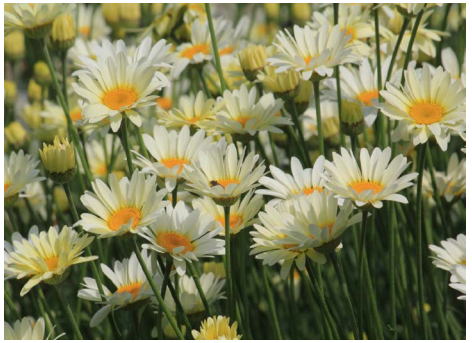
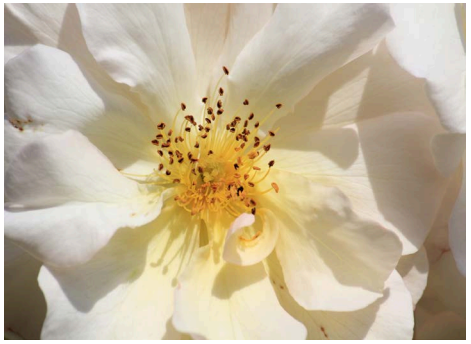
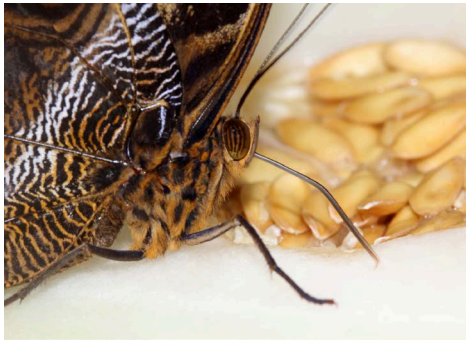
The Essential Guide To Close Up and Macro Photography

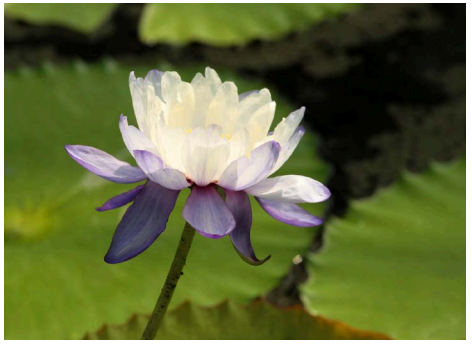
Written by Nina Bailey

Especially for Canon EOS cameras









Written, designed and images by

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PREVIEW EDITION

Foreword by the author

Over the years I have written many different guides, scripts, technical publications and more presentations than I really care to remember, but this is my third ebook.

A subject that I have always taken lots of pictures of is close up and macro photography. We live in a country that offers countless opportunities to shoot some great subjects with some of the best parks and gardens in the world to shoot in. Our climate, though we may complain about the rain, gives green lush conditions throughout the year, allowing a wide range of plants from all over the world to flourish in our gardens.

It's a area of photography that can be enjoyed with very modest equipment, without going far from home, if you have a garden then that's as far as you need to go to get some great images.

It's a subject that can be very challenging as the magnifications increase, but one of the things I hope to show in this ebook is that you can get some great results without having to use specialist or expensive equipment and so this is a subject accessible to all photographers.

It's easy to think that this is a seasonal area of photography, yet there are opportunities for shooting all through the year. In fact a lot of the butterfly images on this book will have been taken in the butterfly houses that we run events in during the winter months. But even out in the field there are great things to photograph all year round.

My aim is to give you a good understanding of what you need to grasp to get some great close up and macro images and what settings are needed. I have also looked at the creative side of this type of photography looking at framing, lighting and seeing the best images to take in addition to the more factual approaches.

Hopefully the images and explanations will inspire you to go out and get the very best images of the subjects that are all around us.

Nina

PREVIEW EDITION

Acknowledgements

I would like to thank the following people for their assistance in producing this book.

Both have endured long hours of reading and proofing this book for which I am very grateful.

