THE

CANON ESS

(GUIDE TO)

LANDS PHOTOG CAPE RAPHY





Welcome...



"If you are passionate about shooting landscapes, then we hope you'll find this comprehensive guide helps you take your best ever pictures. Millions of photographers around the world have discovered the benefits of capturing images with a digital SLR – their ease of use, wide choice of lenses and incredibly high image quality are just three reasons why DSLRs remain the most popular type of camera with photo enthusiasts. *The Canon Guide to Landscape Photography* has been produced to allow Canon EOS users to make the most of

their Canon camera outfit. It's packed with essential advice, photo techniques, expert guides and stunning photography and aims to deliver all the information, advice and inspiration you need to improve your photo skills. It's brimming with tutorials from many of the UK's favourite outdoor photographers, with emphasis on key in-camera techniques, as well as essential and creative post-processing skills. Before heading out with your Canon kit, be sure to read up and learn from the UK's leading experts before heading out to capture landscape images like a pro. All the best!"

DANIEL LEZANO, EDITOR

Meet our landscape experts

All our experts are regular contributors to *Digital SLR Photography* magazine. For expert advice and inspiration to help you improve your photo skills, pick up the latest issue, available on the second Tuesday of every month. For further information, visit: www.digitalslrphoto.com



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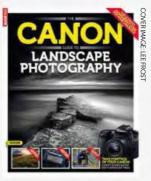
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CONTENTS



7 Introduction to landscapes

Be prepared to learn and exploit the fundamentals of landscape photography

8 Composition

The key techniques you need to master to take perfect landscapes, including lead-in lines, foreground interest and natural frames

20 Exposure

Master these simple techniques and you'll be on your way to well-exposed landscapes

24 EXPERT TUTORIAL: APERTURE-PRIORITY
26 EXPERT TUTORIAL: SHUTTER SPEEDS
28 EXPERT TUTORIAL: WATER IN LANDSCAPES

31 Sharpness

The best techniques for super-sharp scenics
32 EXPERT TUTORIAL: HYPERFOCAL FOCUSING
34 EXPERT TUTORIAL: FOCUS FOR SHARPNESS

36 Lighting

Learn how to make the most of any lighting condition, from sunrise through to sunset

38 EXPERT ADVICE: TIME OF DAY

40 EXPERT ADVICE: MAGIC HOUR & SUNSETS

42 EXPERT ADVICE: WEATHER
44 EXPERT ADVICE: SEASONAL LIGHT

48 Raw & landscapes

Maximise image quality by shooting in Raw 50 EXPERT ADVICE: INTRODUCTION TO RAW 52 EXPERT ADVICE: UNDERSTANDING ACR

54 EXPERT TUTORIAL: PROCESSING RAW FILES
56 EXPERT TUTORIAL: MERGING RAW FILES
58 EXPERT TUTORIAL: EXPOSING TO THE RIGHT

60 Filters

Use filters to improve and enhance your results

62 EXPERT ADVICE: USING AN ND GRAD 64 EXPERT ADVICE: USING A POLARISER 66 EXPERT ADVICE: USING AN ND FILTER 68 EXPERT ADVICE: THE TEN-STOP ND FILTER

71 Colour

Learn the relationships of colour & landscapes
72 EXPERT ADVICE: COLOUR THEORY

74 EXPERT ADVICE: WHITE BALANCE

76 Black & white

Master the art of shooting monochrome

78 EXPERT ADVICE: THE BASICS OF B&W **80 EXPERT ADVICE:** LIGHTING & WEATHER

82 EXPERT ADVICE: MONOCHROME COASTLINES **84 EXPERT ADVICE:** LANDSCAPES

86 PHOTOSHOP TUTORIAL: CONVERTING TO B&W **88 EXPERT ADVICE:** PRO EDITING TECHNIQUES







91 Landscape projects

Fantastic techniques leading to stunning scenics

92 EXPERT TUTORIAL: STITCH A PANORAMA
94 EXPERT TUTORIAL: SUMMER LANDSCAPES
96 EXPERT TUTORIAL: LAVENDER LANDSCAPES
98 EXPERT TUTORIAL: HEATHER LANDSCAPES
100 EXPERT TUTORIAL: CAPTURE THE

102 EXPERT TUTORIAL: MISTY MORNINGS
104 EXPERT TUTORIAL: ROCKPOOL REFLECTIONS
106 EXPERT TUTORIAL: SHOOT REALISTIC WAVES

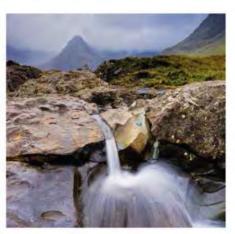
108 EXPERT TUTORIAL: SHOOT RUNNING WATER
110 EXPERT TUTORIAL: ABSTRACT BEACH SCENE
112 EXPERT TUTORIAL: SHOOT STAR TRAILS
114 EXPERT TUTORIAL: MOONLIT LANDSCAPES

117 Photoshop techniques

Simple Photoshop step-by-steps that can be used to improve and enhance your landscape images

118 PHOTOSHOP TUTORIAL: BOOST CONTRAST
120 PHOTOSHOP TUTORIAL: CONTROL COLOUR
122 PHOTOSHOP TUTORIAL: DRAW OUT DETAIL
124 PHOTOSHOP TUTORIAL: SELECTIVE EDITING
126 PHOTOSHOP TUTORIAL: ADD MIST & MOOD
128 PHOTOSHOP TUTORIAL: COLOURFUL SKIES
130 PHOTOSHOP TUTORIAL: DUOTONE

132 PHOTOSHOP TUTORIAL: REPLACE A SKY 134 PHOTOSHOP TUTORIAL: TEN-STOP EFFECT 136 PHOTOSHOP TUTORIAL: SEASONAL BLUR







136 Landscape gear

The best equipment for outdoor photography

136 IDEAL KITS FOR YOUR REQUIREMENTS

142 COMPREHENSIVE LENS TESTS

150 EXPERT TUTORIAL: WIDE-ANGLE LENSES

152 EXPERT TUTORIAL: TELEZOOMS

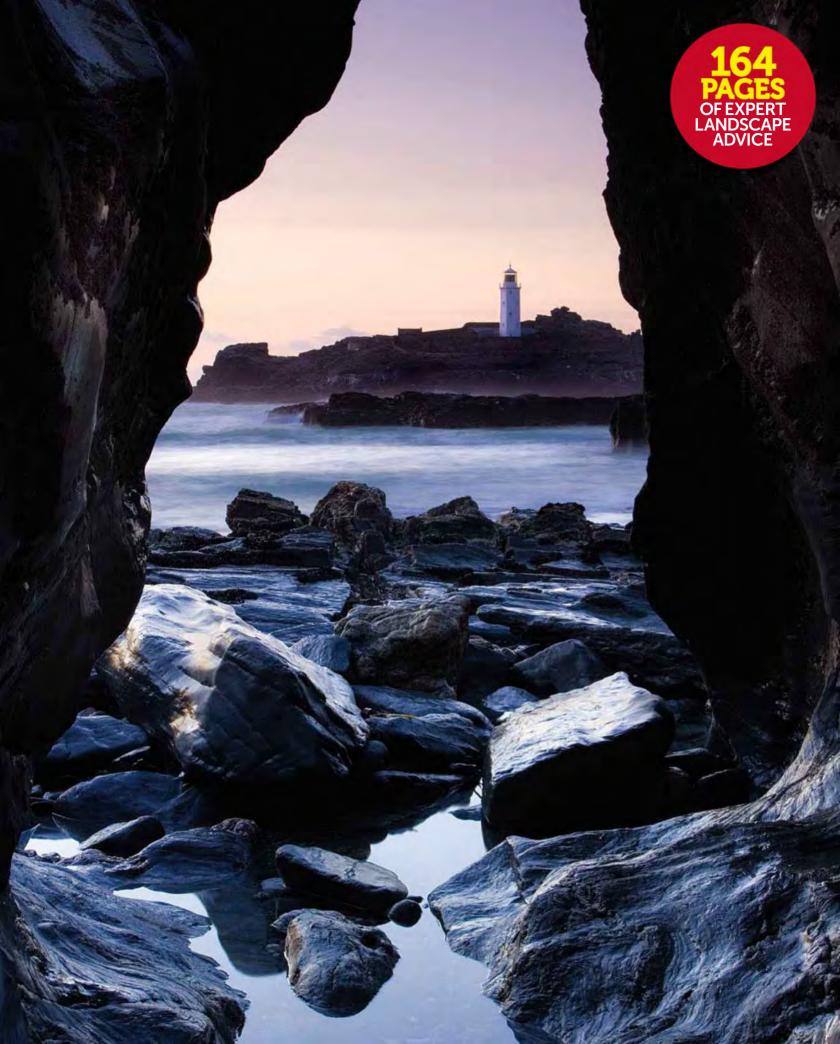
154 FILTER SYSTEMS & BRANDS
158 CHOOSING THE RIGHT TRIPOD

160 CHOOSING THE RIGHT BAG

162 Perfect exposures

Cut out and use our free grey card!

TURN TO PAGE 90 TO FIND OUT ABOUT OUR FANTASTIC SUBSCRIPTION OFFERS



POWER TO YOUR NEXT STEP

We all have a next step. Make yours getting more





you can



THE BASICS

do it. Fantastic landscapes inspire more photographers than any other type of image and on the face of it, well, it should be easy to do. Find an awesome vista and point your camera at it, press the shutter and that should do the trick. This simple approach will probably bag you a decent snap, but often the image you capture will not do justice to the glorious scene in front of you. We've all

been a little bit disappointed by a photo that doesn't quite live up to our great expectations. The difference between a decent snap and a stunning image is often down to a few versatile ideas, some easily learned expert knowledge, the right equipment choice and careful planning. This inspirational guide will provide you with an excellent grasp of these fundamentals and help you transform your shots from the ordinary into something very special indeed.







Foreground interest

As the world is three-dimensional but a photograph is twodimensional, one of the main reasons that landscape images fail is that they don't convey the sense of depth that our eyes see. Fortunately, there are a few compositional tricks that we can employ to get around this rather frustrating little problem.

A very effective way to create depth in a photograph is to include a strong foreground, often in conjunction with a wide-angle lens. Emphasising the foreground in this way will add depth to the picture by creating an entry-point for the eye, pulling the viewer into the scene and giving the picture a sense of distance and scale.

Wide-angle lenses help this technique because they stretch perspective, exaggerating the elements close to the lens and opening up the view beyond the foreground.

But be careful, this can result in the middle distance looking empty and lacking in interest so the trick is to shoot from a lower viewpoint. This compresses the middle distance, so that there isn't too much empty space in the composition. You'll also need to use a small aperture and focus carefully to maximise depth-of-field, keeping foreground and distant objects in focus (we'll explain how to do this later).





GETTING IT RIGHT: The cow parsley and gorse make attractive foregrounds to lead the eye into the scene and provide suitable frames for the view beyond. A wide-angle lens and a small aperture of f/22 provide plenty of depth-of-field.



BIG FOREGROUND OR SMALL DETAIL: It's not always necessary to have a large foreground; colour, texture and pattern can provide foreground interest. This carpet of flowers is as effective as the strong shapes of rocks, opposite.



Lead-in lines

Lines represent depth in a picture and can be used to lead your eye into the picture and guide it around the scene. Lines are everywhere: man-made, such as roads, paths and hedgerows; or natural, such as rivers or the coastline. All will add dynamism to your photographs. Lines don't have to be real, they can be implied like the patterns created by waves over a longish exposure, or objects pointing into the frame. Lots of things can bring linear energy into your work.

Straight, converging lines are very dynamic and can give a lot of impact to a picture, but there is always the danger that the eye follows the lines into and then very quickly out of the frame again. Pictures with only converging lines might have immediate impact, but can still be unsatisfying. It's a good idea to try to place some object of interest within the frame – a figure or a tree, for example - to give the eye something to settle on within the scene.

Lines that curve gently in an 'S' shape lack the immediate impact of straight, converging lines, but can result in a more satisfying image. They can lead the eye gently through the whole picture, allowing the viewer to take in other elements within the composition.

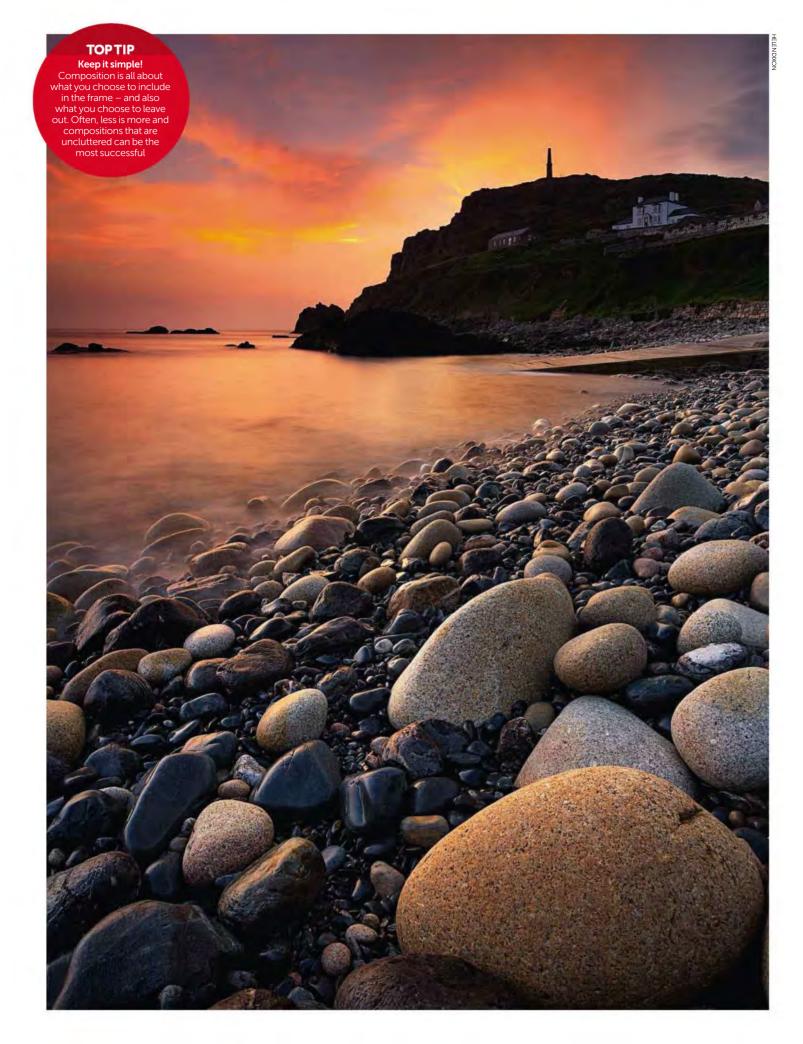
Layers and planes

Another in-camera technique that can be used to add depth to an image is the creation of a layers. Layers in an image can be created by having a series of overlapping shapes, like the hills in this image, right, or by strong side-lighting, creating alternate bands of light and shade that can create the effect of layers of light.

This kind of technique works particularly well with longer lenses that compress perspective and stack overlapping forms. Each layer, or plane, appears thinner and closer to the next, exaggerating the effect. Just remember longer lenses produce less depth-of-field so you'll need to use smaller apertures, such as f/16, if elements are in the foreground or near the middle distance.

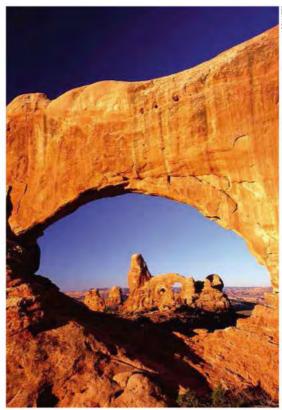
This shot was taken at dawn near Lyme Regis using a 70-200mm zoom at around 100mm. The longer focal length compresses the distances between the layers and the strong, directional light helps emphasise the layers – the early morning mist adds bags of atmosphere.











Find natural frames

A popular compositional device is to use elements in a scene to frame the view beyond, such as an archway, doorway, window or the overhanging branches of trees.

Try using frost-covered plants and gateposts to create a natural frame for the main subject of your shot. Use the frame to lead the viewer's eye into the scene for some truly eye-catching results.

Control your focus and depth-of-field carefully though. While a small aperture often works best, blurring the frame significantly can help keep attention on the main subject. If you do want to render your frame out of focus, make sure you blur it enough so that the effect looks deliberate and not like a mistake in focusing.





Experiment with viewpoints

Finding the right viewpoint is key to successful landscape composition. Rather than shooting everything from head height, experiment with high and low viewpoints.

Higher viewpoints have the effect of opening up the planes in the image and are useful when using standard and telephoto lenses. When photographing wellknown landmarks, it's tempting to use the established viewpoints, but spend time looking for a fresh view, as

it's much more satisfying to capture something original.
While there's nothing wrong with the first picture, it's the 'standard' view of Old Harry Rocks in Dorset. Without having to move very far, however, a less photographed and more dramatic viewpoint has been found.

Lead-in lines

Master one of the most important compositional tools: lead-in lines

FEW COMPOSITIONAL devices can improve the impact and add depth to your landscape pictures as well as lead-in lines.

When you think of lead-in lines, what comes to mind? Rows of crops, a seemingly never-ending road, a bendy stream? What about shadows, footprints, clouds, the coastline, windows, piers, cracks, paths or rocks? The list can go on and on. Although lead-in lines come in many quises, some natural, others man-made, all of them tend to either lead the viewer in and out of the picture or towards a focal point. The latter being the preferred choice as it allows the eye to settle within the scene, but both can work well depending on the picture.

Some of the most effective lead-in lines start from the bottom edge of the frame and go straight in to the centre of the picture, like a pier towards the horizon, but there are many variations that can have just as much impact, depending on the scene. While straight lines quickly draw the eye to the point of interest, curved lines force the viewer to take a more leisurely journey through the image. Vertical lines, shot from a low angle, like those on a building, add tension to a picture and diagonal lines work well if they travel from the bottom left to the top right of a picture, as that's where the human eye naturally gravitates. It doesn't have to be a single line either: multiple lines only strengthen the effect of one line, as long as they're clearly defined and heading in the same direction. It's very important to try to keep the elements within a scene connected, as any break in the flow of the



line will leave the composition feeling disjointed and allow the viewer's gaze to wander aimlessly in and out of the frame.

You can enhance your lead-in lines depending on what viewpoint and lens you choose, as both can either flatten or stretch perspective. The most dynamic distortion of lead-in lines is converging verticals. Converging diagonal lines create a powerful impression of distance and depth, especially if they converge in to the centre of the frame and run parallel to each other. By standing in the middle of them, you'll find that the further the lines are away from the camera, the closer they get to each other, creating what's known as a vanishing point when they join. A wide-angle lens can greatly enhance this effect as it stretches perspective – so the lines seem wider at the start and narrower in the distance - whereas a telephoto lens compresses perspective and hinders the feeling of depth.

- 1) Lead-in lines don't have to be straight or lead to a focal point: the line can also be the interest in the picture. Note how your eye is led through the scene by the wintry tree-lined road.
- 2) When using converging verticals, you need to get the entire scene in focus. Set the camera on a tripod, select a small aperture (f/11-f/22) and focus on the hyperfocal distance for maximum depth-of-field.
- 3) Simple compositions can sometimes be the most effective. Think about creating a graphic coastal landscape with nothing more than groynes or a pier as a lead-in line. By connecting it to the horizon, too, it means the viewer's gaze is led in to the far reaches of the scene and led out of the frame by the horizon line.
- 4) Diagonal lines can be used to draw the gaze from bottom left to top right, where the eye naturally gravitates, as in this coastal landscape where the lines of rocks converge towards the stunning sunset sky.
- 5) The fence in this picture is used as a neat device to draw the eye in towards the focal point: the elevated castle in the distance.

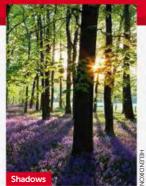






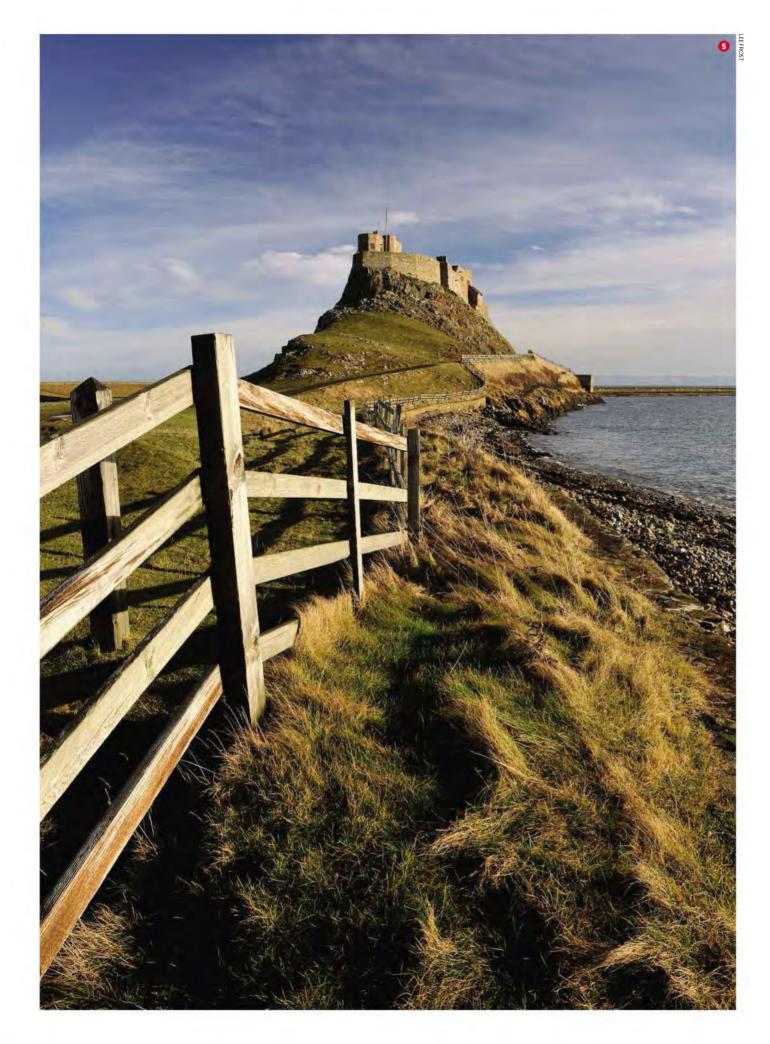
Think differently

Try photographing lead-in lines from different angles. You may find that photographing the lines entering the frame at an angle works better than if you captured them starting within the frame. The opposite can be true, too. Try different perspectives: get low to the ground for extreme converging verticals. Tilt the camera up to see what vertical lines you can find and try to elevate your position by standing on a bridge, for instance. Above all, keep your eyes and your mind open for less obvious linear aspects and don't forget the other guidelines for composition, including foreground interest and the rule-of-thirds.









