

www.intova.net

Subal D500 for Nikon D500



With the SUBAL ND500 for the Nikon D500, SUBAL offers an aluminum housing for the latest compact full frame camera.

Maximum depth: 80 m (120 m on request). Weight: Approx. 2 kg (without port and accessories). Weight in water: nearly neutral (depending on the port and accessories)

www.subal.com



APSO-A72

Underwater Housing for the Sony ILCE-7M2/7RM2



<http://acquapazza.jp/en>

NEW MIDX HOUSINGS



NIKON MDX-D500



CANON MDX-80D



SONY MDX-a6300

New MDX Housings from Sea&Sea

MDX-80D (for Canon 80D)



- * Depth rating: 100m / 330ft
- * Equipped with three accessory bulkheads; these allow the fitting of a vacuum leak sensor (such as the new Leak Sentinel), an external monitor and/or strobe connector.
- * All controls are ergonomically situated and much improved from the previous model.
- * Equipped with two Fibre-optic cable sockets.
- * All switches have luminescent labels.

MDX-a6300 (for Sony a6300/a6000)

- * Housing is compatible with both SONY a6300 and a6000 cameras.
- * Depth Rating: 100m / 330ft
- * Compatible with ML ports.
- * All the camera's functions can be used underwater
- * Equipped with two accessory



bulkheads. Vacuum leak sensor such as the new Leak Sentinel and/or strobe connector can be fitted.

- * Equipped with three tripod screw holes on the underside so Grip-Stay L II and SA8 Camera Tray/Grip can be attached.
- * ML Hand Strap is available for users who do not use grips.
- * Equipped with two Fibre-optic cable sockets.
- * The camera's LCD monitor can be tilted by 10 degrees.
- * All switches have luminescent labels.
- * LCD Monitor Hood with Lens (optional) can be fitted with accessory bracket supplied with the housing.
- * Conventional Leak Sensor (optional) can be fitted. The LED will be located at the rear window.
- * Equipped with two sacrificial zinc diodes (one on the front and the other on the rear cases).

Prices to be confirmed.

Due to be available end July.

www.sea-sea.com



Nauticam NA-RX100IV for Sony RX100 IV



"Amazing 4K Compact"

With the ability to shoot stunning 4K video and 20mp stills, this camera and housing package offers image quality approaching that of an SLR system with the size and convenience of a compact. Controls are simple, but well thought out with easy to access push buttons. Dual command dials immediately access frequently used manual settings like Manual Focus, F-Stop, and Shutter Speed. The addition of excellent wet lens options make for one versatile, powerful, compact package.

www.reefphoto.com

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Multipurpose float that can be used as a buoyancy arm and as a carry handle.

The most versatile buoyancy-arm available!

* Underwater Buoyancy: Approximately -350g.
* SA8 Fixed Ball Bases can be attached so the Buoyancy-Arm Handle can be used as a strobe arm.



Clip Set (for Buoyancy-Arm Handle)

Includes clips and loops so Buoyancy-Arm Handle can be used as a carry handle.

Prices to be confirmed.
Due to be available end July.

www.sea-sea.com

ACU AQUATICA CLOSE-UP SYSTEM



Aquatica has assembled and redesigned its whole range of close up accessories under the ACU system banner, which stands for Aquatica Close-Up System.

The ACU system consolidates all the components of our macro and close-up accessories (new and existing ones) into a comprehensive underwater close-up system.

www.aquatica.ca



Nauticam NA-D500 for Nikon D500



"A New Era"

With 153 focus points and 10 fps continuous shooting, there has never been a Nikon DX camera with the level of autofocus and continuous shooting capability as the Nikon D500—not to mention the revolutionary addition of 4K UHD video. This extraordinary camera demands an equally impressive housing, and the Nauticam design team has left no detail overlooked. In addition to the superior ergonomics for which Nauticam is renowned, each NA-D500 comes with an installed manual optical flash trigger—standard!

www.reefphoto.com



High definition in the palm of your hand.

APSO-RX100M4

Underwater Camera Housing for SONY RX100 M4



<http://acquapazza.jp/en>

Nauticam Buoyancy Collar for WWL-1 Lens



The Nauticam WWL-1 wide wet lens has an equivalent weight underwater of 620g / 22 ounce.

With the buoyancy collar mounted, the equivalent weight is reduced to 160g / 5.6 ounce.

Depth rating is 50m / 164 feet.

www.nauticamusa.com

Sea&Sea MDX-D500 for Nikon D500



- * Lighter weight.
- * One-touch AF Lock function.
- * Lever function to depress "Info" button.
- * Lever function to depress "Fn" button, located on the left side of the housing.
- * Main command dial is located on the left side of the housing.
- * A single lever controls both the "Play" and "Enlarge" buttons which are often used underwater.
- * The multi-selector buttons now have luminous labels.
- * The Quick (Sub-Command) Dial is located very close to the shutter release lever so users can operate the dial with their index finger resting on the shutter-release lever.

www.sea-sea.com

FROM POINT & SHOOT TO PROFESSIONAL



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Ikelite Canon PowerShot G7X Mark II



This compact and lightweight housing provide full operation of the camera up to depths of 200 feet (60m). Large, easy-to-reach controls are provided for all camera functions including the front and rear dials. Rear controls are marked with easy-to-see laser engraved symbols which never fade or fall off.

A new, ultra sensitive shutter lever and front rubberized grip make the system a pleasure to hold and shoot with or without an optional tray and handle. The front-loading camera mounting system makes installation and removal a breeze. The camera mounting plate allows ready access to the battery and memory card, and features a standard 1/4-20 tripod mounting point for topside use.

The glass lens port has been optimized for full use of the camera's zoom range.

The front of the lens port

is 67mm threaded for the direct attachment of external wide angle and macro lenses. This port is as close to the camera's lens as possible for the best image quality and minimal vignetting (dark shadows in the corners of the image) with external wet lenses. Vignetting can be eliminated by cropping the photo in post-production. The INON UWL-H100 exhibits the least vignetting and best clarity with this model among popular wet lenses currently available on the market.

Differences in camera size and lens placement prevent the original Canon PowerShot G7X from operating in this housing. For the same reason, the housing for the Canon PowerShot G7X cannot be modified or adapted to fit the newer Canon PowerShot G7X Mark II.

www.ikelite.com

THE NEXT GENERATION

YS-D2

Underwater Strobe



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MODELLING LIGHT

ILLUMINATED REAR
CONTROLS (BACKLIT)

FASTER RECYCLING TIME

WIDER EV RANGE
AND MORE...



WWW.SEA-SEA.COM

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FOR BOTH INON Z-240 AND D-2000 STROBES
AVAILABLE IN BLACK AND AS GLOW IN THE DARK



FLIP SNOOT PRO

USED FOR WINNING PICTURE CLOSE UP WITH THEME
CMAS WORLD CHAMPIONSHIP 2015

DOME DIFFUSER PRO



FOR INON Z-240/D-2000, IKELITE DS125/160/161
SEA&SEA YS-D1/D2 AND YS-01/02/03

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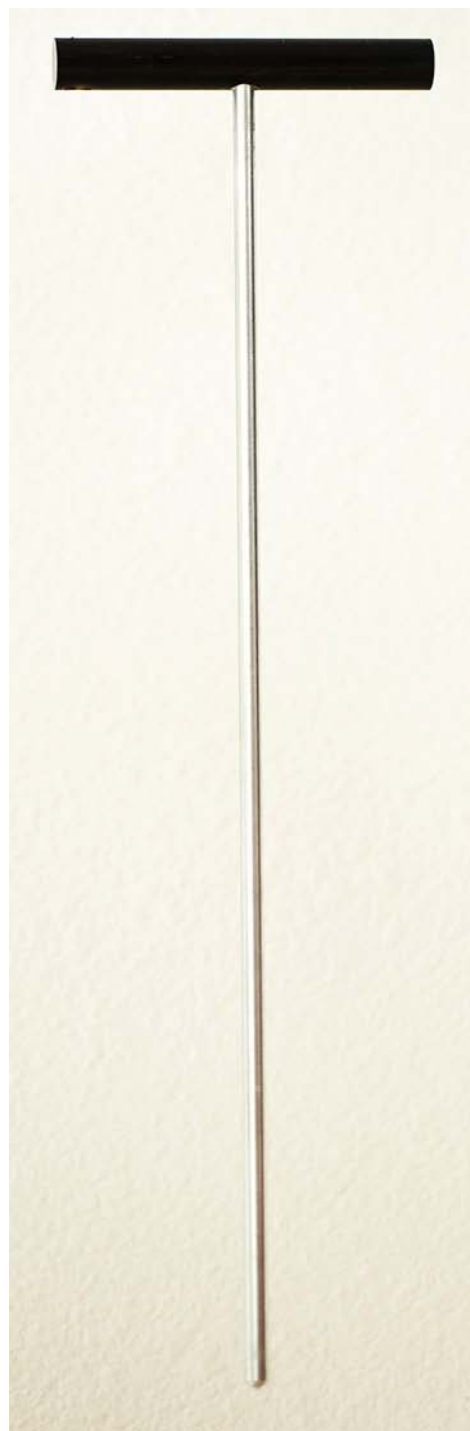
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T-Handle stabilizing stick for muck or sand

A new twist on an old product. Muck sticks have been out for some time; but this one has a T-handle on it, giving the diver a much better grip to help stabilize the body in a sandy situation. The T-handle is threaded so a ball can be added and a small action camera can be attached. A lanyard hole is also available.

MSRP: \$22.50

www.ulcs.com



Nauticam NA-A6300 for Sony A6300



“Versatility & Power”

The Sony A6300 is blurring the lines between compact camera, DSLR, and video powerhouse with its 24.2MP APS-C sensor and 4K UHD shooting capability. An ever-expanding selection of lenses allows your pick of the right lens for the job. The 16-50mm PZ kit lens is easily and comfortably controlled in the Nauticam A6300 housing and is expertly complemented by the Nauticam Wet Wide Lens (WWL-1) or Compact Macro Converter (CMC-1) for the ultimate in versatility—all in one dive!

www.reefphoto.com

New Keldan Lights!



Today we are excited to unveil three new Keldan products, including the new Video 8X CRI and updates to the existing Video 8X and 4X Lights with more power

Video 8X CRI uses the same small, travel friendly housing as the previous Video 8X model and adds a new efficient LED module with extremely high color rendering capability!

Keldan is the only underwater video light maker to offer an LED with this CRI rating, providing the absolute best color possible. The high CRI lights offered by Keldan in the past have been preferred by professional videographers around the world, and this new compact version is sure to continue that tradition!

Last year Keldan broke the 10,000 lumen barrier in Video 8X Flux, and the new Video 8X FLUX advances that power threshold further a 20% increase in output with the same burn time. The quality of light



also remains unchanged, with the same smooth, even, and wide beam angle Keldan users demand.

Based on a smaller housing and four cell battery pack, but featuring the same wide, smooth, even beam that is free from distortions, the upgraded Keldan Video 4X now emits 7000 lumen. Burn time is unchanged, 45 minutes on full power.

Actual output is measured at operating temperatures in real world conditions.

The Video 8X takes advantage of the fixed light head style (as compared to the modular Video 8M) to effectively cool the LED



110° usable beam angle with gradual falloff. There are no hard edges to contend with even with ultra wide lenses.

Beam angle in water when measured using the FWHM standard of 50% intensity is 90 degrees, but that doesn't accurately represent the beam pattern of these lights. The usable beam angle is much wider thanks to a very even and gradual edge falloff.

Battery packs can be easily changed in the field, supporting long shooting days and short surface intervals. An LED charge indicator provides battery info at a glance.

array, allowing for higher output and maximum efficiency in an extremely compact form factor.

To the keen eye of the underwater videographer, the shape and quality of the beam is paramount. The dome of the Video 8X and Video 4X lights allows for a

www.nauticamusa.com

Aquatica AD500 housing for the Nikon D500



The Aquatica AD500 housing is designed specifically for the Nikon D500 camera. With 21mp still image, 4K video, impressive level of low light performance, this Nikon D500 is a worthy addition to the DX format, a much appreciated sensor size for underwater photography.

Aquatica designed the AD500 housing by carefully selecting the features that will improve performance for underwater imaging. We then ergonomically placed the vital controls where they were most needed, right at your fingers tips. At the core of this housing design one can trace over 30 years of expertise in this field. Years of knowledge that have pushed us forward in incorporating new ideas, concept and technological advances to these constantly evolving imaging tools.

www.aquatica.ca

www.uwpmag.com



NA-D500 Housing for Nikon D500 Camera

Ikelite housing for Canon EOS 80D DSLR



Canon cameras are known for their great ergonomics. We extend this underwater, providing larger controls and push buttons which are easy to access even with thick gloves. Whenever possible, controls are located in the same configuration as on the camera to replicate the muscle memory and familiarity you've developed with your camera on the surface. Control symbols laser engraved into the back of the housing will never peel off or fade even with years of use. The camera's large, super-bright LCD screen is viewable edge-to-edge through the back of the housing.

The front-loading camera mounting system makes installation and removal a breeze. The camera mounting plate allows ready access to the battery and memory card, and features a standard 1/4-20 mounting point for attachment to a tripod topside.

An integrated TTL circuit is

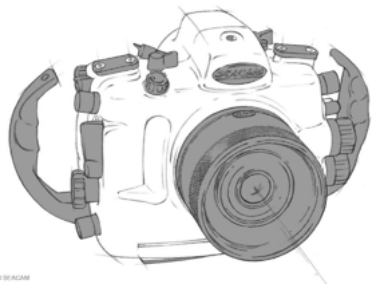


fine-tuned to the Canon EOS 80D flash exposure protocol for the most accurate exposure possible. The circuit is powered by the strobe for zero maintenance and no batteries to change. Exposure compensation in TTL mode is supported using the camera's built-in control. At this time, only Ikelite DS strobes are capable of powering the circuitry. SEA&SEA, INON, and Nikonos strobes will still enjoy fast recycle times and improved battery life, but must be used in manual exposure modes only.



IKELITE HOUSING FOR THE SONY α7 MK II

Seacam Silver Nikon D5



Seacam has never complied with fashion standards or trends. But we have always listened to clients' valuable advice and taken feedback and suggestions from photographers seriously. The result is pretty impressive: The new housing for the Nikon D5. Now available.

www.seacam.com

i-Divesite housing iP6-A6W+i-Pix A6+



This is a housing for iPhone 6+ black / white

www.i-divesite.com

Mangrove V30 Video Light



The Videocompact V30 is an amazing new video & focus light with white, red, blue (ultraviolet) lights.

We have packed a lot of features in to a very compact package this time around. To start we have a massive 5600 lumens of white light to cover all of your regular lighting needs, which we give you 2 different levels to choose from.

We have built in our push button switch to turn the light on-off, and cycle through the modes, and it includes a battery level meter.

Using four lithium cell creates a very compact light weight package. With this system the user does not have to worry about a sealed lithium cell dieing in the middle of a trip!

www.aditech-uw.com

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not a film SLR,
but with a picture quality
that exceed the two!

APSG-dpQ

Underwater Camera Housing for
SIGMA dp0Q, dp1Q, dp2Q, dp3Q



<http://acquapazza.jp/en>

Hugyfot Canon 5DMkIII/s/sr



The HFC-5D MkIII housing is machined out of a solid block AlMgSi1 high strength aluminum. Each housing is sanded by hand, sandblasted and finished with a hard anodisation and Teflon coating. The housing is pressure rated to 100m.

All Canon 5D MkIII camera controls can be accessed (on/off, shutter release, shutter speed, aperture, program dial, main dial, push buttons, lens release).

Dimensions (W x H x D):

220 x 230 x 130 mm

Weight (without camera): 2,7 Kg

Color (anodized): black

Pressure rated: 100m

www.hugyfot.com



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www.keldanlights.com



Issue 91/23

www.uwpmag.com

Acquapazza APSO-A6300 housing for the Sony A6300



Japanese housing manufacturer Acquapazza will have their APSO-A6300 housing for the Sony A6300 on the market early in July.

The main features are as follows:
A Slant cover is fitted as standard.

The Sony E90 Macro and the Zeiss Tounit 2.8/12 can be changed out easily. The Zeiss 12 mm, 50mm and 16-70 mm can all be used

Manual focus is available with all the lenses in their system chart.

The Sony SELP1650 power zoom and manual focus can both be controlled simultaneously.

The closing over centre catch is made from aluminium rather than plastic for strength and longevity.

Push button controls are larger 8mm for ease of use especially in

deeper water.

The APSO-A6300 is the mirrorless housing which Acquapazza has awaited for three years. They made the popular Slant cover as standard specification on their APSO-NEX5 housing and although this was a more costly option, economies were made by not needing to produce a flat cover for the LCD viewing screen.

A Slant cover is very convenient and is like using a separate monitor without the bulk and it is ideal for shooting images from a low angle.

The original APSO-NEX5 was designed to take A mount lenses so the diameter of the port mount is large. This allows the E90Macro and Tounit 2.8/12 to be used which



is a big advantage. Other housing manufacturers either don't have these lenses in their lineup, or it is quite complicated to mount and unmount them.

www.acquapazza.jp/en/

Isotecnic housing for Nikon D500



Team Isotta is pleased to present the case for the Nikon D500.

The continuous improvements have led to having a lightweight and practical, suitable for every owner of Nikon camera.

Even though his choice of the highest quality and durability materials that allow the case to work up to 100 meters deep, continuous innovation has made it possible to lighten the product in a remarkable fashion.

The craftsmanship is found in detail and Italian design combined with the use of raw materials Made in Italy has led to a concentration of technology and harmony.

www.isotecnic.it

You're gonna need a bigger boat

Olympus TG Tracker action cam



Olympus has announced a new action cam. The TG tracker is waterproof to 30m and offers sensors that record depth and time during a dive. Video output is 4K and the camera offers 5-axis image stabilization.

TG-Tracker automatically senses when you are under water. At a water depth below 50cm, the camera switches to the optimal mode for shooting underwater – so you can fully concentrate on your once-in-a-lifetime diving experience.

The camera automatically adjusts white balance and other settings, and there is an up to 60 lumen spotlight for shooting when it would otherwise be too dark. The supplied grip extension and built-in mirror mean owners can hold their camera how they want and they make

it as easy to shoot selfies as over a cliff edge or – using a compatible mount or harness – completely hands-free. Alternatively, for full-length selfies with a big group and all the gear, they can operate the camera remotely from a phone with OI.Share installed, another of Olympus' free Apps.

It is available from July 2016 for €349 in Europe.

www.olympus.co.uk

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Deep Trekker DTX2



The DTX2 is the culmination of our customers' desires to have the same capability, portability, and ease of use in a package rated for offshore use, with a best in class 24 lbs of thrust.

Integrating vectored thrusters allows for lateral movement in the horizontal plane, and by activating the pitch system, the DTX2 can achieve simultaneous vertical and lateral movement using only 4 thrusters.

The DTX2 comes with robust features as a standard, with many options for sophisticated add-ons such as single and multi-beam sonar, USBL positioning, Cutter Attachments, Cygnus Thickness Gauge, tether lengths up to 400 M. We encourage you to customize your add-ons and accessories to best fit your needs.

www.deeptrekker.com

Canon WP-DC55 housing for PowerShot G7 X II



Depth rating: 40m

All camera functions are accessible.

Supplied with removable flash diffuser.

Internal flash can be used to trigger optional external slave flash for reduced backscatter and improved illumination.

Standard 1/4" tripod socket at base.

