

# Gill Moon Photography Photo Club



## September 2023 Challenge 7

### Depth of Field

*Hello*

and welcome to my monthly photo club challenges.

Each month I will be setting a new challenge for club members to work with. The challenges are not designed to be competitive but they are designed to be fun and inspiring and help you grow as a photographer.

During these challenges we will be looking at the work of different photographers who are 'masters' in their chosen field of photography. We will examine how they make their images and discuss how you can use their techniques in your own work. I hope these will be inspiring sessions.

Every monthly challenge will be followed by a 1.5 hour Zoom session (which is entirely optional) on the last Wednesday of every month where we will discuss some of the submitted images and talk about what worked and what didn't. I hope this feedback will be useful.

Thank you very much for being part of the Photo Club and I hope you will find it a fun and rewarding challenge.

Gill.

# Depth of field

This month's challenge is all about depth of field (DOF) and how we can use this in our landscape photography to make interesting images.

In its most simplistic terms Depth of Field (DOF) is the area of sharpness within an image where all the elements appear to be in focus.

DOF is governed by the following factors:

## 1. Aperture

The aperture of a lens is the opening that allows light to reach the sensor. Each aperture has an F number assigned to it. These can be a little confusing at first

A large aperture / opening has a small f number - f2.8, f3.2, f3.5, f4, f5.6 - these will give a shallow depth of field. This means that only a small portion of the image will be in focus. Small F numbers will give a small depth of field.

A small aperture / opening has a larger f number eg f11, f14, f16 - these will allow you to get more of the scene in focus and your image will be sharper from front to back. Large F numbers will give a large depth of field.

## 2. Focal length (magnification)

As a general rule the smaller your focal length the greater your depth of field and the longer your focal length the less depth of field you will have. A 14mm lens will give you more depth of field (more of the image sharp) at any given aperture than a 600mm lens. This is because a 600mm lens has a greater ability to magnify.

## 3. Distance between the photographer and the subject.

When you get close to your subject you will have less depth of field than when your subject is far away. This is most obvious when you are shooting with a macro lens where

you will find that your depth of field is really shallow.

## How can you use DOF creatively in your photography?

Once you have an understanding of DOF you can use it creatively to do a number of things:

### 1. Use a shallow depth of field to separate a subject from its background.

The image below shows a bracken stem which I shot with a 70 - 200mm lens at F5.6 with a focal length of 200mm and I focused on the orange part of the bracken.



My choice of aperture, focal length and focus point has allowed me to blur the background completely isolating the bracken from its background. The background has blurred well because of the following factors:

- I used a large aperture of F5.6
- (small F number, small DOF)
- I used a longer focal length of 200mm giving me more magnification.
- I was closer to the bracken than it was to the background.
- I focused on the bracken.

2. Add depth to your image turning it from a two dimensional shot to a three dimensional image. You can do this by adding foreground or background blur or by creating an image that is sharp front to back.

Example of an image using background blur



This image (above) was taken with a 70-200mm lens and was shot at F4.5 with a focal length of 160mm. In this shot I focused on the fishing nets in the foreground rendering the boat in the background out of focus.

Although the lens choice and focal length has compressed the scene, bringing the boat and the nets closer together than they physically were, the image has a sense of depth created by the out of focus boat and the sharp foreground.

Examples of images using foreground blur



This image (above) was taken with a 70-200mm lens and was shot at F6.3 with a focal length of 200mm. This time I focused on the boat and this has rendered the flowers in the foreground soft. The sense of depth in this shot is perhaps not as great as the first shot because the lens compression has brought all the elements very close together.

