A field review on the

Sigma 100-400mm f5-6.3 DG OS HSM Contemporary

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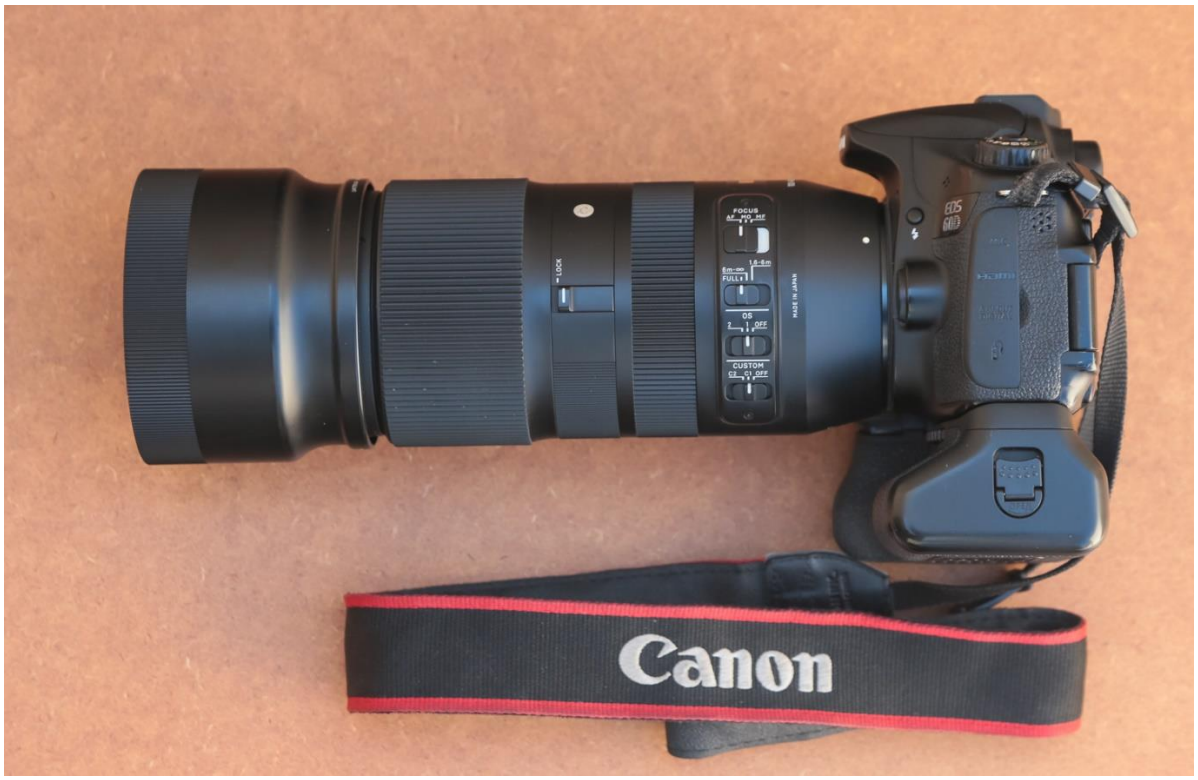


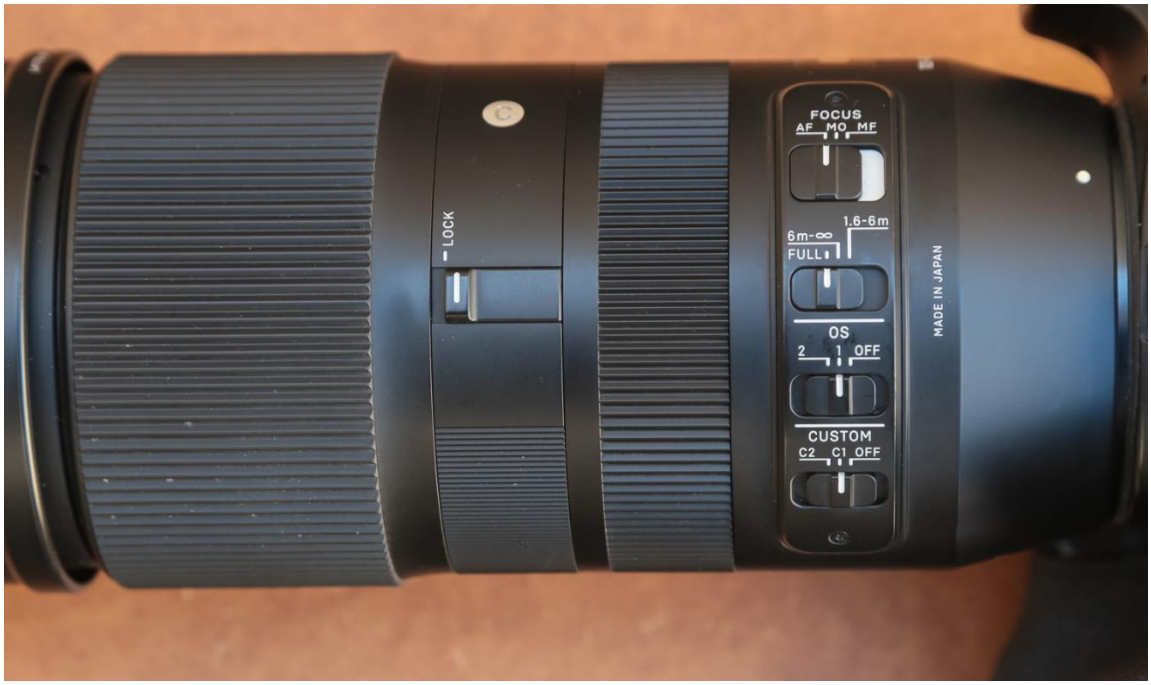
Introduction

The range of tele-zoom lenses covering anything from 80mm to 400mm is a quite heavily contested area of the market, with many manufacturers having a lens on offer. This Sigma 100-400mm f5-6.3 DG OS HSM Contemporary (hereafter referred to as the Sigma 100-400 C) offering fits perfectly in this market segment and is a good addition to their Global Vision design concept, specifically the Contemporary line.

Launched in 2017 already, this lens has gained popularity rather quickly, being a very affordable option when compared to some of the other similar offerings from other manufacturers.

Basic Specifications, Design and Switches

Listed below are the basic specifications of the Sigma 100-400 C lens, followed by a discussion on some of the important specifications and controls of the lens.