Supplied accessories: neck strap, wrist strap, flash diffuser, silicone grease.

www.camerasunderwater.co.uk

www.uwpmag.com

Pelican Air 1535 Rolling Case

By Phil Rudin

During my film days Pelican cases were the gold standard for traveling underwater photographers looking for maximum equipment protection.

These water tight hard cases offered excellent protection both as checked and carry-on luggage with the only downside being their weight. Pelican cases always survived abusive baggage handlers, over packed taxis, rough boat transfers, salt air and much more. During the late 1990's and early 2000's baggage restrictions and TAS regulations changed dramatically with greater weight and size restrictions.

As a result many photographers turned to the lighter soft sided cases like ThinkTank bags to reduce weight.

Pelican has recently introduced a new line of Air series cases which are designed to be as much as forty percent lighter than their standard hard cases without giving up the durability that is Pelican's trademark.

Among the new releases is the Pelican Air 1535 carry-on sized case with the TrekPak system dividers. The Polypropylene blend case has exterior dimensions of 55.8 x 35.5 x 22.8 cm (21.96 x 13.97 x 8.98 inches) interior 51.8 x 28.4 x 18.3 cm (20.39 x 11.20

x 7.21 inches) with a weight of 3.9 kg (8.69 lbs) without the TrekPak inserts which are quite light and thin.

By comparison the ThinkTank Airport Security V2.0 dimensions are exterior 55.9 x 35.6 x 22.9 interior 53.3 x 33 x 17.8-20.3 cm and 5.4 kg (12 lbs) without the thicker and heavier dividers. So while the Pelican Air 1535 has a slightly smaller interior volume it is also one and a half kg lighter (three + pounds).

My first outing with the Pelican Air 1535 case was a trip half way around the world from my home in Florida to Puerto Galera, Philippines. It included long layovers, hours of vehicle transfers over some rough highways and a wet boat ride across the South China Sea from Batangas City. My Pelican Air 1535 case contained the following list of equipment.

Nauticam NA-A7II housing with the grips removed, two Sony A7R II camera bodies, Nauticam macro port for Sony 90mm macro lens, two Nauticam flash triggers, Nauticam 45 degree optical viewfinder, Nauticam SMC-1 closeup lens, two Inon Z-240 strobes, two Sony and two Zeiss lenses, Metabones IV lens adapter,





FixNeo Mini 500 FS focus light with ball mount, eight AA batteries, four fiber optic cables, an assortment of small items like spare O-rings, cloths, etc.

In my ThinkTank Urban Disguise shoulder bag I had my laptop, Zen Underwater 200mm and 100mm optical glass ports, Sony 90mm macro lens and Sony A6300 with 50mm and



Sony 16-35 mm lenses.

The TrekPak system dividers are 3mm/ 0.125" and look like corrugated plastic cardboard. Several lengths of TrekPak are included in the Air 1535/ TrekPak package which includes a small cutting tool. just align your equipment in the case and then cut the dividers to fit. The dividers are held in place by U-shaped pegs that connect the corrugated sections. You get around eighty inches of the TrekPak divider material and 20 of the "u" shaped pegs which include a red ribbon so they can be easily removed. If you want to reconfigure the case at some point and need additional divider material it is available from Pelican.

The TrekPak dividers allow much more interior space and protection than the pinch out foam which has been used for decades. The outside of the case has a folding suitcase like handle in the center, below that is a plastic card holder

where you can display a business card or owner information, the top which only opens about 90 degrees can close unexpectedly when tilted.

The case also has two large push locks which keep the case securely locked, metal reinforced openings on the front of the case also allow you to add one or two padlocks or TSA approved locks. The case has rather small wheels which increase interior space but makes the case a bit harder to roll over uneven surfaces. The pull out handle locks into place and retracts by simply pushing on the locking device.

The roller option allows you to stack a second bag like the ThinkTank on top and move with one hand while preventing the back pain associated with similar size backpacks. With its much lighter weight and customizable TrekPak inserts the rugged Air 1535 case is an excellent choice for traveling photographers. The case conforms to the latest carryon size restrictions for almost all airlines and would work particularly well with smaller mirrorless camera systems.

The Pelican Air 1535 rolling case with the TrekPak divider system retails for \$315.00/£220 at your authorized Pelican dealer..

Phil Rudin
www.pelican.com

www.uwpmag.com

Sony a6300 review

By Jim Decker



The Sony a6300 is a 24MP APS-C sized mirrorless camera that also shoots 4K video at a bit rate of 100mbps. You can shoot it like a compact with the kit lens and add wet lenses for wide angle and macro, or go totally pro with top grade dedicated SLR type optics. With a price tag of \$999 can it live up to the high performance levels one would expect from its specs? Read on to see images and video from the latest mirrorless camera from Sony.

SLR Level Control Set

While not having as many dedicated buttons and dials as the Sony a7R II, there's enough customization that can be done to the camera to meet the underwater photographer's needs. I chose to assign focus to the AF/MF button on the back of the camera to be AF-ON and remove focus from the shutter,

assigned white balance to the C1 button, and made the center button AF/MF toggle. This is pretty much the same way I set up shooting on the Sony a7R II, so there wasn't much of a learning curve to getting up to speed on shooting.

Impressive Image Quality and Performance

The image quality is excellent and is in the top range of any APS-C size sensor camera on the market today. It has great low light performance, dynamic range, and smooth transitions in the blue water gradients. Looking at images zoomed in at 1:1 in Lightroom show extremely sharp detail. The AF system has 425 focus points with super quick AF performance. Just like its big brother Sony a7R II, the a6300 can also use Canon lenses with pass thru AF by using either a Metabones or Fotodiox



The Sony a6300 image quality is impressive with low noise in shadows and very sharp detail. Tokina 10-17mm at 10mm, ISO 100, f/10, 1/100.

adapter. Rounding out the impressive spec list, it can shoot 11fps in RAW, with a 21 shot buffer.

Lens Selection

With the advent of a Metabones or Fotodiox adapter, the Sony a6300 isn't just limited to shooting Sony lenses. The a6300 can shoot Canon mount lenses. This is a good thing as there isn't a whole lot of Sony APS-C optimized lenses that are great for



Setting up focus on the AF-ON button instead of the shutter allows focusing and shooting to be separated from each other, allowing one to concentrate on shooting multiple frames, while not needing to focus for every shot. Tokina 10-17mm at 10mm, ISO 100, f/9, 1/60.

underwater work, especially on the wide angle fisheye side. I've divided the lens selection into two different paths--the Sony 16-50 kit lens with wet changeable lenses and going with a more traditional SLR style of dedicated wide angle and macro lenses.

The Sony 16-50mm with the Nauticam WWL lens can pull off impressive wide angle in the 130 degree angle range, yet still have zoom thru capability for tighter shots. More advanced shooters might want to get wider shots with a dedicated fisheye lens.

While being able to switch lenses underwater seems like the ultimate flexibility in theory, in practice it can be a bit of a pain. Managing multiple lenses underwater can be a distraction. Most wet mount wide angle lenses are quite heavy and attaching one to an arm for storage when not in use can be unwieldy when trying to position strobes. However, it does make for a great 1 kit lens solution without the need to change ports. Changing from a true wide system to a macro system has the convenience of not needing to worry about o-ring maintenance or risk water intrusion into the housing while changing ports on a wet boat. It also makes for a less expensive and smaller travel system.

While there are gains in quick change flexibility and a smaller system, there are disadvantages in both wide and macro. On the wide lens the angle of coverage is a little narrow for my tastes, coming in about the 120-130 degree range while dedicated fisheye lenses are in the range of about 170-180 degrees, allowing one to get closer and have a



wider field of view. There was a little bit of zooming that was needed to avoid vignetting, generally needing to zoom in to about 19mm. For most novice shooters and people whose shooting style doesn't find themselves shooting in extreme wide scenes, the angle of coverage will be more than adequate. For macro shooting with the Nauticam CMC lens, the system will be able to shoot macro scenes, but at a reproduction ratio of less than 1:1. This is probably fine for most general and novice macro shooters, but if you're into super macro photography and want to fill the frame with the smallest critters on the reef, you'll



The Nauticam WWL-1 and Sony 16-50 make a versatile combination that allows wide angle to fish portrait type shots without needing to remove the lens. Sony 16-50mm, at 50mm, Nauticam WWL-1, ISO 200, f/13, 1/80.

need a dedicated macro lens.

Shooting Dedicated Wide and Macro Lenses

Shooting a dedicated lens, by definition, limits the types of subjects you'll be able to shoot with that particular lens. Using a lens for a dedicated purpose will yield the best results compositionally and optically for that style of shooting by being optimized for the particular purpose it was designed for.

For wide angle the Tokina 10-

17mm has been THE favorite APS-C wide angle lens since it came out. We've used it for years on both Nikon and Canon mounts. It is a fisheye zoom lens with an angle of coverage that ranges from 100-180 degrees, making it the most ideal lens for underwater wide angle photography. The Sony a6300 can use the Canon mount Tokina 10-17mm with either the Metabones or Photodiox adapter. Autofocus works quickly and accurately.



I had no problems focusing a Canon mount Tokina 10-17mm lens. The Tokina 10-17mm lens has been our favorite APS-C fisheye lens with an angle of coverage of 100-180 degrees since it was introduced.

For macro, the favorite choice is the Sony 90mm macro. This lens will do a 1:1 reproduction ratio with a respectable working distance of 11 inches. External macro lenses can be added to the lens port to be able to do greater than 2:1 macro photography.

Flash--Optical or Electrical Connections?

The a6300 has the ability to use the pop up flash to trigger external strobes optically or use the camera's hot shoe to connect to strobes electrically.

While the optical connection can be used to trigger slave strobes that have either manual or TTL modes, the speed of shooting is limited by the recycle time of the internal flash which can be quite long. There's nothing more frustrating than being



The Sony 16-50mm with the Nauticam CMC macro lens (left) is a great combination for normal macro shooting while allowing flexibility to shoot larger subjects on the same dive, but it falls short of being a true super macro lens. The Sony 90mm with the SMC (right) will get super tight pro level macro shots of the tiniest critters on the reef.

in the heat of action and having a flash icon blink at you on the screen of the camera while frantically pressing down the shutter button to no avail, which I personally experienced.

In most other cameras with pop up flashes, you can set the flash to manual and a very low power (usually around 1/64 power) to trigger the strobes and allow a quick recycle.

Unfortunately the a6300, along with other Sony cameras with pop up flashes, has no ability to set a manual flash power. If you want to fire strobes in quick successive shots, you'll need to use an electrical connection.

After a day of shooting with the very slow recycle of the pop up flash, I switched over to an electrical connection for quick shooting. When shooting with an electrical connection, keep in mind the fastest flash sync speed of the camera is 1/160. With an electrical connection, the camera will allow



you to set a faster shutter speed than the flash sync limit of 1/160, thus resulting in black areas at the top of the frame from catching the shutter travel.

When the pop up flash is deployed, the camera will not allow a shutter speed faster than 1/160. In practice there were times that I had the shutter speed set faster than the max sync speed at 1/250 by accident and I did not see any shutter travel in the image.

When I got home I experimented with shutter speeds and flash sync. I had no shutter travel in the image at 1/250, but it did creep in the top part of the frame when set at 1/320.

4K Video

The a6300 records 4K 30p video at a 100mbps data rate. This is the same pro level video codec that is also found in the Sony a7R II and Sony a7S II. The 6300 captures 4K 30p video in 6K resolution



Sony a7R II
Full Frame (1.0x Crop)



Sony a7R II
Super 35 Mode (1.5x Crop)



Sony a6300
(1.8x Crop)

The Sony a6300 shoots 4K 30p footage from a smaller area of the sensor, leading to super tight 4K macro video. While this will also lead to narrower wide angle video, the Tokina 10-17mm will yield about 140 degrees, and the Canon 8-15mm will get back to around 180 degrees, at their widest settings.

from a smaller section of the imaging sensor and then down samples it to 4K resolution with no pixel binning. This results in a very sharp image that has reduced moire and really great detail. The camera can be shot at 4K 24p from the full sensor width, but I suspect most users will want to shoot the 30p option which has smoother motion.

The Sony a6300 shoots 4K 30p footage from a smaller area of the sensor, leading to super tight 4K macro video. While this will also lead to narrower wide angle video, the Tokina 10-17mm will yield about 140 degrees, and the Canon 8-15mm will get



back to around 180 degrees, at their widest settings.

The disadvantage is shooting wide angle. The lens won't be as wide as it is for photo mode. If shooting a Tokina 10-17mm lens for video, having the lens set at 10mm (which normally will result in a 180 degree angle of coverage in photo mode) will have an approximate angle of coverage of having the lens set to 12mm. The crop effect can be completely eliminated by using the Canon 8-15mm lens. Setting the Canon 8-15mm at 8mm will yield an approximate angle of coverage set at 10mm, getting an angle of coverage of about 180 degrees.

Focus Peaking

The Sony a6300 has the same exact focus peaking features as the Sony a7R II. When in manual focus, focus peaking will show areas that are in focus as a color. This makes critical focus super easy to see. For those who can't see critical focus on a screen or optical viewfinder very well, this is a must for macro shooting.

Focus peaking also works with depth of field (DOF) preview. The gain on the screen compensates for any loss of light stopping the lens down, but it is still important to use a focus light to help see subjects clear and help with AF performance



Tokina 10-17mm at 10mm, ISO 100, f14, 1/160.

in low light. This is an advantage over SLRs, as most cameras either don't have access to the DOF preview button, or when you do, the viewfinder is too overly dark to actually see anything when the lens is stopped down. Plus there is no focus peaking in an optical viewfinder.

Underwater White Balance Performance

Up to this point Sony has not been able to execute a custom underwater white balance with ambient light shooting. Unfortunately the a6300 is no different. The white balance tops out at 9900K, which is nowhere near where us underwater shooters need to be. I used a Magic Filter in the back of the lens to execute a custom white balance underwater. The red color of the magic filter knocks down the color temperature of the scene and gets it into a range that the camera can white balance in.

I found that in the range of 30-50 feet there was no need to re-execute custom white balances, as I found that the camera always pegged out at the color temperature and tint limits in this depth range. The camera can be set to the max 9900K and the tint at M7 and the colors look really good. Above about 25-30 feet a custom white balance will result in a kelvin temperature under 9900K, so executing multiple white balances at different depths will be necessary above 30 feet.

Unfortunately after about 50 feet, the blue background starts to lean more to purple. The tint can be dialed back a little but it doesn't look as good as it does at shallower depths with ambient light. Most cameras top

out around 60 feet max for working well with ambient light, so this isn't too unusual. I recommend using a filter for wide video all the time and using cyan lights when shooting below about 50 feet and white blancing to the lights.

Being able to white balance without a color correction filter is a huge advantage, allowing one to do photo and video on the same dive, or do video lights and ambient light on the same dive. You'll get great color with the Sony a6300, but you'll need to go in the water dedicated with either a color filter or lights.

Conclusion

The Sony a6300 can almost be any camera you want it to be. Moving up from a compact and want better quality images and video, but don't want to deal with port changes and the o-ring maintenance while traveling around with a whole bunch of lens ports and extra lenses to keep the whole rig really small? You can get the 16-50mm kit lens and use wet lenses for wide angle and macro. Want the ultimate wide angle and macro shooting rig to be right up there with SLRs in image quality? Shoot the Tokina 10-17mm and Sony 90mm macro and you'll have some of the best images out there for the price. If you're a macro video shooter

that wants to move to 4K, there isn't a better system out there that will provide the combination of quality 4K video and reproduction ratio.

All these positives aren't to say that there aren't a few negatives. The 1/160 flash sync speed is a bummer and makes pulling in tighter sun balls and bright ambient light backgrounds while using strobes a little bit harder, but it can be done by getting really close to the foreground and using bright strobes. Although our testing shows we can shoot 1/250 with our camera, I don't feel comfortable saying that it works for all cameras until I see it for myself. The 4K 30p crop video can be a positive or negative depending if you are shooting macro or wide, but the wide disadvantage can be overcome by using the Canon 8-15mm lens, although it does come at a premium price.

Everything considered, you are getting a lot of camera for \$999, making this one of the best values in the crop sensor mirrorless range of cameras.

Pros

Many lens options
Can use the Tokina 10-17mm with a Metabones or Photodiox adapter
Excellent video image quality in 4K
Super sick tight macro in 4K video
Razor sharp images

Excellent low noise performance and image quality to rival leading APS-C mirrorless and SLR cameras.
Extreme high level of performance you get for \$999

Cons

Slow 1/160 flash sync speed according to spec, but we were able to shoot 1/250 with a manual electrical strobe connection
Needs a color filter for underwater manual white balance
Built in flash can only be shot in TTL, leading to slow internal flash recycle times when using optical cables
Need to change battery each dive if shooting a lot of 4K video

Jim Decker

www.backscatter.com



Glowdive Light Dome

By Phil Rudin

Light diffusing devices have been around about as long as photographers have been exposing images and underwater photographers have been using diffusers for many years as well.

Recently dome shaped strobe diffusers like the Light Dome have begun to gain traction in the underwater photo community replacing the much more common flat diffusers which have been used for decades.

We have used the position of the sun to create interesting lighting effects, a verity of flat diffusers to widen and soften strobe lighting and now the Glowdive Light Dome has added another approach for getting softer light onto your subject.

Single and Multiple strobes have been used for years in underwater photography to control shadows, highlights, contrast, color and depth. The many techniques used to position strobes, while helpful won't totally eliminate the effects of hard lighting from wide angle or macro images.

Hard Lighting creates hard shadows and high contrast while soft lighting tends to wrap around the subject and fills in harsh shadows

creating a lower contrast within the images. Studio photographers have used umbrellas, soft boxes, diffused window light, parabolic reflectors, bounced lighting and more to soften light for years.

The rule of thumb for all light diffusing devices is that bigger is better so the larger the surface of the devise the softer the light. Since it would be impractical to swim around with a pair of forty inch soft boxes underwater photographer and product designer Carols Villoch has developed the Light Dome which takes a page straight from the studio photographers manual.

The Glowdive Light Dome has a large surface area of around 315 cm² (about 49 square inches) while standard flat diffusers for strobes like Sea & Sea YS-D2 and Inon Z-240 have a total surface area of around 55 cm² (about 8.5 square inches).

Willans Chromodoris Sea Slug, Sony A6300, Sony 90mm macro, Ikelite housing and port, ISO-200, F/10, 1/160th, two Inon Z-240 strobes with Light Domes.



The shape of the Light Dome, the much larger total surface area and the materials used in constructing Light Dome all combine to produce extremely soft edge lighting. The result is a much less noticeable transition from strobe to ambient lighting in an image.

Another upside to Light Dome is that you are able to get closer to your subject even in turbid conditions with less backscatter.

Light Dome diffusers work well for wide angle photography, macro photography and are ideal for those using single strobe lighting. Softer lighting allows you to get closer to the main subject without blowing out highlights while reducing backscatter even in murky water.

Unlike top side strobes incorporating large soft boxes or bounced off of walls and ceilings our underwater strobes tend to produce powerful bursts of light from a small source which is often directed forward. This results in increased backscatter and harsh shadow areas. Light Dome also greatly reduces the over exposed reflections associated with shooting schooling fish like Barracuda and Jacks.

With Light Dome loss of light at the center of the beam is about two-thirds of an f/stop compared to a standard diffuser, but the gain at the edges offsets the center loss allowing



Diver over Anemone, Sony A7R II, Zeiss 18mm F/2.8, ISO-640, F/8, 1/200th, Nauticam NA-A7II housing, Zen Underwater 200mm optical glass dome port, two Inon Z-240 strobes with Light Domes.

you to move closer to your subject.