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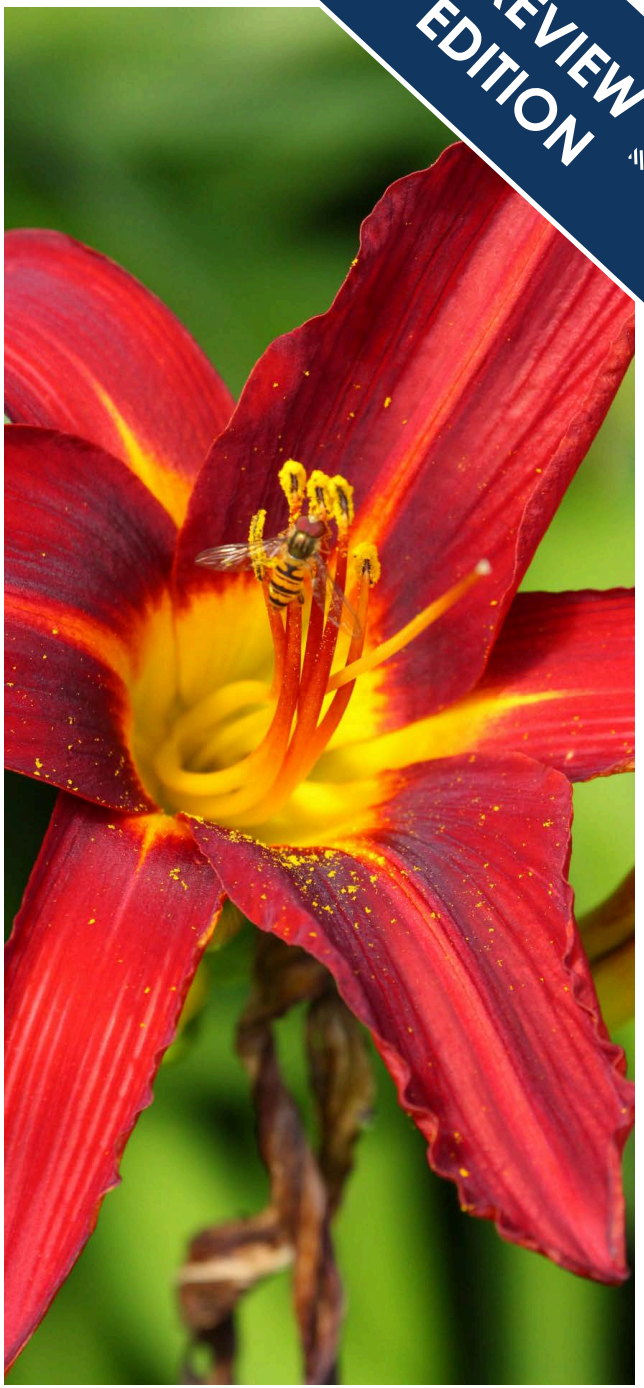


Chapter 01

Introduction

This was taken on the EF 100-400mm lens using the lens' long focal length of 400mm to allow me to fill the frame and also get the background blur that was needed to simplify the image.

Introduction

Close up photography covers a very wide range of subject types and techniques. The equipment that you need varies a lot according to the magnifications that you want to work at.

In this ebook we are going to look at three distinctly different areas. Close up, Macro and Micro. Each of these has their own shooting techniques and their own specific problems that need to be overcome, to get good results.

This can be one of the most challenging areas of photography, as the distances that we are working at between the camera and our subject, makes the required depth of field challenging to get. Yet in spite of these challenges, it can also be a very rewarding area, and one that provides the opportunity to photograph on days that would not give good results in other areas of photography.

As the magnifications that you tackle increase, you start to see into a hidden world, beyond the scope of the things that we normally see. Things we can hardy see turn into objects of beauty and provide fascinating things to photograph.

It is an area that you can do close to home, and any garden or park will provide a wealth of subjects for you to practice on. The equipment is affordable, especially at the lower magnifications and easy to carry, as it is all relatively small and light.

This makes it an area of photography that can be enjoyed by all photographers and regardless of the seasons, there is always something of interest to take.

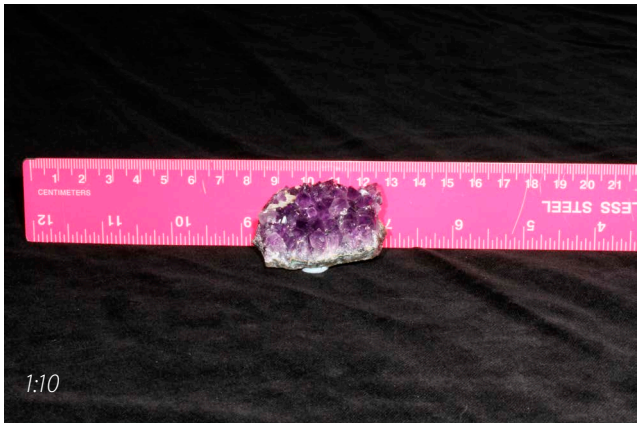
Taken with an EF 100-400mm from about 1.8m away, with the light coming from behind.