Controls of the Sigma 100-400 C:

Selector switch panel from top to bottom: focus mode switch AF/MO/MF, focus limiter switch, optical stabiliser switch, custom selector switch.

From left to right : broad rubberised zoom ring, zoom lock switch, knurled plastic manual focus ring, selector switch panel.

Lens Construction	21 elements (4 of which are SLD) in 15
Angle of View	24.4°-6.2°
Number of Diaphragm Blades	9 (rounded)
Maximum Aperture	f5 – f6.3
Minimum Aperture	f22
Minimum Focusing Distance	160 cm
Filter Size (mm)	67 mm
Maximum Magnifications	1:3.8 (0.26x)
Dimensions (Diameter x Length)	182.3mm x 86.4mm (without lens hood)
Weight	1.16 kg
Mounts available	Canon EF, Nikon F, Sigma SA. Can be used with mount Convertor MC11

Focus mode switch AF/MO/MF: Offers the standard auto focus (AF) and manual focus (MF) modes. Also includes MO which is Manual Override allowing the manual focus ring to be operated even when the focus is on continuous AF mode. How often this will be used remains to be seen, I didn't find the need to use this feature, but as usual it's nice to know it's there if you need it. An ultrasonic type focus motor that Sigma calls HSM (Hyper-Sonic Motor) for a fast and quiet AF function is standard for this lens.

A focus limiter switch: providing the following settings: 1.6m – 6m, 6m – infinity and the full focus range.

Optical Stabiliser Switch: A two stage OS is included:

- Mode 1: Normal OS in both horizontal and vertical planes
- Mode 2: Panning mode – OS in the vertical plane only

Custom Selector Switch: using the USB Dock (sold separately, and which basically looks like a rear lens cap with electronic contacts and a USM cable) with the free Sigma Optimization Pro software the user can update the firmware of the lens and add custom settings to his lens setup for AF, OS function and focus range. Different settings can be stored in two memories, C1 and C2. More on this later in the review.

Mass: This is not a heavy lens for the zoom range it offers, tipping the scales at 1.16 kg it is quite a bit lighter than the similar Canon EF 100-400 MkII at 1.7 kg, the older Canon 100-400 MkI version at 1.38kg, and Sigma's older 120-400mm f4.5-5.6 OS APO at 1.75 kg. Definitely a bonus for this lens when handholding or used by a more petite photographer.

The lens is not fitted with a tripod mounting ring: I believe it is not a very negative aspect, the lens being rather light and easy to handhold, also makes it more compact.

The capable OS system: helps to keep things steady when handholding at marginal shutter speeds, further negating the absolute need for a tripod mounting ring.

The zoom mechanism: is of the familiar twist operation, but it can also function as a push/pull system. A rubberised, knurled zoom ring is fitted towards the front of the lens, where I like it, easy on the hand when holding the lens. A slightly less than 90 deg anti-clockwise twist gets you from 100 to 400mm. The twist zoom action is smooth and secure. The lens will stop down to f5.6 at about 115mm, and to f6.3 at about 235mm

An indentation around the base of the lens hood aids in a secure grip when using the lens with a push/pull zoom action. I don't like push/pull actions, but this one is smooth and easily controllable. A zoom lock switch is fitted which securely locks the lens at 100mm for safe carry.

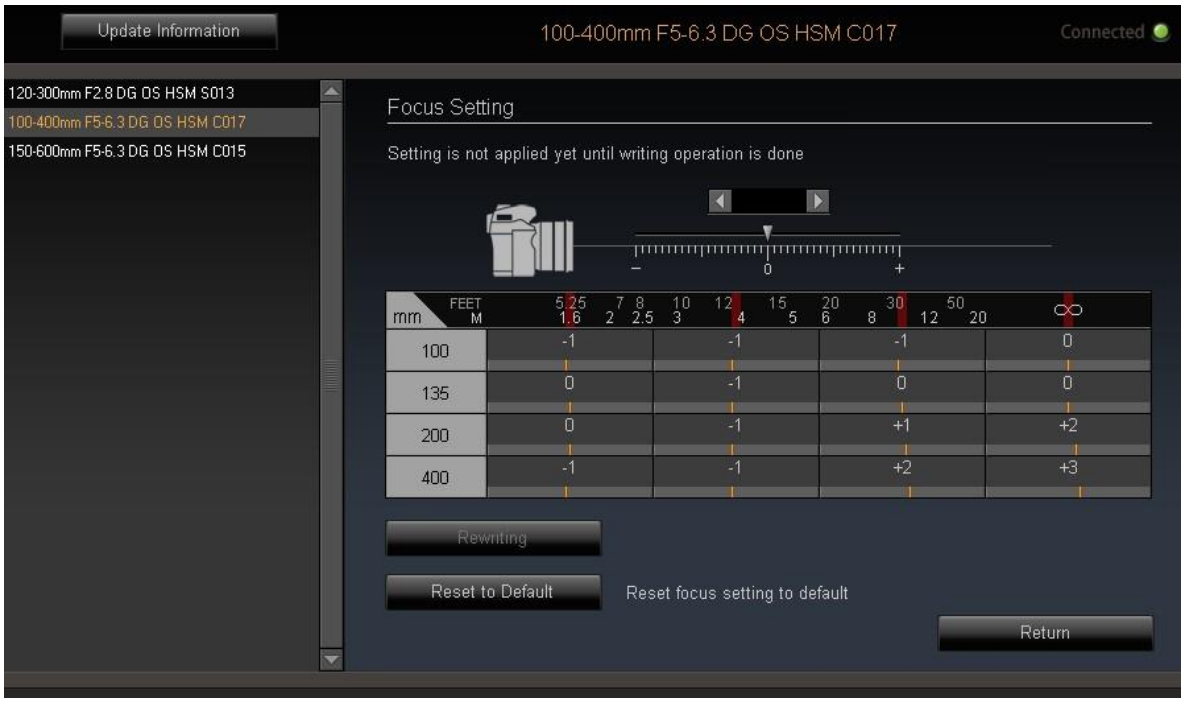
The manual focus ring: is fitted towards the rear of the lens and is not rubberised but of a knurled plastic design. Good enough for me, I really don't think it will see much use anyway. Most users will rely on the internal AF system with its quiet and quick HSM design.

Size: The plastic lens hood fits in place with a secure click mount. With the lens hood fitted it sticks out 241mm in front of the camera at 100mm zoom, and around 303mm when zoomed to 400mm. I didn't find it overly bulky or unwieldy. Definitely easier to swing around than my Sigma 120-300 f2.8 Sport, and a Sigma EX 120-400 OS which I had on hand, borrowing it from my niece as a comparison.

