

# Canon RF 800mm f11 IS STM

## A field review

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### Introduction

The Canon RF 800mm f11 IS STM (hereafter referred to as the RF 800/11) is a lens that has always intrigued me ever since it was introduced in July 2020. An autofocus f11 fixed aperture, 800mm prime lens seems like magic when looking at the price and initial specifications, but “caveat emptor” (the buyer alone is responsible for checking the quality and suitability of goods before a purchase is made) comes to mind when doing a little more research on this lens, and it’s smaller sibling, the RF 600mm f11 IS STM. Just by reviewing the basic specifications, a knowledgeable photographer should already be able to recognise some pros and cons to this lens.

### Specifications

Focal length range: 800mm

F-stop range: f11 (that’s it)

Filter diameter: 95mm

Minimum focussing distance: 6m

Image Stabilization: Optical IS, Single phase only (no panning mode)

Focus motor: STM

Focus method: Internal, front element does not rotate during focus

Weight: 1260g

Accessories: front and rear lens caps, lens hood with bayonet mount and locking clip.

Not weather proofed

### In the hand

One can immediately recognise that this lens is a lightweight, only 1,26 kg which for an 800mm is exceptional. (The Sigma 300-800 f5.6 lens I used on loan weighs in at a whopping 6.5 kg) It is also quite compact for an 800mm lens, which makes portability and packing in a camera bag a lot easier.



**Size comparison: typical EF 500mm f4.5 top, RF 800/11 (extended) bottom**

Do take note that the fixed aperture of f11 means good light and/or higher than usual ISO settings for shutter speeds to avoid camera shake (where the IS helps a lot) and subject blur (where IS doesn't help). The lens IS with the in-body IS does help to avoid camera shake a lot, and I was able to get good results with shutter speeds of 1/100, handheld, on stationary subjects but note that there is no panning mode IS on the lens.

The lens is manufactured from rather sturdy, strong plastic with a metal mount. The front of the lens barrel has a protective coating which feels rather rubbery but secure in the hand.

Switches on the lens body is pretty basic and normal for just about every lens these days. On the left side of the body, you'll find sliding switches for the AF limiter which can be set to full range or +20m, the AF/MF sliding switch below that, and the single setting Stabilizer On/Off switch which is the bottom one of the three.

On the lens barrel one will find the RF Control Ring (nice silver colour which makes it stand out and can be set in-camera to provide a function / setting to your liking), the MF knurled ring, which is easy to grip and operate, and the course ribbed lens barrel lock ring. This ring is used to unlock the lens barrel, extend it into the shooting position (push-pull mechanism: push to extend, pull to retract) and lock it in the extended position again. When stowing the lens the reverse applies – unlock, pull, lock.



**Left Photo: Controls and switches. From left silver RF Control Ring, Knurled MF Ring, Switches for focus limiter, AF/MF selector, Stabilizer On-Off, knurled Lock-Ring for Lens Barrel.**

**Right Photo: Standard threaded mount**

On the bottom of the lens is a standard threaded mount for fitting a sling or mounting a quick release plate when using on a tripod. There is no rotating collar.

The lens hood is of the bayonet mount type, with a push-button lock, a feature I like.

### **Performance**

I used the lens on my Canon EOS R6, and overall it proved to be a good combo for the aspiring wildlife photographer, when used within its limitations.

One strange anomaly I noticed was that with the camera in Tv mode, it would adjust the Auto ISO to reach the target shutter speed set for the fixed f11 aperture, but with Av mode it would not compensate for focal length with Auto ISO and higher shutter speeds, sticking to 1/30, to 1/250 in lower light conditions with ISO setting of 400 or even 200. My suggestion would be to set the camera on Tv mode, a high enough shutter speed for the intended use, and Auto ISO within useable digital noise range for the camera in use.

Also note that the design of the lens, f11, only allows for focussing using the centre section of the lens. Not all the focus points will be at your disposal.

Optically the lens can deliver surprisingly good results. With my test target (note that the petals of my test target flower will just fit inside a 10cm diameter circle) at the minimum focus distance of 6m for the RF 800/11, I compared the results with my trusty and ancient Sigma EX 500mm f4.5 (hereafter referred to as EF 500/4.5) with EF-RF adapter on its minimum focus distance, which is 4m. Results showed that the magnification effect is almost the same but with an edge to the RF 800/11. Officially the RF 800/11 yields a magnification ratio of 1:7.1 where the EF 500/4.5 does 1:7.7.

