In digital photography, image resolution is intricately linked to the density of pixels. Simply put, the more pixels that make up an image, the more you can zoom in without the image appearing degraded or pixelated. However, there are limits to how many pixels manufacturers can cram onto a sensor. There is a trade-off between pixel size and the ability to capture information – bigger pixels capture more light and thus work better at low light levels. Also, adding pixels increases the amount of information that the camera needs to process, limiting the rate at which pictures can be captured – often a crucial factor for wildlife photographers. These limitations can be offset by improved technology and there has been a steady increase in resolution, frame rate and low-light tolerance of digital cameras. In resolution, frame rate and low-light performance by quite some way – but they are very expensive and a lot heavier to lug around. Plus, if you are shooting birds that are rather small or distant, then the full-frame sensors on both these cameras might encourage you to consider the advantages of a crop sensor body, which substantially boosts your effective resolution. Here Canon’s 7D II and Nikon D500 are the obvious choices, boasting 10 frames per second and the same resolution as the much more expensive professional bodies crammed onto a cropped sensor.

If frame rate is less of an issue and you want to capture stunning, high-resolution images of birds (and other subjects), then the best options probably are Canon’s 5Ds and Nikon’s D810. For those who also value video capability, the new Canon 5D IV is an attractive option as it offers more than three-quarters the resolution of the 5Ds with a slightly faster frame rate and 4K video capability.

I’ve had the opportunity to use the 5Ds for a few months and am seriously impressed by the image quality. But its pixel size is similar to that of the 7D II, so it offers only roughly the same resolution within the cropped area as the 7D, at half the frame rate. For now, the 7D is my camera of choice for most birding applications, with the 5Ds used mainly for landscapes and general photography. But when I’m close to the action, I’ll probably wish I had a 1Dx!