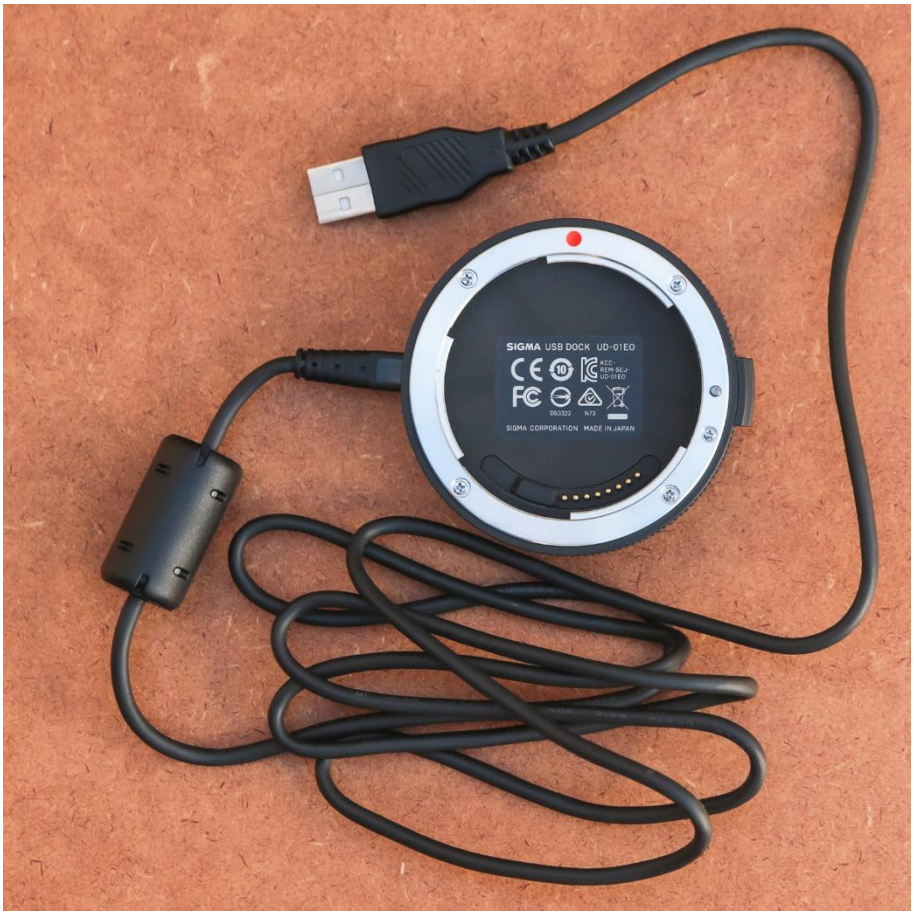
Weather sealing: A prominent dust and splash protecting rubber seal around the lens mount is a nice to have.

Calibration

I always check the AF calibration of every lens I review, irrespective of brand. After setting up my depth of field test apparatus of my own design, I connected my USB dock to the lens and using the Sigma Optimization Pro (SOP) software, first of all updated the firmware of the lens (internet connection required for this). Making a note of the zoom and distance settings recommended by the SOP software, I took the calibration shots and evaluated them. After making the conclusion that there was a slight front-focus offset at shorter zoom settings, and a slight back-focus offset at long zoom settings, I adjusted according, and wrote the new stings to the lens, The follow-on check proved that I got them right first time. Refer to the screen capture of the software for my final settings.



Screen capture of AF calibration settings



USB Dock

As I usually do with the Global Vision Sport and Contemporary lines, I registered on the C1 custom setting the AF Speed Setting to prioritise the AF drive motor to achieve fast initial focus. OS priority was allocated to the C2 custom setting. As a side-note I have always found the USB Dock and software very easy and intuitive to use. One does have to be connected to the internet for the automatic check on firmware updates, but once done you can just close those request screens and move to the customization screen. After changing and setting those parameters you wish to change, remember to write the settings to the lens by clicking the “Rewriting” button.

Handling

The weight of this lens makes it really easy to handhold. It also makes tracking moving objects easy to follow and keep in the frame. The more compact dimensions in length and diameter helps to make it feel comfortable in the hand, even with smaller hands unlike my gorilla paws. My niece, who is rather slight of built, also

found the 100-400 C easy to hold and use and preferred the feel of the lens to her older Sigma 120-400 OS.

The switches were easy to manipulate, clicking positively into a setting, and staying there unless specifically set again.

With the lens still quite new there was no zoom creep as many external zoom lenses exhibit, more so when worn in a little. Might come with time, might not. The zoom function was easy, smooth and not overly stiff, but very controllable in either twist or push/pull operation.

