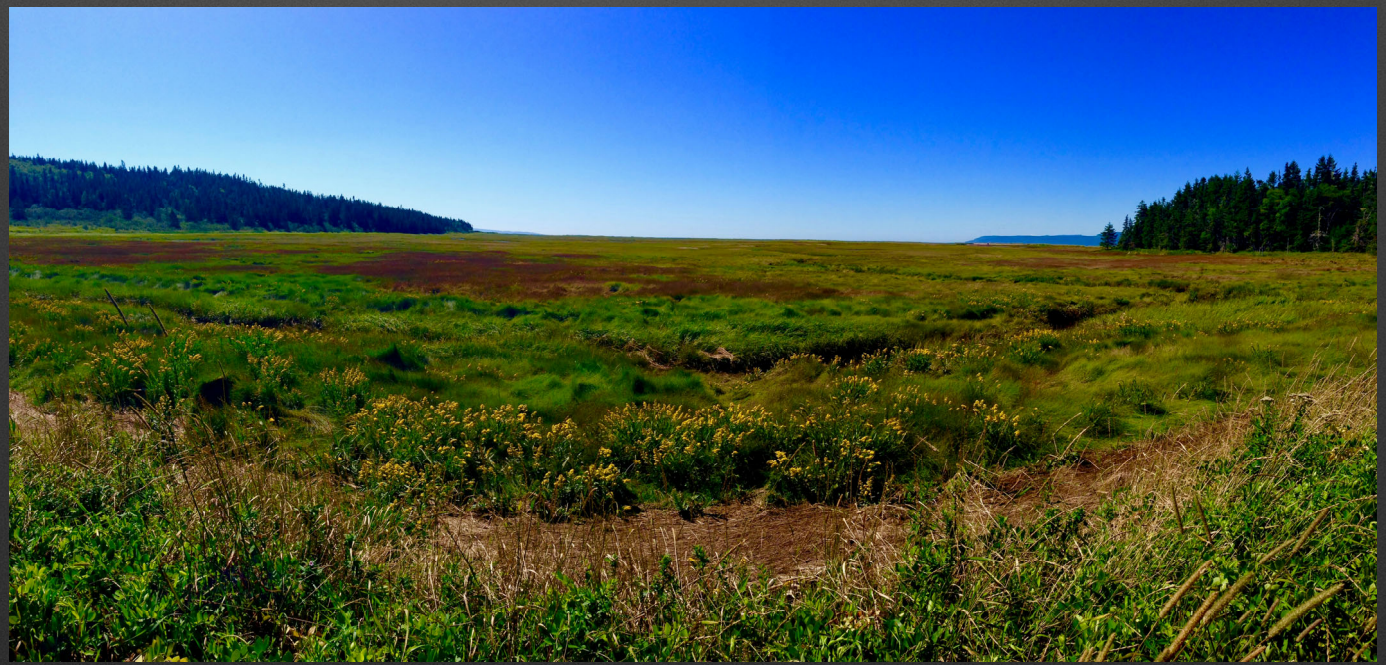
Optional extras: a brief intro to photography

- Almost any camera can be effective in the field. I have a lot of lovely photos from my iPhone and others from a small, snappy camera.
  - Advantages for such cameras is that they are “point and shoot” easy with little or no learning curve.



Bog, Nova Scotia, iPhone 5, panorama

Optional extras: a brief intro to photography

- New snappy cams can come with extraordinary optical zoom* lenses that make the boundaries between “serious” photography and amateur work *much* harder to distinguish.

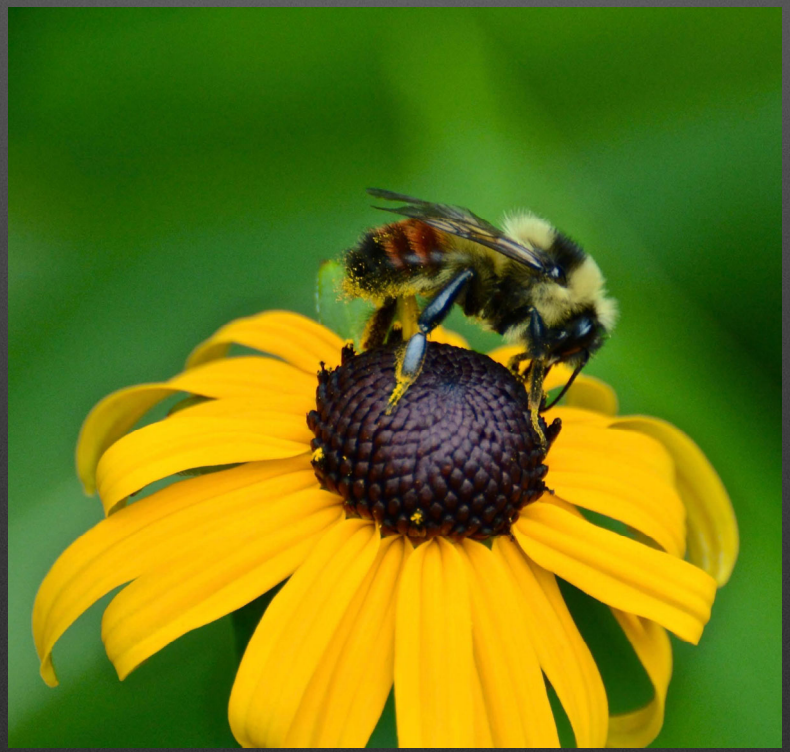
White rhino, South Africa, Canon G9.