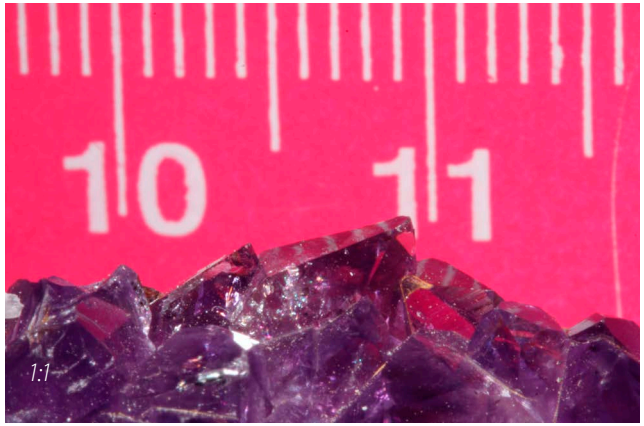
Chapter 02

Approaches to close up and macro

This image was taken with a 100mm macro lens with a 25mm tube fitted on a 1.6x sensor model, the butterfly was in a butterfly house and was just siting there and allowed me to get in very close.

Approaches to close up and macro photography





Close up and macro photography actually covers a very wide area of photography. The subject splits into three distinct areas, close up, macro and micro. These are defined by the magnification that the subject is reproduced at.

Anything from 0.10x magnification is considered close up photography through to 0.5x magnification. The magnification that you are working at can be defined in different ways. It can be expressed as a reproduction ratio 1:4 or as ¼ life size or 0.25x. This is referring to the size that something is going to be reproduced on the imaging sensor of the camera.

There is a lot of confusion in the market today about what is close up and what is macro photography. This is not helped by manufactures, Canon included, who insist on putting macro focusing options on zoom lenses when the lens only ever gives a close up reproduction. If you are wondering why, it's all to do with what sells the most lenses and people expect macro to be better than close up.

Close up is any magnification up to 1:2 or 0.5x. Macro is always technically described as 1:1 or 1x or life size.

It is important to distinguish the two areas apart as the techniques, equipment and skills required between the two very different areas are different.

Close up photography

The advantage with close up photography is that the techniques are quite simple and it can be done with the general lens that is supplied with the camera. Most standard zoom lenses offer a close up capability of 1:4 up to 1:2, depending on the lens that you have.

In fact one of the most common kit lenses in the Canon range, the EF-S 18-55mm gives a really good close up capability of almost 0.3x or 1:3.

This is good enough to be able to cope with a wide range of subjects and produce some very good results.

Other lenses that give good close up magnifications include the EF-S 55-250mm lens and the EF-S 18-135mm.

The professional L series tend to give slightly lower magnifications than the more affordable models in the range.

This is taken on the EF-S 18-55mm f3.5-5.6 IS kit lens.

This is taken on the EF 70-300 f4-5.6L IS USM lens.

This is taken on the EF 100-400mm f4.5-5.6L IS USM lens.

Macro photography

When the image on the sensor gets to the same size as it is in life, it is referred to as 1x or life size or 1:1. This is defined as macro photography.

How small the subject is that will fill the frame will vary according to the sensor size that your camera has.

The 1.6x crop sensor models have a smaller frame size and therefore smaller subjects will fill the frame more than if using one of the full frame or 1x models that has a larger sensor and therefore will need a larger subject to completely fill the frame. We will look at this more in the next chapter.

Macro photography is going to need more specialist equipment. The most common way to achieve this magnification is using a macro lens. The term macro is correctly applied to photography at 1:1 magnifications.

However, macro is a term that often appears on zoom lenses that offer what is actually a close focusing capability, normally achieving a magnification of 1:2 to 1:4 depending on the lens in question.

A true macro lens will not zoom, it will be what we term a prime or fixed focal length. The focal length will normally be in the range between 60mm and 180mm.

The most commonly seen are 100mm macro lenses. Offering the best combination of size, weight, cost and working distance to the subject.