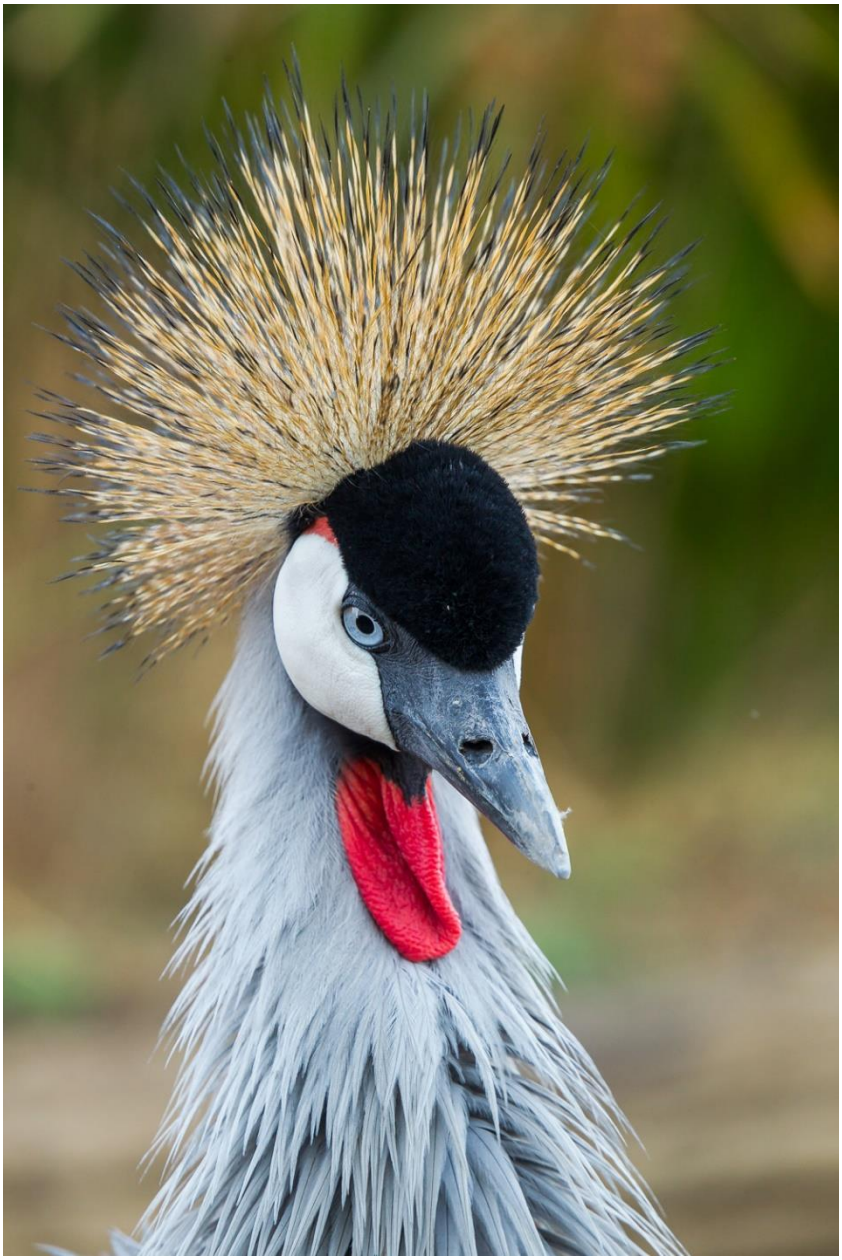
For the field evaluation of this lens I had lined up my Canon EOS 1D X, 1D MkIV and 60D camera bodies. The mirrorless Canon EOS M5 with EF to EF-M adapter was also thrown in the mix. I can confirm the lens worked perfectly on all four Canon bodies. Only odd thing I noticed was that when I added the Canon 1.4x Extender with the two EOS 1D series bodies, I could not select any AF point other than the centre one, and centre expanded with 4 surrounding on the 1DX. With the extender the AF worked fine, if a little slower which was to be expected with the aperture reported on the camera as f9. Unfortunately, I don't have a Global Vision TC-1401 which could perform electronically even better than my Canon 1.4x MkII. Maybe one day I can do a comparison on this.

In the field

Due the Level 3 lockdown regulations in effect at the time of the review, I could not fully test the lens in the typical family sporting environment, with all professional sports which I cover on a regular basis such as motorsport (although I did get to a round of off-road racing but no track racing), rugby, cricket and athletics being suspended. Fortunately, the in-province nature reserves were re-opened, so I could manage some birding and wildlife testing, as well as some general close-up and otherwise standard stuff for the review.

Visiting local nature reserves allowed me to test the Sigma 100-400 C on some static birds and animals and do a first evaluation on the performance with birds in flight. In addition, I also tested it with the aforementioned 1.4x extender fitted to my Canon EOS 1D MkIV body.

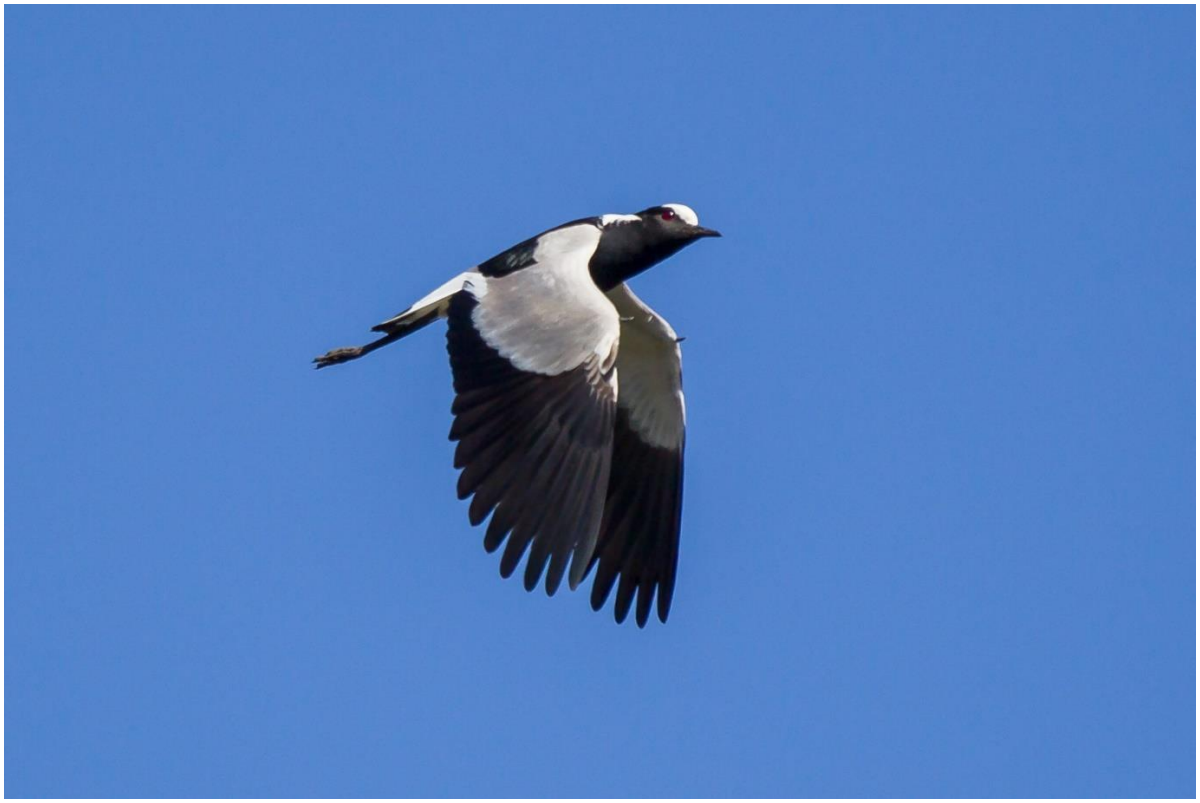
With the lens on the C1 setting (see calibration section) the OS still performed quite well. Refer to the image of the Grey Crowned Crane – when attempting the shot handheld without the OS, the image was rather soft and blurry, even though I tried to hold the camera as steady as I possibly could. Switching to OS Mode 1 made a huge difference, resulting in a sharp portrait of this endangered bird species with a 1/80 shutter speed on 361 mm (x 1.3x crop factor = 470mm effective focal length). Impressive performance indeed.



