Editorial

2001 - 2018

by Peter Rowlands
with guest Editors:
Alex Mustard, Doug Perrine,
Adam Hanlon, Steve Jones,
Dan Bolt and Simon Brown

As is usual with milestones, they present an excuse to stop the clock for a while and look back at what has happened since said milestone began.

UwP's was August 2001 when I was financed by the then Ocean Optics to produce a one off bumped up newsletter harnessing the cost control of desktop publishing, the print free downloadable PDF format and free distribution via the internet. In hindsight, it was the perfect time to start and, as history has since proved, UwP was the very first downloadable PDF magazine designed to look like the conventionally produced product it was replacing.

What was also perfect timing was that it was the time of transition from film to digital photography. The first issue of UwP was a mixture of both; early compact digital cameras had basic sensors, limited capacity memory cards and power hungry electronics. The first very basic DSLR

from Canon wasn't due to arrive until November 2001 in time for Issue UwP2 which contained the shock news that the Nikonos V was to be discontinued after seventeen, yes, I said seventeen years of production since 1984. It was truly a time of seismic change.

With this in mind I thought it would be an interesting idea to write about what has changed in the same seventeen year period since then from 2001 to 2018 when Issue UwP100 is rolling off the imaginary presses and dropping through your theoretical letterbox. In addition I thought it made sense to find out what other leading protagonists felt were their most important changes so I have enlisted the help of half a dozen leaders in their field. Enjoy.

Polycarbonate housings, Manual White balance and Alex Mustard

by Peter Rowlands

Polycarbonate housings

It might seem a bit quaint now but in 2001 underwater housings were traditionally made from aluminium, cast in hardwood moulds. These were then machined with smooth O ring surfaces to form water and pressure proof enclosures. This production method suited low volume output and had served the market well for decades.

The advent of injection moulded polycarbonate housings was made possible by computer aided design (CAD) software which in turn controlled CNC mills and lathes to make mouldmaking much more economic and capable of producing shapes which traditional human machinists could not match.

I don't think there can be any doubt that these housings were one of the main reasons why digital photography underwater got off to such a fast start, faster even than land photography where it would take digital cameras several years before they could truly claim to be better than their traditional SLR counterpart.

Point and shoot ease of use combined with the instant feedback on the LCD screen produced good results which even a novice could achieve almost straight away. They made underwater photography simple, effective and therefore enjoyable!

The ability of these comparatively inexpensive housed compact cameras, I think, quite literally, revolutionised the appeal of underwater photography to the diving world and divers as a whole.

Manual white balance

As a mostly available light photographer the advent of Manual White Balance brought about a groundbreaking shift in the capability of underwater scenery photography.

Altering the colour of a traditional film involved either adding filters, changing film stock or manipulation of the chemical processing of the film or, believe it or not, all three at once.

I guess it should have come as no surprise to me because prior to 2001 I primarily shot video and these amazing electronic camcorders were able to offer the choice of daylight balance (for outdoors), tungsten (for indoors) or fluorescent (also indoors). In addition they were also able to change the white balance automatically to ensure the correct colours footage regardless of the light source.

This ability lent itself so successfully to the underwater world but the natural cyan colour of even the clearest water gets stronger and stronger the deeper one goes and usually out of range of the colout presets.

More sophisticated cameras provided Manual White Balance (MWB) where, at the push of a button, the camera sensor evaluated the colour of the light and adjusted the image electronically. It would now be remiss of me not to mention that the invention of the Magic Filter in 2005 designed to work with MWB was a combination made in photographic heaven :-)

The result was much improved colour in available light images and those, for me, have been some of the most important image improvements in the past seventeen years.

Alex Mustard

I'm going to finish my piece not with a product or a capability but a person and I doubt if it surprises you that it is Alex Mustard.