I used two Light Domes with Inon Z-240 strobes, Sony A7R II camera, Nauticam NA-A7II housing, Nauticam float arms and a verity of lens and dome configurations.

When you enter the water with your housing you get an explosion of bubbles exiting the domes as they fill



Reef Scene, Verde Island Philippines, Sony A7R II, Canon 8-15mm Fisheye at 8mm, ISO-400, F/13, 1/250th, Nauticam housing, Zen 100mm optical glass dome port, Metabones IV adapter, two Inon Z-240 strobes with Light Domes.

with water which at first tends to be concerning. once you realize it is not your housing flooding it is easy to just

point the strobes down until the air escapes.

While the light domes just push

onto the front of the strobes I never had them fall off in over fifty dives.

I found that I needed to get the domes a little closer to the subject to compensate for the added light loss or bump up the ISO a bit. For all uses I kept the domes well behind the port because of the very wide angle of the light beam.

These domes work, they reduced harsh blown-out highlights, overly exposed skin tones in models, reduced noticeable backscatter and produced an very even and pleasing soft light. I have now added a pair to my travel kit .

Light Dome is specifically designed to fit a wide verity of popular strobes including Epoque 230, Ikelite 125, 160, 161, Inon S-2000, D-2000, Z-240, Sea & Sea D1, D2, YS01, YS02, YS03, 110, 110a, YS250 pro and are custom made for a verity of video lights.

The Light Dome can be purchased through the glowdive.com web page for 80€ (around \$90.00USD) for one or 150€ (around \$169.00USD) for a pair plus shipping anywhere world wide.

You can also consult the Lightdome.works web page for further information and a list of the growing network of Light Dome dealers world wide.

Thanks to Alex Tattersall from Underwater Visions the UK Glowdive



Giant Frogfish, Sony A7R II, Canon 8-15mm Fisheye at 15mm, ISO-200, F/7.1, 1/250th, Nauticam NA-A7II housing, Zen Underwater 100mm optical glass dome port, Metabones IV adapter, two Inon Z-240 strobes with Light Domes.

Light Dome dealer for providing the two Inon Z-240 Light Domes used for this review. Alex can be reached at uwvisions.com.

Phil Rudin

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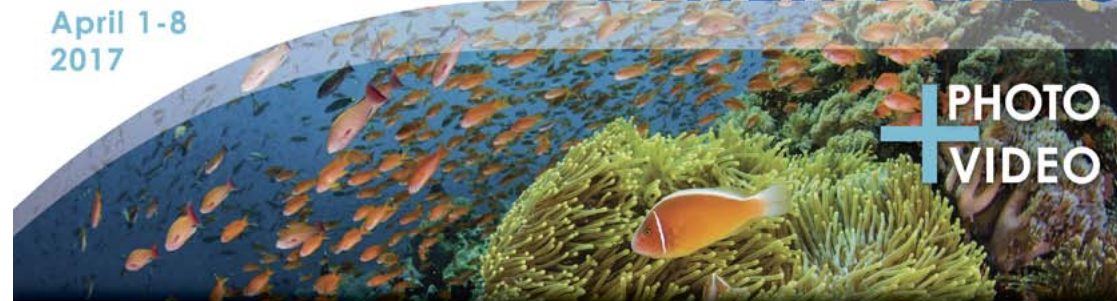


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Underwater Macro Photography

Thoughts and strategies for minimising our environmental impact

by Alex Tattersall

Digital underwater photography is still in its infancy yet along with the rapid advances in social media, the wealth of impressive underwater images is now breath-taking. By signing up to some of the numerous UW photography groups on social media networks, very quickly you will be exposed to a seemingly endless stream of simply stunning imagery. Furthermore, we need only to follow the development of UW competition winning images over the last ten years to appreciate how far the art has come in such a relatively short time.

Unfortunately, this makes creating original and innovative imagery an increasing challenge, and in our small, obsessive world where many people want to develop a stand-out profile to self-promote and perhaps build an income stream, the challenges are obvious. If money is no object (or they are assigned on a professional budget), photographers can travel to relatively uncharted territories to find rarely photographed species in unusual topographical locations. Others choose to take their cameras deeper for new and interesting scientific revelations and fauna encounters. Most of us though will look to capture unusual behaviours or new perspectives on frequently photographed species hoping to create stand out images to gain kudos among our peers.

Anyone who has travelled to some of the world's macro hotspots cannot fail to notice the 'pointy stick' that has become the norm wherein small macro subjects are corralled and positioned into more photogenic poses and locations in order to

produce more attractive photos. Subjects are herded into couples/triplets/cross species encounters, or even towards potential predators in order to present behavioural situations that will earn their photographer the competition prizes/respect/kudos they desire.

Note well- I must say here that I have also been involved in such practice which at the time seemed to be the norm and a part of my earlier portfolio can be attributed to such critter manipulation. It is important also to note that I was largely driven through aspiration to replicate the successful images of my seniors, many of which had been achieved through similar practice. I was also admittedly driven to producing original shots to build my own industry profile.

The issue of drawing the line with critter manipulation is an ethical dilemma and each photographer will be guided by his or her own evolving personal code of ethics. Ethics are

Tigershrimp seem to be very much an 'en vogue' subject currently but we see these more and more photographed perched beautifully atop seemingly unnatural but stunningly contrasting backgrounds such as blue tunicates against a black water column. We also see them photographed flying through the water column with eggs in their abdomen. I have only rarely seen a tiger shrimp and it was neither perched on a blue tunicate (as if it were fully aware of the colour wheel and how nicely orange can contrast with blue), nor free-swimming in the water column. When I have seen them, they have, like boxer (pom-pom) crabs and harlequin shrimp, been on a sandy or rocky substrate. Rather than corral them into position with a pointer stick, try increasing magnification as in the image here which blurs the background and still offers an impressive image.

Nikon D7200, Nauticam, 105mm VR, Nauticam SMC, F29, 1/200, ISO 320.



©Alex Tattersall

generally formed around norms, peer behaviour and opinion, and respected spheres of influence. However, it seems that as the wealth of amazing imagery increases, we are seeing some photographers resort to more and more extreme measures in their quest for originality. The good news is that there is a resounding movement in the UW world now gaining momentum against such practice and spheres of influence such as respected photographers, resort owners, dive guides, competition organisers and magazine editors are being lobbied to assist in policing dubious practice.

Fashions change of course as do what is understood as acceptable and unacceptable practice. It was not long ago that we saw series after series of benthic octopi being photographed from below parachuting out of the water column. Some such images won prestigious competitions, setting the trend for a multitude of imitators. Learning and aspiring photographers see winning images and want to emulate them. If the ethical practice of how the winning images were shot is seen as the norm, as key influencers, competition organiser, judges and winning competitors are perhaps inadvertently setting up the next generation of photographers for ecological failure. The same is true, if not more so, for the increasing number of UW photo workshop leaders whose images inspire and whose techniques and practice educate.

Having been involved quite heavily in the debate of critter manipulating, during my most recent workshop trip to Dumaguete, Philippines, I consciously put aside my 'bothering rod', using it only to stabilise myself and turned my attention to photographic techniques rather than critter manipulation to attempt to produce a portfolio of original and interesting images. I'd like to share



The triplefin goby was ubiquitous in Dumaguete and the numerous specimens came to rest in a variety of places. The blue tunicates proved to be a much nicer background than the rocky outcrops. Nikon D7200, Nauticam housing, 105mm VR, F11, 1/200, ISO 320

some of these here with you now to give ideas of how to minimise our impact as photographers on our environment (addendum- having sat down to pull together images, I realise that some of the images from previous Lembeh and Puerto Galera trips demonstrate the techniques equally well).

1. Backgrounds

The beauty of the UW macro world is that even on the most hardcore of muck sites, there are outcrops of beauty which can be used as attractive negative space. Something as simple as a seapen, urchin or a crinoid can play host to numerous fascinating subjects. Many of these backgrounds do not respond well to being poked, polyps retracting, crinoid arms waving or urchins fleeing, therefore far



Frogfish big and small were everywhere in Dumaguete. This very attractive yellow juvenile was much more reflective than the dark, volcanic substrate. Behind, a slice of mango peel had been thrown from the boat and was being eaten by a spikey, black urchin. This mango colour complimented the frogfish and offered an interesting background. Again, no poking required. Nikon D7200, Nauticam housing, 105mm VR, SMC, F29, 1/200, ISO 320.

better images can come from a hands-off, gentle and careful approach.

An example is the triplefin goby. These skittish subjects have a habit of flitting away and then returning to the same place of rest. Some choose bare and unattractive rock, others choose more photogenic backgrounds. Fish such as these are skittish at first but become used to relaxed diver presence after time. A long macro lens is invaluable however, and a pointer stick will have an undesired affect on this species (i.e. it will swim away rapidly).



Canon G7X, Nauticam CMC, F11, 1/200, ISO 200. Having a small sized compact camera in this case was a major advantage for approaching and framing this usually skittish subject. Minimising contact with the host critter makes life so much easier for the photographer.

Crinoids can make the most wonderful textured and patterned negative space and play host to some fascinating creatures. As soon as the crinoid is disturbed, its movements will make capturing a good shot far more onerous, the best shots will almost inevitably come as a result of zero physical contact with either crinoid or critter.

So, begin your search for these backgrounds, know they are there and exploit the photo opportunities they offer passively and conscientiously and the rewards will come to you.

2. Magnification

If an interesting subject is framed against an unattractive background, a strategy to eliminate this is to use high magnification. This will have the



Christmas Tree Worm detail – Nikon D7200, Nauticam housing, 105mm VR, Nauticam SMC, F29, 1/200, ISO 320.

effect of either filling the frame with the features of your subject, or creating a narrower depth of field that will effectively blur out any unattractive rock or substrate negative space. The first example is the Christmas Tree Worm. This is a subject, I'm sure you know, that will retract rapidly into its hole should it feel excessive vibration in the water column. A pointer stick is of no use here! It is therefore a very good subject to hone photography skills, to move gently with controlled breathing, to demonstrate good buoyancy and to be very gentle in approach. Once these skills are finely tuned, you will find that you become a far more effective macro photographer, subjects will be less intimidated by your presence and will be more welcoming of your advances.

The hairy squat lobster usually sits quite inaccessibly in the folds of large barrel sponges, not easy to approach and certainly not easy to introduce strobe light as the barrel sponge folds often block this. With supermacro diopters and a very steady



Hairy Squat Lobster Detail – Nikon D7200, Nauticam, 105mm VR, Nauticam SMC, F29, 1/200, ISO 320.

approach, if you choose the right non-skittish subject (a player as we call them), magnification can produce an interesting image while avoiding unattractive negative space.

For all these shots, the technique is in the approach. Set up your strobe output prior to approaching the animal using a similarly reflective coloured surface. Consider your desired depth of field before making the approach. Set the camera to rear button focus and focus on a rock beforehand. Approach with very little exhalation of bubbles, carefully, slowly and smoothly. If the critter decides it doesn't want you in its comfort zone, just let it go and find a more cooperative specimen. Above all, respect and look in wonder at the animal and avoid prodding it back into an accessible place with a steel rod. Discourage your guide from doing the same if necessary.

3. Lighting techniques



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Pink seahorse and distracting background – Nikon D7200, Nauticam, 105mm VR, F22, 1/200, ISO 320.

As photographers, we have the ability to light what we choose to light. My first example demonstrates the effectiveness of inward lighting. A lovely pinkish seahorse was curled around a seapen in a sheltered sandy dip on the ocean floor during a high current dive. I took a couple of shots and quickly realised the sandy background was distracting (you can see this in the image below). In order to isolate the seahorse from the sandy background without interfering with the subject, I turned the strobes inwards pointing them towards the camera and tried again. There was no need to move the seahorse into a better position, simply through a more controlled strobe position, I was able to get the shot I wanted with no physical disturbance of the subject.

Snoots and focused light are an excellent way of removing unattractive backgrounds and seem to have little effect on many species of marine life if used with care and attention. If you are shooting



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Pink seahorse with inward lighting – Nikon D7200, Nauticam, 105mm VR, F22, 1/200, ISO 320.

alone, the ideal practice I've found (with some early guidance from Alex M I should mention) is to find a subject and then consider the size/power/definition of the light I want to produce. If the snoot or light shaping device has options of light point size, I can make this decision early. I will then find a rock or patch of similar size and reflective property/colour to the subject in order to set up the shot before approaching the critter.

With the snoot attached to a strobe on two long arm (1x 300mm and 1x 200mm usually) segments on the left side of the housing, I can physically move the light into position, pull the focus using the rear lever and practice a couple of shots. If the light point is too large or too powerful/weak, I can make these adjustments before approaching the subject.



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Zebra crab on fire urchin – Nikon D7200, Nauticam, 105mm VR, F22, 1/200, ISO 320, 10 bar laser snoot

Once set up in this way, I tighten all the clamps on the arm so the arm is rigid and then make my approach. Once the subject falls into focus, I know that the light is in approximately the right position; a few minor adjustments and the light can be placed where I want it. Some devices use the strobe's spotting light as a useful aiming tool, others recently have developed a red laser pointer (visible even during the day – very useful).

Through lack of understanding as to the effects of laser pointer light on critters' eyes, I set the laser to be a couple of millimetres away from the subject itself although I may have been worrying unnecessarily. The result of careful light placement is that you can take original and beautiful images with minimal impact to the marine environment.

4. Naturally occurring behaviours



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Animals do things, don't they? They eat, sleep, spawn, yawn, fight, even flirt. These behaviours make for amazing and outstanding photos. In the recent debates about critter manipulation, concern was repeatedly expressed about what happens if a one in a million behavioural sequence occurs and competition judges deem it to be manipulated or a social media witch hunt ensues.

This is a very real concern currently and it is certainly not our intention to encourage that we 'throw the baby out with the bathwater', as we say

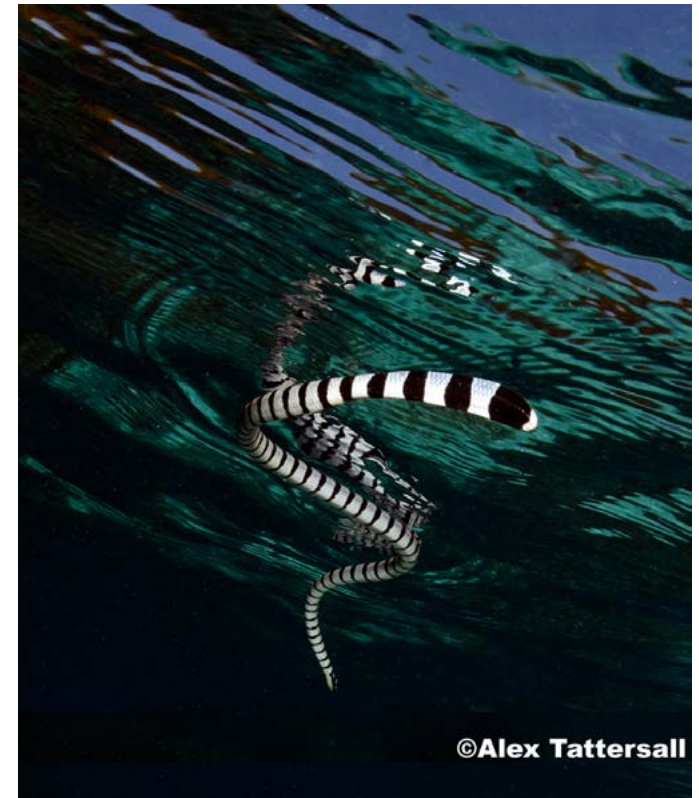
Courting cardinalfish - Nikon D7200, Nauticam, 105mm VR, F22, 1/200, ISO 320, Inon Z240 strobes pushed forwards on long arms. Here I was trying to capture behaviours that could under no circumstances be attributed to pointer stick interference.



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Mouth-brooding cardinalfish – Olympus EM10ii, 14-42 EZ lens and Nauticam CMC-2. This image demonstrates the importance of approach. With the camera and lens combination I was using, working distance was much less than it would have been with the 105mm macro lens on the DSLR. Having setup for the shot with all strobe and camera settings tested on a benign surface, I was able to use a very slow and steady approach to this small cardinalfish. Each time it seemed it would swim away, I stopped and moved back slightly as it became more and more comfortable with my presence. The animal always had the option to swim away and the shots I took were very limited.

in colloquial English. Anyone capturing unique and amazing behaviour would surely stand firm in their knowledge and not fear reprimand from their peers. I know I certainly would. Many behaviours



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*Breathing banded seasnake - Nikon D7200, Nauticam, Tokina 10-17mm, 140mm glass dome, F22, 1/200, ISO 320
25 minutes with this lovely sea snake, every 5 minutes or so she would go to the surface to breathe. At first she seemed wary but then let me follow her up each time for that magical reflective moment.*

though cannot be manipulated, and are indeed sometimes actually easier to capture as the subjects are distracted by their activity.

5. Depth of field and blur

At the fingertips of any photographer (with a camera which allows manual settings) is the ability to open the aperture and blur distracting surroundings. Blurred areas are rendered stylistically differently depending on the main lens and supplementary wet dioptre make-up. Rather than move a critter into a more photogenic setting, we have the option of using blur to our advantage, effectively making the subject pop out of the image.

Be aware of course that opening the camera aperture and not reducing ISO requires a decrease in your strobe light output to keep the same exposure. When using such shallow depth of field and open aperture, flash power is usually nearly minimum. Strobe effect on critters will often come up in the debate regarding affecting our environment so minimising output may cause fewer disturbances.

The only methodical empirical testing study I have seen is that of David Harasti with seahorses which doubts negative effect on the subjects tested. As sensitive photographers though, we all surely know when a subject has had enough of us and our activity, we all must have felt this and responded appropriately.

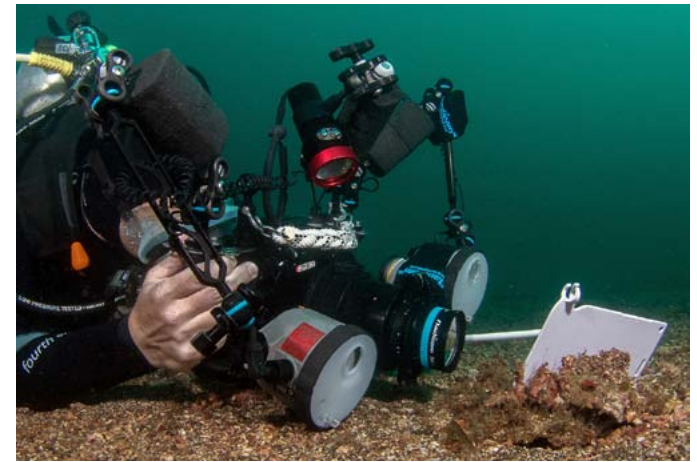
6. Placing backgrounds

Once upon a time, a number of beautiful nudibranchs were relocated to an underwater studio which showed the animals impressively set against white backgrounds. This series of photos was quite groundbreaking at the time and was widely published and of high profile. This unfortunately made it seminal in numerous mimicry projects. We have touched earlier on how accepted practice



Blue Ring Octopus - Nikon D7200, Nauticam, 105mm VR, F7.1, 1/200, ISO 100 – All too often do we see Blue Ring Octopi isolated against the water column in unnatural seeming locations. Try using shallow depth of field to isolate the critter in its natural environment if it decides to stay near unattractive benthos.

changes over time but I think this demonstrates the importance of role models and successful imagery in forming the next generation of photographers. In



It is possible though to present a critter against an alternative background with minimal impact to the environment. Here I have taken a simple dive slate and placed it behind the subjects. Photo courtesy of Sasha Janson



Nauticam NA-D7200, 105mm VR, SMC, F22, 1/200, ISO 320, with white slate. Gently placing the white slate behind the subjects allows separation with minimal interference.

the quest for originality and renown, photographers think up more creative methods, with greater or lesser impact on the environment and the subject.