Grey Crowned Crane. EOS 1D MkIV, 361mm, 1/80, f7.1, ISO 800, OS Mode 1, handheld

The focus tracking with the 1D series bodies should be good enough for most users except the true professional who demand only top performance, available from the professional lenses at between three and ten times or more the price of this little lens. I found it to search for lock-on a few times in low light shadowy areas, something which also occurs with other lenses in this class and price bracket. Bright sunlit areas had no such issues. AF was slower compared to my Sigma 120-300 f2.8 Sport lens, which I expected, and faster than the older Sigma 120-400 OS which

I used as a comparison, also which was expected. Sigma definitely improved on the HSM functioning On the Canon EOS 60D it was slower to capture birds in flight, with a hit rate of about 30% on panning shots, compared to 75% on similar shots taken with the 1D series bodies. Using my Canon EOS 1D MkIV to capture a series of the Blacksmith Lapwing on a flyby, I managed 4 of 5 shots very sharp, with the camera set to 7 fps instead of 10. The slower frame rate I believe helps to keep the keeper rate on sharp images higher, allowing the lens and camera AF system to update the tracking focus on a subject. Tracking and capturing a gliding Rock Dove at 10 fps yielded only 3 of 6 frames sharp. Generally, no surprises here, and overall, I was quite impressed by the AF performance delivered by this lens.



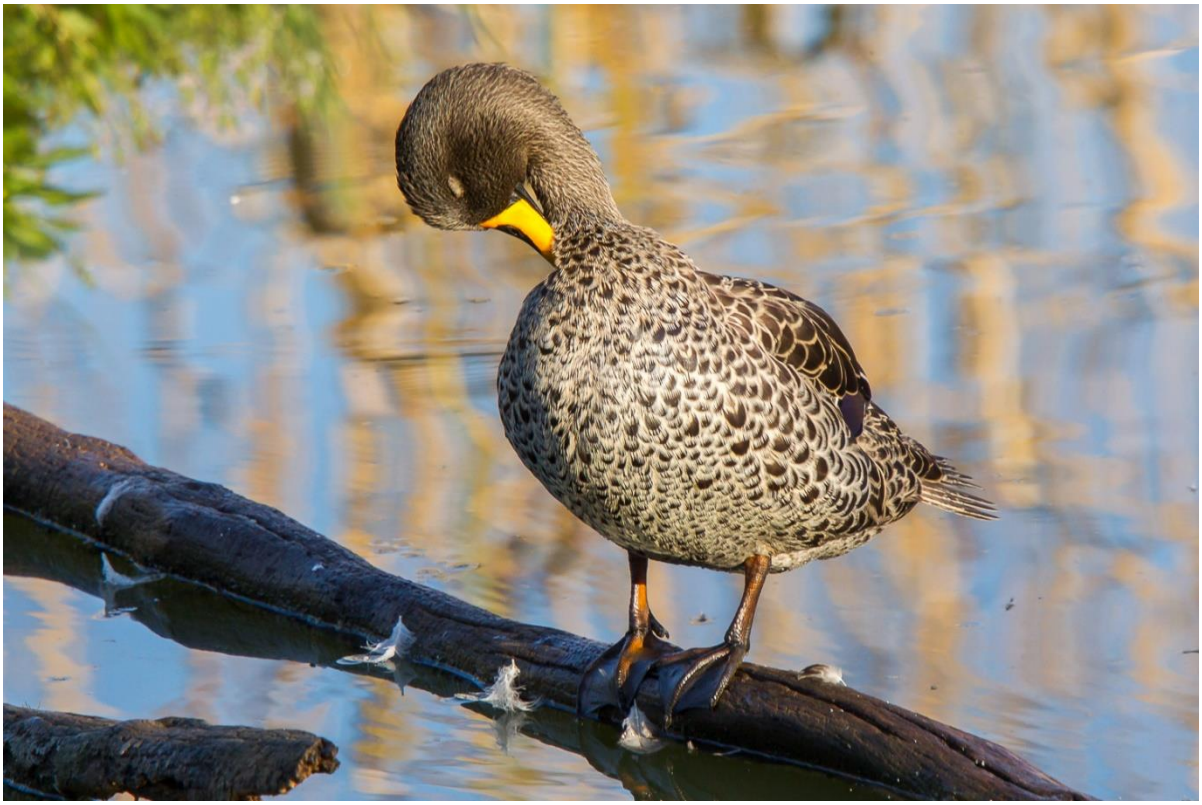
Blacksmith Lapwing. EOS 1D MkIV, 400mm, 1/1600, f6.3, ISO 400

Being so easy to handhold the lens, I also pre-focussed on a Southern Masked Weaver busy building his nest. With my arms not tiring quickly I could easily keep the pre-framed nest in place, and with peripheral vision from my left eye (I always shoot both eyes open) could see the bird approaching and time my shutter release to capture the best moment with a two shot burst.

