



# Exposure

## Getting it Right in Camera

a series on photography for the hunter

WRITTEN BY ~ MATT WINTER



**A good quality image and a successful hunt...do you see a connection or mutual similarities? Here's what I see – to have a successful hunt there are certain basic pre-trip ingredients that have to be put in place to give you the best chance of a result**

**Consider these simple things: choosing a good area, watching weather forecasts, making sure your rifle or bow is shooting straight and getting the wind right. When these factors are all put together, your chances of coming away with an animal are greatly increased.**

A good photograph has the same type of pre-image basics that determine how that image will turn out. In fact there are

three basic variable ingredients that have a huge effect on the success or otherwise of your image. They are shutter speed, aperture and ISO, or 'the big three' as I call them.

### The Basic Principles

**A photograph is created by the camera recording the light (scene) that 'hits' the digital sensor.** The amount of light (and corresponding data) hitting that sensor determines how the image will look. Too much light and the image will look very bright or overexposed; not enough light and it will come out very dark or underexposed.

Now, the amount of light that is cast onto the sensor can be controlled by the shutter speed and aperture size. The third controlling influence on the image is that of ISO, which can be described as the 'sensitivity' of the sensor to the incoming light.

It helps to understand the relationship of the big three if you think of a window with shutters that open and close. The aperture is the size of the window – if it is bigger, more light gets through and the room is brighter. The shutter speed is the amount of time the shutters on the window are open – the longer you leave them open, the more light comes in. Finally, imagine that you're inside the room and you're wearing sunglasses; this has the effect of 'desensitizing' your eyes to the light coming in through the window. The sunglasses can be likened to a low ISO setting; taking the sunglasses off would be akin to a high ISO setting.

With all that understood, there are advantages and disadvantages or trade-offs for all the various settings of each of the big three.

Intentional slow shutter speed used to create motion blur which has also resulted in over exposure - an artistic effect

1/15 @ f/7.1, ISO 1250



A fast shutter speed froze the rapid wing movement of this house sparrow in flight

1/2500 @ f/7.1, ISO 800



### Shutter Speed

**One advantage of a slower shutter speed (more light) is that you are able to capture images in darker situations such as late evening, early morning or in the dark of the bush.**

The trade-off with these slow shutter times is the potential for the scene or subject to become less than sharp or worse still, downright blurry. This is because there is more time available for the subject to move as well as more opportunity for camera movement to be recorded in the shot.

The converse applies when using a faster shutter speed – the image has a much better chance of being sharp, action or movement can be 'frozen' and any camera movements are pretty much negated.

### Aperture

**Just like shutter speed, aperture gives you direct control over how much light enters the camera.** A large 'hole' (aperture) will obviously let more light in, a small aperture, less light. What can be a tad confusing is that a small number on the aperture dial (eg: f/2.8) equates to a large aperture and a large number (eg: f/22) will yield a small aperture.

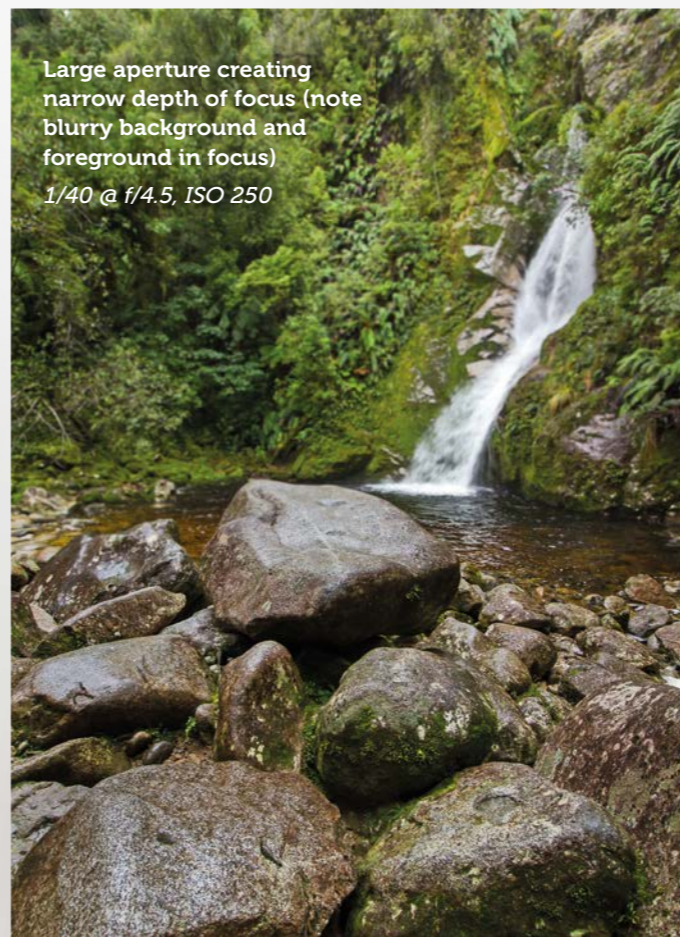
The aperture's greatest effect is on the depth or field of focus within the image. To put it another way, the aperture size has direct control over what parts of the photograph are in focus and which parts are out of focus. To obtain focus right throughout the image from the near foreground all the way to the back of the image, a small or narrow aperture is used. Landscape images are the most common subjects where you usually want