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Nauticam NA-D7200, 105mm VR, prototype dioptre, F29, 1/200, ISO 320, Framed against the sandy beige background.



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Nauticam NA-D7200, 105mm VR, prototype dioptre, F29, 1/200, ISO 320, Framed against a black background.

Dumaguete proved to be a real hotbed for the curiously macabre skeleton shrimp and during our visit there this month they were absolutely everywhere, many of them with young clinging on to their backs. Testing a new dioptre prototype, I took several shots of an individual with young against the sandy substrate. After a short while, I considered whether the impact of a black background would make for a stronger image and so unscrewed and gently placed another

wet dioptre I had on my dual flip holder just behind the subject.

The images show the difference. I didn't need to lift the subject into the water column to obtain the black background, a practice I've seen frequently and admittedly done myself in the quest for better images.

Backgrounds, mirrors, mats can be used responsibly to produce good images but can also be used carelessly to the detriment of the welfare of the marine environment. As people want

to mimic certain photo styles, being transparent with the way the images have been produced seems to me to be the best hope to prevent abuse and misuse.

It is my hope that the above six strategies may find their way into many of your photographic toolkits and consciousness when you are 'in the zone' with a cooperative subject. I intend to continue and develop this article as new ideas are shared in the UW photo community. The ideas

presented above were not formed in a vacuum, they were developed from experiences and sharing of ideas with other passionate members of our community. Much of the inspiration for this article comes from the comments made by divers and UW photographers in our online petition for change in UW macro photo practice. You can find this here and are very welcome to add any ideas you think would be helpful and browse the comments of others.

<https://www.change.org/p/competition-organisers-more-ethics-in-uw-photography/c>

To conclude, we all have in common a love for the marine environment and being immersed in this watery world. As UW photographers, we have already developed a poor reputation among non-photographic divers for our single mindedness (and sometimes recklessness) when behind the camera.

There is also risk of perceived entitlement over subjects and ego can intervene. Our interaction with the marine environment is less passive than non-photographic divers and we collectively need to be aware of this. However, as one poignant comment on the petition above points out, it is far easier to be tolerant of one's own behaviour than the behaviour of others, so change unequivocally needs to start with ourselves.

It is a very human desire to stand out, to be counted and to be respected by our peers. It is also unfortunately very human to want to amass financial reward and indeed a survival requirement for many of us. However, it seems that ambition and the quest for photographic originality, kudos and status in our community is making many of us lose sight of why we original fell in love with the aquatic environment in the first place.

To be passionate wildlife photographers at the expense of the wellbeing of our subjects is the

ultimate irony and sadness.

Addendum

This article attempts to consider some of the issues in the underwater macro photography experience. I am well aware of similar ethical questions concerning large animals, baiting of sharks for example, and the emotion this causes to many of us. If another photographer would care to take the baton on this topic, that would be interesting, as this really falls outside of my own experience. I am also aware of the practiced arguments against us that there are more important things going on in the world. This unquestionably does not make our concern about the direction in which current underwater macro photography is headed any less valid.

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Adding Luminance to Fluo Photography

by Steve Miller

Among the primary attractions of night diving are the colors. At first, this statement may seem counter intuitive, as the reef is cloaked in darkness. Sunlight may reveal the broader vistas of the underwater realm, but as any underwater photographer can tell you, it does not render the full spectrum of colors, as red, orange and yellow wavelengths are lost even at relatively shallow depths. This changes at night. When we carry high-powered artificial lights, all wavelengths and colors are restored, making the reef look like a different place, this time vibrating with warm colors.

The ability to control the light source opens up a wealth of creative possibilities. A prime example of this is the growing popularity of the phenomenon known as fluo diving, which exposes the unique florescent characteristics of certain animals and corals in glowing, neon-like hues reminiscent of the black light posters of the 60's and 70's. On a recent trip to Indonesia's Wakatobi Resort, I had an opportunity to take fluorescence to a new level by adding additional conventional light sources altered

with warming gels. This technique yielded some intriguing results.

Fluo diving as practiced at locations such as Wakatobi Resort is a relatively new phenomenon, and the techniques of fluorescence photography are equally recent, though now well understood. You may remember an article in the July 2015 issue by Phil Rudin that detailed the equipment and techniques necessary for capturing the bright colors of the reef using fluo photography. These techniques remain essentially unchanged.

First, you color your lights blue, either by using a blue LED light designed specifically for this purpose, or by using dichroic filters on your lights and strobes to produce this exclusively blue light. From there,

The green is a result of Fluorescence. The red, however, could be a result of either fluo or a red filter gamma, or both.

Looking through the yellow barrier filter the green is all you see, because that is the only thing fluorescing.



Fluorescence luminance setup. The colored Gammas above are constantly on for color and for seeing around you. When the flash goes off the light emitted is blue as it passes through a dichroic filter, the first step in Fluorescence shooting.





The eye of a crocodile-fish taken on a fluo night dive at Wakatobi Resort using two Ikelite strobes with blue dichroic filters and gamma lights fitted with gels in red, yellow and orange. Surprisingly, crocodile-fish with a rainbow of colors—particularly in their eyes, express no fluorescence (in the six crocodile-fish that I have seen during fluo dives at Wakatobi.

you place a yellow barrier filter on your camera lens or the housing port. Now your camera will capture only things that are actively fluorescing. To be able to see the effect—and to find subjects—you will also need to place a barrier filter on your mask. Now, like your camera- you will only see things that are fluorescing.... provided

there are no white light sources around.

When fluo dives were first offered, they were conducted in a one guest per guide situation, and rarely with cameras involved. Even skilled night divers benefit from a guide when engaged in fluo diving. Although you are seeing wonderful



Lizardfish are well known for showing a high tendency to fluoresce, in fact they seem to always fluoresce, and it's quite beautiful.

bright-glowing animals, anything that is not fluorescing—which is most of the reef—is almost... well, invisible! This can present issues for the diver, as well as the underwater environment and its inhabitants. Divers are expected to avoid contact with the reef, and if we can't see it there is a better chance of inadvertently bumping to coral or a camouflaged animal.

And even when contact is avoided, navigation and subject identification can remain a challenge. On a recent night dive at Wakatobi Resort, my non-fluo diving buddies signaled to me that they had found something I might want to see. An interesting aspect of the fluo dive experience is the colors are so vivid that they can be seen at greater distances. I swam towards the group



No luminance was used to find this red on the tentacles; both colors in this image are from fluo.

and went directly to what I saw fluorescing- a small patch of hard coral that from 15 feet away glowed bright green. I later learned that on my way to the coral I'd swam past a crocodilefish and a lionfish, and saw neither. Those were the subjects my friends had signaled me over to

see, but since these fish were not fluorescing, they were almost invisible to me.

There are several ways to mitigate this issue. If you dive around dusk the remaining ambient light will allow you to see the shapes of the reef. Of course, this somewhat defeats the

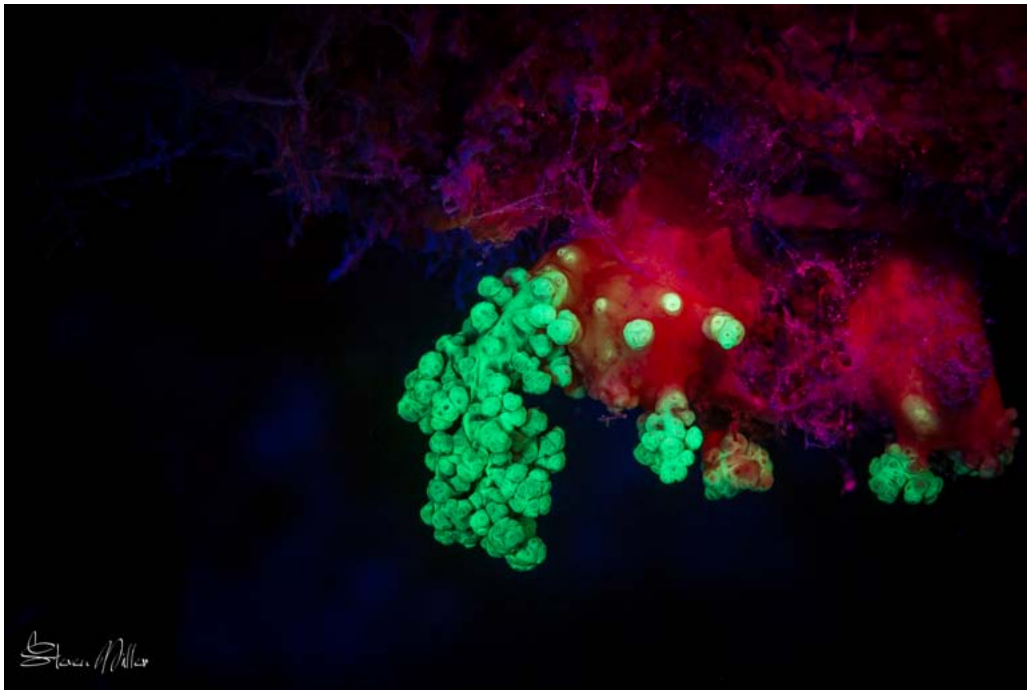


There were no luminance lights used to produce this image of dragon-eye zoanthid coral, it is 100% Fluo.

purpose, as the darker it is, the more pronounced the fluo effect becomes. If you are a live-view shooter, or are using live view for video, then you can lose the barrier on your mask, and just look at the camera for things that are fluorescing, although the "fluo experience" suffers a bit with this technique. Another option would be to use an oversized yellow barrier filter on your camera housing's port, positioning the yellow filter material to extend upward enough for you to sight over the housing and look through the barrier to know what is

fluorescing. Again, this diminishes the overall fluo experience, but it provides a compromise that allows you to see where you are going.

Lastly, and in my opinion the best solution, is to add luminance to the imaging equation. Though I can't put an exact number on the phenomenon, fluorescent colors seem to travel great distances through the water. If I point my blue wavelength light at a fluorescing coral, I see the resulting bright green splash of color from much farther away than I would if a red coral were hit with white light.

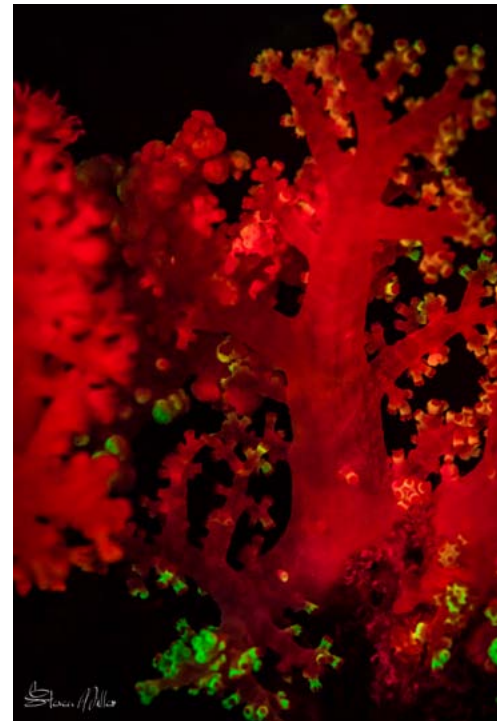


Looking through the yellow barrier filter the green is all you see, because that is the only thing fluorescing.

When using fluo lighting alone, this results in images where much of the scene both close and far is missing because there is no fluorescence. By combining light sources, you can restore the lost details of the reef while still showcasing fluorescent effects.

Adding luminance to your fluo kit involves attaching a number of additional light sources to your camera setup, which are typically fitted with various filters. The colors these lights produce will shift and become warmer as they pass through

your barrier filter, but will produce the ambient light needed to navigate and find subjects, whether they are fluorescing or not. You can negotiate the reef with your luminance and fluo lights working together, then select a lighting strategy based on the subject. If it is fluorescing, you can turn off the luminance lights and shoot pure fluo. You can also combine the light sources to create new effects, or even shoot pure luminance. Think of your scene as a theatrical stage, and light it with a half dozen or so sources in various colors, each set and tweaked



The tiny green at the lower portions of this image is actually the fluorescent area of this stand of soft coral, which illuminated a gorgeous brilliant red.

to suit the scene.

The images presented here were shot during a single night dive at Wakatobi Resort, with two Ikelite DS strobes set with blue Dichroic filters, accompanied by 4 Gamma lights fitted with gels in red, yellow, and orange. There are a wide range of colored gels available to experiment with, and as always, there are no rules, so have fun experimenting.

Wakatobi Resort is considered

one of the best places in the world to observe and document marine fluorescence. The resort pioneered the practice now known as Fluo-Diving, and the protected reefs surrounding the resort are rich in the creatures that reveal their hidden nature through fluorescence. Fluo-dive and fluo-snorkel programs are conducted with a private guide as a one-on-one or buddy-diving experience. Following a comprehensive pre-dive briefing, participants are provided with the special dive lights and mask filters used to reveal marine fluorescence. Dives take place on the House Reef or one of several nearby sites that are rich in fluorescing marine life such as the site known as Zoo. Guides and boat crews are accustomed to working with photographers, and will assist in all aspects of gear management, subject acquisition and in-water assistance.

Steve Miller
www.wakatobi.com

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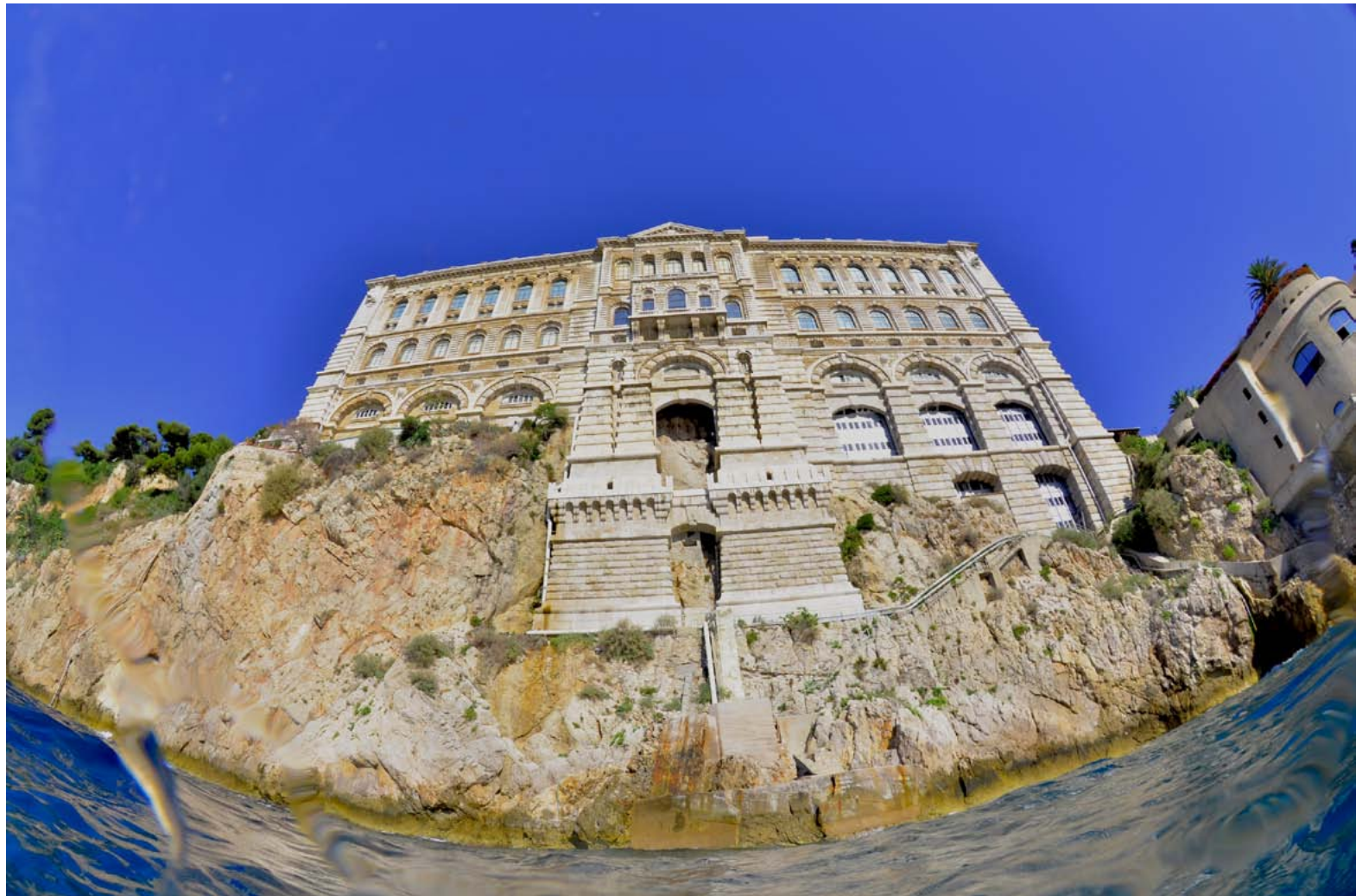
Monaco

by Bassem Jamour

I first discovered underwater photography during my “Discovery Dive” in the Dominican Republic in 2009, using a disposable camera. What a disappointment I felt when the film was developed and I saw the pictures! It was after this first failed experiment that I realized how the art of underwater photography was going to be very difficult and tricky to master. I already imagined the challenges that I would have to face in order to produce an image of good quality and, above all, original. I can say that it was at that particular moment that my passion for underwater photography was born.

Underwater photography is a pure challenge as it pushes the photographer’s artistry to the limit in search of the perfect picture. With the loss of light and colors, photographers need to dive holding a “mini studio” between their arms in their quest to capture beautiful and original pictures under extreme and sometimes harsh conditions.

Over the past few years, I have participated in various underwater photography tournaments where I had the honor to meet other photographers that share my same passion. These



All Pictures are shot with a Nikon D7000 in an Aquatica housing AD7000, with 2 x Ikelite strobes D161 (with Ikelite dome diffuser).

competitions are always very exciting, but can also be very stressful, because the diving sites are new and unknown, diving conditions can be harsh and visibility poor, and of course the diving time is limited. So, in order to capture a shot that we usually master,

it can prove to be a very challenging task. In my experience, I have found wide angle shots with a model in a new site to be the most challenging. Communicating to the model what position, angle, view to take is not easy and it requires very good

and constant communication skills between the photographer and the model.