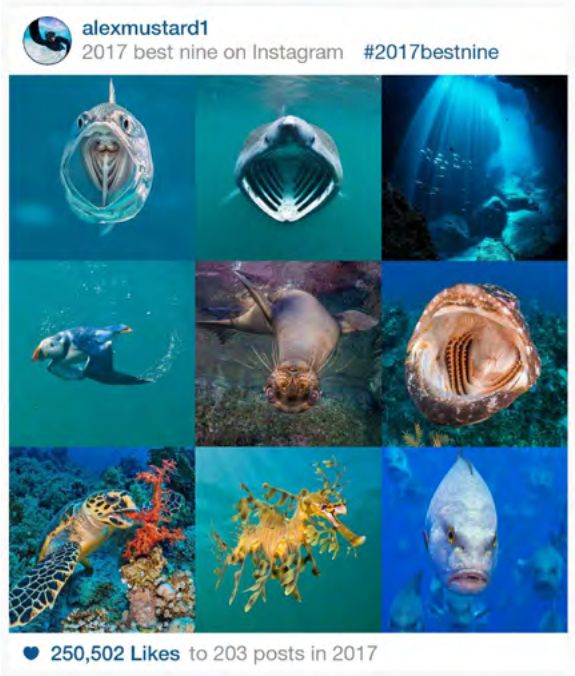
Even in UwP1 the youthful Dr M was describing "Zoom blurring underwater", a way of bringing more eye catching excitement to our shots but what set him apart, even at that early stage, was he was prepared to tell everyone how to do it.

Underwater photography was then, is now and probably always will be, competitive; yet here was someone who was taking images that were really groundbreaking and was prepared to impart his secrets to all and sundry so that is why I am highlighting him.

Like only one other person before him that I had the pleasure of knowing, he combines the perfect blend of marine biological knowledge, photographic control and artistic creativity. His images over the past seventeen years have built into a most impressive body of work and they in turn have inspired others to improve the quality of their work.

As a result I hold him significantly responsible for the very high standard of images that are being produced underwater today.

Peter Rowlands
peter@uwpmag.com



The underwater photography community
by Alex Mustard

I am sure others will comment on the huge changes in imaging technology, underwater housings and more during the 100 issues of UwP, but I thought I'd take a different approach and talk about us, well our community.

The arrival of UwP coincided, not coincidentally, with the rise of the internet in underwater photography. A phenomenon that has shared knowledge like nothing before, but has also brought our international community together. It is not far fetched to say that we weren't really a community before it. Societies of underwater photographers have existed since the 1960s, like our much loved BSoUP in the UK, but they were few and far between resulting in strong local gatherings but nothing international. Photographers could gather at events like the Brighton Festival, the Antibes Festival and still can at DEMA and ADEX, but we're talking about a gathering of 10s of shooters, the biggest max out at 100. Online hundreds of underwater photographers regularly interact, in fact most groups have memberships in the 1000s.

I see the greatest impact of this community when I travel. In this interconnected world of hobbyists suddenly we have friends everywhere. One of the best feelings when you turn up in a country you have never visited is being greeted by local who shares your interest. Taking you to choice dive spots and more. Fifteen to twenty years ago, BSoUP members would be forever moaning about dive guides, who didn't understand what photographers wanted. Now everyone is interconnected, guides chat and plan with photographers before the trip, share jokes and pictures during and plan for a repeat visit after.

Group trips have really changed too. Previously they were almost always single nationality affairs, now they are multinational, which I think is a huge benefit for workshops because photographers are exposed to peers with different tastes, different home conditions, different gear and everyone's horizons are expanded. I quite regularly run workshop trips where I am the only the only Brit. My record is 19 different nationalities on a big Lembeh Wetpixel event! On my more typical sized and most recent workshop in December in Ambon, I was joined by two Brits, two Australians, three Americans, as well as a German, an Argentinian, a Chinese, a Polish and a Dutch photographer.

What a great time to be an underwater photographer and part of this interconnected global community.

Alex Mustard
www.amustard.com

Democratisation
by Doug Perrine

From my perspective, the sea change since 2001 has been the democratisation of photography in general and underwater photography in particular, due to two massively disruptive technologies: digital photography and the internet.

In the 20th century, nature photography, and underwater photography in particular, were dominated by full-time professionals. Someone that only had a few weeks during the year to go play underwater just didn't have time to master the steep learning curve of using the equipment available at that time, especially considering that they would usually not see any of their results until after their return to home base, by which time they probably didn't remember what they did when they took the picture, and had no opportunity to give it another try.

Digital cameras with instant replay enabled novices to progress to professional quality images within a few weeks, as long as they had an innate eye for composition. But even an amateur with world-class images didn't have access to the world of print publishing. Picture editors dealt with known photographers or stock photo libraries that could supply images of a range of subjects with one submission (that had to be delivered in physical form as slides, with a risk of substantial liability if they were lost or damaged).