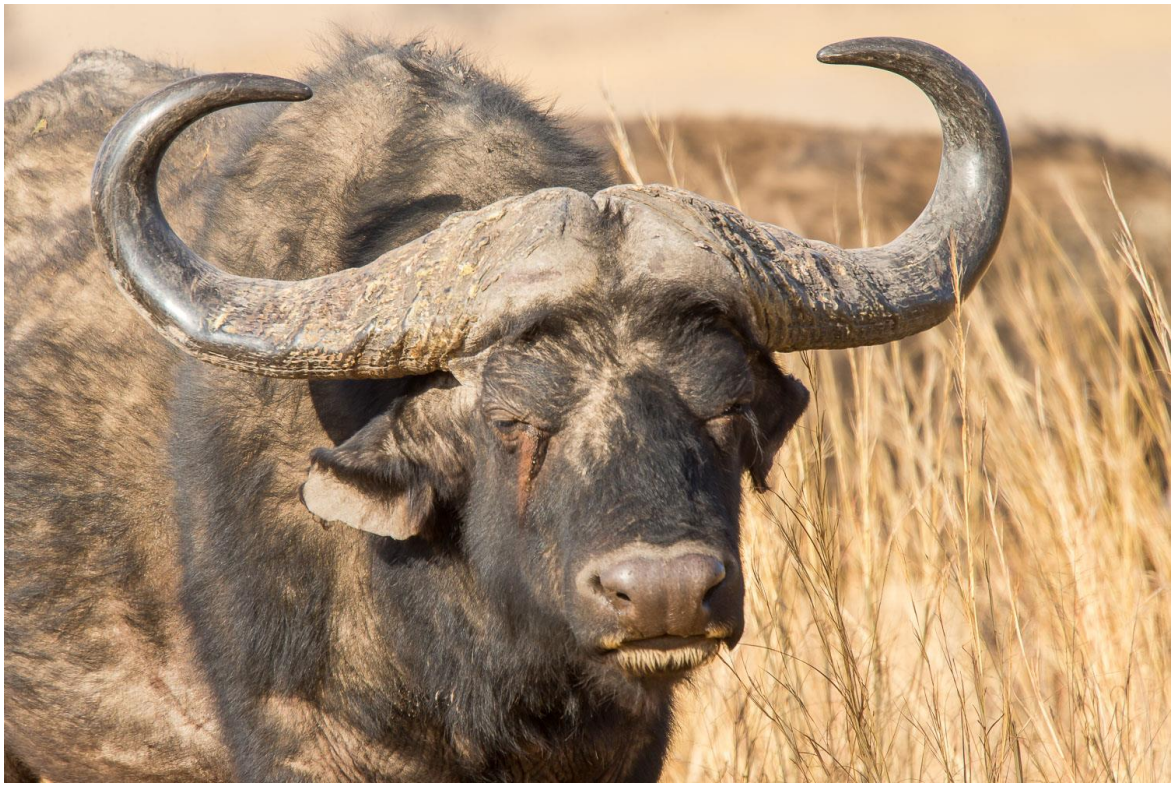
As mentioned earlier, I also used the lens fitted with my Canon 1.4x MkII Extender. I really didn't expect stellar results here but have to admit the images turned out quite useful. AF was slower to pick-up and lock on as is usually the case when fitting an

Southern Masked Weaver. EOS 1D MkIV, 315mm, 1/1250, f7.1, ISO 1600

extender to a lens. AF tracking on fast flying birds difficult even with my EOS 1D MkIV body, and slightly better with my EOS 1DX, provided the subject didn't move faster than walking pace at closer distances. It can be used in a pinch when more reach is required but be sure you have good lighting. Just accept that image quality will be more degraded with the extender fitted to this lens than when fitted to more expensive and faster professional series lenses. The Yellow-billed Duck preening was stationary and in good light, making it ideal to use the 1.4x extender on the lens. When using the extender, it definitely helps to stop down from f9 to f11 to increase sharpness and finer detail and I actually achieved some surprising results in detail and sharpness after stopping down.



Yellow-billed Duck. EOS 1D MkIV, 560mm, 1/320, f11, ISO 800



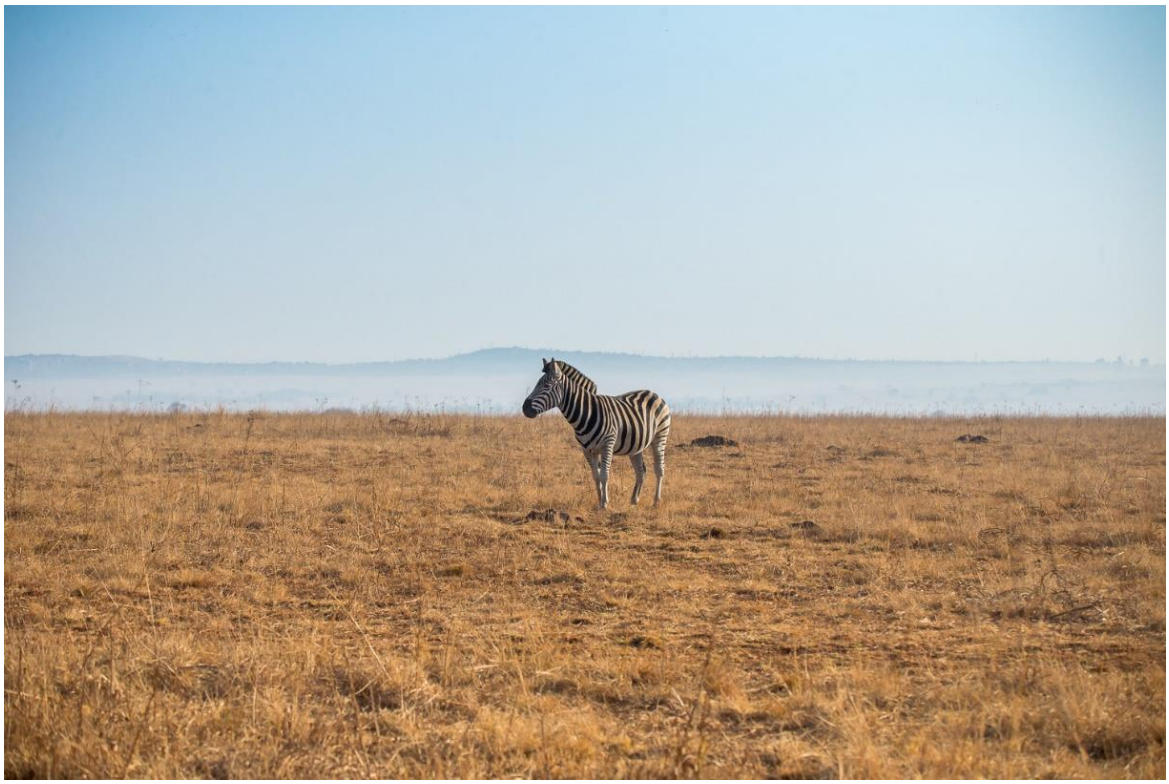
Buffalo. EOS 1DX, 560mm, 1/250, f11, ISO 800, uncropped

The extender also helps to keep your distance from the more dangerous game such as the Big 5 and still get tightly framed shots of them. The Buffalo image above serves as an example, keeping your distance means you have more time to react in the event of him getting annoyed by your presence.