I mostly dive in Monte Carlo, Monaco, a Principality located along the Mediterranean Sea, on the French Riviera, halfway between Nice and



Seabream protected by Barracudas: Nikon Lens 105mm. ISO100 1/40 F13

Spongia officinalis: Tokina Lens 10.50mm ISO100 1/125 F14

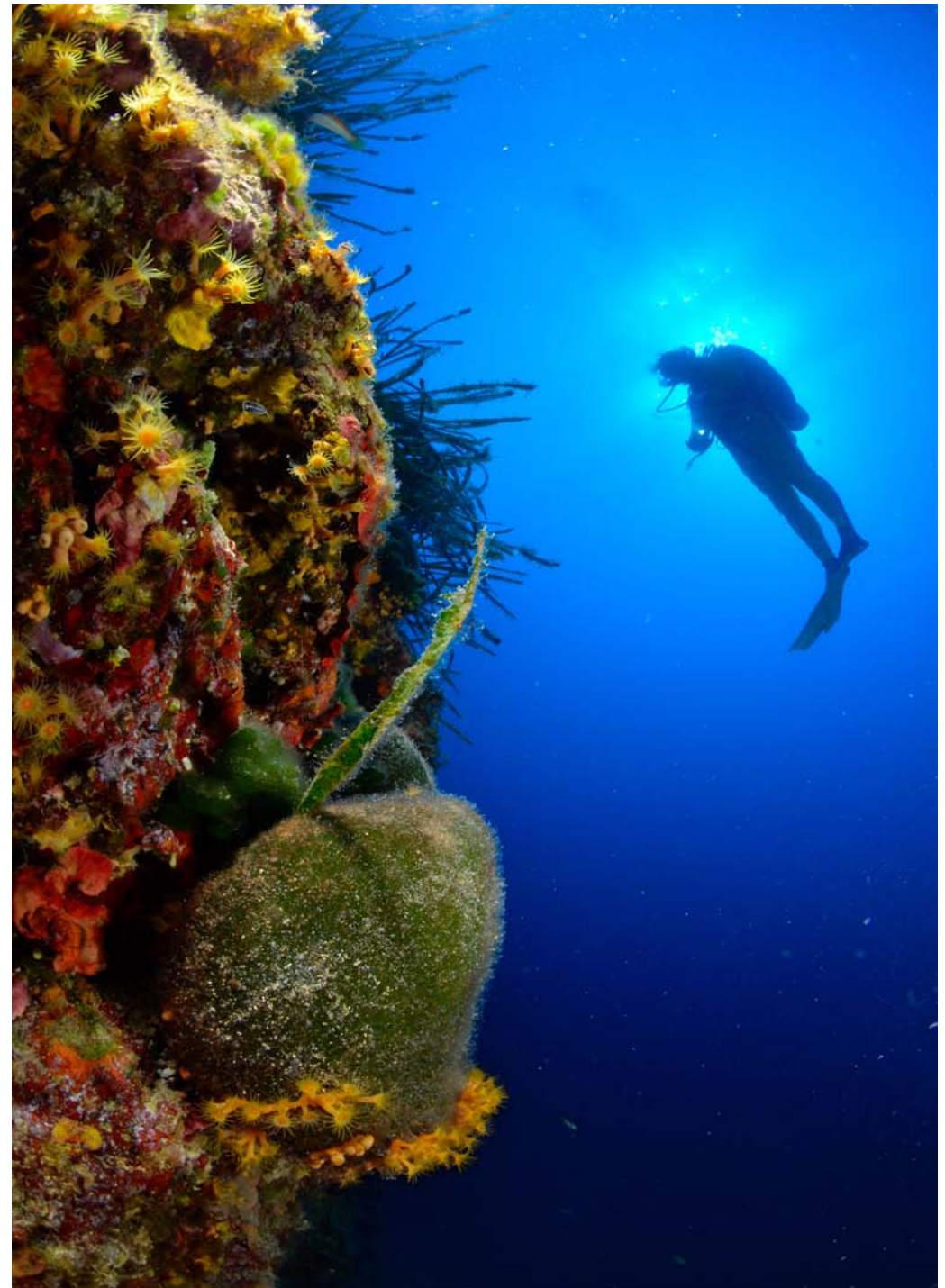
the Italian border. Monaco is the second smallest independent state in the world, after the Vatican. The geographical location of Monaco and its mild Mediterranean climate in the winter make it a very popular destination.

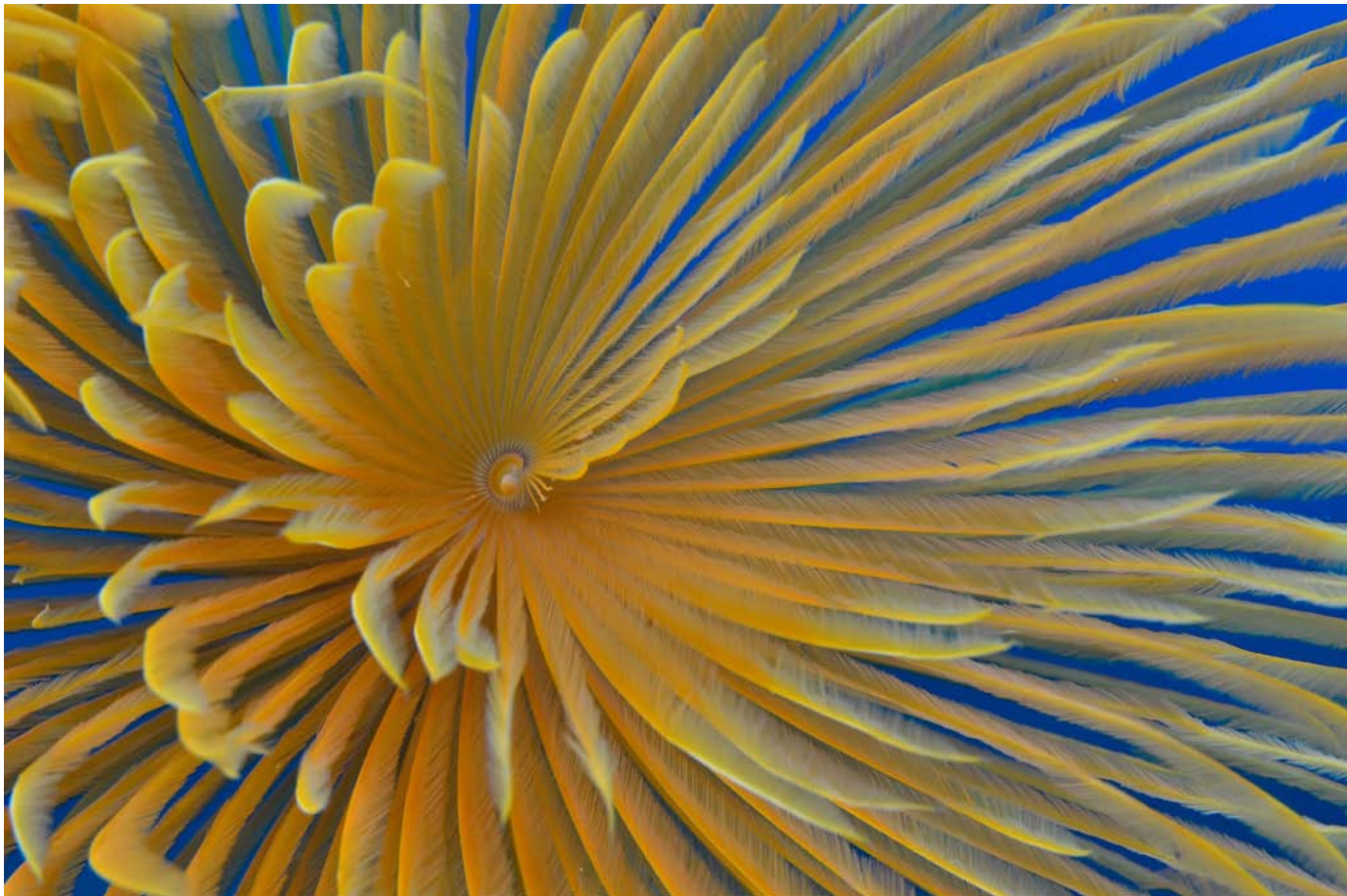
Monaco is famous for its glamorous life, its Formula 1 race and its casinos. But below all the noise lies a secret underwater world. A world that is very well hidden and only known to local divers and to a few divers from the region.

There are several popular

dive sites in Monaco which are of particular interest, such as the “Loews”, the “Tombant du Port Hercule”, the “Oceanographic Museum” or the “Saint Nicolas” just outside the harbor of Fontvieille. These sites offer a very rich life and the diving depth varies from 10 meters to 60 meters.

A special mention should be made about the site of the Larvotto Reserve, a protected marine reserve, which is a little corner of paradise, completely unknown to most divers and which is under the protection of





Blenny: Canon G11 with Subsee +10 ISO400 1/80 F8

Spirographe: Nikon Lens 105mm. ISO100 1/40 F16

the “Association Monégasque de la Protection de la Nature”, a Monaco association responsible for the protection of nature. Recently, “The Toulonnais” a wreck of a 27 meters tug, weighing over 300 tons, was sunk opposite the Oceanographic Museum and is currently sitting at a depth of 30 meters. Also of notable mention, “The Catalina”, a 1972 seaplane that had technical problems and missed its landing, is currently sitting at a depth of 58 meters near the coast.

All these sites are accessible with two diving clubs in the Principality of Monaco. The

“Club d’Exploration Sous-Marine de Monaco”, C.E.S.M.M., is located at the entrance of the harbor of Fontvieille and is open all year long. The club was created in 1951, at a time when people started to discover diving thanks to Captain Cousteau and his famous red cap. Commander Cousteau impressed many people, particularly in Monaco, where he left on his boat, the Calypso, for his worldwide underwater explorations. From 1957 to 1988, Captain Cousteau even served as director of the Monaco Oceanographic Museum.

The other club in Monaco is the “Ecole

Bleue”, located on the Larvotto beach, founded and led by the world champion freediver, Pierre Frolla. Pierre is very dedicated to the training of young scuba divers and free divers. Ecole bleue is an international reference in the field of child diving. It is dedicated to the discovery, respect and preservation of the underwater world. Pierre Frolla, a very charismatic figure in Monaco, has transmitted his love of the underwater world through his passion and dedication.

Monaco’s sea waters are rich in flora and fauna and have a good visibility. There are plenty of



Axinella polypoides: Tokina Lens 10.50mm. ISO100 1/30 F13

interesting subjects to photograph in wide angle or close-up.

Photographers equipped with wide angle or macro lenses will be well rewarded. There are very nice drop-offs, wrecks that are gorgeous to photograph, batteries of barracudas, and schools of groupers at the Larvotto Reserve. There are also morays, sea bass, scorpionfish, John Dory, Seaweed pipefish, and for the lucky photographers, seahorses that have been seen recently spotted in the reserve by some photographers. In winter, with a little luck, a photographer can also come face to face with a monkfish.

The local club C.E.S.M.M. organizes a yearly underwater competition that attracts photographers from different parts of Europe. Over the past 13 years, the Monaco Underwater Competition has gained in fame and attracted many followers, due to its prestigious location. The dive sites face the beautiful and glamorous city of Monaco and the majestic Oceanographic Museum of Monaco. The awards ceremony is held at the Museum itself, and sometimes the awards are handed out by His Serene Highness, Prince Albert II of Monaco.

The C.E.S.M.M. also organizes



"Fried Egg" jelly fish: Nikon Lens 105mm. ISO100 1/50 F14

Cuttlefish: Tokina Lens 11mm ISO100 1/125 F13





Gorgone: Tokina Lens 13mm ISO100 1/60 F13

an underwater contest for children that takes place at the same time as the yearly Monaco Underwater Competition. This new competition was launched 3 years ago and has proven to be extremely successful with the local children.

In 2015, the “C.E.S.M.M”, under the tutelage of the “FMAS - Fédération Monégasque des Activités Subaquatiques” created an underwater



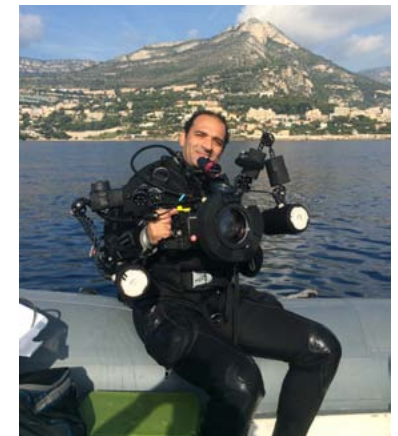
Pinna nobilis: Tokina 10.50mm. ISO100 1/60 F13

photography school, the “Ecole de Photographie Sous-Marine de Monaco”. Its objective is to introduce underwater photography to the scuba divers of the Principality, and help them develop their skills for the underwater art. The aim is to also raise the consciousness of divers to our surrounding ecosystem and to convey, through pictures, a message related to environmental protection.

Since its inception in 2015 by Mr. Pascal PARRY, the “Munegu Photo Sub Academy” (as it is called in the Monegasque language) has met a great success. Already, over a dozen young photographers have obtained their “Level 1” license as Underwater Photographers. The training classes consist of theoretical courses and application dives. The courses are provided by various local accomplished photographers under the supervision of both Mr. Jean Lou Ferretti and Mr. Michel Dagnino, who are both very well-known and highly respected and accomplished underwater photographers.

Children will soon be able to follow special underwater photography classes during their school year. The classes will also be provided by the “Munegu Photo Sub Academy”. The goal is to increase children’s awareness to the sea life and protection of the environment, so that they can present their knowledge in an educational framework within their respective schools and contribute to promote marine environment preservation.

Bassem Jamour
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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

Cave photography

by Jean-Michel Machefert

Why take pictures in places where the sun never shines?

Cave divers have the opportunity to see unique scenery and the pictures they take during their subterranean dive trips allows them to share with everybody the mineral (and sometimes animal) beauties only seen by few.

The good news is that there's no need for the latest camera in the latest brand of housing! Don't forget that in cave diving equipment suffers a lot. You will always feel more comfortable with equipment that you can replace in case of a terminal problem than with something which makes you nervous each time you descend. The first rule for nice pictures and safe dives in caves: relax...

A solid and easy to use camera (Single Lens Reflex or Compact or Bridge) familiar and controlled by the photographer in an appropriate housing for the intended depth is perfect. External strobes (at least one) are also highly recommended and powerful continuous lights are also effective. Internal strobes are not sufficient for correct lighting in caves, other than to trigger external slave

strobes.

Most pictures are taken in manual exposure mode and usually with fixed manual focus with a range of focus (depth of field) from about 0.7m to 5m or more (hyperfocal distance). This is because the autofocus needs some light to work but with a strong focus light with automatic light shut off, to avoid any "hot spot" on the walls, auto focus can also be used.

Because of the usual lack of space in caves and also the presence of silt the photographer has to be close to the subject. Wide angle lenses such as the Nikon 10.5mm or Tokina 10-17 or Sigma 10-20 are the most popular for cropped sensors and 15 to 24mm for full frame sensors .

If the photographer feels comfortable and has enough experience to dive safely in caves it could even be easier than in the sea

The entrance of the same cave in Burgundy France, but the view is from under the surface.

Nikon D2x with nikkor 10.5mm, in Aquatica housing, f 5.6, 1/15s, 400 ISO. 2x Nikon SB 910 strobes in Patima housings, 1/4 and 1/2 power.



The entrance of a cave in Burgundy (Douix in Chatillon sur Seine) France illuminated by a powerful HID lamp from under the surface. Last briefing before diving. Leica D Lux 5, 13.9mm, f 2.9, 1/30s, 400 ISO. Picture : Marie Machefert.





Easy shot: portrait of a diver. Single strobe on the camera. Nikon D70 with sigma 10-20mm (17mm), in Sealux housing, f 5.3, 1/60s, 200 ISO. 1x Nikon SB 800 strobe in Patima housing, 1/2 power.

since in caves there is no influence of the light of the sun and the only light is provided by the equipment of the photographer and can be controlled.

The light reflecting off the walls is an important parameter and influences quite a lot the results. The equipment used by divers acting as models is also very important. If possible try always to avoid models with black diving suits and reflecting bands. The reflecting bands will be too bright and the black suits will disappear in the dark background... If

you want to be photographed in cave diving, wear a red or orange suit and you will come out of the picture even in muddy water!

The first step in the life of a cave photographer is to take well focused and well exposed pictures of the caves and their buddies to give scale. A camera working in manual mode with a single external strobe works well. A second strobe can be added but not at the beginning. The strobes should be fitted with diffusers to avoid burnt spots on the walls and



An orange suit in muddy water is far better than the black one. Typical example of cave diver in action with a line and some silt around. Nikon D2x with nikkor 10.5mm, in Aquatica housing, f 6.7, 1/30s, 400 ISO. 2x Nikon SB 910 strobes in Patima housings, 1/4 and 1/2 power.

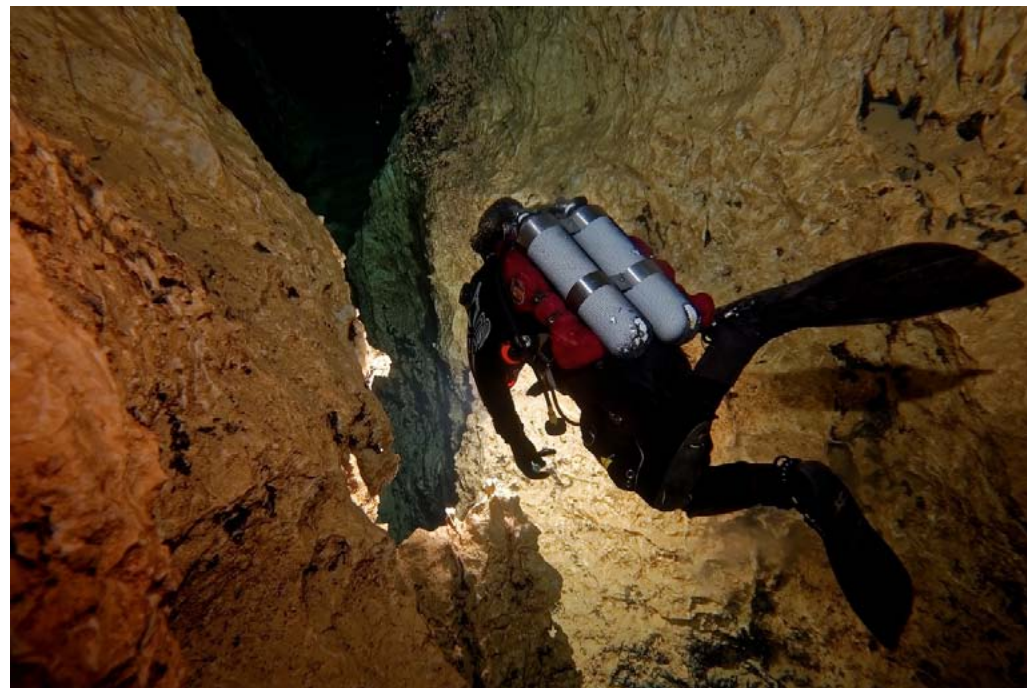
to fill as much as possible the picture with the light from the strobe(s). To prevent unaesthetic shadows and also burnt out walls the easiest way is to orient the strobes in the direction of the axis of the galleries. More over by using the lowest possible power of the strobe the backscatter from particles (there are so many in caves most of the time!) is reduced.

Here's some technical tips but only basics! : The strobes have a limited power indicated by the guide number (Guide number = aperture

x distance). A usual strobe with a guide number of 36 (in air) will have a guide number of about $36/3 = 12$ under water and so at 1.5m the correct aperture should be F8. In caves a part of the light will be reflected by the walls. The consequence is that a correct exposure in white walled caves requires to close the aperture by 1 f stop (f11) and in caves with dark walls it would be better to open by 1 f stop (F5.6).

So starting with the old saying "f8 at 1 meter and be there!" it is

*Diver with an off camera strobe behind him lightning the gallery
him lightning the gallery
Nikon D70 with sigma 10-20mm
(14mm), in Sealux housing, f 8, 1/60s,
200 ISO. 1x Nikon SB 24 strobe in
Subal housing, full power. Extra off
housing strobe: Nikon SB 105 ¼ power
with a RSU from Heinrich Weikamp*



possible to take nice pictures and portraits of your buddies.