When the internet came along, anybody could post pictures for the whole world to see, and an editor might contact you, even if you had only ever photographed one subject. You didn't need a list of publication credits or a recommendation from someone else in the industry.

For picture editors, this meant much easier searches, with a much greater variety of pictures to choose from, and most of the photographers were happy to have them used for free. For amateur photographers, it meant access to the whole world of image users and the possibility to have your name in lights. As a result, we are constantly seeing ever better images of every aspect of the natural world.

On the down side, most print publications have gone out of business, as ad revenue has migrated to the internet. Furthermore almost nobody is able to make a living from photography any more, and especially not underwater photography. So you rarely have photographers taking great risks to accomplish something that's never been done before, unless there is a commercial sponsor involved. Instead you have thousands of photographers taking pictures of the same subjects, inevitably making improvements over time, but rarely breaking new ground. Someone who does gets their 15 minutes of fame before the new image is copied endlessly and everyone forgets who took the first one.

As with any new technology, there are winners and losers. We have more and better pictures than ever before, but they have no value, and are shared freely without reward to the creator. That can be good or bad, depending on your perspective.

The big unanswered question in my mind is: Does it inspire people to make greater efforts to protect nature?

Doug Perrine
www.seapics.com

Behaviour
by Adam Hanlon

When I bought my first underwater camera in the 1980's, I was unwittingly part of a small group of people that attempted to capture the underwater beauty of the world's oceans. This was largely due to the relatively low number of people actually diving, combined with the large expense and extreme frustrations involved in trying to take pictures with film underwater. It should be pointed out that at the same time, I didn't own (or know how to use) a computer, cell phones were the size of rucksacks and I had never heard of the internet.

Fifteen or so years later, we see the release of the Nikon D1, arguably the first "serious" digital camera. Digital imaging technology revolutionized underwater imaging, freeing us from the strictures of 36 exposures per dive and allowing us to preview our images as they are shot. Almost simultaneously, the numbers of people enjoying the underwater world exploded too, so the scene was set for a dramatic increase in the numbers of people creating images underwater.

The internet produced a platform for image (and opinion) sharing unlike anything that has gone before. It is now fairly easy to attract relatively large audiences to images. It could be argued that the combination of the increased numbers of image makers, the technology and the ease of sharing has caused an overall improvement in the amount of quality imagery that is readily available to the viewing public. What is undeniably true is that the sheer number of people going underwater and creating imagery has increased exponentially.

Baba Dioum, in his 1968 address to the International Union for the Conservation of Nature and Natural Resources stated: "In the end we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught." There is no doubt that imagery generates an interest that can help drive a demand for the preservation of the oceans. The increase in the amount of underwater imagery available to the public has helped raise awareness of environmental challenges and given a voice to individuals that seek to conserve our underwater world.

But, this new access and technology has also brought with it challenges.The desire to produce unique (and/or commercial) imagery has led some people to employ dubious ethical techniques. Whilst these practices certainly existed before the digital explosion, this increase in the number of individuals with cameras underwater has increased their frequency. The ease with which these images can be shared can cause unrealistic impressions of animal behavior, particularly among people that have not visited the underwater world and have no way of assessing the accuracy of the events portrayed. We are responsible for ensuring that we faithfully represent what we see, albeit using our creativity and skill to show it in as intrinsically attractive or dramatic fashion.

Whilst the definition of what is "acceptable" will vary from era to era and from individual to individual, I am certain that most people would now agree that anything that harms or stresses a subject unduly is unacceptable. I would also argue that the circumstances around the capture of images that portray strikingly unnatural behaviors should be queried by the wildlife photography community. For example, images captured when an octopus is picked up into the water column and then released to "parachute" back to the sea bed exemplifies

both these criteria. The octopus will be stressed as it is being handled and any resulting images will show a behavior that does not naturally occur. As a community, we should ensure that such images are not accepted.

Conversely, the oceans are a big unpredictable place and their inhabitants sometimes do things that we do not expect. We are fortunate to sometimes document things that are unique and previously undocumented. Seals may seek out physical interaction with divers and this seems to be a mutually enjoyable experience for both parties. Hence, we should be cautious in how we go about raising concerns about images that we suspect may have been captured via methods that we feel are dubious. I would suggest that we at least attempt to communicate directly with the creator of the image in private to hear their account of how they captured it, before we make any judgement.