Early morning dew on the petals of a polyanthus taken with a 100mm macro lens and available light.

Taken with a 100mm macro lens with a MR14EX ringflash.

Taken with a 60mm macro lens and a MR14EX ringflash.

Micro photography

Then there is micro photography. This is normally done with a special micro lens that is designed to give magnifications above life size. It is also possible to achieve this magnification using bellows and a lens fitted to the front.

This is a fascinating area of photography, but one that is very time consuming as nearly everything at the higher magnifications needs to be shot on a tripod in a studio.

The lens I normally use these days is shown below and is the Canon MPE 65mm f3.5 macro lens. This fits directly onto the camera and will give you magnifications from 1x life size up to 5x lifesize.

I normally use flash to illuminate the subject and the focusing light on the MR14EX is very useful for finding and focusing the subject as the lens is manual focus only.

The centre of a hibiscus flower.

A common subject a green aphid.

A close up of a feather.

Creative versus the factual approach

There are also two approaches to this area of photography. This type of photography is often used to record subjects that are found. These are the sort of images that we see in reference books.

These images are taken in order to be able to identify what the subject is. As a result they need to be shot to show the most details, however this approach is not necessarily going to give the most stunning images.

The image above left shows the subject shot front lit to give an image where it would be easy to identify the subject as it show the details in depth. The lighting was from a ring flash but I only had one side of the ring providing light to give relief to the subject.

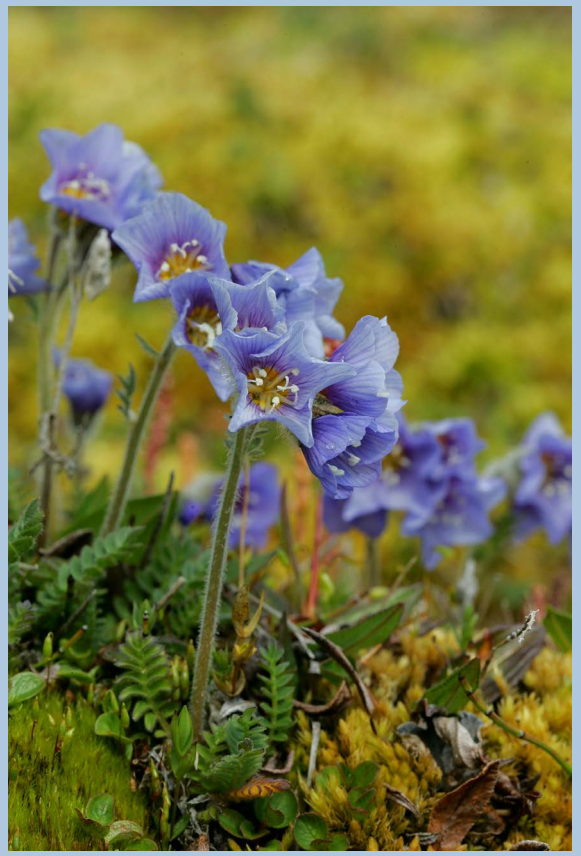
The alternative is a more creative approach, this often gives a better image, however the image may not be good for identifying the subject. The choice between the approaches lies with the photographer and the reasons that they are taking the image. The equipment and techniques are virtually identical, it is mainly the lighting and framing that is going to differ between the two approaches.

The same subject on the right has been lit from behind the leaf, turning the subject into almost a silhouette, which gives interest to the image and also show up more details of the structure of the leaf but the image would be no good for identifying the subject.

Both are good images in their own field, but presenting the one on the right for inclusion in a book about identifying caterpillars would be pointless as no detail can be seen due to the way that the subject has ben lit.

This was taken in Spitsbergen of a plant that only grows on a small island off the mainland. This is an example of a factual approach that shows clearly the plant, foliage and even the terrain that it grows in.

The shot below is also of the same plant but shows the flowers in more detail.



This is another shot taken on a trip to Spitsbergen, which is an example of a more creative approach to close up photography. The angle the shot is taken from shows a great contrast between the plant and moss as its surrounding rocks but fails to make identification of the plant easy.

This is an example of the creative approach to macro photography. I like this shot and the light coming through the delicate petals of these arctic poppies. To give an idea of scale the flowers are only about 3cm high and are the national flower of Spitsbergen.

Chapter 03

Equipment selection

This image was taken with a EF 70-300mm f4-5.6L IS USM lens set to 300mm. The lens was used at 300mm to give the background blur needed to isolate this flower from the background.

