

Fisheyes For FX

Replacing the 10-17mm

by Alex Mustard and Jeff Hartog

Fisheye lenses are considered special effect optics on land. Used occasionally to create fresh perspectives with their ultra wide coverage and barrel distortion. Underwater the situation couldn't be more different. Fisheyes are the mainstay of wide angle photography and there are many underwater photographers who shoot little else. They are popular because of the power they bring to underwater images, opening up space and cutting through the murk of the underwater world, as well as working easily behind dome ports.

Beneath the waves, their inherent characteristic, that they forego a rectilinear image to achieve their ultra wide coverage with characteristic barrel distortion, is not so problematic. We rarely have to deal with a horizon or straight lines in natural subjects, and experienced users become so used to composing fisheye images that it is hard to spot any barrel distortion in their shots. Unless, that is, they want you to see it for artistic reasons, such as to enhance the curves in a subject, such as a school of fish or the stern of a wreck.

Judging by my inbox in the last six months, triggered particularly by the arrival of housings for the 5D Mk2 and D700, has seen lots of people making or contemplating the switch to full 35mm frame digital. Of course, full frame digital SLRs have been around for a number of years, but certainly for Nikon users the D700 has thrust the option into the mainstream of underwater photography. And one of the first questions that



Seal – The Sigma 15mm offers considerably closer focus than the Nikon 16mm. If you are used to the 10.5mm or 10-17mm, the 16mm is disappointing in this regard. Nikon D700, Sigma 15mm, Subal housing. Inon Z240 strobes. 1/200th @ F13, ISO 800. ©AM

Soft coral in mangrove – Fisheyes are mainstream lenses underwater, opening up space and allow us to photograph the largest scenes from close distance. Their distortion is hidden by most natural subjects. Nikon D700, Sigma 15mm, Subal housing. Inon Z240 strobes. 1/125th @ F13, ISO 200. ©AM



comes up is “what lenses do I need?”. In this article we focus on the fisheye options for Nikon users planning the switch to full frame.

The choice, at first, appears straightforward. Nikon have made a 16mm fisheye for many years, case closed. Well not quite. We were all very happy with the 16mm when shooting Nikon film SLRs, but since we've tasted more exotic fruit. In 2006 Tokina released the 10-17mm zoom and underwater photographers quickly embraced it. The

biggest strength of a fisheye lens is that it is very wide, but this is also one of its biggest drawbacks. For some subjects it is just too wide meaning missed opportunities and wasted dives. The Tok neatly addressed this problem and most found that they could shoot almost anything with it. But frustratingly this DX lens has no equivalent in FX.

There is an amusing irony that many moaned about converting to digital because of the effect of the DX crop factor on their lenses,

and now it is a DX lens that it is causing similar complaints with changing back to FX. This is a new problem too, because the D700 and 5D Mk2 are the first mainstream full frame cameras released since the Tok. The situation was very different for Canon users, when original 5D appeared back in 2005.

The choice for the FX Nikon user comes down to two: Nikon 16mm and Sigma 15mm. I own both and although there are noticeable differences they are small; if you already own one, there is little financial sense in buying the other. I generally favour the Sigma, I find its more recent design produces marginally sharper images and it focuses considerably closer than the Nikon 16mm. The lack of close focus of the 16mm is also immediately noticeable when coming from a DX lens like the 10-17mm or Nikon 10.5mm. The Nikon 16mm, however, is better at resisting flare when shooting into the sun than the Sigma, and its removable filter holders make it much easier to fit and remove gels. But the bottom line is that both perform well giving the traditional 180° corner to corner coverage.

The biggest change from DX is depth of field. If on DX you usually shot at F8-11 then you really need to be at F13-16 on FX. This is particularly critical on close focus wide angle shots and for split levels, which require plenty of depth of field. FX cameras typically perform well at higher ISOs, so one solution to counter the need for smaller apertures is to increase the ISO. Alternatively, more powerful strobes become appealing to maintain the depth of field we've become used to.

The increasingly common solution to reduce the coverage of fisheye lenses is to add a weak teleconverter to the lens and a small port extension ring to your dome. Popular teleconverters include the Kenko 1.4x and 1.5x versions, although if you



are planning to buy one, take your camera and lens to the shop to ensure everything fits together. Not everything is compatible. Teleconverters do degrade image quality, but most people find the loss hard to spot and find the advantages of the option of an approximately 100° fisheye, with little distortion, far outweigh the negatives. I use this setup routinely and have shown the resulting images to many discerning eyes and nobody can see any drop in quality from using the teleconverter underwater.