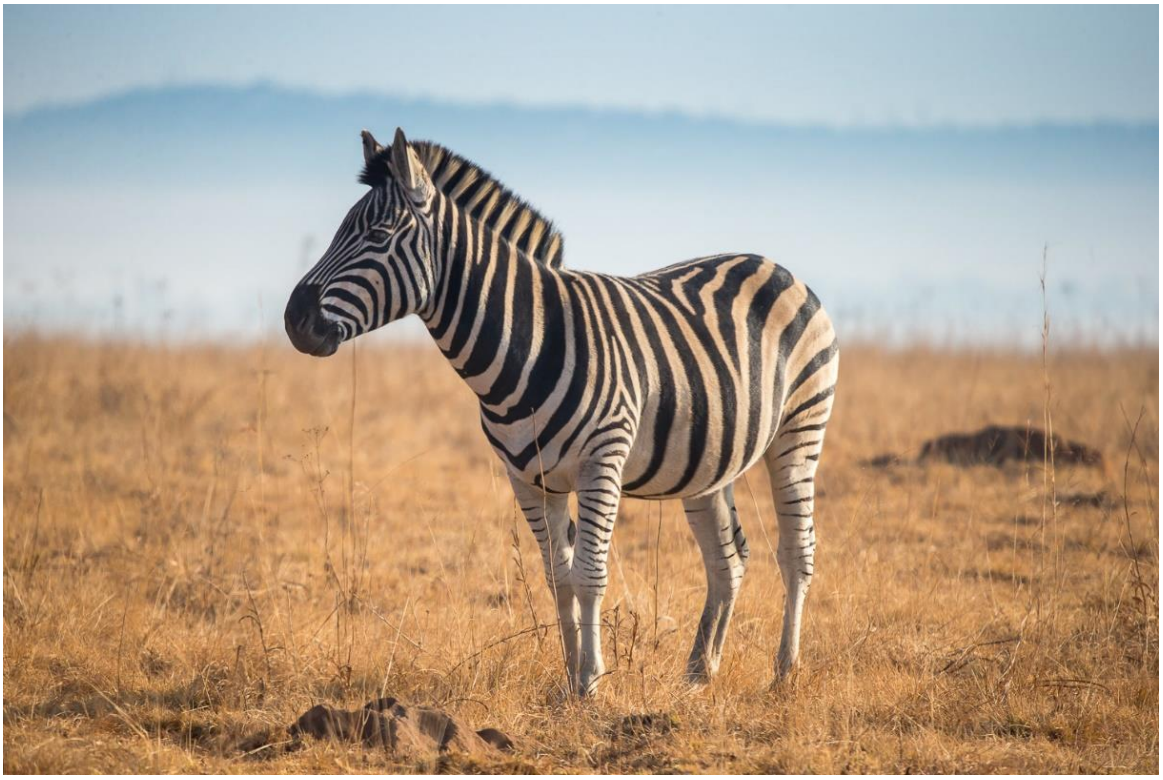
The rather short minimum focussing distance of 1.6m is very handy for those small birds perching close to the camera, or for capturing flowers or other close-up subjects. The photo of the yellow metal flower with the bug in the centre is used for my macro students to practise their minimum focus techniques. The yellow petals will fit in a circle with a diameter of 10 cm, whilst the dark centre disc is 3cm in diameter. Just as an idea of what you will achieve with this lens using a full frame camera (my Canon EOS 1DX) and minimum focus distance for 0.26x (or just over quarter lifesize). The inset photo was taken with a true macro lens (Sigma EX 150mm OS Macro) at minimum focus distance for 1:1 lifesize magnification.

The Sigma 100-400 C does perform rather well as a close-up lens, but it is definitely not a pseudo macro lens. Sigma also does not market it as such. I can see it being used to capture flowers, large insects with some heavy cropping and so on.

Main photo – Canon EOS 1DX with Sigma 100-400 C, 400mm, minimum focus distance. Inset photo - Canon EOS 1DX with Sigma EX 150mm OS Macro, minimum focus distance. No cropping on both photos.