Adam Hanlon
www.adamhanlon.com
www.wetpixel.com

Deep wreck photography
by Steve Jones

Taking a digital camera underwater was one of the most significant recent milestones for many of us who started in the film days, however I'm going to talk about another development that had a profound impact on my image making.

As a photojournalist I have to be an all-round photographer, yet a passion for wrecks has long been a central theme in my work. The lesser-explored ones are often found in deep water, where ambient light levels are very low so in the film days, jumping in with 36 exposures often meant a similar number of unusable images of these difficult subjects unless cumbersome tripods were carried.

Earlier generations of digital cameras simply magnified the number of binned images! All that changed in 2008 when Nikon released the D3 and D700. These cameras had sensors capable of superb image quality at very high ISO's and had autofocus systems to match, opening up a vast new range of subjects for me.

Dark wrecks that I had previously found to be unphotographable now became ripe subject matter and when combined with emerging ultra-powerful LED lamps, I found I could create images that not only show the full seascape but really capture the atmosphere and eeriness of these deep wrecks.

The near-intact wreck of the British submarine HMS Stubborn, which lies at 55 metres depth off the coast of Malta. Nikon D4 in Seacam housing with Nikon RS 13mm. 1/125 F8 ISO 1000. Off camera Orcalight Seawolf

I wanted to create images that explained without words, why we take such risks in visiting these unforgiving places and my D700 enabled me to do that. Subsequent cameras such as the D4 and D5 were an evolution, but the D3/D700 were a revolution when it came to deep water wreck photography.

Steve Jones
www.millionfish.com

Citizen scientists
by Dan Bolt

When Peter's invitation to write this piece came through I had just seen the concluding episode of the BBC's epic TV series: Blue Planet II. So, taking my inspiration from the octopus & shark story and the leatherback turtle protection piece, I thought I would turn the camera back on itself and focus on you, the citizen scientist.

I won't write about the huge leaps in camera & lens tech that we have seen over the past 17 years - but instead, I want to celebrate the growth of localised knowledge gained by dedicated individuals, and how this is adding to our knowledge of the marine environment and, ultimately, to its protection.

In 30 years of diving the same sites most local to me, I've witnessed the spread of warm-water species, recorded unique intra-species behaviour, mapped new colonies of rare animals and helped to re-classify species.