Frogfish and sponges – The teleconverter combo can also be used with a small dome as a macro-wide angle lens. Nikon D700, Sigma 15mm, 1.5x teleconverter. Subal housing. Inon Z240 strobes. 1/25th @ F13, ISO 200. ©AM

Diver and cuttlefish – Using a teleconverter on a fisheye restricts the angle of coverage and also the distortion, creating an alternate wide angle optic. Nikon D700, Sigma 15mm, 1.5x teleconverter. Subal housing. Inon Z240 strobes. 1/90th @ F13, ISO 800. ©AM

The main role of the fisheye teleconverter setup is to provide an alternative focal length for wide angle, while preserving the fisheye tradition of performing well behind dome ports and the focus range of the lens. The angle of coverage with these teleconverters is comparable to the 17mm end of the Tok on DX, which many have found so useful. This focal length is particularly suited to big animal photography and tighter shots including divers. Of course, unlike with the Tok, we have to make the



Sponges in cave with diver – On FX it is important to stop down more than DX lenses to achieve a comparable depth of field in 180° close focus wide angle shots. Nikon D700, Sigma 15mm, Subal housing. Inon Z240 strobes. 1/30th @ F13, ISO 200. ©AM

choice before the dive. But on the positive side, for relatively little investment and baggage weight, this solution adds a new focal length to your arsenal.

Another use for the fisheye teleconverter is for macro-wide angle photographs, which I wrote about in UWP Issue 35, although to make the most from this technique it requires purchasing the small diameter dome port. This technique requires very short camera to subject distances, to achieve foregrounds with macro like magnification. A small dome is essential for getting a high quality of light onto the subject in such confines. The full possibilities of this technique cannot be released with typical sized domes.

In the last few months, my friend, Jeff Hartog has been experimenting with a third option, hoping to have the best of all worlds. And he has kindly agreed to let me report on his findings here. He has



At the widest setting, 10mm, there is slight cut off which needs to be removed either by selective cropping or cloning. ©JH

been experimenting with using the Tokina 10-17mm on a teleconverter on his D700, which converts it to approximately a 16-27mm fisheye zoom on FX. Ryan Canon dug out a zoom gear that worked with the Tok once the teleconverter was fitted.

In theory this approach should be troublesome and I was certainly sceptical. The Tok, for all the praise lavished on it by underwater photographers, rarely gets good reviews from land photographers because it suffers significant chromatic aberrations, manifested as clear purple fringing on contrasting edges towards the corners of the frame. It is reasonable to expect a teleconverter to magnify this fault. Furthermore, the Tok is known to be prone to hunting and failing to lock on subjects when autofocus, due to it being a slowish lens with a widest aperture of f3.5-f4.5. A teleconverter will make it slower still and should magnify any AF



Zooming in slightly eliminates any vignetting. ©JH

problems.

As Jeff says, “I did some quick tests in the pool, which demonstrated pretty decent performance beginning at f5.6 (f8 effective), with no cut off beyond 11mm. I was encouraged and took the combo on my trip to Jardin de la Reina. In the field, I was pleasantly surprised to see that my Frankenlens, as Alex subsequently dubbed it, retained the exceptional close focus ability of the Tokina without any apparent loss of sharpness. Furthermore I did not notice any significant decrease in autofocus speed on the D700, nor was there any apparent increase in purple fringing sometimes seen with this lens. In practice I have found that the Tokina 10-17 with 1.4 TC on my D700 performs just as it did without the TC on my D200, and is the perfect complement to my 17-35 for wide angle underwater action.”



Green wreck – With non-close focus wide angle shots, wider apertures give acceptable depth of field on FX. Nikon D700, Sigma 15mm, Subal housing. No strobes. 1/40th @ F7.1, ISO 800. ©AM

photography, where blue water will not reveal corner aberration issues, the Tok + TC is probably the best option, particularly if you already have one and can find a suitable zoom gear.

However, for all round fisheye work, I don't see an outright winner in the current choices for FX. All have their strengths depending on what you plan to shoot. At present the most accurate conclusion is it is different tools for different jobs. I have spoken to Tokina in the UK and their official response is that they cannot confirm or deny whether Japan is working on a full frame fisheye zoom. The 10-17mm has been a popular seller for them, and they are well aware that more and more photographers are switching to full frame. Watch this space.

Alex Mustard

www.amustard.com

Jeff Hartog

www.waterworldimages.com

We recently dived together in the Bahamas, photographing oceanic whitetips on a JASA/Wetpixel trip, and comparing our shots from prime fisheye and Tok both on teleconverter, there was no noticeable difference in optical quality. I also think that the D700, which shares its AF system with the D3 made up for any loss in AF performance. No teleconverter exactly matches the Nikon crop factor (1.57), so there will always be some cut off with the Tokina at 10mm on FX, but this is usually less than 5%. In any case, this can easily be cloned away or cropped out of the frame.

Certainly for big animal

We've got you covered!



Magic filters are now available in 3 options.

Original Magic for use in blue water with DSLR and compact cameras with Manual White Balance,

Auto-Magic for compact cameras in automatic point and shoot mode.

GreenWater Magic for use in green water with DSLR and compact cameras with Manual White Balance.

Prices start at just £19.

www.magic-filters.com