Foreground interest

Swot up on how you should use foreground interest to give your shots depth and scale and improve the impact of your images

THE LATE, GREAT war photographer Robert Capa once said, "If a picture's not good enough, you weren't close enough." He was talking about capturing the drama of human conflict, of course, and the need to be in the heart of the action – an approach that unfortunately eventually cost him his life. However, the same maxim can easily be applied to landscape photography because if you want to capture the drama of a great scene, you need to move in close and make the most of the foreground - it's one of the important elements you need to create a dynamic composition.

Foreground interest is useful for a number of reasons. First and foremost, emphasising the foreground will help to give your photographs a sense of distance and scale. This is due to perspective – features close to the camera look much bigger than those further way, so our brain immediately registers that the smaller features must be in the distance and we see the image as three-dimensional, making it more realistic.

Second, the foreground provides a convenient entry point into the composition for the viewer's eye, which then naturally travels up through the scene to the focal point or the background. A successful composition needs a 'hook' to entice the viewer and hold the attention. With landscapes, the foreground is that hook.

Third, the foreground contains more information than the rest of the scene, and being closest to the camera allows you to record the fine detail that isn't affected by haze, mist and fog. Distant features will record softer and undefined in such conditions.

Wide-angle lenses are the most useful for exploiting foreground interest as they allow you to include elements in a shot that are literally at your feet. The way wide-angle lenses 'stretch' perspective also makes those elements loom large in the frame while

everything else seems to rush away into the distance. The lower the viewpoint you adopt, the more the foreground will dominate.

Lenses with a focal length of 16-18mm (26-29mm on full-frame sensors) are a relatively safe bet to begin with as they're wide enough to include lots of foreground interest without being so wide that you end up with all foreground and nothing else. Once your confidence grows, you can produce amazing images with ultra wide-angle lenses from 10-15mm (16-24mm full-frame), but you need to get really close to the foreground, otherwise it will seem miles away due to the excessive 'stretching' of perspective that you get with these wider lenses.

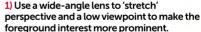
Telephoto lenses are less dynamic in this respect, as the foreground interest you include is formed by elements or features in the scene that are obviously further away, while the foreshortening of perspective 'squeezes' the elements together so that you don't get the same sense of distance and three-dimension as with a wide-angle. Nevertheless, the effect can still be strong, with a single feature dominating the foreground.

What can be used as foreground interest? Pretty much anything - rocks, rivers, walls, gates, fences, trees, moored boats, sand ripples, reflections, people. Features and elements in the scene that create natural or assumed lines work the best of all, as they lead the viewer's eye into and through the scene. Lines that travel vertically work well, lines that travel diagonally from bottom left to top right work even better, and lines that converge into the distance, such as railway tracks or straight roads, are the most powerful of all. To make the most of vertical and converging lines, turn your camera on its side and shoot in portrait format. Diagonal lines are better shot in landscape format as they have further to travel through the composition, holding attention for longer.







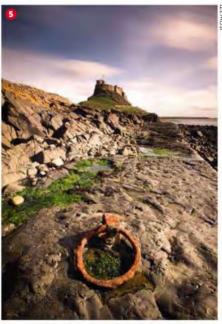


- 2) Try picking subjects that form diagonal lines leading from the bottom left to the top right of the frame, like these boats do, as it draws the viewer into the picture.
- 3) Instead of using foreground interest as a prelude to a distant focal point, try composing pictures where the dominant subject is in the foreground and keep the background simple.
- 4) One good reason why you shouldn't leave home without an array of ND grad filters is to ensure your foreground is correctly exposed. In low-light conditions, like a sunset, it's easy to render the foreground dark and distracting.
- 5) Practically anything can work as foreground interest, as long as it's composed well and fits with the rest of the scene. Look for unusual subjects or for objects that you may never have considered using before, such as driftwood, shells or wreckage remains
- 6) Rocks are the most popular subjects to use in a coastal landscape and can be the most effective when used as a lead-in line, also. Jetties and piers work well, too, and have the added bonus of you being able to introduce converging verticals.









Maximise depth-of-field

There's no point including fantastic foreground if it's out of focus; what you need is enough depth-of-field for front-to-back sharpness. As a rule of thumb, if you use a camera with an APS-C sensor with a focal length around 16-18mm, focus the lens on a point 1.5m from the camera, stop down to f/11 and everything will be sharp from around 75cm to infinity. For wider focal lengths in the 10-15mm range, focus on a point one metre away, stop down to f/11 and everything will be sharp from around 50cm to infinity. For full-frame DSLRs with a focal length in the 24-28mm range, focus on a point 1.5m away, stop down to f/16 and depth-of-field will extend from around 75cm to infinity. For wider lenses in the 16-20mm range, focus on 1m, stop down to f/16 and you'll get depth-of-field from around 50cm to infinity. Basically, to maximise depth-of-field with wide-angle lenses, you need to focus on a point relatively close to the camera; many photographers focus further into the scene, resulting in an unsharp image.

How to use natural frames

For ideas, inspiration and information on how to improve your landscape pictures by using environmental frames, read on...

ONE OF THE MOST effective ways to produce a tight, structured composition is by framing the scene or subject you're shooting. Not only does this help to direct the viewer's eye towards the most important part of the picture, but frames can also be used to hide uninteresting areas, such as a broad expanse of empty sky. Natural frames can be used in all types of photography, but are abound in the landscape if you keep your eyes peeled.

When you think of natural frames, what comes to mind? The overhanging branches of a tree are perhaps the most obvious. A gap between trees that frames a distant focal point? How about overhanging cliffs or the entrance to a cave? On the coast, the gaps between rock outcrops or cliffs can be used to frame the beach and sea beyond.

These are all fairly obvious options, but if you start to think laterally, other ideas will present themselves. For example, the shape of a hillside or mountain can be used to frame features positioned in front of it. Clouds in the sky can act like a frame, too - containing elements on the ground and forcing the eye down towards them.

When shooting using a frame and the sun is behind you, light will fall onto the entire scene, so everything will be of a similar brightness and should record more or less as you see it. If you're shooting into the light,

however, or the sun is to the side of the camera's position, the main part of the scene may be well lit, but little or no light will fall directly onto the frame and it will record dark or even as a silhouette. If the frame and the scene beyond it is evenly lit, you shouldn't experience any problems obtaining well-exposed images. If you're standing in the shadow of the frame, however, overexposure is likely. If this proves to be the case, step beyond the frame and out of the shade, take an exposure reading, set it on your camera using the AE-Lock or by shooting in manual exposure mode, and don't change anything once you recompose with the frame included. Alternatively, take a shot from your shooting position, check the preview image and histogram, then apply negative or positive exposure compensation as required and retake your exposure.

Finally, if you want the frame and the scene beyond to be rendered in focus, select a small lens aperture, such as f/13, and use hyperfocal focusing to maximise depth-of-field (see page 32 for details). Alternatively, by setting a wide aperture such as f/4 and focusing on the scene beyond the frame, depth-of-field will be reduced so that the frame itself is thrown out of focus and all attention is directed towards your main subject.





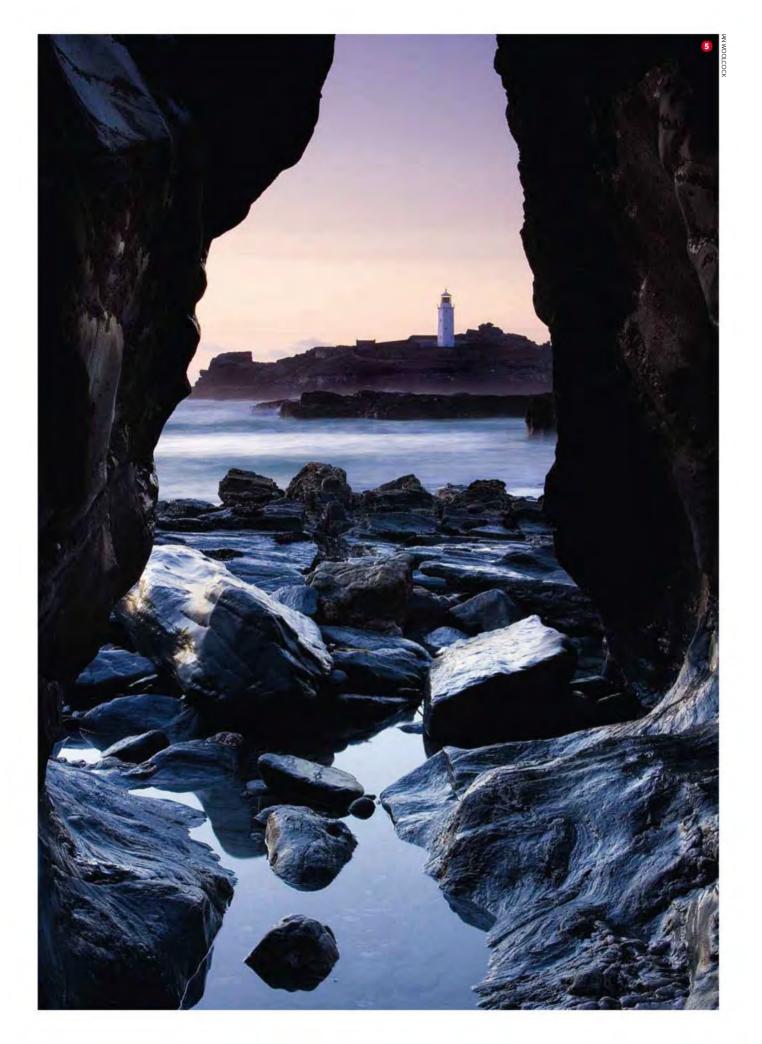
Wide-angle or telephoto?



The effect the frame has on the composition is partly determined by your lens choice. Wide-angle lenses stretch perspective so the apparent distance between the elements in a scene is increased. If you move close to a natural frame, you can include it in the shot, but you'll still get a clear view of the scene beyond. Telephoto lenses have the opposite effect – they compress perspective so the elements in a scene appear closer together. This makes them less suited to shooting natural frames, though they can be handy at times if you're unable to get close to an effective frame and you're happy for the scene beyond the frame to be more selective.

- 1) Using archways is something we've seen many times before, but they always lend themselves beautifully to frame a focal point. It works particularly well with this church because the detail in the frame complements the subject.
- 2) Think about symmetry when looking for natural frames; it is always pleasing to the eye.
 Even the most simple of arrangements can create impact, as seen here.
- 3) Using natural frames is a great way of adding foreground interest to a scene. While the castle is the focal point in this image, it's the dramatic spikes that add impact for the viewer
- 4) Your subject doesn't have to fill the frame to be striking - here the extra space in fact helps to frame and draw emphasis to the small chapel. Try using subtle but graphic shapes in the landscape, such as clouds or hills, to improve your composition - simply centring the church would fail to create the same energy as it does here. Think outside the box and you'll begin to see frames in the most unlikely places.
- 5) The dark frame here is a striking contrast to the lighter scene beyond. Look for differences in colour to emphasise your frame and add impact.





Exposure

Digital SLRs have extremely accurate, multi-zone metering systems with a histogram function to help us check accurate exposure, so getting it right has never been easier. However, to take more creative control, you need to take things into your own hands. Here are a few techniques for perfect exposures

Mark Bauer



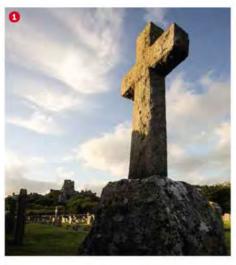
I was looking for an unusual view of Corfe Castle in Dorset, so I sauntered along to this graveyard in the village. Having found a composition based around one of the crosses, the next

problem was sorting out the exposure. Here's how I tackled the challenge:

- 1) This is what the camera's multi-zone meter came up with, without the aid of any filtration. The scene is high in contrast, and the camera has struggled to capture all the tonal information.
- 2) Spot meter readings from the base of the cross and the sky revealed a difference in brightness of about 4.5 stops. Setting an exposure for the land, I fitted a 0.9ND grad (three stops) and pulled it down below the horizon to the edge of the darkest shadow area. I used a soft grad so that it wouldn't cut a line into the cross. As there is some loss of detail in the brighter parts of the sky, I reduced the exposure by two thirds of a stop and reshot.
- 3) The result is that the image has now been 'exposed to the right' (see over the page for details), without 'clipping' the highlights. The histogram shows that there are still dark tones, but also plenty of information in the top section, and no clipped shadows.
- 4) A straight conversion of the Raw file looks dull, the picture lacks contrast. For the final version, I've brought the exposure down slightly and added more contrast, especially in the shadows, to recreate the drama of the original scene. I've also tweaked the White Balance to add warmth and increased the saturation too
- 5) For comparison purposes, I also took a shot that was underexposed by one stop. As you can see, it's left the shadows muddy and lacking in detail.

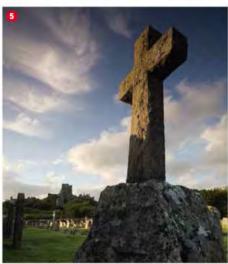
MID-TONE METERING

Metering systems in digital cameras are calibrated to an 18% grey mid-tone. Basing exposure readings on a mid-tone such as grass is a good starting point for accurate exposures









Expose correctly

Shadows

These two examples on the right show why it's not a good idea to underexpose your shot and then try to open up the shadows during post-processing. The nearest image is around one stop underexposed (to maintain highlight detail) and the shadow curve has been pulled up to match the exposure in the correctly exposed version on the right. As you can see, not only is there posterisation in the shadows, rather than smooth tonal transitions, and tons of noise, but also the sensor has recorded significantly less detail.







Exposure for coastal landscapes

Achieving the correct exposure in coastal shots can be a bit trickier than for inland landscapes, as there are several things that can fool the camera's metering system – for example, bright highlights on water or bright white foamy waves can lead to underexposure. On the other hand, if you have chosen a large, dark rock for your foreground, this could cause the camera to overexpose. You need to keep an eye out for any large areas of particularly bright or dark tones and apply exposure compensation accordingly. It is good practice to check the histogram after each shot and be prepared to reshoot if necessary.

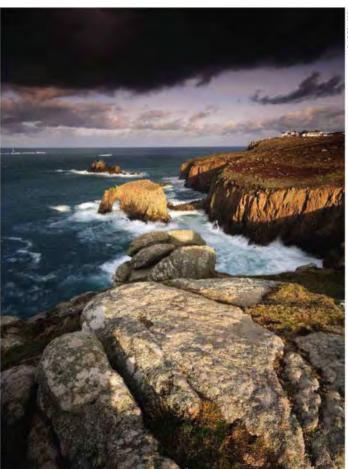
There can also be a huge range of contrast within any one scene, with bright skies, dark rocks and bright highlights on water. Neutral Density (ND) graduate filters are essential, and depending on the conditions and the brightness of the sky and sea relative to your foreground, you may need to pull the grad down very low in the frame. This could even be below the horizon, to the top of your foreground. If you don't, you might end up with a correctly exposed sky and foreground with a band of over-bright water in the middle of the picture. So when metering the scene to choose the strength and placement of the filter, remember to take readings from the foreground, sky and sea.

Long exposures

Exposing to capture movement

One of the great things about taking photos by the sea is the opportunities it gives for capturing the movement of waves and adding atmosphere. In low light, with the lens stopped down to extend depth-of-field, long exposures are a necessity. They may range from several seconds to minutes, depending on lighting conditions. As waves wash around rocks or up and down the shore while the shutter is open, they will record as a romantic, mysterious mist. To capture the drama of waves breaking on the shore, speeds of 1/4sec or slower work well.





Histograms: An aid to checking exposure

IN SIMPLE TERMS, a histogram is a two-dimensional graph, often resembling a range of mountain peaks, which represents an image's tonal extent. While, at first glance, histograms might appear complex and confusing, they're actually very simple to read. They are an essential aid for digital photographers striving to achieve consistently correct exposures in-camera and are a more accurate method of assessing exposure than looking at images you've taken on the LCD monitor. Therefore, if you're not already in the habit of regularly reviewing your images' histograms, it is time you did so. With our guide, you will soon feel confident assessing histograms.

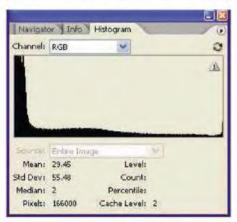
• What is a histogram? A histogram is a visual representation of an image's tonal range. The horizontal axis indicates the picture's extent from pure black (0, far left) to pure white (225, far right). The vertical axis shows how many pixels have that particular value. Looking at an image's histogram, you can tell whether the picture is made up of predominantly light, dark or mid-tones.

Although its appearance is also dictated by the colour and tone of the subject, a histogram with a large number of pixels (or a sharp peak) grouped at either edge is an indication of poor exposure. For example, a histogram with a large number of black pixels (grouped to the left) often signifies underexposure and that subject detail will be obscured in the shadow areas. A large number of pixels grouped to the right of the histogram normally indicates an overexposed image. The image's highlights will burn out (or 'clip') and this detail is irretrievable. A graph with a narrow peak in the middle and no (or few) black or white pixels indicates an image lacking contrast.

So what should a histogram look like? This is a tricky one to answer. Despite what some people may say, there is no such thing as the perfect histogram. It simply tells us how a picture is exposed, allowing photographers to decide whether – and how – to adjust exposure settings. Therefore, a histogram of a light scene will be very different from one with predominantly black tones or one with a mix of both. However, generally speaking, a histogram should show a good spread of tones across the horizontal axis, with the majority of pixels positioned near to the middle (100, mid-point). Normally, it is desirable to avoid peaks to the right-hand side of the graph, as this is usually an indication of 'burnt out' (overexposed) highlights, resulting in lost detail.

When assessing a histogram, it is important to consider the brightness of the subject itself. For example, a scene or subject boasting a large percentage of light or dark tones - like snow or a silhouette – will naturally have an effect on the overall look of the resulting graph. Therefore, while it is possible to make recommendations, it is impossible to generalise about what is and isn't a good histogram. While an even spread of pixels throughout the greyscale is often considered desirable, you will also need to use your own knowledge gained through experience.

• How do I check an image's histogram? Most Canon digital SLRs allow you to view the histogram on the LCD monitor during playback. To do this, press the playback button to view the image and then cycle through the additional photo info screens until the histogram is displayed. Make this your default setting so you can quickly access the histogram and assess exposure immediately after taking the picture when required. If the histogram indicates underexposure, apply positive exposure compensation. If pixels are grouped to the right-hand side and the image appears overexposed, dial in negative compensation. Using the histogram is a far more reliable method of assessing exposure than looking at images on the LCD screen, particularly when trying to view images outdoors in bright light when the light reflecting from the LCD can prove deceptive.



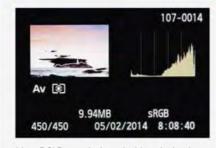
Peaks to the left: The histogram is skewed to the left. The dark backdrop means many of the pixels are in shadow areas, but the image is well exposed.





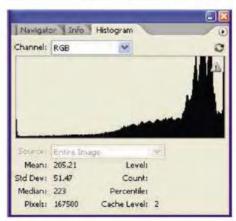
Perfect exposure: A typical landscape scene gives a so-called 'perfect histogram' as it has a good spread of tones and peaks through the mid-tones.

Exposure warnings



Most DSLRs are designed with a playback function known as the 'highlights screen'. While histograms provide a graphic illustration of an image's tonal extent, helping you assess exposure overall, the highlights screen – or highlights alert – helps photographers to avoid highlights burning out. White or very light subjects in direct sunlight are especially prone to this. A histogram with a sharp peak to the far right normally indicates areas of overexposure. However, the highlights alert actually identifies the pixels that exceed the value for pure white (255). Those pixels are not given a value, meaning they cannot be processed and are effectively discarded, having no detail or information recorded. When the image is reviewed on the LCD, the pixels falling outside the camera's dynamic range flash or blink, providing a quick and graphic illustration of where picture detail is 'burned out' and devoid of detail. To rectify this, set negative exposure compensation so that the next image is recorded darker. A camera's highlights alert is not always switched on by default. Consult your manual and switch it on when you feel this type of exposure warning would prove useful; normally it's via the camera's Playback Menu.





Peaks to the right: A well-exposed shot of an overly light scene gives a histogram skewed to the right. much like that of an overexposed image.