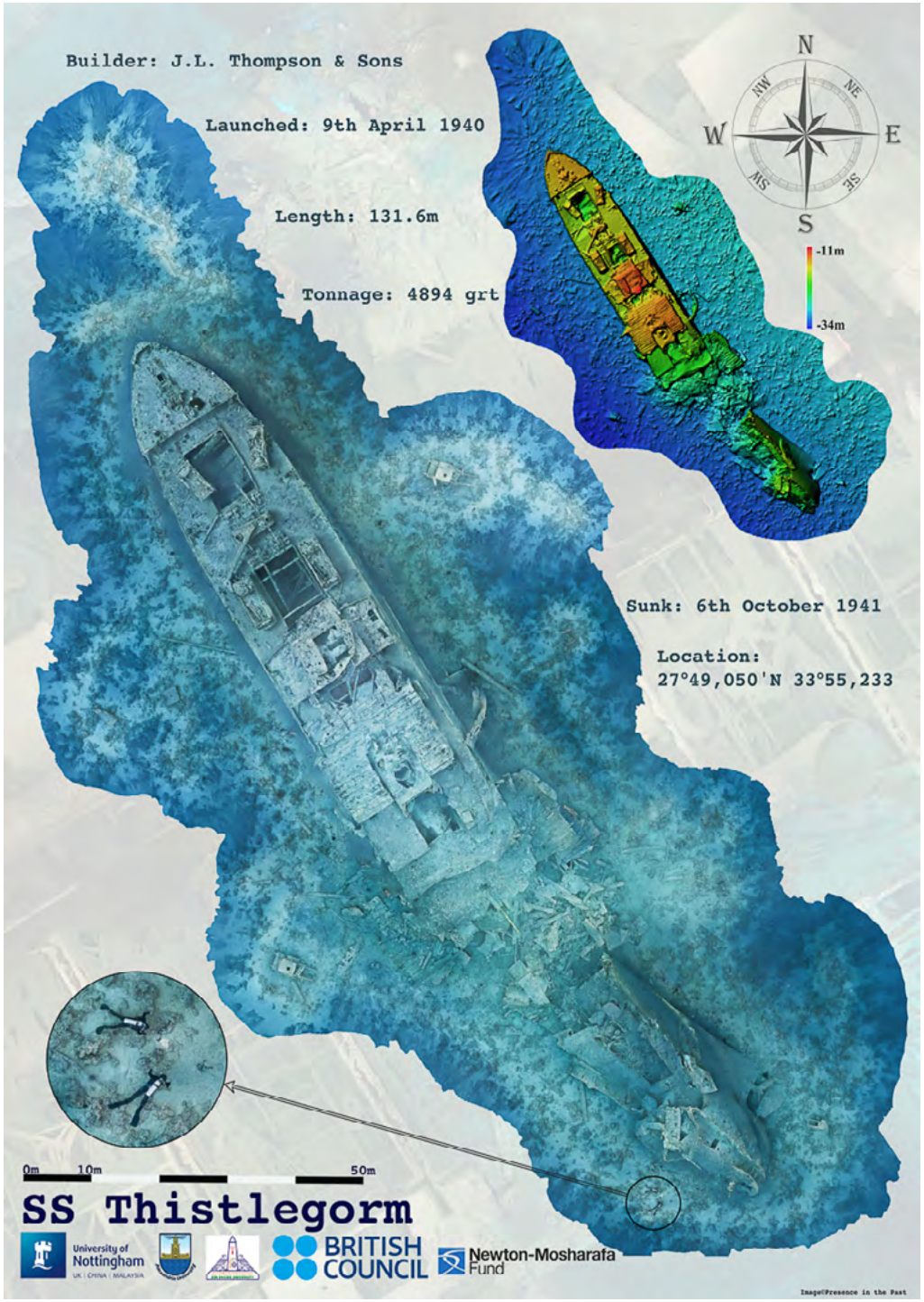
Only by dedicating this in-water time can we record seasonal changes, observe behaviours and, ultimately, recognise the unusual and noteworthy that can truly make a difference to the 'value' of your local eco-system.

The latest camera equipment we have to hand certainly makes it easier to record everything we see and want to document, but surely it is you, the every-day underwater photographer that we owe the greatest deal of thanks to.

Over the past 17 years you have contributed hugely to the collective wealth of information about our most precious places... and who knows, perhaps now, your dedication can finally make a difference.?

Here's to you; your time, your efforts, your knowledge and with your continued efforts, a brighter future for our oceans :)

Dan Bolt
www.underwaterpics.co.uk



Photogrammetry
by Simon Brown

What has changed over the 100 issues? Working as an editorial photographer I would shoot a series of images to tell the story, then edit them down to a small selection. I was selectively choosing how the story was to be interpreted and the viewer had no choice.

With photogrammetry, I now shoot hundreds or thousands of overlapping images, build a 3D model and then let the viewer choose their own viewpoint. The public can choose where and how they see what I have captured, and are at liberty to wander around the scene as they see fit. This has surprising benefits; after diving a recently uncovered cannon site on Chesil Beach we were all confident we had seven iron guns. After the model was published a non-diving team member announced there were in fact 8 guns. They had found the cascable of another gun amongst the cobbles from the comfort of their desk.

None of this would be possible without the advent of some very clever software (www.agisoft.com) exploiting high-resolution digital images with embedded EXIF data, massive storage capacity and – thanks in part to the gaming industry – graphics processing power.

What else has changed? I used to shoot 5~10k images a year, now I regularly shoot 2000~4000 on a single dive. And for me at least 2D imagery died the very day I created my first 3D model.

Derived from the 3D model of the SS Thistlegorm, the image (known as an ortho photo) is a 'divers-eye-view' of the wreck and was created from 15,000 separate images. The wreck is geo referenced and scaled, and a Digital Elevation Model (DEM) in the top right corner shows relative depths over the wreck. Two divers were scanned alongside the stern to show the scale of the area covered - 7 acres in total. This image is available as a poster or fine art print.

http://deep3d.co.uk/store/

Simon Brown
www.deep3d.co.uk

I hope you have enjoyed and been enlightened by the thoughts and images of the above underwater photographers and I look forward to producing the follow up article in another seventeen years time in UwP200 :-)

Peter Rowlands
peter@uwpmag.com

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