With only on camera strobes it is sometimes interesting to take a picture of the entrance of the cave with the light of the sun illuminating the background through blue or green water. The conditions are the same as in the sea. You choose the aperture to match the strobe power and the subject you would like to photograph and then the correct shutter speed to background light.

Now for something a little bit more complicated – the use of several strobes. If you have the full collection of portraits of your buddies it is time to take pictures showing bigger spaces (cave divers aren't always happy with narrow passages filled with mud !) But here there is a problem. There is no sunlight for blue or green backgrounds. The only solution is to replace the sun with an off camera strobe (slave strobe) fitted with a trigger cell. This second strobe will be used for lighting the backgrounds as

the sun does in open water.

How to proceed? Some technical details but easy ones: the slave strobe will be fired by the light emitted by the main flash on the housing of the camera. The connection between the master and the slave flash has to be wireless to avoid any cables. The most convenient solution consists in using a remote trigger cell (as the RSU cell by Heinrich Weikamp or the triggerfish by Hedwig Dieraert or Ikelite or homemade...). All these cells allow you to fire the slave strobe as soon as they receive some light. Usually in caves they can be used at a distance up to 10m from the nearest strobe.

One more technical tip on the

*Diver with an off camera strobe behind him lightning the gallery
Nikon D70 with sigma 10-20mm (14mm), in Sealux housing, f 8, 1/60s, 200 ISO.
1x Nikon SB 24 strobe in Subal housing, full power. Extra off housing strobe:
Nikon SB 105 ¼ power with a RSU from Heinrich Weikamp*

off camera strobes: Since the remote trigger cell fires the strobe as soon as it receives some light, it is important to use the camera strobe in manual mode to avoid any pre flash. If not the slave strobe will fire when receiving the pre flash and at the time of the effective flash it will be recycling and not fire. Some remote trigger cells (named digital adapter) take in account the pre flash but they need to be very close to the main strobe (about 10cm) and so are impractical to

use in caves for background lightning.

In order to have a correct exposure the easiest solution consists in choosing the aperture for a correct exposure where the slave flash is and to adjust the power of the off camera strobe to lighten the subject area correctly and of course take in account the aperture set on the camera. The setting is done by choosing the aperture and the power settings on the 2 strobes for the correct exposure of the 2 lightened areas.



Tek diver in a decorated gallery. Off camera strobe on hand. Nikon D2x with sigma 10-20mm (11mm) in Aquatica housing, f 11, 1/60s, 400 ISO. 1x Nikon SB 800 strobe in Patima housings, 1/2 power. Extra off housing strobe: Sea and sea YS 90 fitted with a RSU from Heinrich Weikamp.

For model photography give a remote strobe to a photogenic, well trained diver. Safety first is important because if the subject feels unsafe and not relaxed the result will be not as good as it could be with an experienced diver.

The model should hold the strobe like a diving lamp lighting away from the photographer (but with the trigger cell in the direction of the photographer). The aim should be

mainly in the direction of the center of the passages and not to the walls to avoid any hot spots. The orientation of the light can be easier with a strobe fitted on an arm. If the model with the off camera strobe is in front of the photographer in the direction of the scene the pictures will really describe what it's like to be a cave diver with the risk of seeing only the fins and the back side of the leader handling the slave strobe. With some preparation



This picture was taken in the upper shunt gallery of the Ressel spring in Lot France. This gallery is yellow white with crystal clear water and no silt. Perfect for such kind of pictures. Nikon D70 with sigma 10-20mm (13mm), in Sealux housing, f 4.8, 1/60s, 200 ISO. 1x Nikon SB 24 strobe in Subal housing, 1/2 power on the housing. 2 Extra off housing strobe : Nikon SB 105 1/4 power with a RSU from Heinrich Weikamp on the subject and Nikon SB 105 1/2 power with a home made cell on the 3rd diver hidden by the subject.

and communication the diver with the off camera strobe can rotate time to time in the direction of the photographer. In this case he lights forwards to always have the light of the strobe in the same direction as the lens of the camera and the cell in the direction of the photographer. The subject is now seen from the front and

the scenery behind him giving a more contrasty and bright image.

One other method that can be used after careful preparation is backlighting the model with a strobe carried by a third diver hidden by the model. It can only be performed in known caves with clear water.

The photographer needs 2 strobes



Divers in progression in a big room. 1 off camera strobe handed by the diver with a black suit Nikon D70 with sigma 10-20mm (14mm), in Sealux housing, f7.1, 1/60s, 200 ISO. 1x Nikon SB 24 strobe in Subal housing, full power. Extra off housing strobe Sea and sea YS 90 fitted with a RSU from Heinrich Weikamp.



Jean Michel ready for action. Leica D Lux 5, 5.1mm, f2.5, 1/125s, 80 ISO. Picture : Marie Machefert.

with remote trigger cells and 2 friends with a good looking one to be the model.

The photographer dives first and at the place chosen for the picture the 3 divers stop. The photographer rotates in the direction of the subject and this one channels his remote strobe to lighten at the opposite of the photographer in the direction of the third diver hidden behind the subject (1 or 2 m behind). The third diver channels his remote strobe in the direction of the photographer to create the backlighting of the subject and also with the cell in the same direction as the light. A wide snoot can be helpful and lead to nice effects. The photographer shoots aiming to hide the third diver.

Of course to avoid any flare or poor reflection (and also some more fun) the diving lights have to

be switched off... This is only possible safely in a cave well known by the divers and with a careful preparation before diving.

If the 3 strobes are identical, the easiest setting consists in setting the aperture of the camera for a correct exposure of the subject, the slave strobe of the subject can be set on a small power (1/2 or 1/4 of full power) because it is only here to trigger the flash of the third diver and a little bit of the background (low power for dark background and higher power for lighter background) and the flash of the third diver is normally on medium power (half power) depending on the targeted strength of the backlighting.

Underwater photography in caves is technically not really more complicated or more difficult than

photography in open water under the light of the sun, and it allows the cave diver to share his passion and the beauty of the under earth sceneries that only few people have the chance to experience.

Jean-Michel Machefert

Jean Michel began diving 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. Pictures and some technical tips are presented on his website:

www.jmfrog.com

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Liveboards and The Stockholm Syndrome

by Colin Marshall

Liveboards are fantastic vehicles to reach pristine, unspoilt and otherwise inaccessible locations. And the diving is “easy” - once you arrive onboard, you just set up your gear once at the start. After that, all you have to do is stagger onto a dive tender, enjoy the short ride to the dive site, don your gear and slip into the water. And repeat, diving up to four times a day, in a variety of different locations. Paradise!

But sometimes (fortunately rarely), there are problems in paradise.

Potential Problems

1. The Boat

Liveboard diving inevitably involves putting sensitive machinery and electrics in close proximity to salt water. This continuously taunts Mother Nature, begging for trouble. And trouble inevitably comes.

Perhaps the worst boat disaster story I’ve heard (from one of the actual guests) was of ascending from a dive to the sight of the liveboard on fire and sinking. All were rescued, but

lost literally everything; computers, passports etc.

More common problems with boats affecting guests generally involve issues with air conditioning, toilets and leaks - though major problems can also occur with engines, sometimes resulting in a compromised, more restricted, itinerary than expected.

The most critical failure I have experienced was on the 3rd day of a 12-day trip, when the entire central air

Liveboards arguably give more opportunity for wide-angle photography than land-based trips, such as this cave in Farondi in Raja Ampat

Subal, Nikon D300, Tokina 10-17 mm f3.5-4.5, 2 x Inon Z240, 1 / 125, f3.5, ISO 160

Liveboards often provide opportunities to see larger fish, such as this Grey Reef Shark (Carcharhinus amblyrhynchos)

Subal, Nikon D7000, Nikkor 105 mm f2.8. 2 x Inon Z240, 1/250, f4, ISO 200





*New, less accessible, areas, may allow one to see some new animals – such as this Gilded Triggerfish (*Xanthichthys auromarginatus*) seen for the first time by the author last month in the Forgotten Islands*

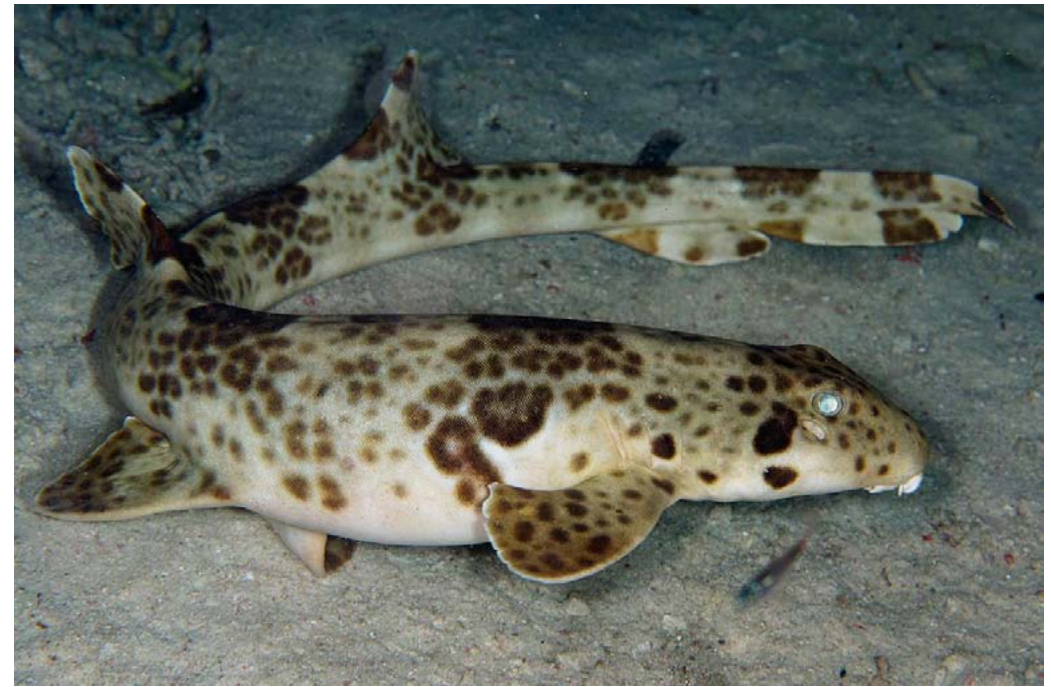
Subal, Nikon D7000, Nikkor 105 mm f 2.8. 2 x Inon Z240, 1/250, f 3.2, ISO 200

conditioning failed and could not be fixed until the boat returned to port. They did have a stash of fans, but these offered little respite, especially for the below-deck cabins. Most of the guests spent the entire trip sleeping on the deck under the stars - charming for one night, but uncomfortable for ten. One could be generous and say “accidents happen”, but considering the catalogue of incidents accumulated by this vessel during its brief life span, my conclusion leaned

towards incompetent management and an inadequate or nonexistent maintenance program. Lesson learnt was to only use boats with individual aircons in cabins.

2. The Cruise Director

The Cruise Director on a liveaboard has the most interaction with guests, and exercises the most influence on clients’ enjoyment of the trip. And generally, most Cruise Directors are excellent.



*Similarly, one has the chance to see fish that are endemic to a particular (remote) area, like this Raja Epaulette Walking Shark (*Hemiscyllium freycineti*) in Raja Ampat*

Subal, Nikon D7000, Nikkor 60 mm f 2.8. 2 x Inon Z240, 1/160, f 8, ISO 200

Great people skills, well organized, good communicators. But there are exceptions.

My last trip had the worst Cruise Director I have ever experienced. Her response to most requests was an automatic “No”, whether it was to allow guests to make a brief land excursion when the boat was near a town, providing options (such as diving instead of land excursion), or changing dive locations when a site didn’t work out. (We did three dives

on one site which was the worst dive site I have visited on a liveaboard).

This same Cruise Director also cancelled a night dive, saying “the village said no”. That could conceivably have been true, but the problem was likely solvable with a slightly larger donation to the village, or finding an alternate island.

The owner subsequently said he and his staff “respect the wishes of the villagers and do not push back”. Well, I want my Cruise Director to

make reasonable efforts to push back (or make a better offer) to make my trip as good as possible, as opposed to just being overly-compliant to protect their future trips. But my suspicion is that the Cruise Director, wanting the night off, walked into the Chief's hut and said something like "Holy cow, looking at your wife, I can see why your daughters are so ugly. Changing the subject, do you have a problem if we do a night dive on your island tonight?"

3. The Guests

One of the most serious problems being on a liveaboard is the difficulty in getting away from your fellow shipmates. Most liveaboard dive boats are relatively small, with limited communal and deck space areas.

How much of a problem this is depends on your own degree of tolerance. If you are easy-going and relaxed, socializing with the other guests can be an enriching and pleasant experience. People who choose to go on liveaboards often share common interests, and can be useful sources of information and advice about diving locations and marine life.

It can be risky to join a boat where most of the guests are part of a single party who all know each other, especially if that group is more interested in partying than

diving. Most boats have music systems, which some inconsiderate guests will play loud into the night. In principle, the Cruise Director should be expected to take control of these situations and seek reasonable compromises - but this depends on the Cruise Director.

Some guests are the "daredevil" types - diving deep, doing solo dives, practising dangerous dive profiles, racking up mandatory decompression obligations, getting close to "dangerous" animals (such as Komodo Dragons). The genuine concern is that such cavalier actions will result in a serious accident or injury, such as an animal bite or

Liveaboards can access underwater sea pinnacles, in great visibility, like this one – notice the fish hiding from the divers on the other side of the pinnacle! Subal, Nikon D70, Nikkor 60 mm f 2.8, 2 x Inon Z240, 1 / 80, f 2.8. ISO 320

Liveaboards generally offer dives on most nights, giving the chance to see a whole different sub-set of animals, such as this Bigfin Reef Squid (Sepioteuthis lessoniana) Subal, Nikon D7000, Nikkor 60 mm f 2.8, 2 x Sea & Sea YS110, 1 / 160. f 13 ISO 160





*Liveboards also allow one to meet locals who are happy to interact with divers, like this fisherman
Subal, Nikon D7000, Tokina 10-17 mm f 3.5-4.5, 2 x Inon Z240, 1 / 160, f 20.
ISO200*

decompression sickness, which would require diverting to the nearest location with medical treatment or evacuation facilities. Such a change in itinerary can have a huge effect on the other guests. How uptight to get about other guests' risky behavior is ultimately a personal decision. I would suggest that humans are poor at assessing risk and commonly over-estimate the degree of risk in a situation. There is a huge grey area between irresponsible daredevil acts and just enjoying life. In other words,

I'd suggest not worrying too much about what might happen – just don't buddy up with people you don't trust!

4. The Weather

Admittedly, the liveboard cruise guide or captain cannot control the weather. However, the approach adopted in anticipation of possibly adverse weather conditions can vary significantly. Some boats avoid any possible risk of being delayed by weather and failing to make it to the final port on time to drop off old



*And occasionally one has the chance to entertain the locals in the shallows
Subal, Nikon D700, Tokina 10-17 mm f 3.5-4.5, 2 x Inon Z240, 1 / 250, f 10.
ISO160*

guests at the airport, take on supplies, and pick up new guests. Up to a point, this is understandable. But some boats continuously rush guests to get to the next destination early, "just in case the weather gets worse". This quickly becomes tedious, especially when one ends up missing or cutting short dives or excursions, only to arrive unnecessarily early at the next destination point, on dead calm seas.

This is obviously a balance and most liveboards get it right, but some can be excessively generous with their

guests' time (and money) to avoid even the slightest risk of delay.

The Stockholm Syndrome

So where does the Stockholm Syndrome fit in?

According to Wikipedia, "Stockholm syndrome, or capture-bonding, is a psychological phenomenon in which hostages express empathy and sympathy and have positive feelings toward their captors, sometimes to the point of

defending and identifying with the captors”.

When one reads reviews on liveboard websites, on Facebook, or in the comments books onboard, most of the reviews tend to be effusive, with comments like “the best trip ever”. The statistical impossibility that so many liveboards are “the best ever” can be overlooked. People are simply trying to express their appreciation for what they found to be a highly enjoyable experience.

But perhaps something else is going on. Investing a significant amount of money and valuable holiday time on a liveboard itself can be a powerful subconscious motivator to perceive the experience in positive terms and to document the trip on Facebook - that well-known vehicle for narcissism, gloating and bragging - as sensational when the reality was somewhat different.

This can even lead people to ignore or deny serious onboard problems, lest dealing with those issues threatens the illusion the “best trip ever”. A clue that this may be happening is when guests defend incompetence or exploitation by the liveboard boat management, as doing otherwise could negate their “excellent” experience and their judgment in selecting “the best liveboard in the world.”

As an example, when I had the “village says no” night dive non-experience, I asked some other guests if they had experienced this excuse before. The answer was “yes, quite often, this is normal”. But further investigation revealed they had only experienced this excuse in other locations on the same boat with the same Cruise Director. The possibility that the Cruise Director was using the village as an excuse not to do night dives for her own convenience never seemed to enter their heads. Instead, they defended the Cruise Director.



*Liveboards sometimes include special highlights on their tours, such as Whale Sharks (*Rhincodon typus*) in Cendrawasih Bay*

Subal, Nikon D300, Tokina 10-17 mm f 3.5-4.5, 2 x Inon Z240, 1 / 200, f 11. ISO 250

Stockholm Syndrome?

Bottom line – when someone recommends a liveboard, ask how many other boats they have been on. I have done about 20 trips - not a huge



Land excursions in places like Komodo give opportunities to see special terrestrial animals. Note my wife cleverly using our 2-year old child to draw the attention of the Dragon away from me...

Subal, Nikon D700, Nikkor 24-70 f 2.8, 1/500, f 9. ISO160

number, and I consider myself barely qualified to write this article. But of these 20 trips, I have been on only two boats more than once (one, 8 times). I don't think I am suffering from the Stockholm



Syndrome on my preferred liveaboard. In fact my last trip was on a new liveaboard (which I will not make it to twice). And I am not mentioning my preferred liveaboard to ensure I cannot be accused of seeking favours. But I will happily provide the name of that liveaboard (and churlishly take pleasure in naming the two I would never sail on again) to anyone who contacts me directly...

Resolving Problems - Before and After

Before committing to a liveaboard, ask as many questions as you can on issues that you care about. How many day dives are likely,

how many night dives, and what will happen if you happen to be the only one who wants to do a certain dive? Get them to make their position clear and upfront. And if they fudge these questions, avoiding specificity, saying "it depends on the weather / Cruise Director / local villagers", then be highly cautious.

If (or perhaps when) something does go wrong, make your complaint clearly and quickly to the Cruise Director. Ensure that all guests get to participate in any conversations that involve consequences, for example changes in the itinerary or route. Some Cruise Directors will make unilateral decisions without

consulting guests and then simply present the new plan later.

If a material event occurs, raise the question of compensation early. Be as imaginative as possible in coming up with compensation. The owners may be open to offering discounted trips in the event of last minute cancellations - a low cost remedy to them.

I once had a boat crew, unsolicited, unscrew my spare housing domeport, and then dunk the unprotected camera into the fresh water tank (all while I was underwater) - this is a "material event"! They replaced the camera and lens - but did not pay for housing servicing nor compensate for the fact I could not take any wide-angle images on that trip. I considered this a failed negotiation on my part and an unsatisfactory outcome.