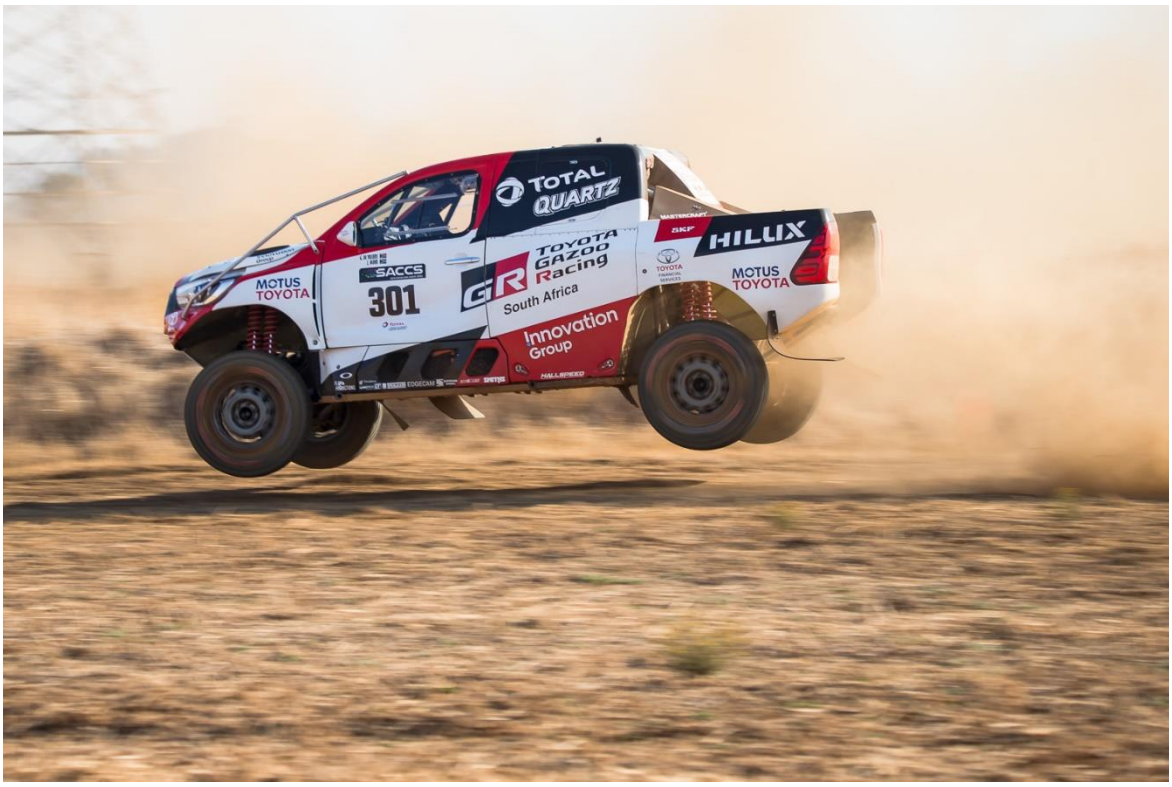
Canon EOS 1DX, 100mm, no cropping



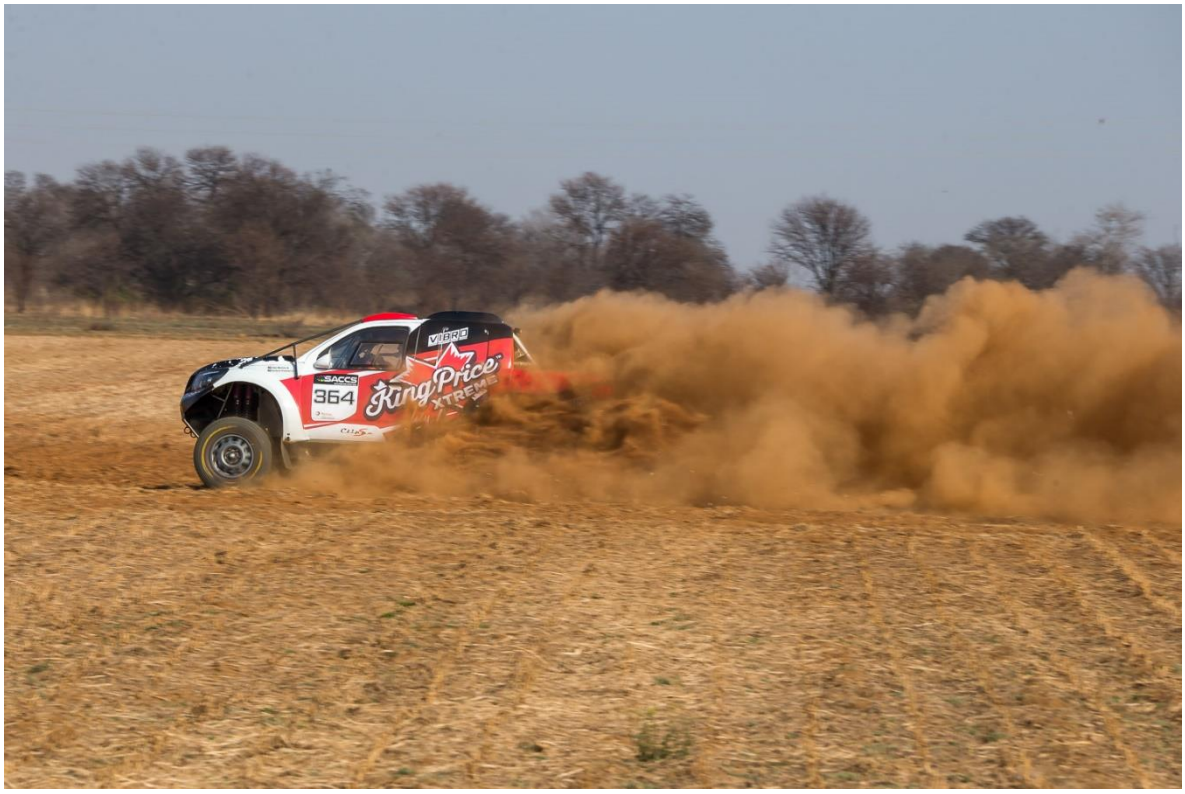
Canon EOS 1DX, 400mm, no cropping

The zoom range of the Sigma 100-400 C is quite handy, as is shown by the Zebra images above, the same scene captured at 100mm, then zoomed in to 400mm. This zoom range enhances the versatility of the lens and makes one of the ideal lenses for wildlife photography in our many reserves and should also be good for most sporting events in daylight conditions.

When the opportunity arose to cover the first round of the SA Cross Country Series since lockdown started in South African during March 2020, I grabbed it with both hands, so eager to do motorsport again, and I just love off-road racing. Using my EOS 1DX with the Sigma 100-400 C, I was quite pleased with the capture of Dakar legend Giniel de Villiers with co-driver Juan Mohr reading the notes in their Toyota Gazoo Racing Hilux. Again, the zoom range helped me so stay in spot, take the panning shot and follow the cars into a fast left-hand sweep by just zooming in. Panning auto focus was good, I managed a keeper rate of around 80% which is good going under the varying speed and angle of attack conditions experience.



Dakar legend Giniel De Villiers and Juan Mohr, Toyota Gazoo Racing Hilux. EOS 1DX, 137mm, 1/200, f5.6, ISO 50.



Clint Weston / Gerhard Snyman Team King Price Extreme. EOS 1DX, 213mm, 1/250, f11, ISO 200

General impressions

Other than what's already reported above, I would also like to mention that this lens, although very good in its class, does have limitations such as the corners going a little soft at f6.3, but getting better at f8. Not peculiar to this lens, but a common trait amongst just about every entry or mid-range lens, with some professional lenses suffering also from this, but less so. I am not really bothered by this, because on a 1.6x crop Canon body it will be less noticeable because that outer section of the glass is not used to capture the image and it is really seldom that you'll get to fill the borders and corners of the frame with some subject with fine detail. Certainly not easy to do when doing birding or wildlife, sports, or general photography. So, the softer corners shouldn't bother you unless you like shooting billboards full in the frame or sell photos of full frame test charts.

Same applies to vignetting where the corners will lose about 1 stop of light, most noticeable when shooting against a clear sky. Again, not a big issue for the enthusiast photographer and this is usually taken out by a clean-up crop anyway.

I do not feel the maximum aperture of f6.3 will be good enough for stadium lighting events; typical settings for rugby matches played under the stadium lights with my current kit are 1/1000, f2.8, ISO 2500. The slower f6.3 will force the ISO setting

upwards and introduce unacceptable noise levels for high quality output. If possible, I will do a follow-up to this review and test the lens on some more motorsport and daytime rugby as well, when we can cover those events again.

Conclusion

The Sigma 100-400mm f5-6.3 DG OS HSM Contemporary lens is a really good performer in its class. It offers good image quality, AF performance, sturdy build quality, light weight and compact dimensions in a very affordable package. You get a lens not much bigger in size than the typical 70-300mm lens, but with 100mm more reach. I feel this lens is aimed at the beginner, more advanced and enthusiast photographer who would like to have a lens with the above-mentioned qualities in his gear bag. I really like the lens, its compact size, quality output and easy handholding features makes it easy to like.

Feel free to comment or request more information, just drop me an email at simondp@actionimage.co.za. Also visit my website www.actionimage.co.za for more reviews done by me.