Main image & inset: Exposure to the right of the histogram will capture maximum detail and minimum noise. Once in the Raw converter, the image will look too light and washed out, so use the Brightness and Contrast controls to adjust the image's appearance.

Aperture-priority is the mode for you!

So what is it that makes aperture-priority mode more useful than any of the other exposure modes for taking pictures of landscapes? Read on - all will be revealed

APERTURE-PRIORITY MODE gets its name because it allows you to decide which aperture (f/number) you want to use to take a photograph, while the camera automatically sets the corresponding shutter speed, based on light levels, to achieve the correct exposure. In other words, it lets you prioritise the aperture selection, and it chooses the shutter speed accordingly.

As the lens aperture is the most influential factor over depth-of-field (the zone of focus) in a photograph, aperture-priority mode is the most practical shooting mode if you are photographing a subject or situation in which control over depth-of-field is important. Landscape photography is the best example. Generally, when shooting landscapes, you'll want to make sure your depth-of-field is broad enough to record the whole scene in focus, from the immediate foreground to infinity, which means that you'll need to set a small aperture, such as f/11. Aperture-priority mode lets you do this easily, because you have to actively set the required aperture.

When shooting portraits, the opposite tends to apply - you want shallow depth-of-field so that your subject is recorded in focus but the background is thrown out of focus. That means making sure you take the picture with a wide aperture such as f/4 or f/2.8, which again is easy when shooting in aperture-priority mode because it's you and not the camera that decides which aperture to use

That said, you can still control which aperture is set using other exposure modes, but it just requires a slightly different (and longer) way of working. In shutter-priority (Tv) mode, for example, you need to change the shutter speed until the camera sets the aperture you want. In program mode, you can use the program shift function to change the aperture and shutter combination that the camera has set until you get the right aperture

Where aperture-priority mode trumps other modes is that once you've set an aperture, the camera won't change it, even if light levels fluctuate. Instead, the shutter speed adjusts to maintain the correct exposure. This wouldn't be the case if you set shutter-priority – if light levels change your camera gives shutter speed priority, automatically adjusting the aperture to maintain correct exposure, and so your control over depth-of-field is diminished. Similarly, in program mode, the camera would change the aperture/ shutter speed combination in response to changing light.

Aperture-priority mode is also handy for general use; ie when you're wandering, shooting anything that takes your fancy, such as architecture, details, abstracts or candids. Depth-of-field requirements will vary depending on the shot - one minute you need lots, the next as little as possible - but you can alter it quickly with the flick of the camera's input dial, and the viewfinder display will keep you informed of exactly which aperture (and corresponding shutter speed) you're using



THE EFFECT OF APERTURES: With depth-of-field having such an effect on the final image, it's no surprise that many experienced photographers rate aperture-priority mode as their favourite mode. These two shots show how different apertures can produce very different results.

Setting aperture-priority mode

Choosing aperture-priority mode is simple – all you need to do is turn your exposure dial (or in some cases push the exposure mode button) and select Av. Your Canon EOS DSLR will then be set to aperture-priority mode and all you need to do is rotate the small adjustment dial (found either on the handgrip or on the top-right corner of the rear of your camera) to change your aperture. If you lightly depress the shutter button to activate the exposure system, you can keep a check on the shutter speed the camera has selected.



How other exposure mödes work

We've already established that in aperture-priority mode, you set the desired aperture and the camera sets the accompanying shutter speed to give the correct exposure. Here's a quick rundown of how the other modes work.



Full-auto mode The camera sets the shutter speed and aperture to achieve the correct exposure. You can't change the combination to use a specific aperture or shutter speed



Program mode Program works in a similar way to full auto, but you can usually alter the aperture/shutter speed combination if you need to use a specific aperture or shutter speed.



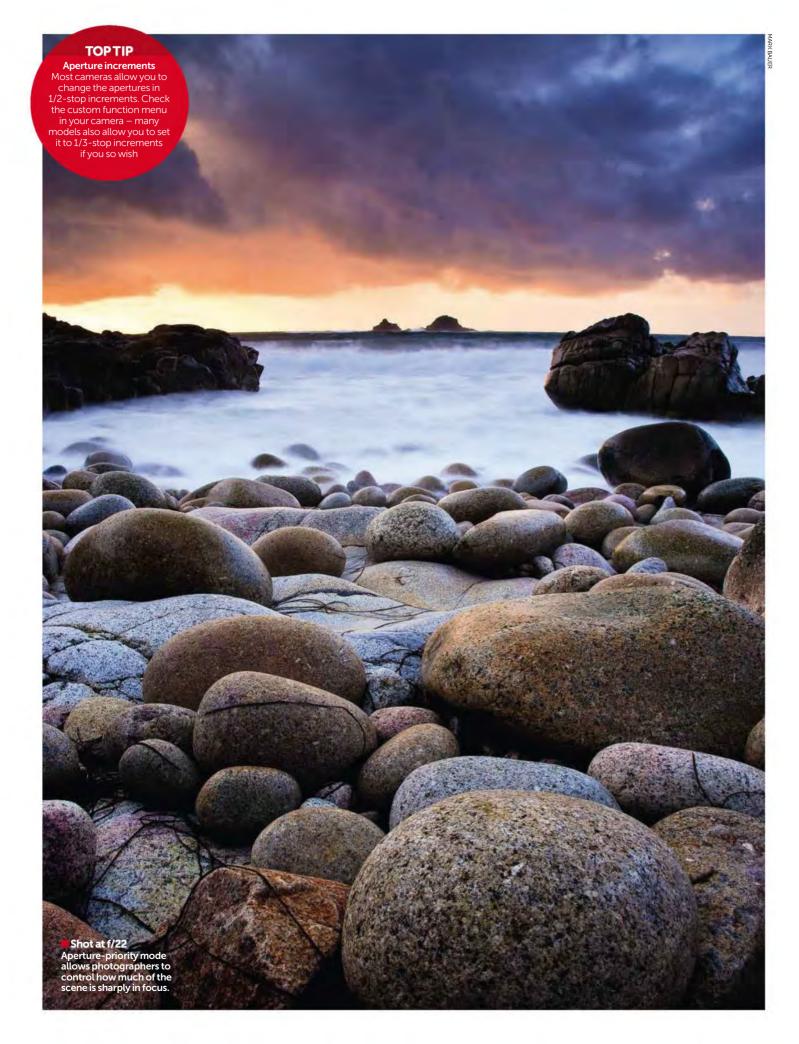
Shutter-priority You set the shutter speed and your camera sets the appropriate aperture. If light levels change, the same shutter speed is used and the aperture changed.



Metered manual You manually set both the aperture and shutter speed independently of each other, so neither changes unless you adjust them, even if light levels fall or rise.



Subject modes These program modes are tailored to suit a specific subject, with various camera functions like the AF, flash and exposure systems set accordingly



Shutter speeds & landscapes

Learn how slow shutters speed can add energy and movement to your landscape images

LANDSCAPE PHOTOGRAPHERS understandably give priority to apertures, but in some situations, the shutter speed is just as important to capture the effect of movement within a scene. Due to the relationship between apertures and shutter speeds, you can prioritise a slow shutter speed and still maintain sharpness by maximising depth-of-field with a smaller aperture. Typically the narrower the aperture, the longer the shutter speed. By setting your camera to shutter-priority (Tv) mode, you can select your desired length of time, while your camera adjusts the aperture accordingly for a correct exposure. So why choose the shutter speed rather than the aperture? Well, setting the slower speed means anything moving when you fire the shutter, such as flowing water or foliage blowing in the wind, is captured as a soft blur, while anything static, like a fence or rock, remains in focus. The effect of setting a long exposure is to give images extra depth and dimension while illustrating a sense of movement. The result is usually closer to how you remember the scene, rather than a lifeless image of grass with every blade in focus.

But remember: even digital cameras can be fooled. Be careful not to overexpose an image when shooting, for example, a field of golden sweeping grass in the evening sun. As you lower the shutter speed, the camera's chosen aperture will eventually flash, indicating that the image will be overexposed. You can, of course, check the image and the histogram on the LCD monitor for blown-out highlights.

For even slower shutter speeds and to elevate your photography to another level, use filters. A polariser cuts out reflections and darkens blue skies to give clouds that 'wow' factor, as well as reduces the amount of light reaching your sensor by two stops. You can enhance movement and blur by using a Neutral Density filter: a neutral grey filter that doesn't affect colour balance but has the effect of reducing the amount of light passing through it, allowing you to select slower shutter speeds.

For optimum results, shoot at dawn and dusk and use a tripod. Shoot on darker, cloudy days, and let nature work for you – less light means slower shutter speeds. On windy days, hang your camera bag from the tripod to keep your outfit stable, and use a remote release/self-timer and mirror lock-up to avoid contact with the camera during the exposure. Wait for the wind, open the shutter and watch you don't get blown away!



Above, polariser and ND grad: Here, a polariser and an ND grad filter has been used to hold back the bright sky and ensure a well-balanced, long exposure. The self-timer was used to reduce the risk of camera shake.

Shutter speed comparison: The lens (10-22mm set to 13mm) was focused on the grass in the foreground, then the shutter speed was changed in a sequence from 1/50 sec to 1.6 seconds. Note how the grass gets more blurry as the shutter speed becomes slower. Our favourite image from the sequence is the longest exposure, 1.6 seconds, as it captures the most realistic sense of movement.



















The basic skills for shooting water in landscapes

It's all about technique and the right gear when shooting stunning water scenics: be prepared before you head into the great outdoors

WE'RE NOT SURE if you've ever noticed, but the majority of stunning landscape images usually have some form of water in the scene. Whether it's as subtle as a small river trickling through or as obvious as a dominating sea in a coastal seascape, water represents a key element in many landscape images.

One of the main reasons for this is because water is such a photographically pliable element. By using filters and/or manipulating the shutter speed, it's possible to record water in all manner of ways, from freezing its movement so droplets are suspended in midair, to using a long exposure to transform it into an ethereal mist. While potentially causing problems with our exposure, the reflective

nature of water also plays its part in improving images, too. On days where there is little or no wind, by heading to a lake, reservoir or any other large body of water, it's possible to produce a striking result by capturing a clean reflection of the scene on its surface. The possibilities don't stop there - rivers can be used as strong lead-in lines through the scene or, along with the likes of secluded rockpools and meandering streams littered with rocks, can form highly effective foreground interest.

The list is endless, but here we cover the basics of shutter speeds when shooting water. as well as the gear that should make it easy to take on our landscape projects, starting on page 91. What are you waiting for? Get exploring!

Choosing shutter speeds

The shutter speed you use to capture water will depend on a number of factors: if it's moving; how quickly it's moving; how much of it there is; and whether you want to stop it dead to freeze its movement or let it blur.

For big waterfalls and breaking waves, a shutter speed of 1/1000-1/200sec will guarantee you freeze every droplet. For fast-flowing rivers and smaller waterfalls like this one pictured here, try 1/200-1/500sec, while for slower rivers and streams, 1/125-1/250sec should do the trick

When it comes to blurring, one second will have a good effect on big waterfalls or try two seconds for smaller waterfalls. Rivers and streams need a slower speed of two to four seconds, though you can go much slower ten to 20 seconds - if you like.

Overexposure can be a problem when large volumes of water are concentrated in certain areas, so keep an eye on the histogram and use a slower speed if you start to clip the highlights. For coastal scenes, one to two seconds will blur waves, while 20 to 30 seconds will produce a milky effect.







Essential gear

Wide-angle zoom: An ultra-wide zoom like a 12-24mm or similar is ideal as it allows you to fill the foreground with water and deliver plenty of depth-of-field for scenes that are sharp



throughout. The Sigma 10-20mm lens, costing around £400, is hugely popular due to its excellent performance and value-formoney price tag.

Spirit level: If your tripod kit has a spirit level, use it to ensure horizons are even - vou don't want to spend ages in Photoshop levelling them if you can avoid it at the picture-



taking stage. Otherwise, buy a basic £10 spirit level to slip into a hotshoe or treat yourself to a funky £30 Seculine Action Level (www.intro2020.co.uk)

Filters: If you're serious about landscape photography, it'll pay to invest in a slot-in filter system. Cokin's P-system (www.intro2020.co.uk) represents great value for money, while if quality is



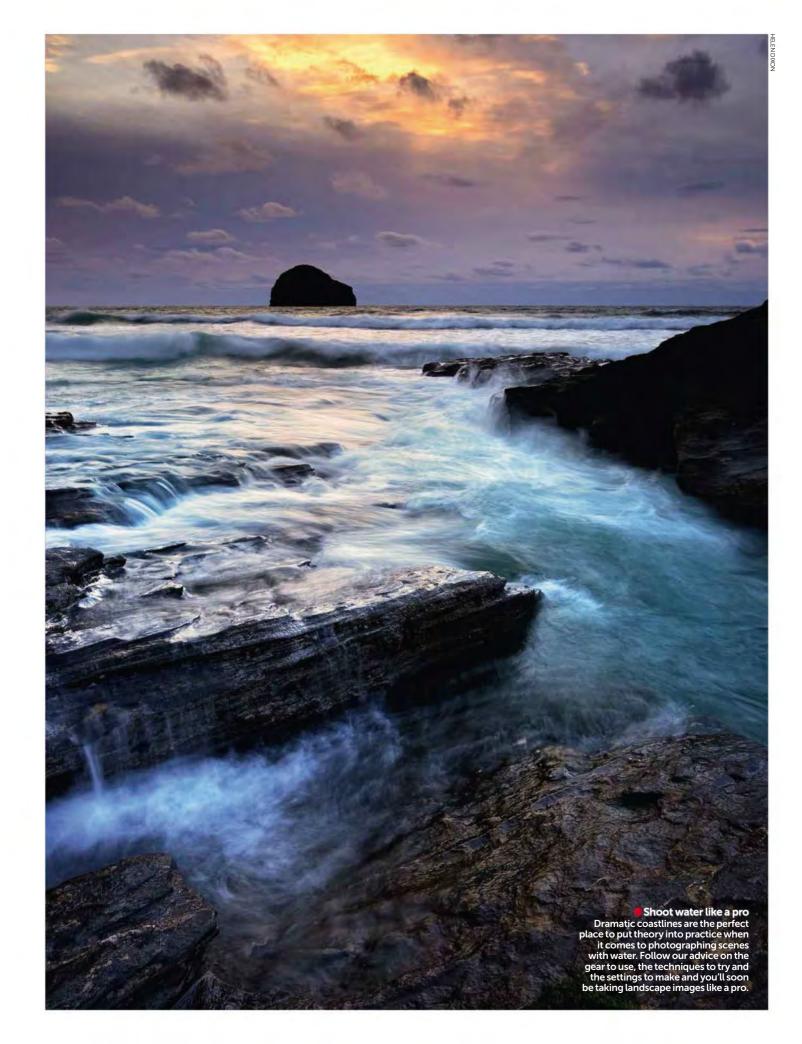
paramount, look to Lee Filters' superb 100mm system – the choice of the professionals (www.leefilters.com). A polariser helps boost blue skies and deliver clear reflections off the water's surface. A 0.6 or 0.9ND filter (not ND grad!) is also worth considering, as it will allow you to use long shutter speeds in daylight to blur moving water.

Tripod: When shooting water, you'll be looking to use small apertures to maximise depth-offield and the slow shutter speeds require you to keep the camera stable

to avoid shake. Check out the essential kit section later in this guide for advice on the best tripods to buy for outdoor photography, whatever your budget.

Photo backpack: When you're walking for miles and miles on end, a decent photo-dedicated backpack is a far better (and comfier)option for protecting your prescious photo kit than a do-it-all gadget bag. Those with an all-weather cover will offer superior protection from water and the other elements. Turn to page 160 for our top

bag recommendations Clothing: There's nothing worse than slipping into a river and having to spend the day in wet clothes. Wear decent footwear from reputable brands such as Berghaus and consider waterproof trousers or gaiters from brands such as Paramo, as they allow you to step into rivers and stay dry.



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Learn how to capture sharp images like a pro

Master the fundamentals of focusing, depth-of-field and camera shake to vastly improve your photography

IMAGINE YOU'VE FOCUSED on an object that is five metres away. How sharp will something be at six metres? Or even five-and-a-half metres? The answer is governed by the depth-of-field: the distance either side of the point of focus that is deemed to be acceptably in focus. As long as you control the aperture you are shooting at, you're in control of depth-of-field, and you can use it creatively. There will be occasions when you don't want much of it at all, and you'll get that effect by shooting with a large aperture like f/4. However, for most of the time that you're shooting landscapes you'll want to maximise depth-of-field to get as much of a scene in focus as you possibly can.

Foreground detail is important and has to be in focus, but so does the rest of the scene. This means using small apertures to get good sharpness either side of the focus point. But just consider this last phrase for a moment, and then think about where you might focus when shooting a landscape. Many novice landscape photographers are happy focusing at infinity when shooting a landscape, but don't forget that depth-of-field extends either side of the point of focus. In fact, the area

of depth-of-field extends one-third in front of the focused point and two-thirds behind: in other words, you get more depth-of-field behind the subject than in front of it. Obviously there is no benefit to having acceptable sharpness extending beyond infinity, but you can pull the point of focus back towards you, so it's the end of the depth-of-field zone that is at infinity instead. This way you'll get more of the scene sharp. This is called hyperfocal focusing and has been used by pro landscape photographers for decades. The optimum point of focus for any scene relies on the choice of aperture setting and the focal length of the lens you use - and changes for full-frame and APS-C-sensor DSLRs! There are calculators and pocket reference tables you can stash in your camera bag, or you can use a dependable rule of thumb that suggests you aim a third of the way into the picture with your lens set to a small aperture. We'll be covering both focusing techniques, as well as providing you with advice to ensure you maximise image sharpness. This includes revealing why using the smallest aperture won't necessarily produce the sharpest results, even though it gives the most depth-of-field!



Focusing with the hyperfocal distance

Lee Frost explains how to use the hyperfocal focusing distance and aperture-priority for super-sharp scenics

ONE OF THE fundamentals of landscape photography is being able to control and assess depth-of-field to ensure that the image is sharp from front to back.

Aperture-priority mode helps you to achieve this, not only by forcing you to think about your aperture, but also by making sure that once set, the aperture won't change if light levels fluctuate or if you use filters. If the exposure has to be adjusted when shooting in aperturepriority mode, the camera does it by changing shutter speed, so the aperture remains constant. This is vitally important because achieving extensive depth-of-field is not just about aperture selection, but also focusing distance, and a careful balancing act between the two is required. You could always shoot at f/22 with the lens set to infinity and most shots would be sharp from front to back. Unfortunately, this simple approach won't always work - so you're not going to get the best results. Wide-angles and zooms tend to be at their worst, optically, at minimum aperture and their best around f/11, so ideally you should shoot as close to f/11 as you can for optimum optical quality, and focus the lens at a distance that maximises depth-of-field at that aperture.

My favourite technique is based around something known as hyperfocal focusing, which involves focusing on a point known as the hyperfocal distance, where depth-of-field is maximised for the aperture in use. Lenses used to feature a hyperfocal distance scale on the barrel but virtually none do today. There is an equation for calculating hyperfocal distance for any lens and aperture, so in true Blue Peter fashion, I've created a hyperfocal distance chart, which you can copy and refer to when you're on location. The distances in feet (ft) represent the hyperfocal distances for each focal length and aperture. If you focus your lens on that distance and set the corresponding aperture, depth-of-field will extend from half the hyperfocal distance to infinity. So, if you're using a Canon EOS with an APS-C-sized sensor, shooting at 24mm and f/11, focus on a point 9ft away and depth-of-field will extend from 4.5ft to infinity more than enough depth-of-field in most situations.

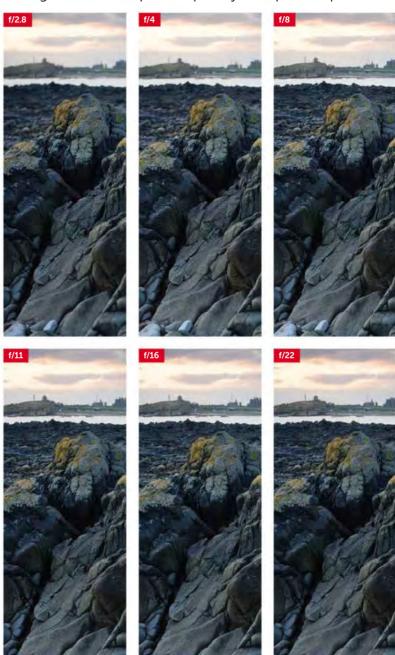
Technique watch!

Aperture-priority and multi-zone metering:

Before finally 'going digital' back in the spring of 2008, I'd spent 20 years shooting with film cameras that had no internal metering, so I used a handheld spot meter to determine correct exposure – which then had to be manually set on the camera. Thankfully, those days are long gone. DSLRs have fantastic integral metering systems that are capable of producing perfectly exposed images in all but the most demanding situations, so I can't see the point in making my life more complicated than it needs to be. These days my digital SLR is set to aperture-priority mode and multi-zone metering and generally stays that way. Combined with the feedback provided by the camera's preview image and the image histogram, I've got all I need to ensure I get perfect exposures in any shooting situation. The same applies to you.