everything to be in focus so apertures in the range of f/10 to f/22 will generally achieve this.

Now if you're wanting to isolate a subject, say a particular foreground point of interest, an animal or bird for example, a good way of getting that result is by blurring the background (and foreground) by using a large aperture. By 'opening the lens up', you get a much narrower range or distance within the frame that will be in focus and by placing the subject in that narrow focus plane, everything else will blur out, making the point of interest jump out at the viewer. Note too that with the image on the left, a faster shutter speed 'froze' the motion of the waterfall whereas the relatively slow shutter speed used in the right image has created a lovely silky smooth look to the waterfall (more time for movement to be recorded on the sensor).

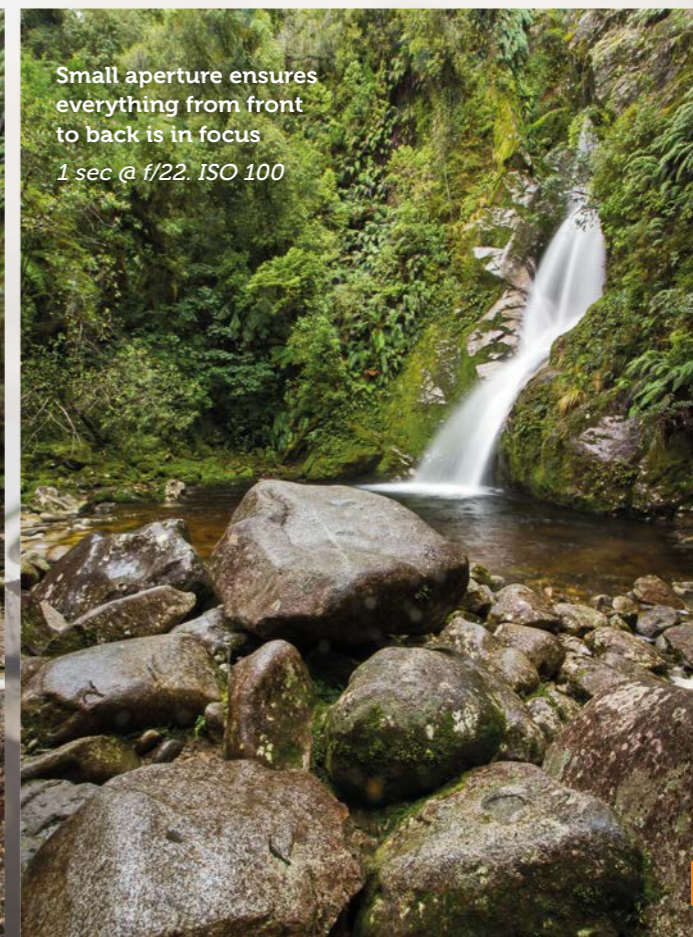
Large aperture creating narrow depth of focus (note blurry background and foreground in focus)

1/40 @ f/4.5, ISO 250



Small aperture ensures everything from front to back is in focus

1 sec @ f/22, ISO 100



## ISO

**ISO, the sensitivity of the sensor to light, has one advantage and two disadvantages.** The benefit is that by using a high ISO you can shoot in lower light conditions. This is all well and good but by increasing it, you introduce two bad effects. One is an increase in digital noise or grain which shows up as thousands of tiny dots or speckles spread right throughout the image, kind of like a layer of transparent, fine sandpaper. The second side effect of high ISO settings is a noticeable reduction in detail.

