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USING YOUR SMARTPHONE UNDERWATER IN A SEALIFE HOUSING

By Nigel Marsh www.nigelmarshphotography.com

Photography has changed a great deal in the past twenty years with the digital revolution. Digital has especially made underwater photography so much easier than the days of film - with no limit of 36 exposures, instant feedback and a great array of cameras and housings to suit every budget. However, the greatest change in digital photography in the last few years hasn't come about due to better cameras or lenses, but by the invention of the smartphone.

The smartphone has dramatically changed the way we take images and videos. Almost everyone has one in their pocket or handbag, and if you want to take photos or videos of family and friends most of us don't grab a camera, we simply use our phone. The rise of the smartphone has meant that compact camera sales have plummeted.

With a lack of sales, all camera manufacturers have drastically cut back the production of compact cameras, and in the case of Olympus, dropped out of the market altogether. Some have even speculated that in a few years there will be no compact cameras available, with smartphones completely taking over this end of the market.

As most divers use compact cameras for their underwater photography this is going to have major implications in the next few years. You can of course use your current compact camera for quite a few more years, but when it starts to age and need updating you will have to replace it. But what are your options? If you want to stick with a camera your only option will be a larger and more expensive mirrorless camera and housing system (as DSLR cameras are also disappearing, but that is another story). But what about if you could house your smartphone?

A few years ago this suggestion would have been seen as crazy, as there was no point spending money on a housing for a smartphone that didn't have the performance quality of a compact camera. However, photography with a smartphone has improved significantly. They still have smaller sensors than a compact camera, but they produce good quality sharp images. Most also have several lenses, allowing you to shoot scenes from semi-wide angle to semi-macro. And besides the image quality, most shoot 4K video and are weather-sealed, so are waterproof, to a certain extent.

I for one hadn't even thought about housing a smartphone, as I still use my camera much more than my phone to take images.

The back of the Sealife Sportdiver housing.

The Sealife Sportdiver housing.

But as I also teach underwater photography to dozens of students each year, I started to do some research once I read about the demise of the compact camera. It was then that I discovered that Sealife make a housing for smartphones called the Sportdiver.

At first, I was a little sceptical, as I thought smartphones have such a limited range of functions and buttons, that controlling one through a housing would be very limited. And who would risk losing all their phone contacts if you had a flood? Doing a little more research I found that you control the phone with a special app and the housing has a vacuum seal, so has little chance of flooding.

I didn't think much more about a smartphone housing until talking to Tim Hochgrebe of Underwater.com, who import a range of underwater photography equipment. He informed me that the Sealife Sportdiver housing works very well and that he would send me one to try out. A week later I had the Sportdiver housing in my hands.

So, what's in the box? The Sportdiving housing comes in its own padded carry case, with the housing, vacuum pump, spare o-rings, o-ring lubricant, a colour-correction red filter, different sized rubber camera grips, an o-ring removal tool, a lanyard, a moisture pack, triple-AAA batteries, and instruction manual.

Straight out of the box I was very impressed with the Sealife Sportdiver housing. The housing is rated to 40m and made of a tough solid polycarbonate, with an anodized lens frame and marine grade stainless steel metal hardware. It also has only five buttons to control the camera functions, and less buttons means less potential flooding points. The back door latch is easy to use, and locks when closed, and the baseplate has three threaded holes to connect a tray and arms. The housing weighs 680g and feels strong and sturdy in the hands.

One great feature of this housing is that one model fits almost all smartphones, even my old five-year-old antique Samsung! So, if you update your smartphone you don't need to buy a new housing, as you do with a new camera model.

The inside of the housing is very simple with only one o-ring. The housing has a large window on the front for your camera's lenses, a battery compartment to power the moisture detector and vacuum system, plus an on-off switch and a slot for a

Blacktip rockcod.