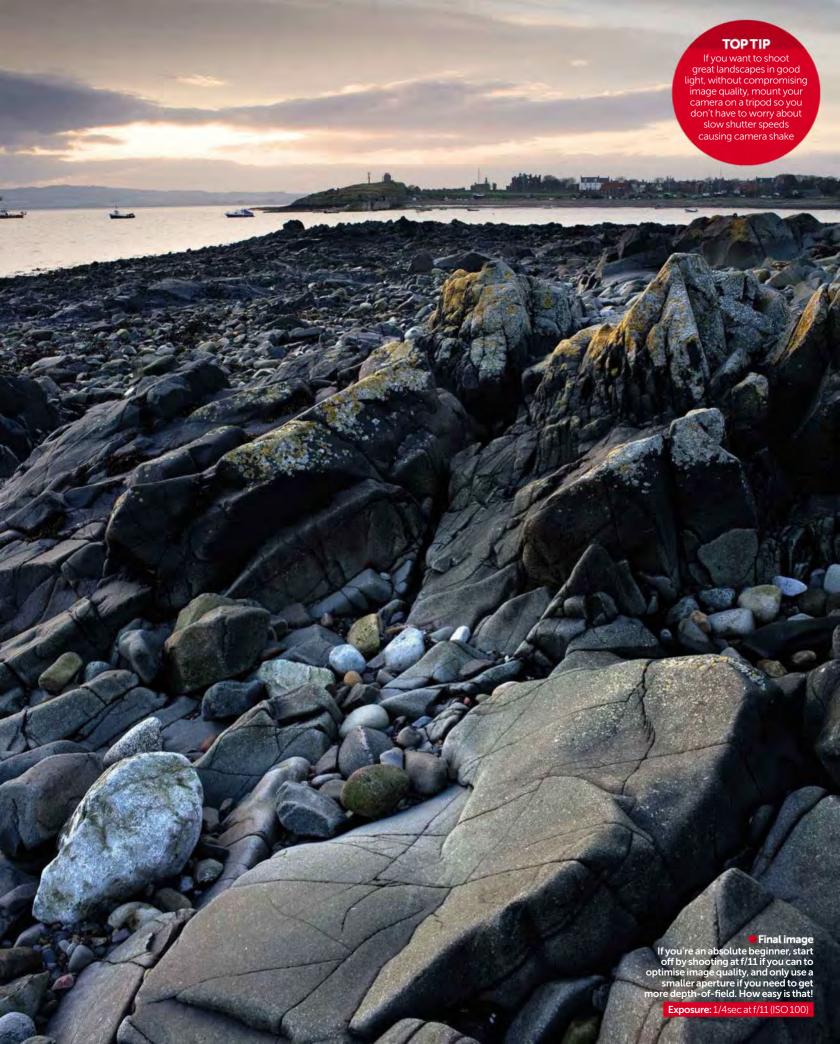






Hyperfocal distance: APS-C sensors											
	12mm	15mm	17mm	20mm	24mm	28mm	35mm	50mm	70mm	100mm	135mm
f/8	3.2ft	5ft	6.4ft	8.9ft	12.6ft	17ft	27ft	55ft	105ft	218ft	395ft
f/11	2.3ft	3.5ft	4.5ft	6.2ft	9ft	12ft	19ft	39ft	75ft	155ft	280ft
f/16	1.7ft	2.5ft	3.3ft	4.4ft	6.4ft	8.6ft	14.5ft	27ft	54ft	110ft	198ft
f/22	1.2ft	0.9ft	2.3ft	3.2ft	4.5ft	6ft	9.5ft	19.2ft	38ft	77ft	140ft

Hyperfocal distance: Full-frame sensors									
	16mm	20mm	24mm	28mm	35mm	50mm	70mm	100mm	135mm
f/8	3.8ft	5.6ft	8.0ft	11ft	17ft	35ft	68ft	138ft	250ft
f/11	2.6ft	3.9ft	5.8ft	7.8ft	12ft	25ft	48ft	98ft	178ft
f/16	1.9ft	2.9ft	4.0ft	5.5ft	8.5ft	17.5ft	34ft	70ft	125ft
f/22	0.4ft	2.0ft	2.9ft	3.9ft	6ft	12.5ft	24ft	49ft	89ft



Focus a third of the way in for sharp results!

Ensure depth-of-field and sharpness with this very simple and effective technique, says Helen Dixon

THE NORMAL PRACTICE for beginners shooting landscapes is to place their DSLR on a tripod, focus on infinity and set a very small aperture to give enough depth-of-field to keep most or all of the scene in focus. It's a tried-and-tested method that works well, but can be improved upon by fine-tuning focusing technique and the choice of aperture.

Looking at focusing first, when you focus on 'infinity' - ie on the distance the depth-of-field will extend a third of the way in front of the focusing point and two thirds behind. So while part of the foreground is sharp, the area closest to you may well be out of focus. Also, you'll have wasted two-thirds of the available depth-of-field, which stretches beyond infinity. Instead, by focusing part of the way into the frame, you can maximise depth-of-field so that it covers the foreground and the distance.

The optimum distance at which you should focus is termed the hyperfocal distance and there are various elaborate ways of calculating it. The simplest method for focusing by far (and one that works 99% of the time) is to focus one-third of the way into the scene. By doing this, and setting a small aperture, you're ensuring that the depth-of-field in front of the focusing point covers most, if not all, of the foreground, while the area behind is kept sharp by the other two-thirds of the depth-of-field. If you want to be as precise with your focusing as possible, use the table on the previous page.

With the focusing technique taken care of, we'll move onto your choice of aperture. While setting the smallest aperture (eq f/32) gives the most depth-of-field, it doesn't necessarily give the sharpest results. That's due to two main reasons: most lenses are optically designed to give the sharpest results at apertures of around f/8 to f/13, while at smaller apertures the effects of diffraction soften the image, negating any benefits provided by depth-of-field. The optimum aperture varies from lens to lens, so the only way to discover for yourself is through trial and error, shooting at different apertures and comparing the sharpness on your LCD monitor or ideally at home on your computer, where you can magnify images for close scrutiny.

For the sharpest results, using hyperfocal distance as explained on the previous pages is best. But this process can be time-consuming and, for most, my technique is ideal. These images were shot using a dominant foreground to emphasise the effect of changing the focusing distance. The aperture was f/13 for all three images.





TAKING THE SHOTS: Helen sets up a tripod, essential for preventing blurred shots caused by shake, then uses LiveView to check the depth-of-field of the shot on her LCD monitor while selecting the aperture. After taking the shot, she can then check the image's sharpness on the LCD monitor by magnifying parts of the frame.

Blurry viewfinder

When using the hyperfocal distance method, you'll notice that the viewfinder image looks unsharp when you've focused a third of the way into the frame. This is because your lens is always set to the widest aperture to provide a bright viewfinder image - depth-of-field



will be minimal. Use the depth-of-field preview button or take a shot at your chosen aperture and you'll see that the image really has far more depth-of-field, because the lens has closed down for the exposure.

Foreground focus

SOFT BACKGROUND kept the foreground parp but the buildings in the distance are soft.











LANDSCAPE LIGHTING

Daylight is the most accessible and versatile light source available to photographers. We explore its many forms, look at the factors that change it and tell you how to make the most of it for successful landscapes

LIGHT IS THE single essential ingredient that allows us to create a photographic image. But light can take on many forms – it can be hard or soft, strong or weak, warm or cold - and each variation has a profound effect, not only on the mood and character of the landscape, but the success of every photograph we take. Time of day and weather conditions are the two main factors that affect the quality of daylight. Throw in seasonal variations and you have seemingly endless permutations that change from one minute to the next. This can be both a blessing and a curse. When things are going to plan, daylight is the most amazing light source there is. But when you crawl out of bed in the middle of the night, drive three hours in darkness to reach a location for sunrise, only to be greeted by thick cloud and drizzle when you finally get there, it can also be the most frustrating.

Be prepared

Planning your shoot puts the odds of success in your favour and is easier than ever these days, thanks to the internet. You can check the weather forecast for the next few days, establish sunrise and sunset times for any day or location in the world, or check tide times if you're heading to the coast. The more information you gather beforehand, the more likely you are to be in the right place at the right time to take advantage of fantastic light. And if things don't go according to plan, you may end up taking photos that are better than you had hoped for - that's because unexpected changes in the weather often produce spectacular conditions that can't be planned for; and by being on location, you can take advantage of them. It's not down to luck that top landscape photographers produce amazing images on a regular basis – it's down to being out in the field, chasing the light.

The ability and willingness to adapt to unforeseen conditions will also help you to make the most of light because different forms of natural light suit different subjects. The flat light of an overcast day may not suit grand wide-angle views, for example, but it's ideal for shooting details in the landscape. Another option is to shoot with the intention of converting images to black & white: in which case, the quality of light isn't so important. You can also use photographic techniques. No matter how drab the weather is, if you're on the coast you can produce amazing images using a ten-stop ND filter to record motion in the sea and contrast it with static elements, such as rocks, groynes and jetties.

Essential filters



ND grad: The Neutral Density (ND) grad lets you balance the sky with the foreground so the whole scene is perfectly exposed. Without a grad, you'll end up with a well-exposed sky and underexposed foreground, or wellexposed foreground and blown-out sky. This is especially true at dawn or dusk, when the contrast between sky and land is at its highest. You'll need a 0.9 density (three-stop) ND grad, while a 0.6 (two-stop) is fine for the day.



Polariser: The second filter is the polariser; in sunny conditions it can make a massive difference to your landscapes, deepening blue sky, cutting through glare, eliminating reflections and boosting both colours and contrast. It's also brilliant for autumnal foliage colour, even on dull days.

The right direction

The direction from which light strikes your subject can make a big difference to the mood and impact of your images. Frontal light, where the sun is to your back, makes the world look lovely but, photographically, it's not very effective because shadows fall away from the camera, making the landscape look rather flat. Just after sunrise, or just before sunset, when the sun is low in



the sky and bathes the landscape in golden light, that lack of depth can be forgiven because the light is fantastic, though you may find that you struggle to keep your own shadow out of the composition!

Side-lighting, with the sun at roughly 90° to the camera, works better because you can incorporate shadows, making them an



integral part of the composition to reveal texture and detail, and add depth. Again, this is most pronounced when the sun is low, as shadows are very long and weak. Another option is to shoot into the light; a technique known as contre-jour. Sunrise and sunset shots are taken in this way because the most colourful area of the sky is generally where

the sun's about to rise or the moments after. You can also produce stunning shots when the sun is higher, but you need to choose the right kind of scene. Coastal views or scenes containing water suit contre-jour photography. Winter scenes are also ideal as sunlight reflects off the snow, ice and frost. Mist and fog work well, too, as the light

burning through can create images that are incredibly atmospheric.

Ultimately, natural daylight is a law unto itself and no matter how hard you try, you'll never be able to control it. You can master it, though, through planning, patience, practice and perseverance, and once you master light, you master photography.

The time of day

From the moment first light appears to the time when darkness takes over, the quality of light undergoes a myriad of amazing changes and makes a huge difference to your photographs



PREDAWN First light usually appears 30-40 minutes before sunrise. Ideally, arrive an hour before sun-up to find a viewpoint, set up your gear and start shooting as soon as colour appears. Any light on the landscape is reflected from the sky, so it's soft and shadowless, and tends to have a strong, cool cast. This contrasts well with the warm glow over the eastern horizon.

Water, wet sand and wet rocks pick up the colour in the sky, so predawn is great to shoot coastal or lake views. Ideally, there will be some broken cloud adding colour to the sky, but clear mornings can also be highly productive. Light levels are low, so expect long exposures. The contrast between the sky and land is high due to the lack of direct light, so use a 0.9ND graduate to retain detail and colour in the sky.



SUNRISE By the time the sun peeps over the horizon, any colour in the sky may have gone. On clear mornings, the sun will be dazzling once it rises, but you'll be able to shoot into it for a few minutes as the sea and wet sand reflects the light to keep contrast manageable. Features such as piers, castles and lighthouses can also be captured in silhouette. Inland, contrast will be too high once the sun rises into a clear sky. At this point, turn and capture the golden light on the landscape. Ideally, let the sun side-light the scene so you can include long, raking shadows to add depth and reveal texture.

The light is warm at sunrise because the rays pass through the atmosphere at a shallow angle and the light is scattered, with many of the wavelengths at the blue end of the spectrum filtered out.



EARLY MORNING Once the sun is up, you have minutes to capture the light at its peak quality before it loses warmth. During the summer, daylight is neutral in colour two hours after sunrise and its colour temperature remains constant for about 12 hours. During spring and autumn, any warmth in the light will have gone by 8am and the colour temperature remains steady until 4pm. In winter, however, the colour temperature hardly ever reaches 5500K, even at midday, because the angle between the sun and earth is shallow all day.

The first two hours after sunrise are the best for landscape photography as the intensity of the light is reasonably low, and long shadows add depth and modelling. A polariser is also effective when the sun is low in the sky and at 90° to the camera.



THE MIDDLE HOURS Once the sun has been up for two hours, the quality of the light in clear, sunny weather begins to tail off. The higher the sun climbs, the more harsh and intense the light and the shorter and denser the shadows. By 9am in summer, the sun is at its 'zenith' - its highest point - and stays there until at least 4pm. The landscape looks flat, contrast is high and the light isn't attractive. The urban landscape is better suited to strong light: shoot modern architecture, using a polariser to deepen the sky, and look for abstracts and colourful details. In the countryside, capture trees against the sky from a low angle and look for reflections in water. Infrared photography works in harsh light, especially in spring and summer when there's lush foliage around.





LATE AFTERNOON Once the sun begins its slow descent and the light begins to warm up, its intensity is reduced, and shadows become longer and weaker. Shape and character return to the landscape, and the longer you wait, the better it gets. In the morning, the light falls on a cold earth, but in the afternoon, the earth is warm so shadows appear neutral, not cool. The atmosphere is also denser in the afternoon, so light can appear redder than it did at the start of the day. The hour before sunset is often referred to as 'the golden hour' due to the richness of the light. Long shadows reveal texture and modelling to give your pictures depth, and because the sun is sinking and not rising, it's easier to predict how the light is going so vou can choose a suitable location.





SUNSET When a sunset seems likely, get to your location 45 minutes before so you can choose the best viewpoint, get set up and take a variety of pictures as the sun dips. Capture the landscape bathed in golden light. If the scenery is relatively flat, the light will perform its magic literally until the moment the sun sets, whereas in hilly regions, you may lose the sun half an hour before. Shooting into the sun will record anything between the sun and the camera in silhouette: a good technique when shooting water because the sun's glow and colour in the sky will be reflected, creating a backdrop to silhouettes of boats, islands, piers and so on. If flare is a problem, hide the sun behind something in the scene or wait for it to set. If you want to record detail in the foreground, use a 0.9ND grad.



TWILIGHT Once the sun finally disappears below the horizon, light levels quickly fade and the light on the landscape is again reflected from the sky. If you're lucky, there will be a vivid afterglow in the sky created by the sun as it under-lights the clouds above the horizon, but even this will fade quickly. You'll find that colours are muted, the light is soft, shadows fade and light levels fall away. Head to the water's edge where the pastel colours left in the sky look stunning reflected in lakes and rivers. Or use those colours as a background to silhouettes. Long exposures record movement: the swaying of trees in the breeze; the movement of clouds across the sky; the motion of the sea or water flowing in rivers and streams. Keep shooting until those colours fade.



MOONLIGHT The moon can be a lovely natural source of light. Winter scenes work well because snow and frost reflect the moonlight. Coastal views also work if you capture the shimmering silver ribbon of light from the moon on the sea. By increasing exposure, you can create surreal shots that look like they've been taken in daylight. They'll look normal, but the light will have a strange quality. You can even try recording star trails in the sky created by the rotation of the earth while the camera's shutter is open. Obviously, exposures will be long in low light, so use a tripod, and keep the ISO low – 400 or less – for high image quality. Whatever you shoot, unless the moon is obscured by cloud, you should keep it out of frame to avoid it recording as an overexposed white smudge!

RYMCPARLAN

Get up early for 'magic hour' lighting

Dawn is the best time of day for taking beautiful, atmospheric shots, says landscape expert Helen Dixon

WAKING A COUPLE of hours before sunrise, which is often in the middle of the night, is not most people's idea of fun. But if you're prepared to make the effort, you will reap the rewards. Planning is essential. Check the weather forecast and the sunrise times on the internet. And check the tide times if you are travelling to the sea - a low tide is usually the best time to visit. If the light fails to materialise, you can always do beach close-ups.

I try to be on location at least half an hour before the sun rises - if not earlier - because it's often before the sun appears that the real magic happens. This also gives me time to set up the camera and to find the best viewpoint. Don't just look for clear days, it's better to have cloud around as this creates wonderful colours in the sky as the cloud reflects the light of the sun. Try to pre-visit and research your location before the day of the shoot. I use Ordnance Survey maps for detailed information on rights of way and parking. Look for appealing places where there will be opportunities for shots that include foreground interest.

Mist mainly develops during a cold night and it only lingers for a short time during the morning or until the heat of the sun burns it away. Something to bear in mind is that, during misty conditions, your camera's metering system will often underexpose the scene, resulting in a dull, lifeless landscape. To compensate, alter the exposure by +1/2 or +1 stop. Check the histogram on the camera's LCD monitor for overexposure.

The use of Neutral Density graduate filters is pretty much standard in landscape photography. They help to control the brightest part of the

image, which is usually the sky. Early in the day, there is a noticeable difference between the light in the sky and the light on the land.

Be aware of lens flare if the sun is included in the frame. To help eliminate this, make sure that your filters and lens optics are spotlessly clean. I rarely use a warm-up filter as these filters normally make any green foliage appear a yellow-brown colour. Instead I set my camera's White Balance to Cloudy or Shade to help warm up the scene. Try to avoid using the Auto White Balance (AWB) setting as you are sure to cool down the light, unless, of course, this is the effect you want. There are a number of reasons why I personally prefer dawn light over sunset. I like to capture atmosphere in my shots if I can, and early morning is the best time to do this as you are more likely to have a misty or frosty start to the day. The light is often diffused and softer at this time, but it's also more of a challenge to include the sun in the picture, too, during the morning than in the evening, because at sunset the pollution levels have risen throughout the day, which helps to diffuse the brightness slightly. Another great advantage of early morning is that it's so peaceful; I rarely see another soul. The world belongs to me - it's so satisfying to watch the day unfold and witness the magical light of dawn.

Once the sun has risen and become too strong to photograph, turn to the side or put your back to the sun, being careful not to cast a shadow in the foreground. Now start using the warm light that's illuminating the land. Light is never static but continually changes – it's the main ingredient that allows us to create something beautiful.

Kit watch!

Helen's magic-hour kit When considering what equipment you will need. a necessity is a sturdy tripod, as at this time of the day you're working with long exposures. Luse a Manfrotto MF4 carbon-fibre with 322RC2 head - it's a lightweight but stable support and I can hang my bag from the centre post for extra stability on really windy days.

I always use a remote release but if you don't have one, use the self-timer to stop any vibrations and use mirror lock-up if your DSLR has this facility.

I find my ultra wide-angle zoom and my 70-200mm telezoom particularly useful. These cover most of my requirements. I use the wide-angle zoom when shooting foreground elements. And the telephoto zoom is especially good for compressing perspective and creating layers on misty mornings



Stay out late and shoot stunning sunsets

The other 'magic hour' is at sunset – be prepared and you'll be rewarded, reveals Mark Bauer

ALTHOUGH IT'S possible to take landscape photographs at most times of the day, there are two times when most landscapers agree the light will give the best results - the first and last hours of the day. What makes these times of day special is that the low sun casts long shadows and helps to pick out the features of the landscape. If you're out predawn or post-sunset, you can also see spectacular skies as the clouds are lit from below.

The light is quite similar at these times of day, and your preference often depends on which direction of light suits your subject. For example, the south coast in winter looks best at the end of the day rather than at the start. Having said that, the light in the final hour of the day tends to be warmer and, as the sun sets, the landscape is often bathed in a golden glow. Also, let's not forget, the nice thing about sunset compared to sunrise is that you don't have to force yourself out of bed at a ridiculous hour to make the most of it. Let's be honest, not everyone has the willpower and enthusiasm for sunrises as Helen Dixon (see opposite)!

Almost any type of landscape looks good in the magic hour, but some features really benefit, like stone buildings or rocky cliffs. When the low sun warms everything up and picks out the texture of rock and stone, scenes that might look dull at any other time of day can be lifted out of the ordinary.

Water is also an excellent subject at this time, because if you have an interesting sky, you can double the impact by using reflections. Moving water can sparkle like diamonds or be made to blur during long exposures. Again, the amount and type of light falling on it determines the result.

The direction of the light can have a strong influence on the mood and success of pictures taken at the beginning or end of the day. Front lighting, for instance, can look flat as the direction of the shadows doesn't help to pick out the details of the landscape. With the sun to one side, however, shadows help to create depth in the picture and reveal form and texture. Side-lighting is best if you want to use a polariser to saturate colours, too, as it will have its strongest effect if the camera is 90° to the sun. Backlighting can be very dramatic as well, but exposure is difficult to control and you will have to be careful to avoid lens flare as light falls directly onto your filters or the front element of your lens.

With all this to consider and the weather is notoriously unpredictable, how can you tell if the magic hour will live up to your expectations? Looking at weather forecasts is a good idea www.metoffice.gov.uk is reliable and you can get a detailed forecast for specific regions. Remember that the longer the range of the forecast, the less reliable it will be. Checking the forecast the night before a dawn shoot gives you the best guide.

If you drive to your location, listen to local radio stations in the car, rather than national ones, and keep an eye on what's happening in the sky. For sunsets you'll need to look to the west, as this is where the sun will be at magic hour. Most of our weather fronts come from the west, too, so by keeping an eve in that direction, it's possible to see if cloud is likely to break up or thicken. Being aware of wind direction, the points of the compass and weather patterns will help enormously and you'll start to recognise the signs of a magic moment.