Camera selection

The type of equipment that you are going to need, is going to depend on the magnifications that you want to achieve.

This is an area of photography that can be done with very modest amounts of equipment, however as the magnifications increase, the equipment becomes increasingly more specialist.

This is a subject where the full frame models actually make it harder to fill the frame, due to the bigger chip area.

The 1.6x sensors smaller area, makes it easier to fill the frame with smaller subjects as we can see in the example on the right.

However technically if shooting at 1:4, the reproduction size is the same on both cameras, it is simply the smaller area being captured that actually makes it look bigger.

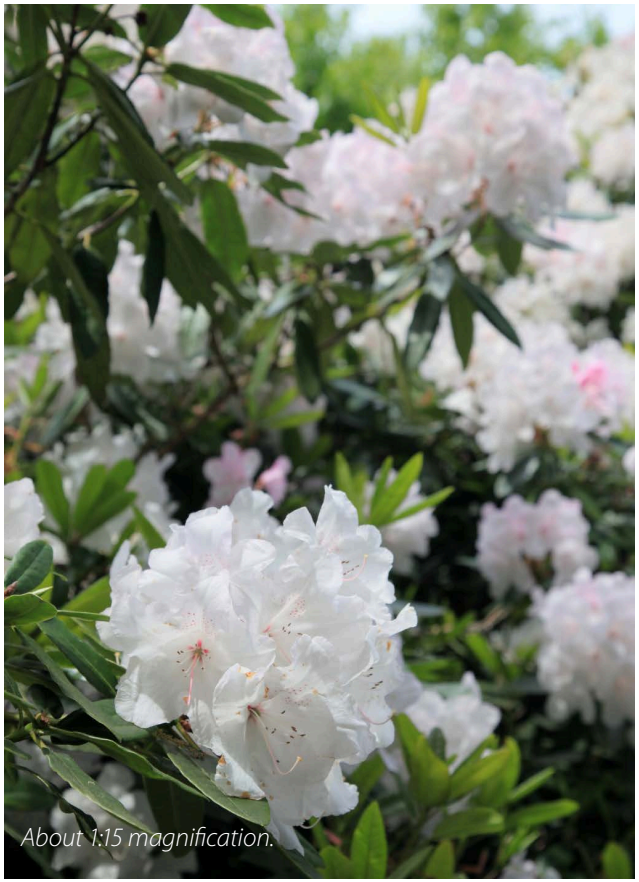
The reality is that close up and macro are both easier to shoot on the cameras with the smaller sensors due to the effect given by the cropped sensor and so more basic equipment can be used.

The image above left was shot on exactly the same lens at the same settings and distance as the image on the right. The only difference between the two images was the one on the left was shot on a full frame camera and the one on the right was shot on a model that featured the 1.6x crop or APS C sensor. We can see here what a big difference it can make to the framing of the image.

There is also one other difference which is, at close up magnifications the lenses that are designed to work just with the 1.6x crop sensors models often offer a better close focusing facility than the higher specification lenses that are used on the full frame models.

This is due to the design of the more affordable lenses being about versatility in use, whereas the higher level L series lenses are much more about high quality optics than versatility in use.

Basic close up photography 1:10 up to 1:4


About 1:15 magnification.


About 1:10 magnification.


About 1:5 magnification.

At the most basic end, magnifications between 1/10th up to 1/4 life size can be achieved with virtually any zoom lens.

The standard kit lenses that come supplied with the cameras do have some very impressive close up capabilities. If this is added to the smaller area being captured by the 1.6x sensor models, some really impressive close up images can be produced without the need for any additional equipment.

Generally the longer range lenses or the more professional models will have slightly lower magnifications than the very basic kit lenses.

Lens	Min focusing	Max magnification	Ratio
EF-S 18-55mm	0.25m	0.34x @ 55mm	approx 1:3
EF-S 15-85mm	0.35m	0.21x @ 85mm	approx 1:5
EF-S 17-85mm	0.35m	0.20x @ 85mm	approx 1:5
EF-S 18-135mm	0.45m	0.21x @ 135mm	approx 1:5
EF-S 18-200mm	0.45m	0.24x @ 200mm	approx 1:4
EF 24-105mmL	0.45m	0.23x @ 105mm	approx 1:4

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Nina

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