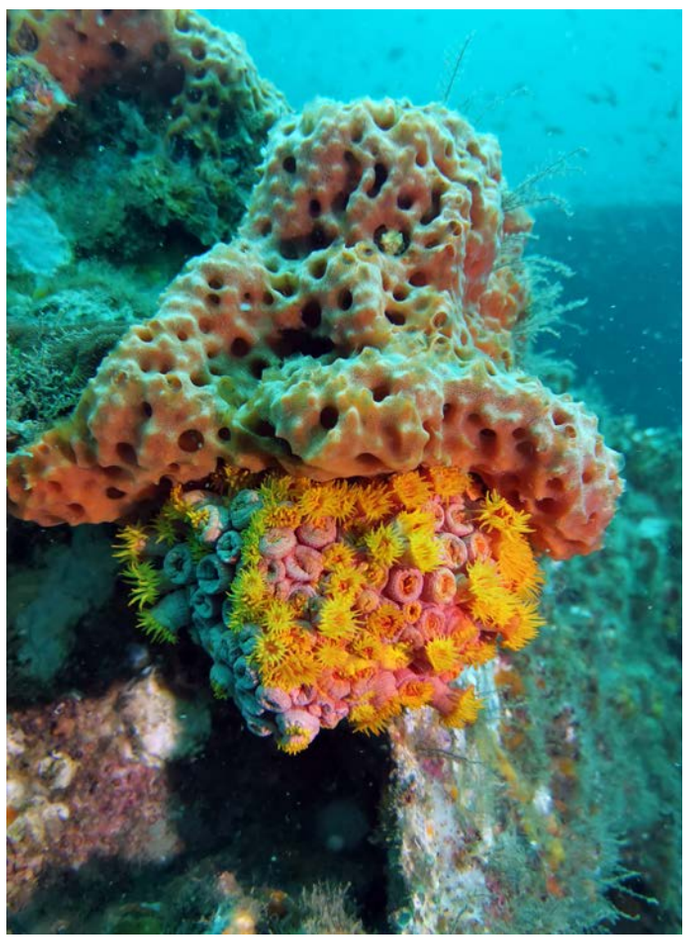
Tawny nurse shark.

moisture pack. There are also two small LED lights, one to tell you the Bluetooth connection is working and the other for moisture detection and vacuum. As smartphones come in a range of different sizes there is a flexible holding spring on the top of the housing and three different sized rubber camera grips, that can be self-installed, depending on your phone size.

I had a quick read through the manual, which is very easy to understand, and had the Sportdiver app downloaded in seconds on my phone. The app takes control of the phone, leaving it on continuously so it doesn't shutdown underwater. Installing the phone was very easy, and I found it connected to the housing via Bluetooth instantly. The phone then came up with a pressure gauge, telling me it was time to try the vacuum pump. This took only three pumps, the phone then ran a three and half minute vacuum test, finally the green LED light informed me all is good to go. That simple.

Connected via Bluetooth, the housing doesn't need any buttons to align with the phone. Once it is ready to go the phone displays four icons on the left (photo, video, settings and preview/playback) and five on the right (phone power, housing power, video mode, zoom and Bluetooth). These are controlled by the four buttons on the back of the housing – mode, up-arrow, down-arrow and OK.

I had a quick play and found the buttons easy to use and camera settings easy to navigate. In the settings I was very surprised by the amount of control the system gives you. I thought it would use only auto setting, like some of the more basic compact cameras. And yes, you can simply use auto everything and let the phone do the work. However, the app gives you some manual settings as well, allowing you to set shutter speed, ISO, exposure, white balance, photo resolution, video resolution and a few other things. The shutter release works smoothly and is used for both photos and video.

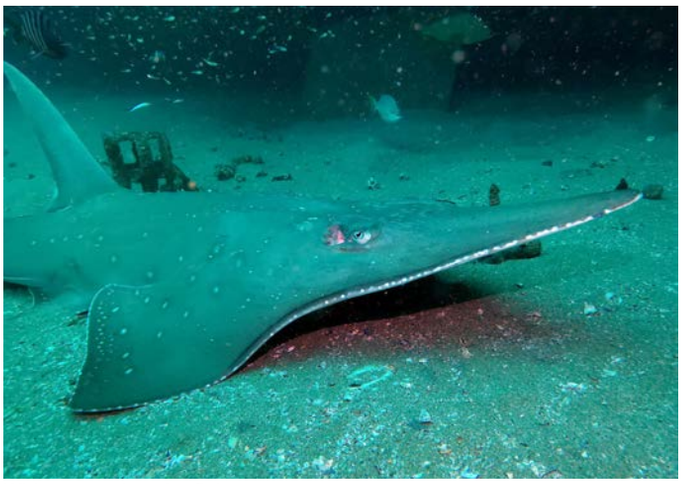


Sponge and tubastra coral.

Red emperor snapper.

Highfin rockcod.

Bearded scorpionfish.



Whitespotted wedgefish.

The only thing the Sportdiver app doesn't allow you to use is the phone's flash. This was not an issue, as for my test dive I was planning to use a video light for photos and video (Sealife also make the Sea Dragon photo-video light to compliment this housing). This is a smart move by Sealife, as it forces you to use an external light source, meaning less chance of backscatter and better images.