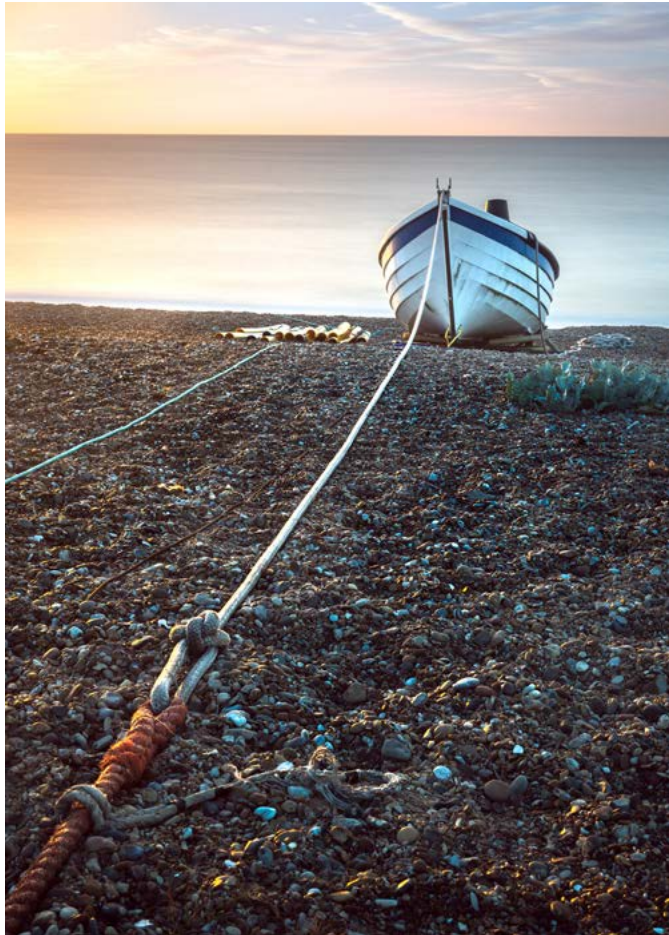


This image of the gorse at Sizewell (above) shows how you can use a wider angle lens to create some foreground blur.

The image was taken with a 24-70mm lens and was shot at F5.6 using a focal length of 50mm. This time I placed the front of the

lens on the gorse flowers and it is this lack of distance between the lens and the flowers that has created the blur. I focused on the buildings in the background so these are sharp whilst the mid ground is part blurred, part sharp. This image has a greater sense of depth to it than the last one because my lens choice hasn't compressed the mid ground in the image.

**Examples of images using front to back sharpness.**



This image of a fishing boat on the beach at Sizewell was taken using my 24-70mm lens. It was shot using an aperture of F16 at a focal length of 48mm. This is a single image where I focused just beyond the knot in the rope. The sense of depth in the shot is achieved using my composition - the rope leading from the foreground to the boat in the background.



This image of the heath at Tunstall is actually a focused stacked shot. The reason I chose to stack this image is because I was physically very close to the heather at the bottom of the shot. It would have been almost impossible to get this and the background trees sharp within one image.

For this stack I took three images at F11 with a focal length of 34mm. I focused one shot on the foreground, one on the mid ground and one on the trees. I blended them all together manually in Photoshop using layers and layer masks.

When you want to create an image with a large depth of field (using a large F number for front to back sharpness) you will need to think very carefully about where you focus within your shot. As a general rule I focus about a third of the way into the scene. The camera renders everything sharp a third in front and two thirds behind your focus point.

This is a generalised rule and works pretty well most of the time for landscape shots. But if you want something more accurate you will need to familiarise yourself with the hyperfocal distance.

### Hyperfocal distance.

The hyperfocal distance is the closest distance at which a lens can be focused while keeping objects at infinity acceptably sharp. When the lens is focused at this distance, all objects at distances from half of the hyperfocal distance out to infinity will be acceptably sharp.

Hyperfocal distance can be confusing and I am not going to spend time discussing it here as I think it is unnecessarily complicated for most shooting situations. If you would like to read more about it and use the hyperfocal distance tables to calculate the correct distance for different scenarios and lenses then please have a look at this comprehensive page from Photo Pills

[www.photopills.com/calculators/hyperfocal-table](http://www.photopills.com/calculators/hyperfocal-table)

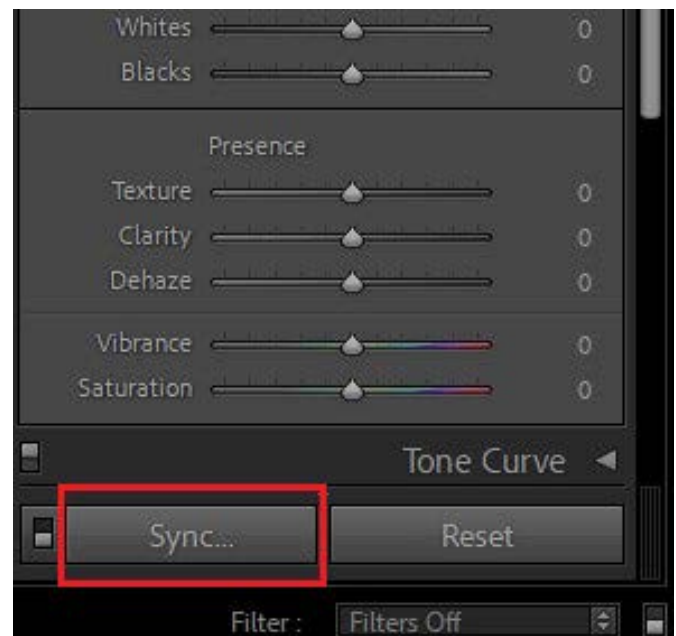
### How to approach depth of field when shooting.