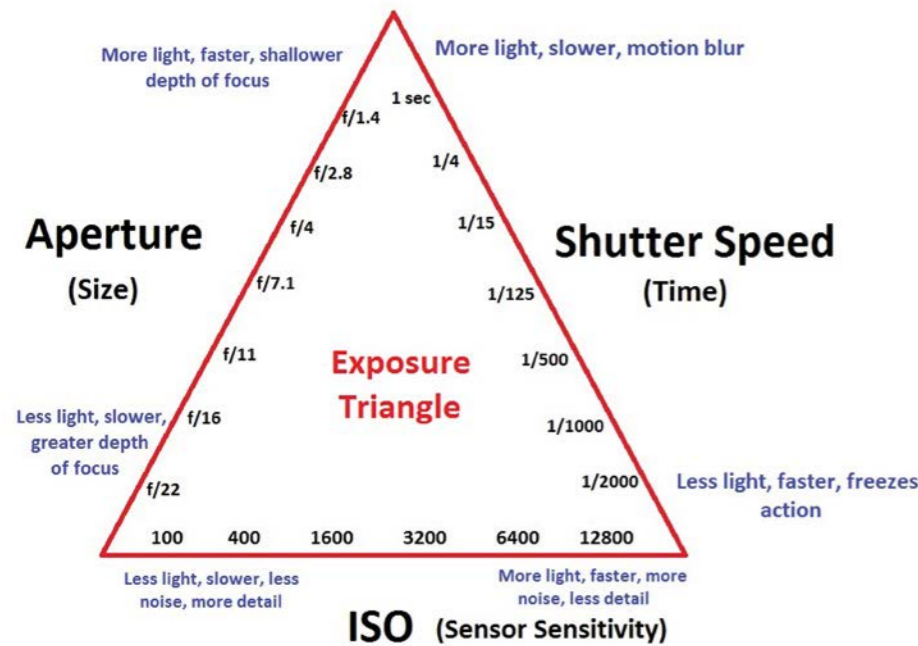
Because of these drastic and conspicuous results, raising the ISO should really be a last resort if you're needing to introduce more light for a good exposure. Explore all the other options of shutter speed and aperture first before resorting to lifting that ISO.



Another example of high ISO ruining what could have been a good image. Lens aperture was maxed out, wide open at f.5.6, shutter speed down at an incredibly slow 1/13 (note blur caused by stag movement and camera shake) and ISO set at a whopping 5000. Massive amounts of noise

The stag image at the start of this article was shot at 1/60 @ f/5.6. That shutter speed is about as low as you can go before introducing hand shake movement and the aperture was as wide

as that lens could go. Consequently I had no option but to raise the ISO to 2500 in order to gain a good exposure but look at the amount of noise (grain) and loss of detail, especially in the shadow areas.



When it all comes together...  
1/400 @ f/7.1, ISO 800

## To sum up

To become familiar with using the 'big three' and the effect each one has on an image, the best thing you can do is just get out, experiment with different settings and shoot lots of shots. While it may be tempting to set the camera to the 'dreaded green box' (auto-mode) and just fire away and hope for the best, you won't learn anything about exposure and what effect each of the big three has on the final product.

To make the learning curve a little less steep, try using one of the 'priority' modes. (First, set the ISO to a fixed figure, say a middle-of-the-road 400). Aperture priority ('Av' on the dial) is the mode where you set the aperture at a constant and the camera will sort out the shutter speed. Take a series of shots using different apertures and watch how the camera changes the shutter speed accordingly for a good exposure to compensate for the aperture changes. Shutter priority ('TV' on the dial) means that you manually set the shutter speed and the aperture will be taken care of.

When you reckon you're ready to move on, use the full manual mode ('M' on the dial) to give you complete control over all of the big three. Experiment, experiment, experiment.

You've probably heard the photography saying "It's all about the light" – there was never a truer word spoken.

By learning about the big three and the effect each has in the exposure of a scene or subject, you are giving yourself the best opportunity for a high quality image.



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