For my test dive I joined Scuba World for a double dive on HMAS Brisbane, off Mooloolaba, Queensland. Usually, I setup my underwater housing the day before a dive trip, but because you can't turn the phone on or off once it is in the housing I did it the morning of the dive to save battery power. Fortunately, this only took five minutes. For the test dive I also used a more modern smartphone, the Huawei Mate20 Pro, borrowed from a friend (thanks Dave).

Once underwater I quickly had the housing and smartphone running through its paces. I settled on the ships bow for the first few minutes, snapping off images of the more stationary reef fish. With these subjects it performed well. The zoom function worked smoothly, using the up and down arrows, and switching between photo and video mode was also simple.

It was also easy to get near perfect exposure, as the phone display shows you exactly what you get as you adjust the shutter speed, getting darker or lighter depending on the setting. It would be nice to be able to control the f-stop, but on this smartphone, like most models, it was fixed at f1.8. The only issue I had with the function buttons was that I found the display a little small and hard to read, as I need reading glasses.

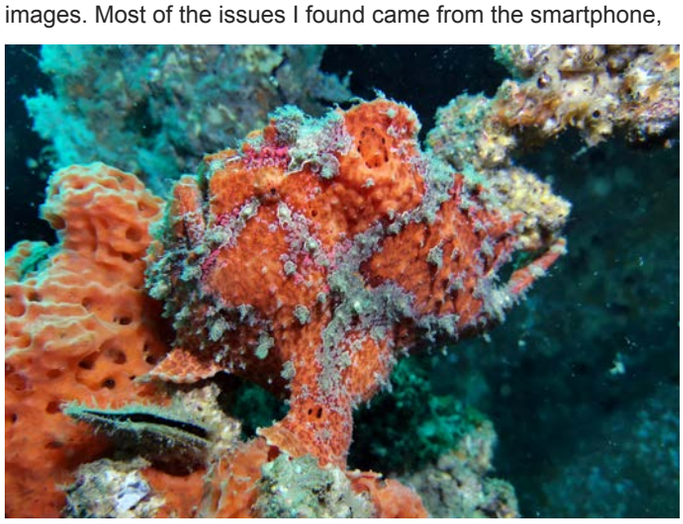
Testing the smartphone on moving fish proved to be a little harder, as the slight shutter delay saw me mistiming a few images. Most of the issues I found came from the smartphone, not the housing. The smartphone taking too long to focus, not focusing well on macro subjects or focusing on the wrong subject. As the phone doesn't show you a focus point with a square, like cameras do, it was hard to tell where it was focusing. After downloading the images, I found around 20% were out of focus. Some of these focusing issues were most likely my fault as I did pick some tricky focusing situations and probably took a few images before the phone had time to focus. I am sure my success rate would improve with more practise and getting more familiar with the phone.

I photographed a good range of subjects – a giant frogfish, angelfish, lionfish, hawkfish, scorpionfish, octopus and even a white-spotted wedgefish and a tawny nurse shark. These last two subjects, being over 2m long, were a little too big for the lens on this smartphone, but I still managed some good images.

As mentioned, the phone didn't do well with macro subjects, and with big animals and small critters being some of the most photogenic subjects that divers take images of having wide angle and macro capabilities is very important. I would be nice if Sealife were to produce wet lens for this housing, to allow for macro and wide-angle subjects. But I'm not sure if they could fit wet lens on this current housing model and also how they would align these lenses with the phone lens being in different locations.

Even with these minor faults I was very impressed by the images the housing and phone produced.

The only real problem I found with the Sealife housing was it being a little clunky in my large hands. Holding it with my right hand to operate the shutter release, I found quite a few times that my palm accidently pushed the buttons on the back of the housing, so changing the zoom and mode when I didn't want it



Giant frogfish

Blue angelfish.

Blue-barred parrotfish.

too. This could be solved by setting up an arm on this side of the housing for a hand grip. During my hour long dive the app showed the battery power of the phone had dropped 20%, which was not bad considering I had it running the entire dive and shot over 170 images and six videos. I suspect you could probably get three or four dives out of this setup, depending on the battery life of your smartphone.

For this test dive I was very interested to discover that the phone worked without a SIM card. I simply connected the phone to my wifi at home to download the Sportdiver app. So, if you are concerned about flooding the housing and losing all your phone data, simply remove the SIM card when you take it for a dive. But hopefully with the vacuum system there is little chance of a leak.

Overall, I was very impressed by the Sealife Sportdiver Smartphone Housing and think it is a good option for those

Day octopus.

wanting to take underwater images at a budget price. And with smartphones getting better with each new release, the Sealife Sportdiver Smartphone Housing has a big future ahead of it and I can see it being used by many divers that want a simple and easy to use underwater photography system.

The Sealife Sportdiver Smartphone Underwater Housing is available from Underwater.com at only $489.