1. Work out your composition
2. Decide how much of your image you would like to be sharp
3. Choose an aperture based on your answer to no. 2 above. If you would like just the subject to be sharp choose an aperture in the region of F2.8 - F5.6. If you would like all of your shot to be sharp work in the region of F10 - F16.
4. If you want front to back sharpness choose a larger F number or focus stack your image. Focus stacking will normally be necessary if your foreground is very close to the camera or if you are using a telephoto lens or a longer focal length.
5. To shoot a series of images for focus stacking make sure you take several shots

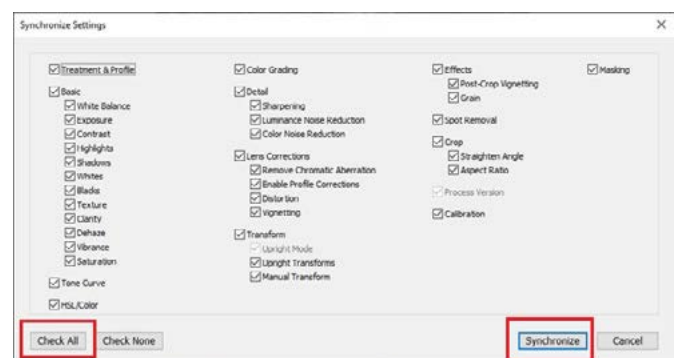
using different focus points across the whole image. Take one at the closest point, one at the farthest point and a series in between the two. If you are shooting a landscape you may only need 3 or 4 images but if you are shooting a macro you will need considerably more to get the whole image sharp.

### How to Focus Stack using Lightroom and Photoshop.

1. Import your images into Lightroom and open them in the develop module.
2. Edit one of the images and then synchronise the settings with all the other images in the focus series. Do this by highlighting all the images and pressing the sync button.



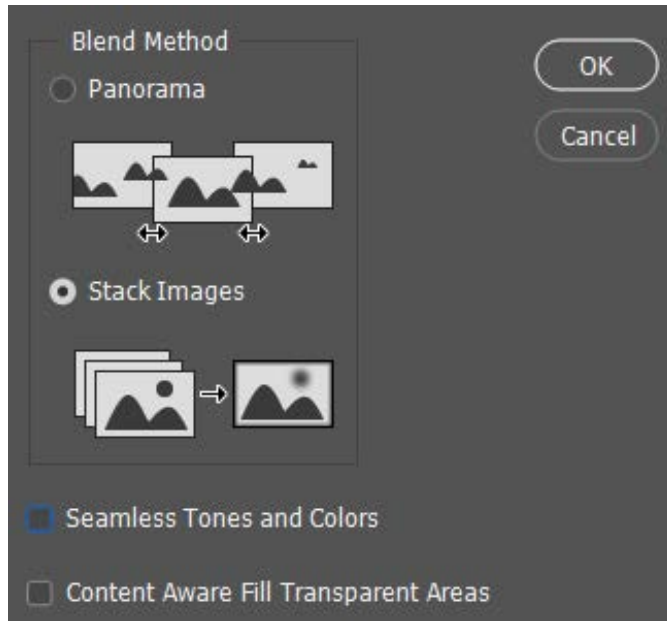
The following dialogue box will appear - check all the settings you want to copy from your processed image and press synchronise.



3. With all the images highlighted right click on any of the images and select Edit in > Open as layers in Photoshop.

4. With all the images now open as layers in Photoshop select all of them and from the edit menu at the top select auto align layers.

5. Once aligned and with all the images still highlighted select Edit > Auto Blend Layers.



6. Once you have blended your image check it carefully to make sure the software has stacked it correctly and there are no out of focus areas. This can sometime occur where you haven't used enough focus points and made enough images. In my experience this is more common on macro shots.

The following shot shows an image taken on the Isle of Harris. I took 4 focus stacked shots to create this image. It would have been impossible to have achieved the same sharpness in one shot even with a 14 - 24mm lens.

The image was taken at F16 using a focal length of 17mm.



For some more inspiration on depth of field have a look at Theo Bosboom's website, in particular his life of limpets gallery and see how he has created images which very large depths of field using smaller elements (limpets) in the wider landscape.  
[www.theobosboom.nl/dt\\_gallery/the-life-of-limpets](http://www.theobosboom.nl/dt_gallery/the-life-of-limpets)

## September's Photo Challenge

This month's photo challenge is to produce three images - one image for each of the following:

1. An image with an obvious subject and a blurred background.
2. An image where you have used a blurred foreground to frame your subject.
3. An image that is sharp front to back - you can either do this in camera using your aperture and a wide angle lens or you can focus stack your shot in camera or in Photoshop.

Be as creative as you like with your shots.

The Zoom session for this challenge will take place on Wednesday 27th September between 7pm - 8.30pm.

The final image in these notes shows a shot taken on the saltmarsh in May. I have focused on the sea thrift and used the out of focus highlights in the foreground as a frame around the subject flowers.

### Shooting Information:

F3.2 at 195mm focal length, 1/800 second at 400 ISO using manual focusing.