Kit watch!

Mark's magic-hour kit

Wide-angle lenses are the most popular for landscape work, but longer lenses can also be useful for picking out the kind of patterns and textures that the magic hour reveals.

A polarising filter will help you make

the most of side-lighting by improving overall saturation, but is especially effective when used with blue skies.

A sturdy tripod is another essential. If you're shooting in the period after sunset, light levels will be low and handholding will be out of the question. But it's good practice to use a tripod whatever the lighting conditions it will slow you down, it makes you think and it enables you to make small but often vital changes to composition.

Neutral Density graduate filters are also important, especially if clouds are lit from below and there is no direct light on the land. ND grads help control contrast





Watch the weather

Changes in weather have an even greater influence on the quality of light than the time of day, so if you want to take stunning shots every time, you need to be prepared to take on the elements

"THERE'S NO SUCH thing as bad weather, only inappropriate clothing," so said comedian Billy Connolly, and he was right. If the sun isn't shining and the sky isn't blue, we tend to refer to the weather as 'bad', but photographically, 'bad' can be good because it gives us variations in the quality of light to work with, adds drama and creates atmosphere. So-called 'good' weather is actually not so good for photography because the light is bland and the landscape looks picture-postcard perfect, which gets boring after a while.

Clouds have a dramatic effect on the quality of daylight because they soften and spread it so intensity is reduced, contrast falls and shadows become weaker. Clouds also add interest to the sky, and the sky can make or break a great landscape.

Days when the sky is a blanket of monotonous grey cloud are probably the least exciting for landscape photography as colours appear dull and muted, and a lack of shadows means scenery tends to look flat and uninviting. However, overcast light is ideal for capturing details in the landscape: the patterns and textures in rocks; the smooth shapes and soft colours in seaworn boulders and pebbles; the rich colours of autumnal foliage or banks of spring flowers. Strong colours look intense in diffuse light because there's no glare to dilute saturation. Dull days are also ideal for slow shutter speed shots of waterfalls – just keep the boring sky out of the shot and you'll get some great results.

White clouds in their many shapes and forms are highly photogenic against blue sky, and you can make them stand out even more by using a polariser to deepen the blue. Keep the sun to your side for the strongest effect. Watch out for cloud patterns on the landscape, too - they can add an extra element that makes a good scene great, and are easiest to spot if you're shooting from an elevated viewpoint.

Stormy weather creates the most

dramatic conditions for landscape photography - angry, dark clouds rushing across the sky, strong winds blowing and momentary breaks that allow rays of sunlight to flood through and illuminate the scene below. You can't plan for such conditions, but if you venture outdoors in stormy weather, there's always the chance that you'll be in the right place to capture them. And it will be a blessing if you do.

If the sun does break through during a storm, the landscape ends up brighter than the sky, which is a reversal of the norm. What this means in practice is that you can get away without using an ND grad as the sky won't overexpose. However, it's still worth using a 0.6ND grad to make the sky look even more dramatic than it really is.

Something else to watch out for in stormy weather is a rainbow arching across the sky. Rainbows are created when the sun shines through falling rain, so if that happens while you're out, turn your back to the sun and check the sky ahead. To reveal the colours of the bow at their best, try to catch it against dark clouds and use a telezoom to home in on part of the bow. Alternatively, use a wide-angle zoom and include the whole bow

Mist and fog reduce the landscape to soft shapes and hazy outlines. Three dimensions become two and aerial perspective means that tones become brighter with distance. The light is diffuse, shadows don't exist and fine detail is lost. Scenes are simplified and your images should reflect that.

Telephoto lenses emphasise the effects of mist and fog by magnifying the scene and compressing perspective, so they're great for shooting the overlapping forms of hills and mountains, or picking out elements like a single tree or church spire fading into the gloom. If you want to relegate mist or fog to the distance, then use a wide-angle lens visibility close to the camera will be much better than farther away, so you can capture plenty of foreground detail and let the rest of

Check the web

If you're planning a landscape shoot, whether it's to head out early in the morning for sunrise or to go off into the wilds for a week, use the internet to gather information that will help you make the most of the light. Here are some websites worth bookmarking for future reference:

Weather forecast

www.metoffice.gov.uk www.bbc.co.uk/weather www.xcweather.co.uk www.metcheck.com

Sunrise & sunset times

www.timeanddate.com/astronomy/

Tide times

www.tidetimes.org.uk/ http://easytide.ukho.gov.uk

Planning your shoot

A more sophisticated tool is the Photographer's Ephemeris (www. photoephemeris.com). This is available as a free download for Mac and PC (plus as a paid-for app for the iPhone) and allows you to determine sunrise and sunset times for anywhere in the world, any day of the year, as well as the angle of the sunrise/sunset so you can check if the sun's orb will be blocked by hills, say. Moonrise and set times are also provided.

Below left: Far from ruining the image, clouds can add all-important interest to coastal views. Below right: Simple scenes suit a misty outlook and are given an ethereal twist. Right: Rays of light shining through storm clouds can have a really dramatic effect.

the scene fade away. Dense fog is heavy and damp. It snuffs out colour and turns the world to grey, so you may decide to convert your foggy landscapes to black & white. Mist is more delicate, so instead of destroying colour, it tends to merge all colours together to create very soft hues. Mist is also fine enough to let the light through, so shoot contre-jour at sunrise, when you're more likely to find mist in woodland or over water, and capture golden rays of light bleeding through. Such conditions aren't all that common, but the quality of light when you get mist and sunrise coinciding is hard to beat.







Expose correctly

Colour temperature and White Balance

The colour of light is referred to as colour temperature, which is measured in Kelvin (K). The warmer the light is, the lower its colour temperature, and the cooler the light is, the higher its temperature.

Our eyes adapt to changes in the colour temperature automatically, so natural light always looks more or less white – this is known as chromatic adaptation. The photographic equivalent is your camera's Auto White Balance (AWB) setting. If you use AWB, you will find that it produces pleasing results in most daylight situations, but the White Balance does fluctuate so you may not record the colour of the light as it really is. If you want to do that, you should set White Balance to the Daylight preset, which is 5500K. This is the colour temperature of 'mean noon daylight', so in normal daylight situations, your images will come out looking neutral. However, at sunrise and sunset the light is much warmer (lower colour temperature), so by using the Daylight White Balance preset, your camera will record that warmth. Similarly, if the light is cool, as is often the case during predawn or in bad weather, using the Daylight preset will record that coolness.

Remember, also, that if you shoot in Raw, you can adjust the colour temperature of the image later. So if you don't like the cool cast, you simply get rid of it, or if a warm image isn't warm enough, you can adjust the colour temperature to make it warmer.

Conditions	Colour temp (K)	Colour cast (Daylight WB)
Open shade under blue sky	10000K	Very blue
Shade under part cloudy sky	7500K	Blue
Overcast weather	6000K	Slightly cool
Average noon daylight	5500K	None
Morning/evening sunlight	3500K	Warm
Sunrise/sunset	2000K	Very warm





Scasonal landseapc light

Although seasonal changes have more of a physical effect on the landscape, the quality of daylight also varies throughout the year. Here's our guide on how to handle landscapes in different seasons...



WINTER

The landscape lies dormant and bare during winter. Trees stand skeletal against the sky, while fields are brown and barren. Days are also painfully short, with the sun rising well after 8am and setting before 4pm in January.

Photographically, however, winter is a fantastic season. There are few sights more magnificent than a landscape covered in freshly fallen snow and bathed in crisp morning sunlight. But even if you're not lucky enough to get that, ice and frost are a certainty at some point as temperatures drop well below freezing.

The short days are a benefit, too, because you can shoot sunrise and sunset at civilised times. Plus the sun never climbs more than about 20° above the horizon, so the quality of light remains high from dawn to dusk, with long, weak shadows adding depth - on a clear winter's day you can get eight hours of good light.

Keep a close watch on the weather forecast and if a clear night is predicted, prepare for an early start the next day because that usually means ice and frost come the morning - and, if you're lucky, freezing mist for the sun to slowly burn away. Incredible pictures are guaranteed. Woodland and water locations are your best bet. As well as shooting wide-angle views, look for winter details: cobwebs covered in



icy beads; the patterns in ice over ponds and puddles; frosty leaves on the ground; and so on. Dawn on a freezing morning can be magical, with the sky full of pastel colours and the sun rising like a giant orange ball. Its intensity is often reduced by mist or haze, so you can include it in your shots without any risk of flare. Use a long lens to make it nice and big in your shots.

Snow is best photographed when it has just fallen so it's pristine and fresh, and ideally in sunny weather – a glistening snowy landscape under a blue sky is hard to beat. And you needn't head to magnificent countryside to take great snow shots - a visit to your local park can be just as productive if you concentrate on simple scenes, like a single tree standing in the middle of a snow-filled field.

Winter Q&A

Q What should I consider when shooting snow scenes?

A Exposure! All that whiteness in the scene is likely to fool your camera's metering system into underexposure, so take a shot then check the preview image and the histogram. You will almost certainly need to dial in extra exposure using the exposure compensation facility - do that in 1/3-stop increments until the highlight warnings on your preview image start to flash to indicate the image is overexposed. Delete that shot - the one before it should be perfect.

Q Is it okay to use a polarising filter during winter?

A Definitely, but carefully. Blue sky is bluer in winter and because more of it is polarised, the effect of a polarising filter is more obvious than at any other time of the year. In extreme cases, the sky can go almost black if you fully polarise, so you may need to wind back the effect a little.

Q Will my camera work okay in freezing winter weather?

A Yes, but batteries drain faster so make sure yours is fully charged and ideally carry a spare. Also, avoid breathing on your lens or any filters you're using as they will mist up and take ages to clear.



SPRING

This season marks the dawn of new life as the landscape awakens from the dormant months of winter. Barren trees burst with buds and blossom, woodland floors, hedgerows and riverbanks are carpeted with colourful wild flowers, while desolate fields turn into beautiful patchwork guilts of green.

Scenes that looked grey and drab during winter are transformed within a few short weeks - especially if the weather turns and is mild towards the end of winter. Spring is also time for tulips, daffodils, buttercups and bluebells, turning gardens and meadows into dazzling displays of colour.

The weather during spring is changeable and unpredictable - but this has its



advantages for the photographer. Brief showers cleanse the atmosphere and create rainbows arching across the countryside, shafts of sunlight burst through stormy skies to illuminate the landscape below, and light mists hang over rivers and lakes or in valley bottoms at dawn

As the weeks pass, the days also grow longer. The sun rises at around 6am during the early days of spring and sets at 8pm, but by mid-June, sunrise can be as early as 4.15am and sunset after 10.30pm in the north of Scotland. To make the most of spring conditions, rise early and stay out late. Dawn on a perfect spring morning is hard to beat, with a chorus of birdsong permeating the cool air and the first rays of sunlight slowly burning away the mist. The opportunity for amazing images is one that shouldn't be missed, and nothing quite beats that feeling of getting in touch with nature.

The intensity of colour in the spring landscape can be improved by using a polarising filter to cut through atmospheric haze and glare on the foliage. If you want to capture carpets of spring flowers, ideally wait for a bright but overcast day when contrast is low and shadows weak. This makes it easier to record the delicate colours and fine details of the blooms, especially when taking pictures in woodland where the light is patchy during sunny spells.

Spring Q&A

Q How do I shoot spring mist?

A Mist often occurs when a mild day with rain is followed by a clear night and cold temperatures. If that's predicted in the weather forecast, set your alarm early and head out before sunrise. Mist is common near water and wetlands, and in woodland. Get to a decent location ready for sunrise: if you're lucky, the light from the rising sun will burst through the mist, creating warm rays of light that radiate from behind trees and buildings. A straight exposure should capture this effect perfectly, but, if necessary, increase the exposure in increments up to one stop.

Q What's the best shutter speed to use when shooting waterfalls?

A A shutter speed around one second is usually slow enough to blur the water, but also record some texture - though you can experiment with slower speeds. What you don't want to do is overexpose the water so it comes out white.

Q How do I get backlit shots of flowers?

A You need to shoot when the sun is low in the sky, so during early morning or late afternoon; morning is often more atmospheric. Get down low, use a telezoom to isolate a group of flowers and try to capture them against a dark background so the colours glow.



SUMMER

Summer is the least favourite season for landscape photographers as the light tends to be harsh and bland. Yes, the countryside does look resplendent in its lush coat of foliage, gardens and meadows are alive with colour and the days last much longer. But when the sun does shine, it can be very intense and unflattering, with a high colour temperature that makes images look cool, while heat haze tends to turn blue sky into an ugly washed-out tone. Consequently, the number of effective hours available for landscape photography are no more than on a clear winter's day.

Between 10am and 4pm in summer, the



sun is overhead and the light harsh and characterless, while shadows are short and dense. For conventional landscape photography, this isn't great, but if you find scenes containing lots of colour - oilseed rape, poppy fields, sunflowers - on a sunny, blue-sky day, it's still possible to produce striking images. Use a polariser to boost contrast and clarity, and keep your composition simple.

Summer storms are also quite common, with high temperatures leading to thunder and heavy rain. This can produce amazing landscape light, but you risk a soaking to catch it! Once the rain subsides, crisp, clean light will often bathe the landscape and rainbows can appear.

The light is at its best at the extreme of the day, so get to your location very early or be prepared to stay out late. The days do get shorter as summer progresses, but 3am starts and 11pm finishes are not uncommon. You can always grab a sleep in the afternoon when the light's no good!

Wild landscapes can still look dramatic during the summer, and by early September start to turn quite autumnal, so scout out the locations nearest you that will be full of colour. Rocky, barren coastline also changes little during the summer and can be the source of great shots - especially at dawn and dusk when the light is warm.

Summer Q&A

Q Can I do anything about hazy skies?

A Not really. Hazy skies and overcast grey skies lack texture or drama - they're just a blanket, boring tone. Using an ND grad merely darkens that tone, but rarely makes it more interesting. Exclude the sky from your compositions; maybe use a telezoom to shoot selective landscapes or concentrate on smaller details.

Q Is the summer a good time to use my infrared modified camera?

A Definitely. There's plenty of foliage to show the ghostly infrared effect, and it doesn't matter how harsh the light is because infrared photography suits it. Use your IR camera in parks, gardens and woodland, as well as the countryside. For those without an IR-modified camera, try using an infrared filter like the Hoya R72.

Q My summer landscapes often have an unsightly blue cast. What causes it?

A High colour temperature – on a sunny blue-sky day, the colour temperature can hit 10000K. If you use Daylight White Balance, set for 5500K, your camera will record the coolness in the light. Setting White Balance to Shade will get rid of the cast - even Auto White Balance (AWB) may work. Or, if you shoot in Raw, you can correct the cast during image processing.

AUTUMN

Colour - that's what autumn is all about. As days shorten and temperatures fall, deciduous foliage turns a myriad of wonderful rustic colours. Hillsides covered in heather and bracken turn to gold and the landscape battens down the hatches ready for winter. Whether autumn is a hit or a flop colourwise depends on temperatures and rainfall during spring and summer: the first week in November is traditionally a time when colours peak, but the prime period can occur earlier or later.

Clear, sunny days provide the best conditions to capture autumn's beauty, especially during early morning and late afternoon when the sunlight is naturally warm and the sky a deep, velvety blue. Wild landscape looks amazing in autumn - head to regions like Rannoch Moor in Scotland or the Lake District and you can't go wrong.

If you intend to shoot deep inside woodland, ideally choose an overcast day when the light is soft and shadows weak, otherwise high contrast will be a problem. Such conditions reveal the woodland colours at their most intense, especially when enhanced by a polarising filter, which cuts through haze on the damp foliage.

Head for rivers and lakes where you can capture the autumnal colours reflecting in calm water, and as well as shooting wide-



angle views, also look for details like the vibrant patterns of fallen autumnal leaves.

Autumn is also good to capture the landscape being brought to life by dramatic, stormy light, with patches of sunlight breaking through the dark, brooding sky. Or why not rise early and make the most of early-morning mist around water or in woodland and valleys? If you're lucky, you may capture the first golden rays of sunlight burning though to create stunning images.

At the start of autumn, the sun rises around 7am and sets at 7pm, so the days are fairly long, but the quality of light remains high throughout. By day one of winter, the sun doesn't rise until gone 8am and it won't set much before 4pm.

Autumn Q&A

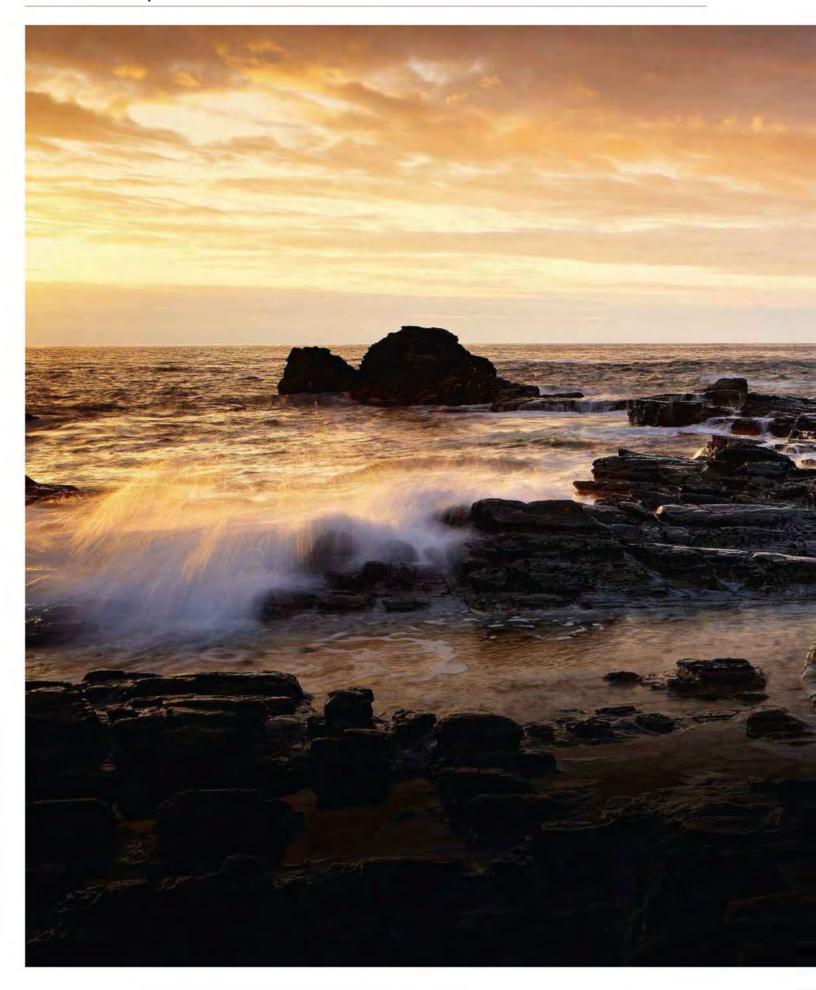
What causes foliage to change colour in autumn?

A Deciduous trees drop their leaves in readiness for winter when there's too little light for photosynthesis to occur, and they live off sugar reserves stored through the summer. Chlorophyll, which gives leaves their green colour, is necessary for photosynthesis to take place, but as the days grow shorter and the hours of darkness increase, the production of chlorophyll slows down and that's when the colour changes start to occur.

Autumnal colours reach their peak when all the chlorophyll has been destroyed and other chemicals in the leaves are revealed, such as carotenoids and anthocyanins.

Q Can you recommend some top autumn locations in the UK?

A If the colours are good, you can take great autumn shots literally anywhere you find deciduous foliage, but check out Westonbirt Arboretum in Gloucestershire, Glen Affric in Scotland, Stourhead Gardens in Wiltshire, The New Forest in Hampshire, Grasmere and Rydal Water in the Lake District, Gwydyr Forest in North Wales and Kielder Forest, Northumberland





An introduction to Raw

If maximum detail and control is what you need, then shooting in Raw is the answer. We cover the basics you need to get started

THE MAIN DIFFERENCE between a Raw file and a JPEG is that when you shoot in Raw format. the images recorded on your camera's memory card consist of the raw data from the sensor. Nothing is added, taken away or changed. If you shoot in JPEG, the camera records all the raw data then develops the file in-camera; applying preset parameters to White Balance, sharpening and custom camera styles etc. deleting any unnecessary information and then erasing any remaining raw data as well.

In film terms, a Raw file is a bit like a negative, whereas a JPEG is similar to a colour slide. Slides are convenient because they come back from the processing lab finished and ready to view. The same can be said for JPEGs, which are supposedly ready to print straight from the camera. However, this convenience means that you need to get everything right in-camera, so there's less room for error. Negatives are more time-consuming than slides as you need to develop them how you see fit in the darkroom. but are much more versatile with more latitude for error. Raw files are the same. They always require processing using suitable software before they're considered finished, but this allows you to make changes to enhance the images and correct in-camera mistakes. The key parameters you can control in Raw are:

- Colour temperature can be adjusted to get rid of unwanted casts or to change the mood of an image. This can be done with JPEGs in Photoshop, but not with the same precision.
- Exposure can be corrected or adjusted for creative reasons – without compromising image quality. Whereas if you make a JPEG lighter or darker, image quality will be affected. You can also optimise image quality by overexposing Raw files in-camera to just before the highlights become blown, as shadow detail is increased and the effects of noise reduced. The exposure can then be 'pulled back' while processing the Raw file. This is only possible because the Raw file contains more data than you need, whereas a JPEG is already compressed, so residual data has been deleted.
- If you do accidentally overexpose a Raw file so the highlights 'blow out', you can recover detail during processing. This isn't possible with JPEGs, so blown highlights appear white and if you try

to darken them they simply go grey.

