

DEPTH OF FOCUS

We all know that depth of focus is the portion of an image between the near foreground and the far background that is in focus or sharply focussed. We also know that this is controlled by changing the aperture of the lens, with large apertures like f2.8 or larger giving narrow depth of focus and small apertures F11 and smaller giving a substantial depth of focus.

You will also have discovered after examining your images that large apertures throw the background way out of focus whereas small apertures render a background more in focus and hence more obtrusive even when it is not focussed. So to isolate a subject from a distracting background and or foreground large apertures are required. Many lenses these days, particularly zooms do not have a very large aperture and this is unfortunately true of many compact cameras. Indeed f2.8 is about the smallest large aperture that can usefully be used if you want to throw a background well out of focus.

What is meant by “in focus” or “sharp”? Simply the part of an image that appears sharp to the eye at normal viewing distance.

However, when you are composing your picture you are looking through the viewfinder at full aperture. With a compact camera you have little ability to judge where zones of sharp focus begin and end. Similarly with the viewing screens of digital cameras. Even with a reflex camera it is difficult to judge. If you stop the lens down your judgement improves but the picture gets very dark and difficult to see clearly.

There is nothing like experience to guide you. Take experimental pictures and assess the results at different apertures. The following table may provide a starting point and a guide for macro photographs. The figures give the depth of zones of sharp focus.

| Image Magnification | f2.8 | f8 | F22 |
|---------------------|-------------|-------------|--------------|
| 1:1 | 1.5mm (5mm) | 5mm (15mm) | 10mm (50mm) |
| 1:2 | 3mm (15mm) | 10mm (30mm) | 20mm (100mm) |
| 1:5 | 7mm (25mm) | 15mm (50mm) | 50mm (250mm) |

The bracketed figures give the distance beyond which the background is far out of focus. At f22 the background is always quite detailed if a bit fuzzy.

But what about controlling depth of focus in landscapes? Here one is normally trying to ensure that important near foreground subject matter is in focus as well as everything beyond to infinity.

Tip 1. Use a tripod and a small aperture like f16 or f22. Focus manually on a point about 1/3 of the way to the most distant part of the image. This will work unless there are very close foreground subjects that must be sharp.

Tip 2. Focus on the hyperfocal distance of your lens. This depends on the lens and aperture.

| Lens focal length | f11 | f16 | f22 |
|-------------------|------|------|------|
| 50mm | 8m | 5m | 3.5m |
| 28mm | 2.5m | 1.7m | 1.2m |
| 20mm | 1.3m | 0.9m | 0.6m |

The nearest point of acceptable sharpness is half the hyperfocal distance.