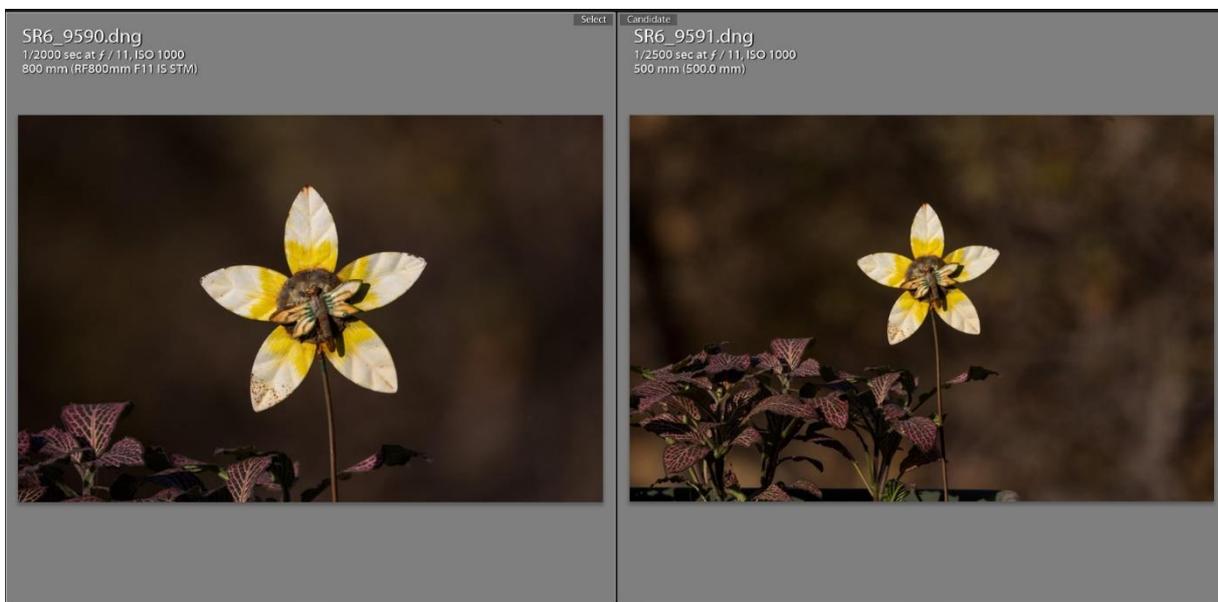
The optical performance of the EF 500/4.5 is better in the finer detail department than the RF 800/11 on comparable settings. Given the relative price range of the two lenses, the RF 800/11 did quite well, an aspect which showed up during field testing of the lens. You only need the operator to perform, set the camera correctly, and have ideal lighting conditions to achieve more than acceptable sharpness.

I found that corner detail on the RF 800/11 is quite acceptable, seldom will you use the absolute corners in any case, usually removed through a slight crop.



**RF 800/11 and EF 500/4.5 detail comparison, both in their respective minimum focus distance (images zoomed in)**

The extra reach provided by the RF 800/11 when compared to my EF 500/4.5 from the same 6m distance is quite clear, as can be seen below. 800mm will obviously provide the better result on subject in-frame size, which is one of the strong points of the RF 800/11 lens.



**RF 800/11 and EF 500/4.5 reach comparison, both from a 6m focus distance (images are full frame)**

One shot AF was accurate and fast enough in good lighting conditions, slower and a little hunting in low light, early morning conditions. Nothing strange here though, f11 is a little limiting on light ingress to the sensors.

The slower AF also proved to be less effective when tracking birds in flight in lower lighting conditions. The need for higher ISO settings to achieve high enough shutter speeds also showed up. In general, you'll need an ISO speed at least two to three stops higher than with your fast f4 or maybe f5.6 lenses, which may lead to digital noise issues.

One shot AF proved the acceptable optical quality of the lens, f11 no doubt helping due to increased depth of field. My neighbour's cat played model for this test, her eyes and fur making for good subject material. AF was quick enough to lock on, even with the late afternoon but still sunny conditions.