Sharpening can be applied using the sharpening tools in Raw file processing software or via third-party applications. JPEGs, however, are already sharpened so extra work must be done carefully to avoid spoiling the images. Any changes you make to a Raw file are nondestructive, because when it's converted to, ideally, a TIFF file, the original Raw image remains unchanged. This means you can return to the same Raw file in the future to process it again. Raw files also contain so much data they can be processed several times then combined either to address exposure and contrast problems, or used as the basis for creative techniques such as HDR (High Dynamic Range), which we'll show you how to do later.

Ultimately, if optimum image quality is what you want, your best chance is to shoot Raw. Raw files support 16-bits of data per colour channel, whereas JPEGs support 8-bits. The difference in image quality won't be obvious initially, but heavy editing reduces quality and 8-bit files will show this more readily than 16-bit.

Many photographers are put off shooting Raw as they assume it's complicated. But using Raw processing software is very intuitive (see panel) and any changes you make can easily be reversed or cancelled. A JPEG, on the other hand, while seen as the more convenient format for beginners, actually leaves more room for mistakes, which beginners will surely make.

What are the downsides to shooting in Raw? Well, aside from spending more time at your computer processing files, there aren't many. And if you get as much right in-camera as you can, a Raw file can be processed in a matter of seconds. Raw files are around four times bigger in terms of megabytes than JPEGs, so take up more storage space. However, memory cards and external hard drives are cheap these days, so if you've spent a fortune on your camera, it's false economy to choose an image format simply to save on storage space. Bigger image files also mean your camera's buffer will fill up faster if you shoot in Raw. While this might prove frustrating when shooting subjects such as sports and wildlife, where lots of shots are taken in quick succession, it isn't a real concern for the landscape photographer.

Shoot&process Raw

Setting your camera to shoot in Raw is easy: simply select the Image Quality setting via the LCD menu screen and choose Raw (or Raw+JPEG). In terms of how you use your camera and its controls, that remains pretty much the same. The only difference is that when shooting Raw, you give the image as much exposure as you can without clipping or overexposing the highlights. By doing this you'll record as much shadow detail as possible and better image quality as a result. It does mean that the images in their raw state appear overexposed, but this is easily resolved during Raw file processing, which you'll find a step-by-step tutorial for later in this guide. You'll also note that the number of shots you can fit on your card drops dramatically, so carry spares!



Raw processing software

You need special software to process Raw files. When you buy a Canon EOS digital SLR, it comes with a CD-ROM containing various software packages, including Canon's Digital Photo Professional processing software. However, the majority of photographers prefer to use a third-party Raw processor. By far the most popular is Adobe Camera Raw, found in all versions of Adobe Photoshop from CS2 onwards, Photoshop Elements since version 3.0 and all versions of Adobe Lightroom. Apple Aperture also has its own Raw converter, while Capture One from Phase One is popular with some photographers. SilkyPix is lesser known but worth trying the free trial download.

Adobe Camera Raw

www.adobe.com/products/photoshop/family/

- Apple Aperture
- www.apple.com/uk Capture One www.phaseone.com/4/
- SilkyPix www.isl.co.jp/SILKYPIX/english/



Troubleshooting

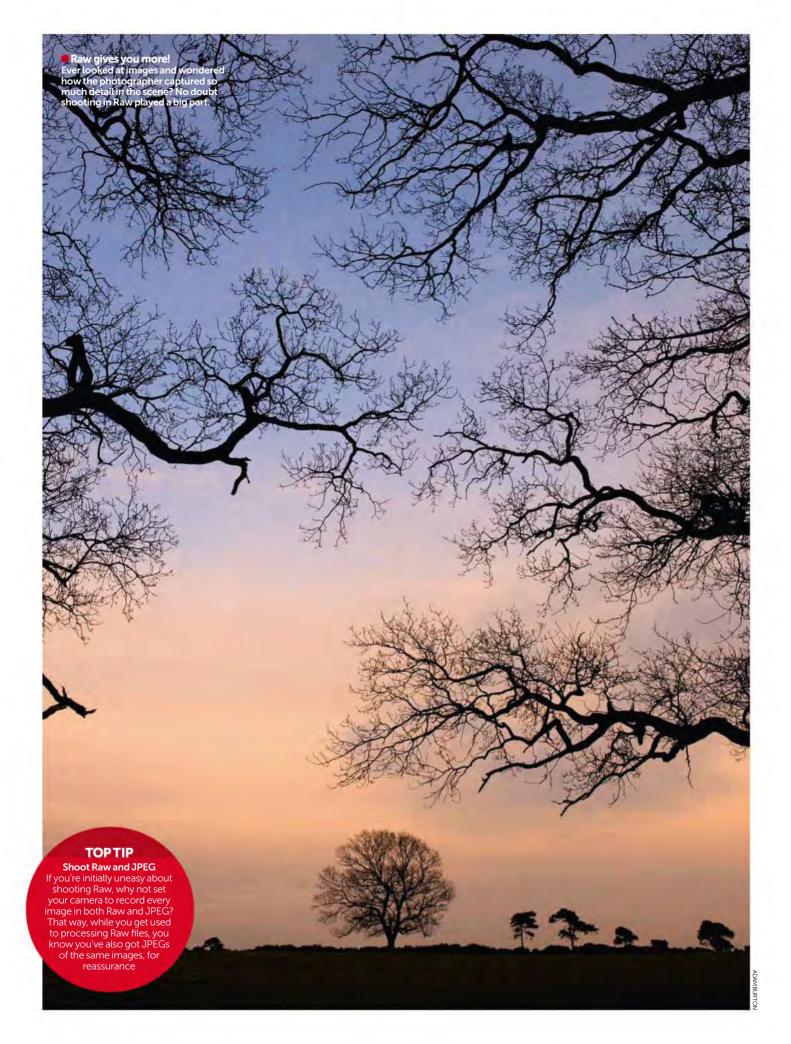
Q I can't open the Raw files from my new DSLR?

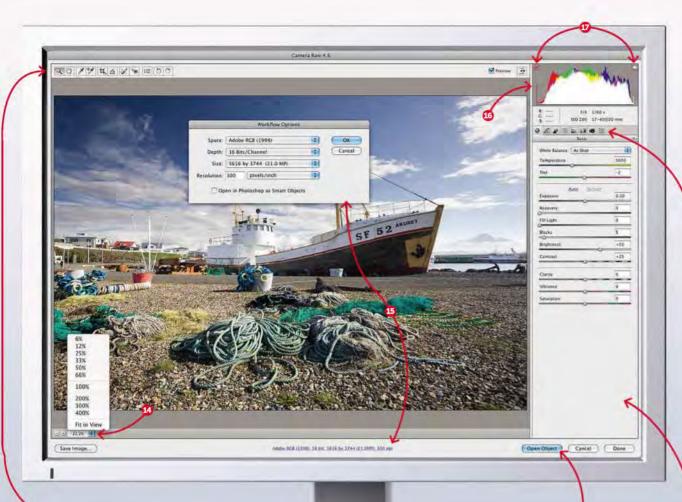
A You're having a problem opening Raw files on your new DSLR because camera manufacturers keep changing Raw file formats as they launch new cameras. Adobe releases regular upgrades for Adobe Camera Raw (ACR) for new cameras. Go to www.adobe. com and see if the latest upgrade includes your camera.

QI processed some Raw files and saved them as TIFFs, but the files are really small. What happened to them and what can I do?

A If you're using ACR, open a Raw file and below the file number for the preview image you'll see a line of text. Click on it and a Workflow Options window opens. To avoid the files being too small, choose Adobe RGB (1998) for Space, 16 Bits/Channel for Depth, 300 pixels/inch for Resolution and, for Size, choose the closest size that matches your camera's maximum pixel resolution.







The toolbar

At the top-left corner of the interface are various symbols, each with a use to edit your pictures. CS5 has a few new additions to the CS4 arsenal, which we outline below, but the main tools you'll use for everyday Raw editing are the Zoom, Hand, Rotate and White Balance tools. Others, such as Color Sampler, Crop, Straighten and Retouch tools, work well, but unless you're editing solely in Raw, are best left to Photoshop once the Raw file is processed. Red-eye removal is handy if you need it, but you're unlikely to process many portraits shot in Raw that suffer from red-eye!



- 1) Zoom Tool: Magnify the image to see it in more detail
- 2) Hand Tool: Navigate around the magnified image.
- 3) White Balance Tool: Allows you to correct and set a custom White Balance by clicking on neutral areas in the preview image, such as white.
- 4) Color Sampler Tool: Allows you to select a colour to adjust by clicking on that area of the image.
- 5) Crop Tool: Use to crop images.

- 6) Straighten Tool: Correct a wonky horizon or rotate.
- 7) Retouch Tool: Gets rid of sensor spots and other unwanted blemishes
- 8) Red-Eye Removal Tool: Click on the eye to remove red-eye.
- 9) Preferences: Click here to access the Camera Raw Preferences dialogue box.
- 10) Rotate counterclockwise & Rotate clockwise tools: Rotate anti-clockwise or clockwise by 90°.
- 11) Targeted Adjustment Tool: Instead of using the sliders, drag this tool on the image to make edits (CS5).
- 12) Adjustment Brush: Use this tool to make localised edits to the image (CS5).
- 13) Graduated Filter: Draw a line across your image to recreate the effect of a Graduated Filter. You can then adjust the Exposure, Brightness, Contrast, Saturation, Clarity, Sharpness and Color of the filter to suit your picture (CS5).

Open object

Once you've done all your necessary Raw editing, press shift to turn the *Open* button to Open Object to process your Raw file in Photoshop as a Smart Object. The benefit of a Smart Object is that you can double-click on the layer in Photoshop to reopen the Raw file and continue any Raw edits in ACR. Alternatively, hold down alt to turn the *Open* button to Open Copy (so you don't work on the original Raw file in Photoshop) and the Cancel button to Reset to revert your image back to its original state.

Understand your Raw converter

To go from an original Raw file to a final image, 'process' it using a Raw converter like Adobe Camera Raw

ANY TECHNICAL process seems complicated and daunting when you try it for the first time. Remember taking your first digital photograph or 'Photoshopping' your first image? Chances are you didn't have a clue what you were doing, but through trial and error and making lots of mistakes, you got there in the end. It's the same with processing your Raw files in software like Adobe Camera Raw.

The main reason why photographers stick to shooting in JPEG is because it's quick, easy and safe: the camera does the complicated stuff and all you're left with are a few tweaks in Photoshop or Lightroom to finish the job off.

Shooting in Raw, on the other hand, involves another steep learning curve because every shot you take needs to be worked on. It's the digital equivalent of going from taking your films to a high-street lab for processing and printing, to setting up a darkroom and doing the job yourself. Do you think it's really worth all the hassle?

In a word, yes! To realise your full potential as a photographer, you need to take control of your photography and the only way to really do this is to shoot and process Raw files. Over the next few pages, we'll give you a rundown of the main controls and tools available in Photoshop's Raw converter - Adobe Camera Raw - with an explanation of what they do and how to use them, starting with the Basics tab which features everything you need for a simple conversion.

The basic tools for Raw conversion

Most of Adobe's Raw controls are adjusted via sliders, making them fast and easy to use. Here are the key features located under the



Adjustment panels: The main controls you're going to use when processing Raw files are to be found on the right side of the Raw Interface, between the histogram and the control sliders. There are eight icons covering the following set of options (from left to right): Basic, Tone Curve, Detail, HSL/Grayscale, Split Toning, Lens Corrections, Camera Calibrations and Presets

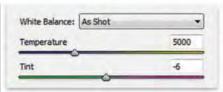


Vibrance and Saturation:

This tool is an alternative to the Saturation slider, which adjusts all the colours in an image equally. The Vibrance Tool, on the other hand, affects colours that need boosting, having less effect on the colours already high in saturation



Blacks: This slider shifts the left part of the histogram even more to the left, making the blacks in the image a lot more dominant, and is a useful way of increasing the overall contrast



White Balance: Shooting in Raw means that you can control the White Balance in post-production, rather than having to select the right White Balance preset in-camera. Under the Basics tab, you have all the incamera WB presets available in a drop-down menu to pick from (eg Auto, Daylight, Cloudy etc). You can also use the Temperature and Tint sliders to create your own Custom WB. Alternatively, you could use the White Balance Tool, found in the toolbar.



Fill Light: Fill Light attempts to recover details from shadows without brightening any blacks. Similar to using fill-in flash, this tool will cast some light into your foreground. Use it alongside the Blacks slider to add more punch, but be really careful not to overdo it for unnatural results



Clarity: Adds depth to an image by increasing local contrast, with the greatest effect on the mid-tones. It works similar to a large radius Unsharp Mask in Photoshop. Zoom into the image 100% to see the effects and stop when you start to see halos appear near the edges in the image.



Exposure: Found at the top of the Basics tab, under White Balance, the Exposure slider adjusts the overall brightness of the image, with greater focus on the highlights. The values are in increments equivalent to f/stops. For many photographers, this tool is their saving grace as it allows them to correct their in-camera exposure. Watch out for noise and artefacts creeping in when you push the exposure too far. Use in conjunction with Recovery to reduce the highlight values.



Brightness/Contrast: Brightness works in a similar way to Exposure. However, instead of clipping the highlights and shadows, it compresses and expands the information. Set the overall tonal range first using the Exposure, Recovery and Blacks sliders, then adjust Brightness. The Contrast slider mainly affects mid-tones, causing them to brighten or darken to increase contrast.



Recovery: This is an image saver for anyone who has slightly overexposed their highlights. This nifty tool should obviously not be relied upon, but is definitely one of the most invaluable features in ACR as it can recover mid-tone detail from clipped highlights. It's not a miracle worker, though: the detail has to be there to begin with.

Raw interface

When you open a Raw file in Adobe Camera Raw, you're presented with this interface. . The preview image shows the Raw image in its original state.

14) Zoom: You can vary the size of the preview image and also zoom into it using the tabs in the bottom left-hand corner of the interface.

15) Workflow Option: At the bottom of the screen is the

Workflow Option. If you click on this, a dialogue box opens, giving you various options. For Space (colour space), Adobe RGB (1998) is most widely used. For Depth, choose 16 Bits/Channel. For Size, go for the one that matches the pixel resolution of your camera (no point paying for those megapixels then not using them!). And for Resolution, enter 300 pixels/inch.

16) Histogram: In the top right-hand corner is the image's histogram, which shows the

distribution of tones in the Red, Green and Blue channels. Where you see Cyan, it indicates a crossover between the green and blue channels, Yellow is the crossover between the red and green channels, and Magenta is a cross between red and blue channels. White shows where all three channels cross over. Use the histogram to judge the exposure as you adjust the sliders.

17) Clipping warning: The two triangular tabs in the top left and

right of the histogram tell you if there has been any clipping of the highlights or shadows. If the triangles are black, no clipping has occurred. If the tabs change colour, the colour tells you that a colour channel or a combination of channels have been clipped. If the triangle is white, all three channels are clipped. If you click on the tabs, areas in the preview images will be highlighted to show where clipping has occurred - clipped shadows show as flashing blue and clipped highlights as flashing red.

How to proecss a Raw file

Get the most from every image by processing in Adobe Camera Raw

The best thing about shooting in Raw is that you can process the file to give a far better result than if you had captured the scene as a JPEG. The preview of a Raw file on your camera's LCD monitor may look identical to a JPEG as all the additional information is hidden within the file, and it's impossible to display on your camera's screen. It's only when you open the Raw file on your computer that

you'll see the wonders retained in this purest of image file formats. Our guide shows how processing Raw files in Photoshop's Adobe Camera Raw allows you to extract an amazing amount of information, leading to a far superior result than if it had been captured in JPEG.





Open the file The first thing we do when we open our Raw file is to see how the histogram looks with the default Camera Raw settings. We can see here that contrast is fairly low with the bulk of the information for this image sitting in the middle. The image looks quite muted and would benefit from extra contrast to add colour and detail.



2 Assess the highlights First check if there's any highlight detail that might be clipped by clicking on the triangle on the top right of the histogram to turn on the highlight clipping display. When active, any clipped areas flash red. The whites of the distant lighthouse here are clipped, which means we might potentially lose some highlight detail.



3 Rescue the highlights You can recover this highlight information using the Recovery slider, but this would be at the expense of highlights elsewhere, which would effectively reduce contrast. The small amount of clipped information isn't that important, so we decide to leave things be. Exposure looks spot on so we don't need to adjust this slider either.



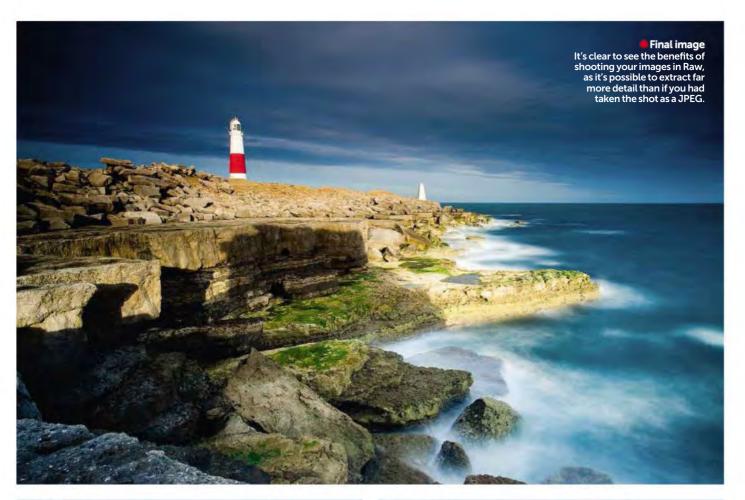
Boost the blacks The image probably looks a little flat straight from the camera, like this one does. Adjust the blacks until the histogram spreads towards the far left side by holding down alt/option and moving the Blacks slider until areas show up black on the white background. You've now created the pure blacks in your image, but be careful not to overdo it.



Watch for clipping You'd normally look to avoid clipping any highlights or **5** Watch for clipping You a normally took to avoid supplied and shadows, but sometimes it's necessary in order to strengthen the dark shadows, but sometimes it's necessary in order to strengthen the dark tones and improve contrast. For instance, here we wouldn't expect to see detail in the rock face cracks. We also set Contrast to +60 to boost contrast further without clipping too much more shadow detail.



Boost the colour Now adjust the Vibrance slider (here we set it to 30), or the Saturation slider if your software doesn't feature Vibrance, to pump up the colour a little. Press I to access the White Balance Tool and check that you have got the correct White Balance by clicking on a neutral white or grey area - the lighthouse is good here.





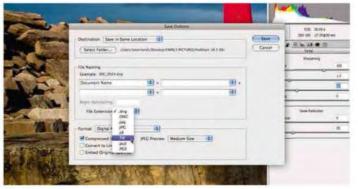
7 Adjust the White Balance If you're not happy with the image's colour tone (White Balance), adjust the *Temperature* slider a little. You can strengthen contrast further if you feel it's necessary by clicking from the *Basic* tab to the *Tone Curve* tab. Select *Point* rather than *Parametric* and change the drop-down menu from *Medium* to *Strong Contrast*.



Sharpen the image Next, negotiate the *Detail* tab and use the *Zoom* buttons to zoom in *100%*. Work with the *Sharpness* slider to get the image looking crisp on screen. We settle on Amount 100, Radius 1.0 and Detail 30. Sharpening too excessively can cause artefacts and noise to appear, which is why it's important to take pictures at the lowest ISO rating possible.



8 Add impact To emphasise areas of colour in the image – in this case the sky and sea – make selective Saturation and Luminance adjustment. Choose the HSL/Grayscale tab, select Saturation first and tweak the relevant sliders (we set Blues to +40). Then choose the Luminance and do the same thing (we set Blues to +40 here, too) until you've reached your level of impact.



10 Save and open Once you're finished, you can either open the image to continue enhancements in Photoshop or save it for later. By saving the image as a .TIFF or .PSD format you will leave yourself with a 16-bit file as opposed to compressing the image to an 8-bit JPEG, which reduces the amount of information and thus flexibility when editing in the future.

Combining Raw files

Get the perfect image by merging two shots for ultimate quality

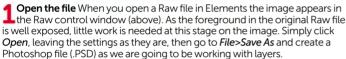
Luke Marsh

Setting your camera to shoot in Raw means you're able to recover hidden detail from areas of a scene that are over- or underexposed. The Raw converter in Photoshop Elements, used here, works in much the same way as CS. You need to create two separate images of different exposures from the same Raw file – one for the sky and the other for the foreground – then combine them for the perfect result. Not only will we show how to adjust exposure post-capture, you'll also find out how to use the High Pass filter for sharpening and

how to make colour adjustments. This technique is especially efficient as you are only working with image data captured in a single exposure, so you can revisit any of your old Raw files to try it.









2 Repeat Reopen the original Raw file, and again the Raw control window appears with the image. This time move the Exposure slider (circled) left to underexpose the image, pulling back the hidden detail from the original Raw file's overexposed sky. When you're happy with the results, click Open to take the image into Elements.



3 Copy & paste You now have two files open. One contains the original exposure and the other is the new underexposed image. With the underexposed file active, click Select>All then Edit>Copy, placing the image into the pasteboard memory. Now you can close this file and use Edit>Paste to place this image into a new layer on the original file.