In the case of the boat where the airconditioning failed for the entire trip, the owner gave the clients a 33% refund. Again, this was an unsatisfactory outcome; a free trip would have been fair. If I was faced with two boats going to the same destination, but one was 33% cheaper but with no aircon, I would invariably choose the boat with aircon at the non-discounted price. The owner's perverse logic was something along the lines of "clients are paying 33% for the diving, 33% for the boat and

33% for the food". Which implies that if there was no diving (or no food) for the entire trip, everyone would be happy to accept a 33% discount, which is patently ridiculous. The owner was happily taking the clients money while expecting them to bear the risks and costs of consequences of his sloppy management.

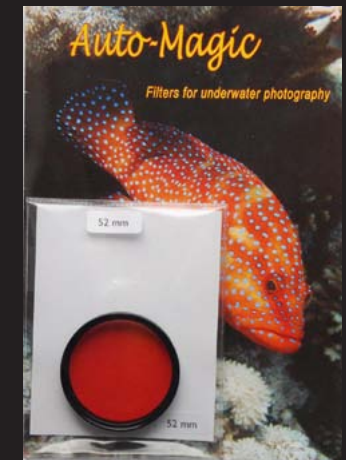
Bottom line - most liveaboard trips are superb and highly enjoyable. In the unlikely case of material negative event, don't let it ruin your holiday, but conversely don't fall victim to the Stockholm Syndrome and let the boat off the hook! There are many boats out there, a lot of fish in the sea so to speak, and some are better than others and some may fit with you better than others...

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Secrets of the Forest

by Tom Burd

You never really know what you will stumble upon during a walk in the forest, but I certainly wasn't expecting to find myself snorkelling in an oversized puddle, mesmerised by an extraordinary little semi-aquatic animal. It wasn't until I had hiked up to the remote waterfall with wetsuit, weights and photography gear, that my camera unfortunately decided to give up the ghost, so the project came to a sudden halt. However a year later, properly equipped and with fresh ideas, I've been lucky enough to have another go at highlighting the fascinating life story of a very charismatic amphibian: the fire salamander!

The Grésigne forest in the South-West of France stretches across nearly 9000 acres and is part of the European Commission's "Natura 2000" network, thanks to its ecological importance as a wildlife refuge for a multitude of fauna and flora. Deer, pine marten, wild boar and a uniquely high diversity of insects are just some of the inhabitants found throughout this beautiful landscape. It also appears that the combination of dense leaf litter, abundant moss and the network of interconnecting

streams found here, provides an ideal habitat for both life stages of the fire salamander (*Salamandra salamandra*). The adults are completely terrestrial (they're actually terrible swimmers!) and are primarily nocturnal, preferring to take refuge under moist dark cover during the day in order to avoid desiccation. These voracious hunters actively stalk the forest at night, devouring a variety of insects such as silkworms, spiders and slugs. In order to avoid predation, fire salamanders secrete a potent neurotoxic mucus from a pair of Parotoid glands situated below the neck, in addition to displaying bright orange or yellow warning patches across their bodies. This flamboyant colouration is actually where the species gets its name from, as they were commonly seen escaping from burning logs

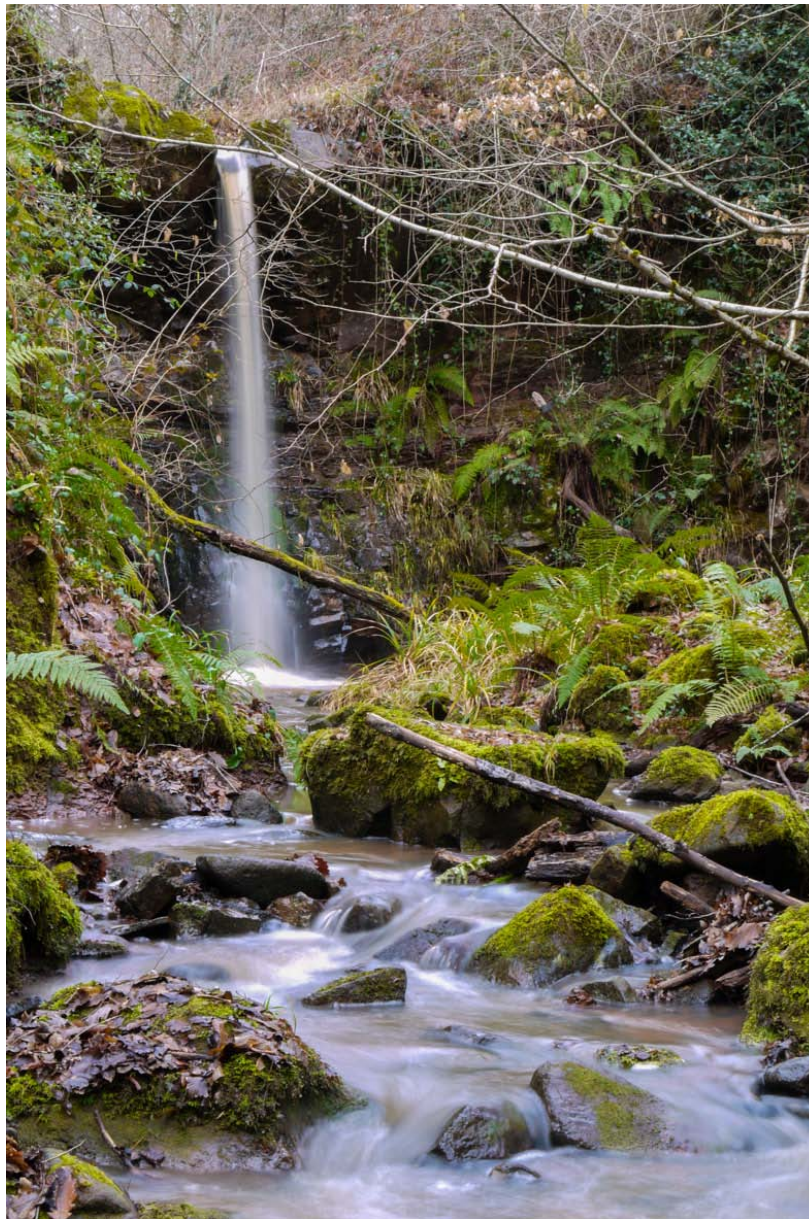
No decompression stops or currents to worry about here! LG G3, f2.4, 1/20, ISO 50.

The true magic of these little creatures is only apparent close up. Nikon D7000, Nauticam Housing, Nikon 60mm Micro, 1x Sea and Sea YS-D1, homemade snoot, f27, 1/250, ISO 160.



inadvertently placed on the fire! Unfortunately, instead of household fires, they are now threatened by an invasive pathogenic fungus called Bsal, which has caused large scale mortalities across certain parts of Europe. The fungus was introduced from Asia through the amphibian pet trade and is considered a severe threat to multiple species, so I was extremely lucky to find such a large breeding population on my doorstep.

During the mating season males transfer a sperm packet, called a spermatophore, to a female who subsequently fertilises her eggs internally. During early spring, she will then travel to a water-body to lay the eggs, which immediately hatch into larvae (a process called ovoviviparity). A few sub-species of fire salamander actually exhibit live birth of well-developed larvae instead, called viviparity. At this point they are left to fend for themselves, but differ greatly from their parents in that they possess external gills protruding from the neck! For two to three months



During early spring high rainfall restricts visibility at the waterfall, but looks beautiful. Panasonic Lumix DMC-GF1, Lumix 14-45mm at 38mm, f22, 0.8 sec, ISO 100.



Centre stage for this young fire salamander! The snoot was key to this type of shot. Nikon D7000, Nauticam Housing, Nikon 60mm Micro, 1x Sea and Sea YS-D1, homemade snoot, f27, 1/250, ISO 200.



A cheeky smile from a salamander, just before my camera broke in the first year... Nikon D7000, Nauticam Housing, Nikon 60mm Micro, 1x Sea and Sea YS-D1, f22, 1/125, ISO 500.

they grow up in the water, absorbing dissolved oxygen and surviving on small invertebrates. (At this time of year the water flow from the waterfall is minimal, providing a stable habitat for the juveniles and allowing me to spot them!) Metamorphosis gradually occurs and the gills recede to be replaced by fully functioning internal lungs, which allow the adults to breathe on land. At this stage other changes also happen, such as a thickening of the skin, the formation of eyelids and sexual maturation.

During my time in the water I noticed a mixture of juveniles and quasi-adults, with the latter featuring much stronger fiery-orange patterns and almost no gills. These were often found breathing at the surface and were even more skittish to approach than the younger ones! Every single individual was completely unique, with different colour tones or skin patterns, as you can see in the photos.

I wanted to use a photographic technique which eliminated the ugly reddish-brown sediment in the



The younger larvae are transparent to some degree, allowing this backlighting to glow through. Nikon D7000, Nauticam Housing, Nikon 60mm Micro, 1x Sea and Sea YS-D1, homemade snoot, f27, 1/250, ISO 200.

background, whilst emphasising the incredible gill structure of the larvae. Having read about “snoots” in the past, they seemed to be perfect for the job: reducing the coverage of the flash to create a thin, directional beam of light. This would highlight only a small portion of the animal, picking up the gill filaments and providing a pleasing black background. However, not wanting to sell my soul to pay for a commercial snoot, I decided it was time for a bit of DIY. Drum roll please for... the baked bean tin! Luckily

enough it turns out that a tin of (French) baked beans exactly matches the diameter of a Sea and Sea YSD1 strobe head. Being metallic, and hence reflective inside, also meant that less light would be lost from absorption into the material. After reading up on the subject (a special thanks to Keri Wilk for all of the pioneering information he has published on the topic), I drilled a hole into the end of the tin and inserted a plastic pipe, 1cm in diameter and 15cm in length. A few strips of Gaffa tape later (the solution



As the larvae metamorphose, their colorations become more prominent and the gills disappear. Nikon D7000, Nauticam Housing, Nikon 60mm Micro, 1x Sea and Sea YS-D1, homemade snoot, f27, 1/250, ISO 160.

to most of life's problems), and I had something that resembled a functional snoot! Test shots revealed that it created a light beam roughly 3cm wide when placing the strobe about 20cm from the subject; this would just cover the width of a salamander head.

The second decision was whether to mount the strobe on a tripod or directly onto the camera housing. Considering the shallow depth of water in the waterfall basin and wanting to try a few different lighting angles, I decided to go for the flexibility of a tripod. Combining a modified triple clamp and three strobe arms did the job perfectly. This would allow me to find a salamander, position the strobe, and then take a few test shots whilst maintaining a good distance from the subject. When the lighting was right, I could slowly move in and adjust my composition freely for the final picture.



Baked bean can snoot ready to be attached to the strobe. LG G3, f2.4, 1/20, ISO 100.

Modifying the rings of the triple clamp allow the tripod legs to be positioned vertically and obtain a higher position over the subject. LG G3, f2.4, 1/40

Three strobe arms and a triple clamp make a good tripod, if a little awkward to adjust underwater. LG G3, f2.4, 1/60, ISO 50.

Of course this technique sounded far simpler in my mind than it turned out to be, even after practicing first in the swimming pool! Floating in a tiny basin of water less than 1m deep, whilst trying not to stir up sediment or scare away the salamanders, proved to be a hefty challenge. They were very sensitive to any vibrations and were often just downright uncooperative, moving position as soon as the lighting was set up. It also didn't help that I was sharing the pool with a little grass snake, which swam around scaring the salamanders into hiding! With a bit of perseverance and adaptation, the technique was refined over a few days and I





A prime adult specimen released after turning up on our mop head, displaying prominent defensive colours! LG G3, f2.4, 1/30, ISO 50

learnt valuable lessons about planning for the shot, as well as the technical aspects of this type of photography.

There is currently an ongoing discussion within the photographic community regarding our interaction with wildlife and the environmental considerations to take into account when participating in this hobby. The obvious issues have already been greatly discussed, such as critter manipulation and poor buoyancy control, but there are still a few less talked about topics - pollutants being one of them. Entering a tiny pool

of water full of fragile inhabitants, I felt acutely aware of my potential impact on the surrounding ecosystem (especially considering that 1/3 of all amphibians are considered threatened or extinct in the wild, a terrifying number!).

Due to the high permeability of their skin they are extremely sensitive to environmental changes and one cause for their rapid decline is the introduction of man-made contaminants into the environment. Fire salamanders are therefore a good species to champion the subject of

chemical pollution, but the following can also be applied to many other animals and habitats. If not naturally biodegradable, most of the products which we use on our bodies or equipment will probably impact a given ecosystem at some level (often in combination with other stressors).

Think about sun cream, talc power for dry suit entry, detergents for scrubbing down boat decks; there is little environmental testing on the trace effects of many of these products. Until not long ago we had no idea that Oxybenzone is highly toxic to corals, being just one chemical contained within the millions of litres of sun cream which enter the oceans every year. Finding out too late about these harmful effects has become a sad trend and we need to be more proactive about mitigating harm.

Now I'm not saying that on your next liveaboard trip you should leave the deodorant at home (as you might not be the most popular person onboard!), however there are bio-degradable alternatives for all of these products. Consider splashing out on a reef-friendly sun cream, spit in your mask instead of rinsing with baby conditioner and use a bio washing-up liquid for slipping into that freediving suit! Millions of divers enter the water each year, so we do have a responsibility to be cautious about the

products that we use, no matter how trivial or inconvenient this may sound.

It was very fulfilling to spend time in the water observing such bizarre but beautiful little beings. When looking through a macro lens at a fire salamander you are instantly transported into the realm of a seemingly long-lost mythical creature. I'm adamant that they were the source of inspiration for Toothless the dragon, in Dreamwork's animation film "How to Train your Dragon"! (If you won't admit to having watched the film, have a quick Google to see what I mean.)

The next step of this adventure will be to witness the birthing process and better document the gradual metamorphosis to adulthood. Thankfully I have another year before the breeding season starts again - should be plenty of time to figure out how on earth to do it!

Tom Burd
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Bimini and Cat Island Sharks

by Albert Kok

Underwater photographers visiting the Bahamas have a choice between three locations for meeting different apex predators: the Tiger shark at Tiger Beach (West Point), the Great Hammerhead at Bimini and the Oceanic white tip at Cat Island. In the right season and suitable weather conditions, one can be pretty sure of close encounters with these fabulous creatures.

There are two reasons why: most female sharks tend to return to their specific habitats in certain months of the year, and the dive operators use bait to bring them in to the boats. In April this year April Jack Bernstein and I visited two of these locations, Bimini and Cat Island. We flew in from Atlanta to Nassau, and then used local flights for transfer to the two islands.

Western Air took us from Nassau to Bimini to meet the legendary Great Hammerheads (GHs). At the end of April most of them have already started their migration to the east coast of the US or even the Bermudas, where the males are eagerly anticipating their arrival. We were lucky that a couple of 'hammies' were still around. In the winter months they often show up

quite soon, but now it took some patience and subtle baiting by Neil Watson to bring them in. Although it's somewhat against my principle, I now tried the 'open mouth trick' after my more placid shark portraits of last year February. You need to get close to Neil and wait for the moment when the hammerhead swims in to take the bait he is handing out.

The golden rule at Bimini is to be over-weighted, kneel down without kicking away the sand and anticipate the action. But with a moderate current it can still be a bit difficult to remain stable. I liked using the Nikon D7200 with mini dome and Tokina 10-17, and to take a sequence of shots of the shark coming in, getting closer, opening the mouth and then turning away. I did not use the viewfinder but aimed the camera and just clicked away. At Bimini many GHs have a tag in their big dorsal fin, inserted by researchers of the Shark Lab to study their migratory patterns.

The GHs are a rare species indeed. But recently the GHs of Bimini have become 'hot'. In past years visitors had a choice between two locations: the Bimini Sands Resort with Neil Watson on South Island and the Bimini Big Game Club



Great Hammerhead Bimini. Nikon D7200, Ikelite, Tokina 10-17, F16, 1/160, ISO 200

Resort & Marina on North Island. Here Vincent and Debra Canabal from Epic run their hammerhead trips in the winter months, and then move to Cat Island in spring for the Oceanic

sharks. However, Neil Watson recently announced that he will also move his scuba diving operation to the Big Game Club Resort. Meaning that from now on North Bimini



© Albert Kok

will become the home base for visits of the GHs. Interestingly, GHs now also show up regularly at the other side of the gulf stream at Jupiter, West Palm Beach. Here a variety of sharks can be encountered at more remote locations in open water, where baiting is permitted. The dives are not so easy since they often take place in deeper water with a strong current. But the shots I have seen so far are truly spectacular. One can only hope that charters with a reputation of being 'shark friendly' like Emerald will contribute to more respect for the apex

predators along the US coastline.

Cat Island: snorkeling with the Oceanics After we spent three days at Bimini, Sky Bahamas took us back to Nassau and from there to Cat island, a long fishhook-shaped island. Cat Island was where Columbus landed in 1492. One says it is named after the pirate captain Arthur Cat who paid frequent visits to the island. Normally the plane will land at New Bight airport in the southern part of the island. But occasionally it will not go further than Arthurs Town Airport (ATC) in the north, in which



The 'Tresher' our diving boat in the Marina. Cat Island, with Debra and Vincent Canabal. Taken by Galice Hoarau.

case the airline will provide free transportation by ground to New Bight. From New Bight it's another 30 minutes (costing around 60 dollars) to the Greenwood Beach Resort at the south east point of Cat Island.

Greenwood is a real paradise located just at the edge of long deserted and beautiful beach of white sand. Each morning a car picked us for the 40 minutes ride to the Marina on the south west of the island, a place called Hawks Nest. From there Vincent en Debra and their friendly captain took



Greenwood Beach resort. Cat Island.

us for a 40 minutes boat ride to a spot a couple of miles out of the coast near Port Howe, in real distance not so far from the Greenwood resort. Here the Oceanics show up regularly in the deep blue water of the Atlantic. Which implies that the dives have to be drift dives, with the boat moving gently with the divers. Normally there is a choice between a snorkel dive with a long rope and a buoy attached to the boat, or a scuba dive with a bait box hanging underneath the buoy at a depth of about 10 meters.

Snorkeling among sharks that circled around the boat was a new and amazing experience.

I also met Oceanics in the southern Red Sea, but here snorkeling with them is not recommended. This is because this pelagic and bold shark has the habit to come very close to, or even bump divers. And since baiting is prohibited in the Red Sea there is no bait in the water to distract the sharks from the divers.

At Cat Island however the boldness of the

Oceanic shark is rather an advantage than a menace for UW photographers. So we felt happy and safe to swim among a dozen Oceanics near the surface. Which also held for the scuba dives with the sharks circling around the bait box, hanging in the blue at around 10 meters deep. After the comfortable sandy bottom of Bimini, we now depended on our buoyancy control skills which made it sometimes difficult to get in the right position for a nice close up shot of the sharks, that constantly zigzagged between the divers and their bubbles.

Benefits of baiting In the Bahamas you can be pretty sure to come close to the apex predators. I am aware that some people reject baiting and defend a 'pure' non interventional approach of wildlife. But there also some arguments in favor of baiting sharks.

First, as said, it allows the photographer to come close to the shark, and second it prevents that the shark spends too much attention to divers. The only reason why a baited shark will occasionally



close in or even bump a diver is that it sees you as 'bait provider' not as bait. In fact, any event associated with bait administration, like the sound of the propeller of the approaching boat or a diver in a black wetsuit entering the water, will trigger its interest. So the bottom line is that baiting means more safety for the diver.

not always compatible with the pure conception of wildlife- can help to establish more marine sanctuaries such as the Bahamas where sharks are protected in waters surrounding their islands.