Optional extras: a brief intro to photography

- Virtually every camera has auto-focus, and most cameras with long zooms have some kind of physical lens stabilization that buys you maybe two f-stops.
- There is no substitute for “big glass” dSLRs/mirrorless cameras.
- dSLRs do not do “ultra zoom” (think 60X zoom) like some snappy cameras, but they take better pictures.

Optional extras: a brief intro to photography

- dSLRs let you control “depth of field” so you can focus on your subject. The background is then blurred out and de-emphasized (called, “bokeh”).



Backyard bumblebee, *Bombus rufocinctus*, Nikon d7100 and Nikon 16-85mm lens, F/5.3.

Photograph published by various news agencies and in magazines.

JEREMY T. KERR

Field tests show neonicotinoid exposure negatively affects bees

Science | Jun. 28, 2017

Optional extras: a brief intro to photography

- dSLRs have big lenses that capture a lot of light. They can shoot faster and focus better than small lenses on point and shoot cameras.
- Aperture control (depth of field) is extremely powerful.
- Lower values (or f-stop, denoted as f/) mean a faster lens that lets in more light relative to its size and that can focus on a shallower depth of field.
- Very fast f/1.8; slower: f/6.5.

Optional extras: a brief intro to photography

- Depth of field can matter enormously for close up shots or for pictures of small things at larger distances.
- Too shallow a depth of field and the organism will be in focus in some areas and unfocused in others. Too deep and more light is required to capture the image and the shutter speed will go down.

A buff-tailed bumblebee on catmint flowers. Warming temperatures have caused bumblebee populations to retreat from the southern limits of their travels in North America and Europe, a new study found.
Jeremy T. Kerr

In *New York Times*, July 2015. Nikon d7100, 16-85mm lens.

Optional extras: a brief intro to photography

- A few words about “Auto” settings.
- Excellent for quick shots, for dodgy light, superb for landscapes.
- Camera automatically adjusts the graininess of the image (through ISO), the focus, maybe the flash, and auto-focuses.
- The same characteristics that let you get a quick shot *can* prevent getting a great one.

Optional extras: a brief intro to photography

- I shoot on Aperture priority mode (A) almost all the time. This lets me adjust depth of field but shutter speed is controlled automatically.
- I set focus to be “center of the screen” so I always know what is going to be focused and what might not be. I find this better than other focus options.
- Three main adjustments: ISO, Aperture, Shutter Speed


70 50 35 24 18
Nikon DX VR
AF-S NIKKOR 18-140mm 1:3.5-5.6G ED
OFF ON
ISO
FORMAT
M A S P
AUTO
EFFECTS
SCENE
U1 U2
250 F5.6
ISO AUTO 100 (459)

BUT… a very long shutter speed (4 or 5 seconds), a tripod, and a dark castle with a flag in the wind is illuminated. (Begur, Spain).

A villa near Pisa in near pitch blackness.
13 second exposure.

Canon G9, British Museum, 8 second exposure.

Optional extras: a brief intro to photography

- Photos that seem like they “worked out” are easy to manipulate later on. Cameras generally shoot in JPG by default. JPG is a “lossy” file format.
- RAW images are better but consume huge amounts of space. e.g. 24 megapixels = 24,000,000 pixels, which means 24 megabytes per RAW image, more or less; a jpg version of the same image might consume 4 or 5 megabytes of space).

Optional extras: a brief intro to photography

- Image adjustment is *dead simple* for major effects. I have published many photos and *none* of them was processed in high end software.
- Key things to play with for image enhancement: colour saturation and colour contrast, light contrast, exposure, etc. Can also digitally sharpen textures in the image to give the appearance of better focus or to underscore subject features.

Man shovelling coffee “cherry”, Kilimanjaro.
Nikon d7100, AF-S DX VR Zoom-Nikkor 16-85mm f/3.5-5

Man shovelling coffee “cherry”, Kilimanjaro. Image enhancement.
Nikon d7100, AF-S DX VR Zoom-Nikkor 16-85mm f/3.5-5

field is sufficient that all four birds and the twig are in focus but branches behi

Nikon d7100, “The quartet”. Carmine bee eaters.
AF-S VR Zoom-Nikkor 70-300mm f/4.5-5.6G IF-ED

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Nikon d7100, “The quartet”. Image enhanced. Carmine bee eaters.
AF-S VR Zoom-Nikkor 70-300mm f/4.5-5.6G IF-ED

Optional extras: a brief intro to photography

- It is possible, even fairly easy, to become “good” at photography in a short time.
- For technical work or work requiring real artistry, more advanced skills and training are required.
- There is no substitute for practice, patience with your subject, and having an “eye”. Take a lot of pictures if you want to capture something memorable in Tanzania.
- Most shots don’t work or simply repeat other shots. But who cares? Go for it.