Remove foreground With the two exposures in place, we now want to combine the correctly exposed foreground with the newly exposed sky. With the sky layer active and using the Rectangular Marquee Tool, select a large area of foreground, just short of the horizon. Next, click Edit>Delete to remove the area, noting the effect in the Layers palette preview (inset).



5 Clean up Now it's time to tidy up the horizon, so with the *Eraser Tool* set to a medium-sized, soft-edged brush and the *Opacity* set to around *55%*, gradually erase areas of the newly exposed layer along the horizon, revealing the original foreground image. The slight feathering between the two layers creates a misty effect that enhances the image's mood.



Enhance The initial layer work is complete, so to save your work so far, go to Layer>Flatten Image then File>Save As to create a new file. With both layers merged, it's time for some overall enhancement, so click on Enhance>Adjust Lighting>Levels to lighten up the image and improve the definition. Click OK to apply the changes.





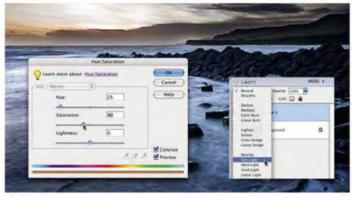
7 High Pass The High Pass filter is a far more forgiving way to enhance detail than sharpening. To use it, first go to Layer>Duplicate Layer to preserve the original image. Then go to Filter>Other>High Pass, adjusting the Radius to around 20 pixels before clicking OK. Now you need to change the Blend Mode in the Layers palette to Soft Light.



Darken areas Use Layer>Flatten Image again, saving a copy if required. Now, using the Burn Tool (inset) with a large soft-edged brush and the Opacity set to approximately 25%, darken the exposure of specific areas, which helps to improve the depth of the image. Focus on the edges of the frame and gradually build the effect up.



Select sky The image is predominantly blue in hue and we'd quite like to inject a different tone to the sky area. Using the *Rectangular Marquee Tool*, select the area above the horizon and go *Select>Feather*, entering an amount of 50 pixels to soften the selection, before clicking *Edit>Copy* then *Edit>Paste*, placing the selection into a new layer.



10 Adjust colour Change the *Blend Mode* of the new layer to *Soft Light*, and then go to *Enhance>Adjust Colour>Adjust Hue/Saturation*. In the window, start by clicking the Colorize box and immediately see the effect in the preview. Finally, adjust the *Hue and Saturation* sliders until you are happy with the colour, and then click *OK*.

'Exposing to the right' with Raw

Understand how your camera records tonal information and how to read a Raw histogram

TO MAKE THE MOST of a Raw file, you need to learn to use your camera's histogram. Using the preview image to judge exposure. isn't the best reference. A histogram, on the other hand, provides all the information you need to create the ultimate Raw file. It shows the distribution of tones in a digital image, from the darkest shadows on the far left of the histogram to the brightest highlights on the far right. The general rule when exposing an image is to make sure tones fall within the extremes of the histogram to retain detail. If too much information is to the far left, some shadows lack detail, and if it's to the far right, some highlights may blow out and record as pure white. Making sure neither extremes are clipped gives an acceptable Raw file. To record maximum tonal detail, however, you need to 'expose to the right'. Why? Because sensors record more tones in the highlights than the shadows.

Most sensors record a brightness range of five or six stops. Most histograms are divided into five sections, which represent the five stops in brightness it records. Rather than the tonal values being divided equally across those five stops, 50% of the total number are recorded in the brightest stop, half this number in the next, half as many again in the next stop, and so on, meaning that the



Reveal the detail Various controls can be used to tone down the image – Contrast, Brightness, Exposure – but the Tone Curve sliders are most effective. Here, the Dark tone was moved to -39 and it looks better already.

brightest 20% of the histogram, on the far right, contains 16 times more tonal values than the darkest 20% on the far left. By 'exposing to the right', you're maximising the information recorded. When you check the preview screen, images exposed to the right look overexposed, so your natural reaction is to reduce the exposure and reshoot, but don't - trust the histogram! You can then adjust the exposure and contrast when processing your shot, retaining the important tonal values and giving a more detailed image with less noise.



Watch out for clipping The brightest highlights in the water and sky have been exposed to the point that they've started to lose detail - indicated by the red highlights. The image looks generally washed out.

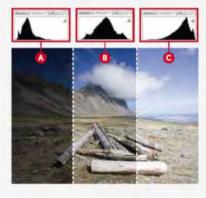


Recover highlights Although you should try to avoid clipping the highlights, you can use the Recovery slider to rescue them - but no more than about 20% should be applied as it tends to flatten the whole image.

Increasing the exposure

The easiest way to 'expose to the right' is to take a test frame and then assess the histogram. If the graph is centred (ie well exposed), or to the left, increase the exposure by + 1/3 stop via exposure compensation, take another shot and check the histogram. Repeat until the highlight warning starts to flash on the preview image, indicating that the highlights have been 'clipped' and that you've taken the exposure too far. The frame before, where you gave 1/3-stop less exposure, is the file to work on.

- A) This is what the histogram for an underexposed image looks like: the tonal graph is pushed over to the left where there are fewer tonal values. If you took a shot like this and tried to recover detail, you'd have problems with noise.
- B) There is nothing wrong technically with this image or histogram: the tonal graph is central and neither highlights or shadows have been clipped. If you saw this shot on the preview screen, you'd probably be happy. However..
- C) Exposing to the right will record far more tonal values in the Raw files than correctly exposing it. This is what the preview image will look like if you do: overexposed and washed out. But it's the best Raw file of the three examples!

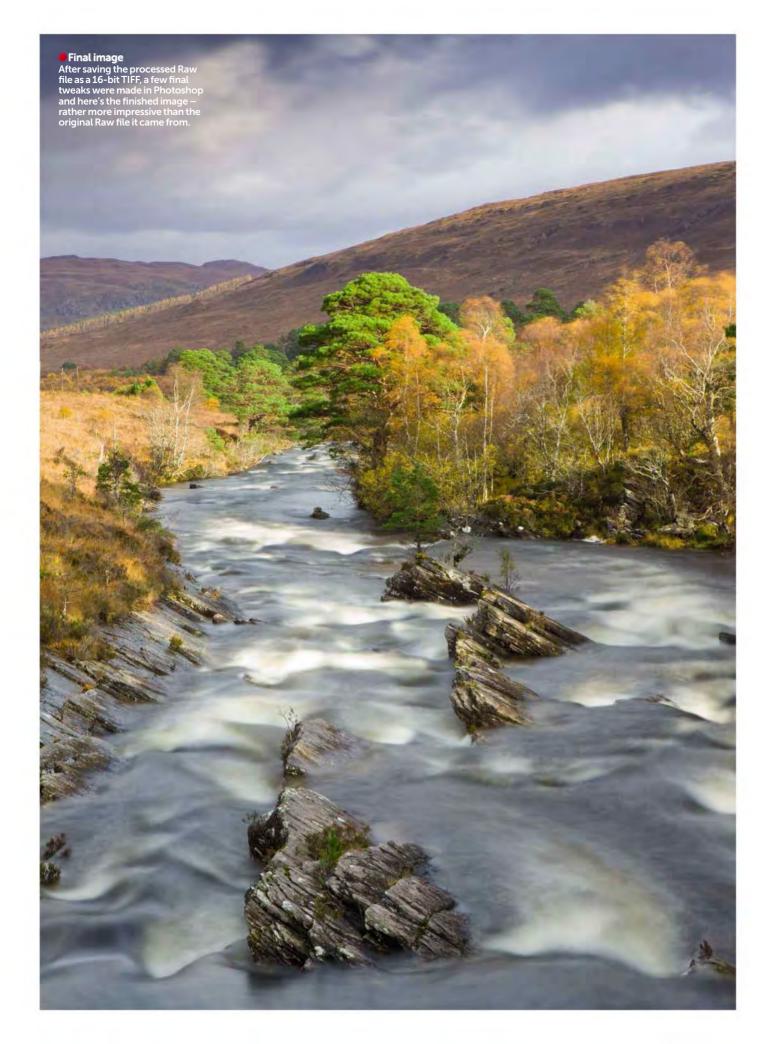




Adjust tonality The Highlight slider was moved to the right to a value of +26 and the Lights slider to the left to a value of -14. You can see how the Tone Curve has changed from a straight line to a shallow 'S' shape.



Improve the colours Clicking back on the Basic tab, the Blacks slider is moved to the right to a value of 14 from its default setting of 5, while Vibrance is set to +22 and Saturation to +8 to boost the colours in the image.



FILTERS

Lee Frost reveals the importance of filters for landscape photographers

IMAGINE YOU'RE ABOUT to be shipwrecked on a desert island and the captain of the vessel has given strict instructions that you can only take three filters overboard with you. Okay, so it's a rather extreme scenario, but - hey - worse things have happened at sea! The question is, which three would you take?

As a child of the Cokin era, I managed to amass more filters than your average camera shop. I had bits of plastic (okay, okay, C39 resin) that could add fake rainbows to my images, ruin a perfectly nice sky by turning it tobacco, reduce attractive scenes to impressionistic smudges, turn bright points of light into brilliant explosions of colour, and perform all sorts of other weird and wonderful tricks. I never used the things, of course, because most of the effects were horrible. But you weren't a proper photographer unless you carried at least a dozen of them everywhere, and if the worst came to the worst, they were ideal for making a sow's ear from a silk purse. I've got hundred of examples to prove it.

Fortunately, after numerous failed attempts I managed to kick my Cokin addiction, so out went all the filters that weren't essential - which actually left very few. Later still, I jumped on the digital bandwagon, which meant I could jettison even more (mainly the colour correction and conversion filters that have been replaced by White Balance and colour temperature adjustments).

Today I'm left with only three filter types: Neutral Density (ND) grads, a polariser and solid Neutral Density (ND) filters. For landscape and general photography, they're all you need, and all three can be used individually or in combination to help you get the most from a scene.

Some of you may be thinking, 'Why bother with filters at all when the effects can be added in Photoshop?' Well, if you're thinking that, chances are you've never used them, because while the effects some filters have can be replicated in Photoshop, others can't. And anyway, even if they could all be, surely it's better to get your photographs as close to completion in-camera as possible, rather than spending ages at your computer trying to sort them out in post-production?

For information on filter systems, take a look at the panel below, then read on to see the difference my three favourite filters could make to your landscape images.

Which filter system?

- SCREW-IN: These high-quality filters screw directly onto the filter thread of your lens, making them fast and easy to use. You'll find numerous polarisers and ND screw-in filters (including B+W's ten-stop ND) but virtually no ND grads. While offering excellent optical quality, screw-in filters have one big disadvantage: if you have numerous lenses, you'll most likely need to buy several sizes of screw-in filters. Brands to consider include B+W, Hoya and Tiffen.
- SLOT-IN: Your best choice when investing in a filter system is the slot-in variety. You buy rings that screw on to your lenses and a holder that slips on to these rings - this way you only need one filter. Polarisers, NDs and ND grads are all available as slot-in filters. Cokin (P or X-Pro) and Formatt (Hitech) are good first systems, while Lee Filters is the professionals' choice.









ND graduates

Make bland skies a thing of the past by learning how to use a Neutral Density graduate filter

HOW MANY TIMES have you composed a great shot with a dramatic sky only to discover that when you check the picture you've taken the landscape looks fine, but the sky is overexposed and washed out?

Naive photographers shrug their shoulders and think, 'Oh, I'll rescue that later' - which is fine if there's something to rescue. But if the sky's so overexposed that no detail has been recorded, there won't be. More experienced shooters take two photographs of the scene - one exposing for the sky, the other for the landscape - then combine them in Photoshop. This method works well, but does mean more time in front of a computer than a camera. The quickest and easiest solution is to use an ND grad filter.

ND grads are grey on the top half - that's the Neutral Density part – and clear on the bottom half. The idea is that the grey part of the grad tones down the brightness of the sky so that when you expose for the landscape, the sky is also correctly exposed, instead of

being completely blown out.



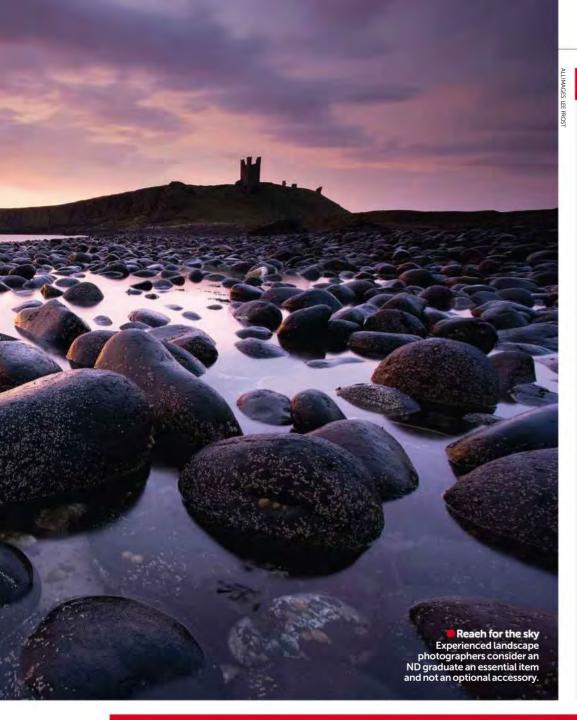


Before multi-zone metering was introduced, exposure readings had to be taken with a lightmeter and set manually on the camera before attaching an ND grad to the lens in order to avoid getting an overexposed image. Metering systems these days are much more intelligent; now you can compose your shot, align the grad ready for use and meter with it on the lens. The reason for this is that a multizone metering pattern takes a number of exposure readings from different parts of the image area, therefore the darkness of the filter doesn't influence the final exposure in a negative way. In fact, it helps your camera obtain an accurate reading, as when an ND grad is fitted, the Neutral Density part of the filter darkens the sky area so that the contrast between the sky and foreground is reduced. Hey presto: a perfectly exposed landscape.

Choose the right density

To produce a convincing result you need to choose the right density of ND grad. Fortunately, making the right choice isn't difficult as there are only three main densities to choose from: 0.3, 0.6 and 0.9, which reduce the brightness of the sky by one, two and three stops respectively. Some manufacturers also produce a 1.2ND grad, which tones down the sky by four stops. The weakest, 0.3ND, is only of use when you need a very subtle effect, while the stronger 0.9ND is mainly used at dawn and dusk when the sky's really bright but there's no direct light on the landscape. That just leaves the 0.6ND grad, which is the best choice for general use. If in doubt, take a test shot with a 0.6ND grad, check the image on your camera's preview screen, then switch to either a 0.3ND or, more likely, a 0.9ND if the effect isn't right.





Aligning an ND grad

The key to success with a grad is correct alignment, so it does its job without leaving telltale signs. Many photographers struggle and assume there must be a magic formula, but it's just a case of taking your time.

Slide the filter Mount your camera on a tripod and compose the frame. Next, place an ND grad filter in the filter holder on your lens, and while peering through the viewfinder, slowly push the grad down into the holder.



2 Watch carefully As you slide the grad down you should see the top part of the picture appear to get darker. It won't be obvious, even if you're using a strong ND grad, so watch carefully and when you think you've got the ND grad in the right position, stop moving it down.



3 Don't go too far A common mistake is to push the grad too far into the holder. The grad will then act like a solid ND filter and increase the exposure but it won't balance the difference in light between the sky and foreground. You may also see the line of the grad.



4 Use LiveView
If you struggle to align the grad using the viewfinder, try using LiveView. You may find it simpler to do this as you're seeing the exact effect the filter is having on the image, making it easier to accurately align it.



Hard or soft grads?

There are two types of ND grad: hard and soft. This refers to the way in which the Neutral Density (grey) part of the filter graduates down to clear: with hard grads the change is quite sudden; whereas with soft grads it's gentle. Newcomers to ND grads assume that soft grads are easier to use because if you align them incorrectly it's less likely that you'll see the line of the grad in your picture. However, hard grads are also quite forgiving and give a more defined effect, making them the best choice.







Polariser

A circular polariser will be your best friend, boosting colour impact and reducing reflections

WHEN LIGHT STRIKES a surface, some of the rays scatter in all directions thus becoming polarised, causing reflections and glare that reduce colour saturation – particularly on shiny surfaces such as paintwork and foliage. Polarising filters prevent this from happening by only allowing light rays to enter your lens that are travelling from one direction effectively blocking out polarised light. Doing this offers three distinct advantages for landscape photography.

The most obvious benefit is that the blue of a sky is deepened because it contains a lot of polarised light. Using a polariser allows you to add visual impact to images by providing a strong, punchy blue backdrop. Another benefit is that glare on non-metallic surfaces is reduced, so the colours in a scene appear richer and more saturated. The third advantage to using polarisers is that reflections are eliminated, so you can see through windows and into rivers.

Using a polariser is easy because you can see the effect it has simply by rotating it slowly in its mount on your

lens while looking



through the camera's viewfinder. Blue sky goes darker and white clouds stand out, reflections come and go, and glare disappears. When you're happy with what you see, simply stop rotating and fire.

To get the best possible results, however, you should also bear in mind certain factors.

Although polarisers generally work best in bright, sunny weather when there's more polarised light around, they can be used in dull, overcast conditions, too, in order to remove glare and reflections. Autumnal woodland scenes usually look much better if you shoot them through a polariser, as glare is reduced, so the rich colours of the foliage really come through.

When using a polariser to deepen blue sky, keep the sun at a right angle to the camera so you're aiming towards the area of sky where maximum polarisation occurs. That way, you'll get the strongest effect. If the sun is behind you, or you're shooting into the sun, a polariser won't make much difference. Polarisation in the sky also tends to be better when the sun is low in the sky - so early morning and evening give better results than in the middle of the day.

Polarisation is uneven across the sky, so take care when using ultra wide-angle lenses or zooms with a focal length wider





Circular or linear?

There are two types of polarising filters available: linear and circular. Avoid linear. You need to use a circular polariser with your digital camera as linear polarisers are used on certain older manual focus film SLRs. Both types do exactly the same job, but a circular polariser is manufactured differently to ensure correct exposure when used with autofocus DSLRs and CSCs.

than 24mm (15mm on APS-C sensors) as the sky in your images may record darker on one side than the other: the effect can look very odd. This can be corrected in Photoshop later, but it's tricky. You should also note that glare will only be removed from non-metallic surfaces such as paintwork, foliage and plastic. To remove reflections from surfaces such as water and glass, the angle between the reflective surface and the lens axis must be around 30°. You can find this by making slight adjustments to your position then rotating the polariser to see what happens.

Finally, polarising filters can give your pictures a slight blue colour cast when used in bright, sunny weather. To remove this, either adjust your camera's White Balance setting or correct the cast when you process the Raw file on your computer.





When you use a polariser, it reduces the light entering your lens by two stops. This means if you have an exposure of 1/125sec at f/11 without a polarising filter in place, the exposure would drop to 1/30sec at f/11 once you fitted it. Your camera accounts for this light loss automatically, so you don't need to compensate, but you need to be aware of it because the shutter speed can easily become very slow when using a polariser - even in bright sunlight - so the risk of camera shake is increased. That said, this light loss can be a benefit when you want to use a slower shutter speed, as the polariser acts like a two-stop (0.6) ND filter (covered overleaf). When shooting waterfalls, for example, the polariser not only gives you a slower shutter speed to blur the water, but also removes reflections from water and glare from wet rocks and foliage, giving a better result.



Neutral Density (ND) filters

Lengthening exposure times with a Neutral Density filter is one of the simplest ways to be creative with your camera, producing great movement in images

ND FILTERS ARE specially made to reduce the amount of light entering your lens without changing the colour balance - hence the name Neutral Density. They do a similar job to ND grad filters, but instead of affecting just part of the image (usually the sky with ND grads), they have a uniform effect on the whole image.

ND filters are mainly used to increase the exposure required for an image, so you can use a slower shutter speed to record motion. The classic subject that they're used for is waterfalls, recording the moving water as a graceful blur. But they can be used to introduce or increase motion in all kinds of subjects - crowds of commuters pouring off a train, traffic moving along busy roads, trees blowing in the wind, waves washing over rocks and so on. They're ideal for use in bright conditions when the lowest ISO rating and smallest aperture aren't enough to give you the slow shutter speed that you desire.



Exposure chart

If you're using weaker ND filters, up to a 1.2 density, your camera's TTL metering will be able to give accurate exposure readings with the filter on the lens. Once density goes beyond 1.2, however, you may find that underexposure occurs because the filter density fools the camera's metering

To avoid exposure error, take a meter reading without the ND filter on the lens, then calculate the required exposure with it in place and set the exposure on your camera manually. If you have an iPhone, there's a useful app called ND Calc that will do this for you.

Alternatively, refer to the table below. Once the required exposure goes beyond 30 seconds you will have to set your camera to its Bulb (B) mode and time the exposure using the timer on the camera or smartphone, a remote release, your wristwatch or by counting elephants - you decide! We'd recommend that you photocopy and cut out the exposure chart below and keep it along with your ND filter for easy reference.

No filter	With 0.6ND	With 0.9ND	With 1.2ND
1/500sec	1/125sec	1/60sec	1/30sec
1/250sec	1/60sec	1/30sec	1/15sec
1/125sec	1/30sec	1/15sec	1/8sec
1/60sec	1/15sec	1/8sec	1/4sec
1/30sec	1/8sec	1/4sec	1/2sec
1/15sec	1/4sec	1/2sec	One second
1/8sec	1/2sec	One second	Two seconds
1/4sec	One second	Two seconds	Four seconds
1/2sec	Two seconds	Four seconds	Eight seconds
One second	Four seconds	Eight seconds	16 seconds
Two seconds	Eight seconds	16 seconds	32 seconds
Three seconds	16 seconds	32 seconds	One minute
Four seconds	32 seconds	One minute	Two minutes



Technique watch!