**One-shot AF test, handheld, 1/320, f11, ISO 500**

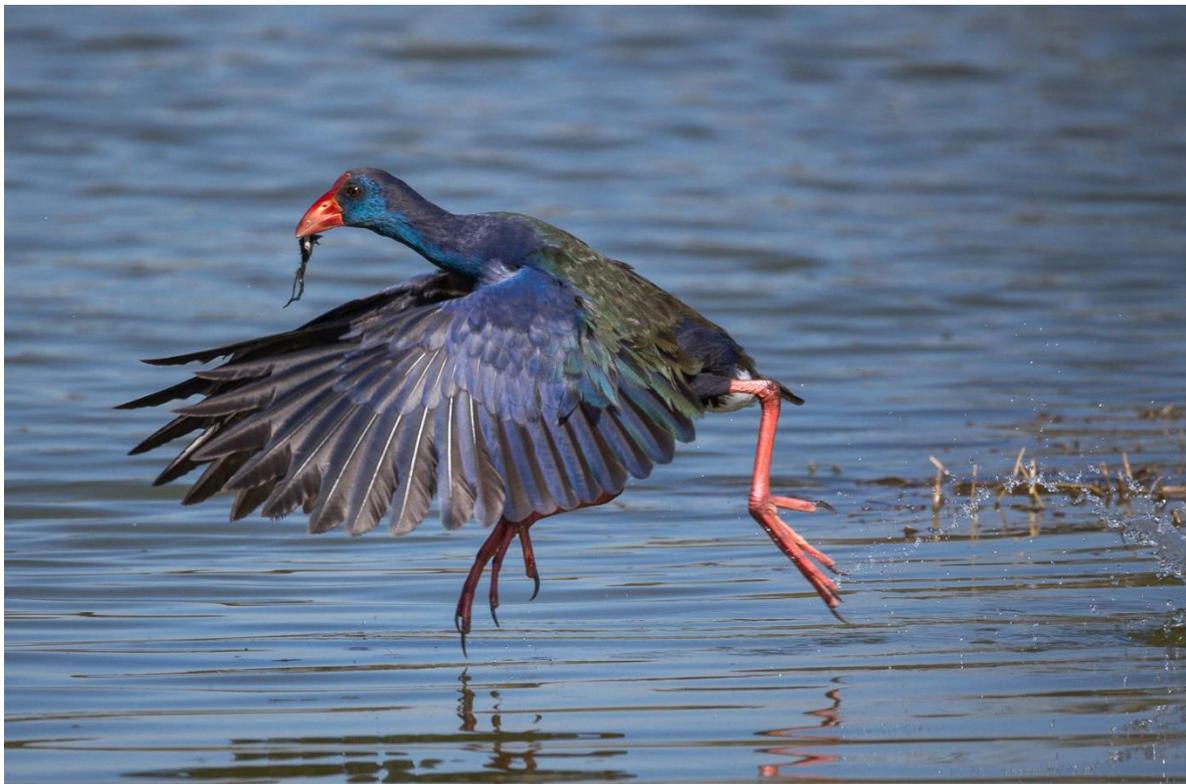
AF tracking was more of a challenge though, more so on faster flying birds. The lens copes quite well with subjects where you can start tracking from a distance, slower and straight flight patterns, but adjusting for changes in direction is not handled the best, with the lens losing AF and then taking a second or two to reacquire it. This resulted in losing about 70% of faster in-flight shots, and 40-50% of the slower flights. Typical here I would get better than 75%+ with my other long tele lenses of faster f-stop design under similar conditions. Snap-shooting with the lens for quick fly-by's did not go well, seldom working out. Please note that my camera is set up properly with the parameters as I would use for the conditions with my normal use lenses. The difference in performance here was quite noticeable, but also note that my normal lenses are three to four times the price range.

With eye-detect animal tracking focus the results are a little better than without, especially if the bird is moving slowly in the frame, and no sudden movements. The focus indicator on the eye locks on after about 0.5 s of picking up the bird, and normally stays locked on if the subject movement is not too irregular. Helps with the longer reaction time and pre-tracking opportunities.

The composite image of the African Sacred Ibis in fast fly-by was a series of 6 images, with only four presented here, only the image top right proved to be sharp. I could actually see the focus fading in the viewfinder. Sharp focus was almost acquired just before the bird disappeared behind a tree. Eye-detect tracking failed me here.



Tracking AF test, handheld, 1/800, f11, ISO 400 (1 in 4 sharp enough, medium shutter speed)



African Purple Swamphen, eye-detect focus tracking, 1/2000, f11, ISO 1000

Using high shutter speeds yielded better results since subject blur was also minimised, but the keeper rate was still not close to the same level as I would experience with my 500 f4.5 with a 1.4x Extender fitted for effective 700mm f6.3. I did manage some really good captures though, as with the African Purple Swamphen, where 4 of 6 images in that series proved sharply focused. The feather detail is very good indeed, and a series I was really happy with. The bird doing a not too fast stroll in a straight line also helped, relative speed here was slower than with the Ibis flypast. About 5 minutes before this, the Swamphen moved from left to right, slightly faster, with four shots snap-shooting and not a single focussed frame, there not being enough time for the lens to acquire the subject, focus and track it.

## **Conclusion**

I see the lens as a lower mid-range lens for the beginning birding or wildlife photographer, on a tighter budget, or petite and younger photographers wanting a lighter, more compact long tele lens.

The RF 800/11 most definitely fills an empty place in the market; those wanting a long prime telephoto lens, light, not too bulky in use and handling, acceptable AF performance and good enough image quality under the right conditions, and with an affordable price should consider taking a long hard look at this lens. If your birding or wildlife photography is generally under more demanding conditions, it might not be the lens to go for.

Many thanks to my buddy Conal Benson for loaning me the test lens.