Albert Kok



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Seahorses and Pipefish

by Mark Webster

Many of the most attractive and appealing marine species are often some of the smallest and best camouflaged and as a result may get missed by divers who are frequently intent on a reef tour rather than a tour of its residents. Amongst these miniature attractions are the various species of seahorses and pipefish which are to be found in temperate and tropical seas around the globe. For photographers these often make spectacular subjects and also offer a technical challenge and so can be very satisfying to pursue and produce a pleasing image.

There are up to 35 species of seahorse and around 200 species of pipefish to be found worldwide but surprisingly few of them get seen by divers regularly. You really do need to specifically seek out these masters of camouflage to get close to them and to achieve this it helps to understand a little of their habits, habitat and distribution.

Seahorses are found around the globe and apparently are even making a come back to British waters (*Hippocampus guttulus* and *Hippocampus hippocampus*) particularly in the south west and along the south coast. In recognition of this slow return they have been made a protected species under the Wildlife and Countryside Act. I have seen them many years ago before I picked up a camera, and assumed they were common, but since then despite many hours searching I have never been able

to find one to photograph, but they are increasingly being spotted by divers and caught inadvertently by fishermen in crab pots. There is even a seahorse breeding centre in the south of the UK in Weymouth releasing them into the wild. However, if you want to be certain to spot and photograph seahorses then two of the hotspots would be the Caribbean and the Indo Pacific region which have comparatively dense populations.

The long snout seahorse (*Hippocampus reidi*) and the Northern seahorse (*Hippocampus erectus*) can be found throughout the Caribbean from the Bahamas to Cuba, Cayman, the Windward and Leeward islands, Mexico, the Dutch Antilles and Belize. However there are apparent concentrations of population and both the islands of St. Vincent and Bonaire offer almost guaranteed

Orange Caribbean seahorse - Hippocampus reidi . Nikon F90X, Subal Housing, 105mm micro, Inon Quad flash, Fujichrome Velvia 50ASA f16 1/125.



sightings. These species can grow up to 225-300mm in length and come in various colourways from drab brown or black to yellow orange, purple or red. But this makes them no easier to spot, as their colour is designed to suit the habitat – perhaps a sponge, gorgonian coral or often amongst coral or man made debris on the sea floor.

They are also able to change colour or grow skin filaments and attachments to blend in with their surroundings and can even attract a healthy growth of algae which breaks up their outline. So the problem is that often they will resemble nothing more than a piece of reef debris.

Their favoured habitats are amongst eel grass beds, branching gorgonian corals and often on dead or dying branching corals. They will frequently be found close the seabed holding onto the coral with their prehensile tail and just gently swaying in the current or swell and may appear to be totally lifeless initially.

They are very territorial however and once you have discovered a habitat you will know that you can return and find the same subject repeatedly and also that there likely to be a mate in the same area. The Caribbean species live for several years and will remain faithful to their favourite anchor point within their territory unless physically disturbed.



Yellow Lembeh seahorse - Hippocampus kuda – Although this species are often seen free swimming across the seabed in the Lembeh Strait this one is striking more of a classic pose whilst resting. Nikon D300, Subal ND2 housing, 10-17mm FE zoom and 2 x teleconverter, Subtronic Mini flash guns, ISO 250 f13 1/30.

Seahorses do move about their territory but only patient watching will enable you to witness the slow and precise way in which they navigate across the reef by using their dorsal fins for propulsion and their ear-like pectoral fins for stabilisation and steering.

These movements are generally to gain better access for feeding or to rendezvous with a mate. If you watch a seahorse you will realise that he or she is very much aware of

your presence but they appear not to be alarmed. However, they are notoriously shy of the camera and will irritatingly turn their back to the lens when a camera is raised having until then held a steady pose!

The Indonesian archipelago is another area for reliable seahorse sightings. Here you will find examples of the larger species (Hippocampus kuda) and also the smallest species, the Pigmy seahorses (Hippocampus bargibanti, Denise and Pontohi) which



Pygmy seahorse – Hippocampus bargibanti – This is the now classic image of the Bargibanti pygmy which was the Holy Grail for macro enthusiasts for some time. They are a lovely subject and technically very challenging to get a good image. Nikon D200, Subal ND20, 105mm micro, Inon wet lens, Inon Quad flash, ISO100 f16 1/125.

is definitely much more difficult to both find and see clearly, let alone photograph. Again, many species are found in their usual habitat of eel grass, corals and sponges, but in classic muck areas like the Lembeh

Strait some follow a quite different lifestyle. Lembeh Strait, like other areas in the region, comprises mostly of dark volcanic sands and has sparse coral formations, but does have high concentrations of debris and detritus both natural and man made. Most of the fish species in the strait are benthic or bottom dwelling and the seahorses have adopted the same lifestyle. So here you will witness large seahorses in various colours marching across the seabed in search of food. Some of the darker coloured examples will be found clinging to tree debris, coconut shells and even old training shoes and paint tins!

Conversely the pygmy seahorses will mostly be found on particular species of sea fan, or gorgonian, which they mimic perfectly. An adult pygmy seahorse will only grow to less than 2cm in length, but most are much smaller, and even when there are several in residence finding one of these little beasts is a real challenge. Fortunately, local dive guides are adept at finding pygmy seahorses and are always keen to take divers to see them. But even when the subject is pointed out they are incredibly difficult to see and even more of a chore to focus and to photograph. The sea fans are often in deeper water and exposed to currents, so limited bottom time and subject movement all make accurate focussing on these



(Left) Pygmy seahorse – Hippocampus pontohi - this is a difficult species to both find and photograph. They prefer shallow locations where there is often swell to contend with in addition to high magnification. Nikon D100, Light & Motion Titan housing, 105mm micro, Inon wet lens, Inon Quad flash, ISO200 f18 1/125.



(Right) Pygmy pipe horse - Acentronura breviperula - this species appears to be the bridge between the seahorse and pipefish and is extremely small and thin. Nikon D7100, Subal ND7100 housing, 105mm micro, SubSea +10 wet lens, Inon Z240 flash guns, ISO200 f25 1/60.

small creatures extremely difficult, but worthwhile when you get it right!

Another species of pygmy that has relatively recently been highlighted is the Pontohi which tends to favour shallow water habitats amongst ascidians (sea squirts) and seaweeds. These are equally small and incredibly thin when viewed head on and are yellow/orange and white in colour. In common with their cousins they also pirouette at the sight of a

looming lens and also hop about quite a lot.

The species which connects, at least visually, the true seahorses and the pipefish is perhaps the short-pouch pygmy pipehorse (Acentronura breviperula). I saw one of these for the first time a few years ago in the Philippines amongst halimeda algae on a sandy seabed. This species is also very small, thin and well camouflaged and it certainly not something I would

have spotted without a guide!

The two hundred or more species of pipe fish to be found world-wide belong to the same Sygnathidae (fused jaw) family as seahorses. The pipe fish group includes several species in temperate waters, the ghost pipe fish found in tropical seas and the antipodean sea dragons and leafy sea dragons. There are many similarities in the shape of the head and the structure of the body between pipe



The Greater pipefish - Syngnathus acus - is the most common species in the UK and will most often be found in shallow water amongst weeds on the seabed moving slowly or lying in wait for prey. Nikon D200, Subal ND2 housing, 12-24mm zoom, Subtronic Mini flash guns, ISO100 f10 1/60.

fish and seahorses and some also use the end of their tails to anchor themselves on the reef.

In the UK we are lucky to have no less than six species – the greater pipefish, Nilsson’s pipefish, deep snout or broad snout pipefish, snake pipefish, worm pipefish and the straight-nosed pipefish. They are most commonly seen in the summer months in shallow water hunting amongst the seaweeds which are then growing prolifically. However, you will need

to move slowly and look carefully as they have very good camouflage and move very slowly amongst the weeds emerging occasionally to strike at small fish or crustaceans. The greater pipefish and snake pipefish are most commonly seen and can grow up to 50-60cm in length, which makes them quite large critters.

One of the most fascinating tropical species are the various ghost pipefish which have the most amazing camouflage systems. The



Ornate ghost pipefish- Solenostomus paradoxus - this is perhaps the prettiest of the ghost pipefish species with spectacular colouring and detail. It can be very hard to spot even when directly in front of you and can be a challenge to capture against a clear background. Nikon D300, Subal ND2 housing, 10-17mm FE zoom and 2 x teleconverter, Subtronic Mini flash guns, ISO320 f14 1/10.

ornate ghost pipefish (Solenostomus paradoxus) is probably the most attractive species in the family. Others include the harlequin, robust, banded and flag-tailed ghost pipefish. These remarkable looking creatures can grow up to 15cm but many are no bigger 5cm and are incredibly hard to find with their perfect camouflage. The ornate and harlequin ghost pipefish are normally associated with crinoids or feather stars, branching

gorgonians and sea fans and black coral bushes. Their camouflage, complex colour patterns and elaborate body shape add to the difficulty in spotting one of these – again, good guides are invaluable as they can lead you straight to the local residents.

The robust ghost pipefish (Solenostomus cyanopterus) are more often associated with muck or eel grass areas where they live closer to the seabed. This species mostly

(Left) Pygmy seahorses – Hippocampus bargibanti – Shooting at high magnification means working with a very narrow depth of field, so having two pygmy seahorses in the image means only one will be fully sharp. Introducing a little natural light into the background make the second one stand out a little more albeit in soft focus. Nikon D100, Light & Motion Titan housing, 105mm micro, Inon wet lens, Inon Quad flash, ISO200 f11 1/15.

(Right) Robust ghost pipefish (Solenostomus cyanopterus) these ghost pipefish have terrific camouflage and mimic anything from sponge growth to leaf debris, but once found are a very patient subject allowing you to find the best angle for your image. Nikon D300, Subal ND2 housing, 105mm micro, Inon Z240 flash guns, ISO100 f20 1/30.

mimic the eel grass blades, halimeda seaweeds or seabed debris such as leaves or twigs and have much drabber colouration and markings as a result. They are sometimes found in pairs and, as with many species in nature, the male will be the smaller of the two. They vary in colour from grey and almost black, to brown and various shades of green dependant on habitat and are able to adjust their colour to suit.

Reproduction

Another feature which both seahorses and some pipefish have in common is an unusual approach to parenthood. The female produces and ripens her eggs to the point where they are ready for fertilisation and at this point she joins the male to begin a courtship ritual. The two then join together whilst the female passes her eggs to the male's



brood pouch, which is almost totally enclosed in seahorses and more of a groove in pipefish. Once the eggs are secure the male will fertilise them and then he broods them for between 7 and 30 days dependant on the species. When the young hatch they are miniature replicas of their parents and are fully independent immediately, although they will often remain with the father for several days. The exception to this rule are the ghost pipefish. In this species the female does the brooding.



Photography

In most circumstances these creatures would be considered a macro subject and, in the case of the pigmy seahorses, a super macro subject. For the larger species of seahorse for both FX and DX sensor format a macro lens in the 50-60mm range will be a perfect tool. This will also be a good choice for the ghost pipefish, although you may be lucky enough to encounter a large individual or a small group together and wish to include more



Spiny Lemberh seahorse - Hippocampus histrix – This species is much smaller than the seabed cruisers and is often found amongst branching sponges. Nikon D200, Subal ND20, 105mm micro, Inon Quad flash, ISO100 f16 1/80.

important and manual or locked focus is often best.

Small 'macro' flash guns or dedicated tools like ring flash can be used in most circumstances. When working in super macro you may need more power dependant on your distance from the subject, or you can move your flash guns well forward or even attach them to the end of your port. Flash positioning can be very important, particularly when working close to sea fans or branching corals, in order to avoid touching the habitat or illuminating branches which may cast harsh shadows over your subject.

Another consideration when photographing seahorses in particular is disturbing them in their habitat. Seahorses, particularly pygmies, often turn away from the camera at the vital moment, which can be very irritating, but we should not be tempted into manipulating the subject to capture the perfect shot. Dive guides often cajole a subject into a photogenic position and if you do not approve or want to see this then it should be pointed out to the guide before the dive.

There has also been some scientific research into the detrimental effect of strobes on seahorses and you may find some locations where the number of flash shots allowed will be limited. But I am not sure that I buy into the this theory as I know of several sea fans in Lemberh and Bali for example that I have visited many times over the years and I know that the guides take photographers to them on

a daily basis, yet there are still, apparently healthy, seahorses there? Some guides are certain that the same seahorses are there for a number of years and I can remember a guide at Captain Don's in Bonaire claiming a particular orange seahorse had been on the same piece of coral for more than five years and so must have seen dozens if not hundreds of strobe flashes a day. So for me the real world experience does not support the theoretical one, so it is a bit like global warming, you are a believer or not!

For a photographer these species are ones that we never tire of and, for me at least, are an irresistible attraction on any dive site that is host to them. The pygmy seahorse was of course the 'holy grail' for many macro photographers for a while and, whilst there are now plenty of images of these beasts, they are still immensely satisfying to photograph well. Non divers relate to the 'cute' beauty of the sea with species like seahorses and so images of them will always have an enduring value. So if you need a theme or a purpose for your next trip you won't go wrong if you choose to chase these sometimes elusive denizens of the marine world.



Mark Webster
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of the habitat when a medium wide or very close focussing wide angle lens can be used.

For the super macro subjects there are various options which include teleconverters, extension tubes, internal 'dry' dioptres and external wet dioptres or combinations of one or more. You should be aiming in general for 2:1 reproduction although many photographers work with 3:1 and higher. Depth of field becomes a real issue at these high magnifications and so focussing accuracy is all

Book Review

Camera Man by Chuck Nicklin by Peter Rowlands

For those of us who are 'of a certain age' we may be struggling to keep up with the pace of technology but we have had the privilege of living and diving through the most eventful and productive period in maritime and imaging history and this book captures those heady days to perfection.

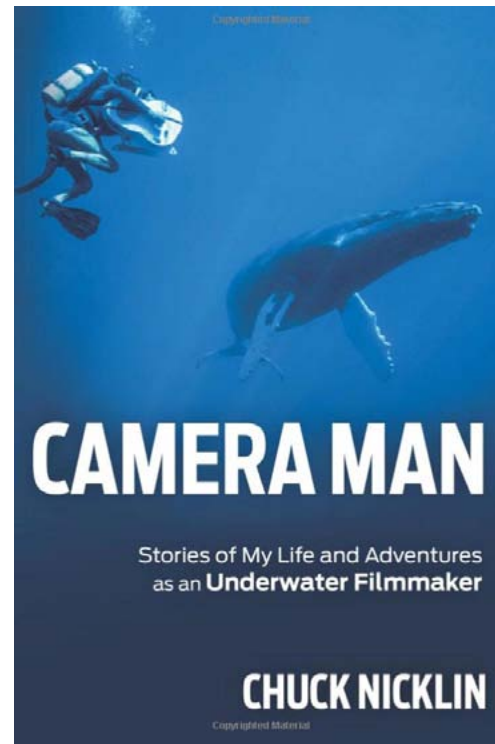
Starting out in the mid to late 50's Chuck grew up on the west coast of America in an era when most gear was home made and most sorties into the underwater world were still experimental. Until this time he had been running Chuck's Market, a small full-service grocery store but his organisational skill were spotted by a group of pioneer divers who wanted to open a dive shop. And so it was that he was able to combine his business and hobby skills running The Dive Locker.

Spearfishing was the main driving force back then but meeting and working with Ron Church, a legendary and much overlooked

underwater photographer of the time, would kindle his ambitions to go full time as an underwater photographer. Ron lent him his RolleiMarin housing and camera which gave the luxury of 12 shots per film!

Chuck's breakthrough came quite by accident when he was part of a group which came to the aid of a grey whale badly tangled in nets. They filmed the progress and Chuck climbed onto the back of the whale and had his picture taken. This caught the attention of the press and the picture was widely published. Next thing you know Bates Littlehales from National Geographic was on the phone asking for his help filming grey whales. Chuck had suddenly become a grey whale expert!

And that was really the start of a career which went stellar right up to James Bond films and a lasting partnership with the legendary Al Giddings culminating in Hollywood blockbusters such as the Deep and Abyss to name just two.

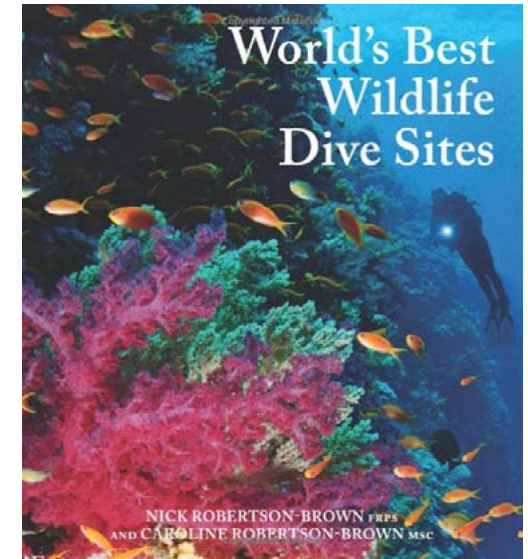


This is a great read and it captures the spirit of the time and the characters involved. Above all I get the impression that Chuck is a great guy and a good team player who worked hard to do the best, whatever it took.

He certainly did a good job with this book.

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World's best wildlife dive sites



Join Nick and Caroline Robertson-Brown as they tour their favourite dive locations around the world.

This book is essentially a diver's wish-list for finding the very best underwater wildlife experiences, covering everything from the adrenaline-fuelled rush caused by big animals interacting in huge underwater scenes like the Sardine Run to the sheer fascination for the sometimes bizarre creatures that live in the micro habitats of Bali.

Their captivating words and beautiful images will provide all the inspiration you need to launch your next big diving adventure.

www.nhpub.co.uk

www.uwpmag.com

www.amazon.co.uk/Camera-Man-Adventures-Underwater-Filmmaker/dp/1517383129

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

Since none of you have submitted any Parting Shots for this issue, it falls on me to fill this space.

This shot was taken in the early 1980s in the waters around Plymouth, Devon, England.

I'd had this idea to backlight macro subjects with a variety of coloured filters over the second strobe (we called them flashguns in those days) with the main strobe providing front lighting. I attached a Cokin filter holder to the front of the backlighting strobe so that I could slot in and remove squares of coloured Perspex (alright Plexiglas if you must). This strobe was out on an extended articulated arm so that it could point back directly into the lens. Then the trick was to find a macro subject such as this white anemone on a clean edge where I could get the rig over the subject and get the shot.

Hilsea Point near Plymouth has particularly craggy terrain and after a while I found this suitable subject protruding from the top of a sharp rock formation with room behind and in front of it to lower the rig over it.

There are times when all the thought, planning and preparation come together and make the shoot simple and this was just such a time. This was in the days of totally manual exposures so I knew exactly what the right settings would be for this fixed setup. All I had to do was slide the first piece of coloured Perspex into the Cokin holder and gently lower the rig over the subject and then take the shot. The next step was to lift the rig out of the way, remove the filter and replace it with another coloured one.

The colours I had decided on were, this one, blue, which created a tropical background, a green one to simulate British waters and then I got carried



Pentax LX camera with a 50mm macro lens in a Hugyfot housing with a Subatec S100 front strobe and an Ikelite Substrobe 50 as a backlight with a Cokin filter holder. Kodak Ektachrome 64 film, home processed when I got back from work on Monday evening. 1/60th @ F22, full power on both strobes (who needs metadata!).

away and had a red one to simulate the Red Sea and a black one for the Black Sea!

PS. The linear line of brighter light behind the subject is the diffused light from the straight flash tube.

Happy days.

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**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.**

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