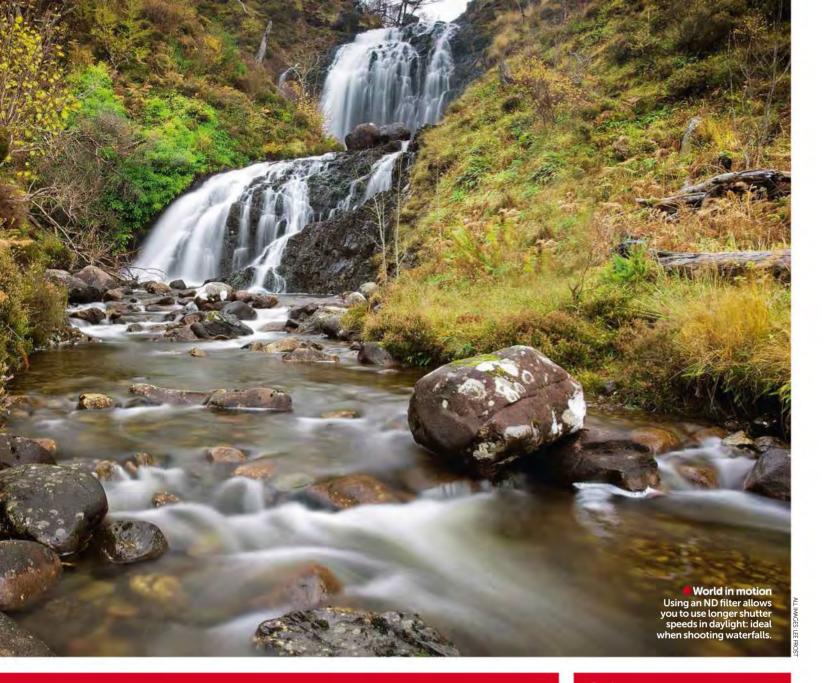
DIFFERENT DENSITIES

The amount of exposure increase an ND filter requires depends on its density. The weakest ND worth bothering with is a 0.6ND (4x), which requires a two-stop exposure increase. A polariser also requires an exposure increase of two stops so can be used like a 0.6ND filter. Next up is a 0.9ND (8x), which requires a three-stop exposure increase, followed by a 1.2ND (16x) that requires a four-stop increase. This is where the density of conventional ND filters ends, though you can combine two or more for a cumulative effect - a 0.6ND and a 0.9ND together will require a five-stop exposure increase, for example.

The alternative is to use a more extreme ND filter, with a density of 1.8 (six stops) or more. These filters were originally designed for photographing industrial processes that involved extreme brightness but are now popular with photographers as they allow exposures in daylight of several minutes. Turn over for our favourite: the 3.0ND, which requires an exposure increase of ten stops that's 1000x more than the unfiltered exposure!







Colour casts







While ND filters should be neutral, once you combine them for higher density (and a longer exposure), you'll see that colour casts appear. This is most noticeable with ten-stop ND filters – the B+W 3.0 adds a very warm colour cast while the Lee Filters Big Stopper adds a cool blue cast. These can enhance the look of the image, but if you prefer, you can adjust the colour temperature when you process the Raw file.

Ten-stop ND filters

Use a ten-stop ND filter and you'll find you can create striking colour and black θ white fine-art landscapes with ease

THE FIRST THING YOU'LL notice when using a ten-stop ND filter is that it's so dense, you can't see through it. In bright sunlight you might just make out a faint image through the viewfinder, but its brightness is 1000x less than if you didn't have the ten-stop ND in place. To take a photograph you must therefore mount your camera on a tripod, compose the scene, set focus to manual (as AF won't work through it), align your ND grad in its holder if you're using one, then finally position the ten-stop ND. Most digital SLRs have LiveView that's sensitive enough to see through a ten-stop ND, so if you need to adjust the composition or move the camera and shoot from a different spot, you may be able to do so without taking the ten-stop ND filter off. For most of us, though, removing the filter to see through the viewfinder is unavoidable. That's why a slot-in filter like the Lee Filters Big Stopper or HiTech's Pro Stop is more versatile than the B+W screw-in filter – you can simply remove it from its holder and leave everything else in place, whereas the B+W has to be unscrewed from the lens.

The longest exposure you can achieve using your camera's programmed shutter speed range is 30 seconds. More often than not, you'll be using exposures much longer than that with the ten-stopper, so you'll need to set your camera to Bulb (B) mode in order to keep the shutter open. Trying to keep exposures under 30 seconds for convenience, by opening up the aperture or increasing the ISO rating, is completely defeating the object because you'll get the best effects by using exposures of several minutes.

In terms of subject matter, any scene containing moving elements is ideal. The sky is an obvious candidate: on a windy day, clouds are transformed into ghostly streaks as they drift overhead, and you won't know quite how they're going to record until the exposure ends and you can review the shot. Trees and grass swaying in the breeze also take on a totally different appearance when exposed for several minutes, adding a strong sense of motion to an image.

Coastal scenes are perhaps the most effective subjects for the ten-stop ND. The sea is constantly moving, so over the course of a few minutes, any texture in its surface is lost and it takes on a smooth, milky appearance that contrasts well with static elements such as piers, lighthouses, headlands, jetties and rocks. Clouds work well, too, rendering as streaks in the sky. Or for something completely different, try shooting urban scenes with a ten-stop ND. Anything moving through the scene while the shutter is open – people and traffic mostly – won't record. This means you can capture something that we never see with the naked eye – busy streets completely deserted!

Wide-angle lenses are more effective than telephotos when using a ten-stop ND because you can emphasise the sky and the foreground, which is where most of the motion is recorded. Move in close to a static feature in the foreground and contrast it with moving water, or get down low with a wide lens so you're looking up at the sky.

Bright sunshine gives the least effective light for ten-stop







shots as it's harsh and flat, plus the higher light levels mean you won't be able to achieve really long exposures – even with your lens stopped right down and the ISO rating at its minimum setting. Dawn and dusk, on the other hand, are perfect for creating atmospheric images, along with early morning and evening when the sun's low in the sky and the light is warm. The B+W 3.0 ten-stop ND has a warm colour cast, which is ideal for enhancing shots taken at either end of the day. Stormy weather can produce dramatic results, too, as there's more movement in the sky and sea, while on overcast days the soft light and gentle tones result in simple, graphic images.

Although you'll be shooting in colour, ten-stop shots look amazing in black & white — especially if you're not keen on the filter's inherent colour cast. To maximise the impact and drama, when converting your picture to monochrome, treat the sky and the rest of the scene as separate elements by adjusting their tonality separately, using tools such as Levels and Curves. The end result may look nothing like the original scene, but that doesn't matter because as soon as you put a ten-stop ND filter on your lens, you're taking a step back from reality anyway.

Exposure chart

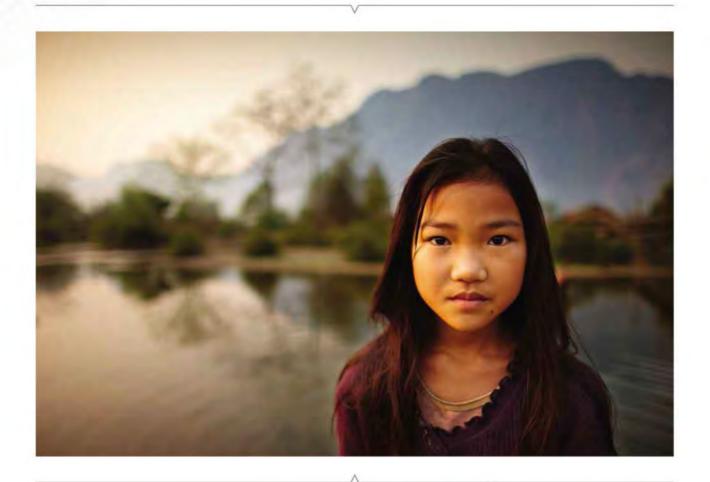
The chart on the right reveals the increase of exposure times when using a ten-stop ND filter. It's a key reason why you're recommended not to use the Long Exposure Noise Reduction system on your camera, as this function takes the same amount of time as the exposure. For instance, when you shoot a two-minute exposure, you'll need to wait another couple of minutes for the image to write and be viewable on the LCD monitor. We'd suggest you switch Noise Reduction off and control noise in post-production.

	Unfiltered	3.0ND (Ten-stop)
,	1/500sec	Two seconds
′	1/250sec	Four seconds
	1/125sec	Eight seconds
	1/60sec	16 seconds
	1/30sec	32 seconds
	1/15sec	One minute
	1/8sec	Two minutes
l	1/4sec	Four minutes
9	1/2sec	Eight minutes
	One second	16 minutes
	Two seconds	32 minutes
	Three seconds	48 minutes
	Four seconds	One hour





Portrait of a girl nr Vang Vieng, Laos.raw



The dawn light is warm and soft. Ash from slash and burn agriculture hangs in the air flattening distant views, a recipe that is hopeless for landscape work, but perfect for impromptu travel portraits. I'm hanging around by a ford accosting passers-by. Using a super-fast wide angle lens I shoot wide open to drop the background out of focus, suggesting the evocative setting of river and mountains without detracting from the power of the girl's piercing expression. I knew before I came to Laos I wanted this sort of picture. Wide angle lenses are not normally the tools of choice for portraiture. Neither are graduated filters, but here a LEE 0.6 neutral density grad was crucial to hold on to the detail in the sky. Working quickly hand held I had to accurately position the filter, compose and focus.

With a full frame sensor and prime lens the potential quality of my images is astounding. But unleashing all of that quality demands painstaking attention to detail. Everything in the equation has to perform to the optimum; not least the filter. A lens is only as good as the filter in front of it. A grad has to be truly neutral and of searing optical quality. There is only one choice.



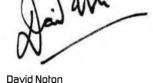
LEE 0.6 ND hard grad filter



LEE Filter Holder



Canon 1Ds mklll, 24mm lens, 1/800 sec @ f1.4



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UNDERSTANDING COLOUR

A LOT OF TIME, energy and thought has been devoted to the study of colour, its practical applications and its psychological effects. Often those applications and effects are linked. It's not an accident that stop signs are red, cool settings on air conditioning are blue or that the environmental movement has adopted the colour green.

Much can be learned about the relationships between colours, too. Colours work together in different ways, with certain combinations creating energy and tension, while others harmonise and create calm. When a colour appears in nature with a greater than normal intensity, the stage is set for great landscape photography. Learning their relationship will reap rewards, helping you to achieve stunning shots that you never before thought possible.

Harmony and contrast

There are basically two types of relationship between colours - harmony and contrast. Looking at a colour wheel helps us to understand this. Colours that are next to each other - for example, blue and green - are harmonious, while those that are opposite - for example, blue and yellow - contrast with each other.

Also, colours that are on the 'warm' side of the wheel harmonise with each other, while all those on the 'cool' side also harmonise. Harmonious colours are more calming to look at, and blues and greens in particular are very tranquil. Contrasting colours are more dramatic and create a tension that can challenge the eye - blue and yellow is a strong contrast.

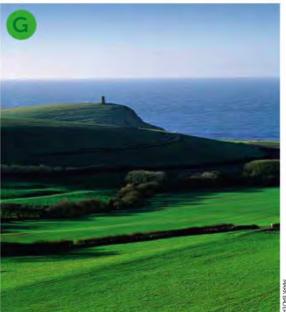


THE COLOUR WHEEL Contrasting colours, such as yellow and blue or red and green, create tension and drama. Colours adjacent to each other are calming.









COLOUR AND EMOTION

As well as having visual impact, colours can suggest different moods, evoke various emotions and can have symbolic significance related to our culture and background. Think about the effect a dominant colour might have on your image. It might be appropriate to subdue a colour, or emphasise it. Consider colour in the composition, the lighting and through careful use of filtration.

RED is an intense colour, especially when contrasted against a dark background. It is a colour universally used for warning or danger and is hard to ignore. Red is the most powerful and attention-grabbing colour in photography, though it can prove distracting if included small within the landscape, for instance, a distant car, boat or letterbox.

BLUE is a retiring colour, which can be employed to convey restfulness, sadness or tranquility. In photography, it is commonly used to convey coldness, which works especially well when combined with water and wintry scenes. Blue is a very important colour for landscape photographers as a saturated sky creates a flattering backdrop.

GREEN is often used to signify health and life. Obviously, green is the predominant colour of vegetation and therefore it is dominant in many scenic images. Green is easily overwhelmed by bright advancing colours like red and, generally speaking, has less impact. However, when isolated, green can still create strong, interesting images.

YELLOW is another bold, advancing colour, often used to represent happiness or brightness. It will add warmth to your image and works particularly well when combined or contrasted with blue. Yellow, along with similarly rich colours, like gold and orange, epitomise autumn. It can prove a good background for still-life images.



USING ONLY ONE COLOUR

Single colours often give an image a particular mood and it's possible to make successful compositions using just one colour – or shades of one colour.

Certain lighting conditions can create this effect and add atmosphere to a scene. An intensely orange or red sunset gives every neutral colour a strong bias, bathing a scene in a fiery warmth.

Also, strong backlighting can desaturate colours, creating an almost monochromatic effect; while at pre-sunrise and post-sunset, there is no single strong light source and the light is diffused and reflected down from the sky.

The two images on the right are really good examples of monochromatic images. Starting over on the far right you can see how backlighting has drained the colours from this scene, resulting in an image that appears almost devoid of colour.

The predawn light bathing the lake and dead wood in the near-right picture is diffused, falling on the scene from virtually the whole sky. It has given the scene a fairly cold cast, but the mood is tranquil. It suits the cold stillness of a winter morning





COLOUR SATURATION

Okay, if we're going to be strictly technical about this, the term saturation refers to how pure a colour is. But over time, and in practical terms, saturation has come to mean how intense or strong a colour appears in an image. Producing saturated images involves more than simply boosting colours in Photoshop – although much can be done that way, with great results, there are many options at the picture-taking stage. Let's consider those first.

The time of day has an impact on colour saturation. Early morning and late-evening light, with the sun low in the sky and less glare, produces more intense colours than at other times, as does front lighting rather than side- or backlighting.

A polarising filter, by reducing reflections and cutting down on glare, also improves saturation. A polariser has the maximum effect when the camera is at 90° to the sun. Polarisers are simple to use as the effect is clearly visible through the camera's viewfinder – the most obvious one being the increase in saturation of blue skies.

There are a couple of things to watch out for. It's possible to over-polarise a scene, resulting in near-black skies, and also, when using wide-angle lenses (wider than 28mm on a full-frame DSLR or 17mm on an APS-C sensor), the degree of polarisation can be uneven across the frame.

Of course, you won't always want strong, vibrant, saturated colours. Muted pastel tones are more subtle, but can be just as effective with the right subject matter, creating an atmosphere of calm and tranquility. Early morning mist drains colours and gives a cold, bluish hue to a scene, which you can enhance by tweaking the White Balance in-camera, or later, if you're shooting Raw.

A lot can be done at the processing stage. Experiment with White Balance settings to fine-tune the overall atmosphere and cast. Over the page, we'll show how varying the White Balance of a Raw file can give dramatic results.

Typcs of polariscr

There are two types of polariser: circular and linear. This doesn't refer to the physical shape - they're both actually circular - but the way the light is polarised. Make sure you buy a circular polariser for use with your DSLR as linear types interfere with your camera's metering, which can't handle linearly polarised light.









Using White Balance presets

Learn how to alter the tone of your landscape images by experimenting with different White Balance presets for creative effect

Helen Dixon



Different light sources have different colour temperatures that affect the warmth and coolness of an image's colours: for instance, fluorescent light produces a yellowish cast, while

tungsten light is slightly blue. Normally you would set your digital SLR's White Balance to match the lighting conditions in order to eliminate any colour cast, usually most evident in the whites of an image. But while keeping to this rule ensures the whites are actually white, using different White Balance presets on certain types of scenes can give your pictures a deliberate cast that makes them look cooler or warmer for creative effect. It's the digital equivalent of using certain types of film or filters as a way of giving an image more impact.

Auto White Balance (AWB) is the easiest way to maintain a correct White Balance and generally produces acceptable results. However, when you

are capturing a particularly warm or cool scene, such as at sunset or twilight, or if your scene is dominated by one colour or hue, AWB can overcompensate, rendering the colours inaccurate and sometimes flat. You're better off taking control over the WB and setting it to match the lighting or setting the WB according to the tone and feel of the shot you want. For instance, setting Cloudy or Shade when the sun's setting or rising can add extra warmth, boosting the oranges and yellows in the sky, while setting Tungsten or Fluorescent WB can make the colours cooler by injecting some blues to the scene.

If you're shooting JPEG, you need to set the White Balance you want to use before you take the shot. For more options, though, we'd strongly recommend shooting Raw + JPEG, setting the correct White Balance and then experimenting with the White Balance afterwards in post-production. The following step-by-step guide will show you how easy it is to do...

Shoot Raw

For added flexibility, shoot your images in Raw and adjust the White Balance post-capture in Adobe Camera Raw. Once the image is opened, click on the drop-down menu at the top of the Basic tab and scroll down to select the White Balance preset you'd like to apply to your image. You can change the WB as many times as you want until you find the one you're happy with and even adjust the Temperature slider for more control over a custom WB.

White Balance:	Daylight	-
Temperature	As Shot Auto	
Tint	Daysoht	
	Cloudy	
	Tungsten	
	Fluorescent	
Exposure	Custom	



1 Find your location Coastal sunsets or sunrises work well for this type of technique due to their vivid colours. Try to arrive at the location at least half an hour before the golden hour begins. Try out different compositions and look for foreground interest. If you have trouble finding anything, use the wet sand or a rock pool to add a reflection in the scene.



2 Use Auto White Balance Once you've composed your scene, select AWB (see your camera's manual if you're not sure where it is) and set aperture-priority mode to at least f/13 to get adequate depth-of-field. If your autofocus struggles in the low light, switch to manual focus. If you struggle to balance the exposure between the sky and foreground, use an ND grad filter.











Try out WB presets As you can see, AWB keeps the colours true to the scene but lacks punch. To warm up colours, I take the same shot using the Daylight, Shade and Cloudy WB presets. The lower the Kelvin (colour temperature), the more saturated the oranges, yellows and reds. Cloudy is the best WB as it boosts the sky's warmth without losing too much coolness.

Increase Kelvin As the sun falls just below the horizon, try increasing the Kelvin by setting Tungsten and then Fluorescent WB to enhance the blueness of twilight. To avoid colours looking too unnatural, opt for a WB setting that enhances the blues in the scene but doesn't overpower the whole image. For this scene, Fluorescent is much better than Tungsten (see right).







AS WONDERFUL as colour photography is, it can also be too familiar. It shows us what things look like and leaves us feeling reassured and comfortable. But in art, reality isn't always the best solution because it doesn't encourage us to look beyond familiarity and appreciate an image for any reason other than what it depicts. As soon as you remove colour from an image, however, everything changes as it no longer represents reality.

Black & white images are simpler, more dramatic, more evocative and more atmospheric than colour. Our emotional response to a colour landscape image is often rendered superficial by familiarity, but comes from a much deeper place when we take that colour away. Light, shade, texture and shape take centre stage and what's actually in the scene becomes almost irrelevant - it's the impact and effect the image has on you that counts much more.

Digital technology makes black & white landscape photography easier than ever before, mainly because the need for a blacked-out room and smelly chemicals has

Thc basic rulcs

Although you don't have to adhere to specific rules when creating black & white landscapes, there are a few worth considering. For example:

- Use foreground interest to add a sense of depth and scale when shooting with a wide-angle lens.
- Look for lines that can carry the eye into the scene – walls, fences, rivers, streams, paths, shadows and other natural or man-made features can be used.
- Use hyperfocal focusing to maximise depth-of-field so you can record the scene with front-to-back focus without having to stop your lens right down to its minimum aperture.
- Use the rule-of-thirds to position the scene's focal point - the top-right third is usually the best place. You can also divide the scene into thirds - two-thirds sky and one-third foreground, or vice versa.



been removed from the equation without compromising the quality of the final result now anyone with a digital camera can create amazing black & white images. Putting yourself into the right mind-set to 'see' the landscape in black & white can be tricky, but it's an obstacle that can easily be overcome. By setting your camera to black & white mode and using the LCD screen in LiveView, you can view the scene in front of you in black & white and quickly pick up on which scenes and colours work best in monochrome. Certain colours when rendered black & white look similar grey tones, which can make your shots look flat: learning what colours create

Above: Misty, blurred water, dramatic looming skies and gritty textures are all great ingredients that add up to an impressive, almost otherworldly, monochrome image.

Right: Don't be afraid to throw the rule book out of the window and include lots of sky in your black & white landscape images. Any interesting cloud formations become the focal point.

contrasting tones will help you recognise what scenes look good in black & white. You can even shoot in both Raw and JPEG - the image you see on your camera's preview screen will be black & white, but you'll also have a colour Raw file on the memory card that you can work on later. The other option is

Filters for black & white

When you convert an image to black & white, some colours come out as similar grey tones. The solution is to use filters to change the way colours translate to grey and also control contrast. Film photographers did/do this by placing optical filters on their lens (yellow, orange, red or green for landscapes). These filters work by lightening colours close to them and darkening colours opposite them on the colour wheel, so a red filter lightens reds and other warm colours, but darkens blues and greens, for example. As a digital shooter you don't need to use these optical filters on your lens because you can add their effects when you convert an image to black & white during post-production, using Photoshop, Lightroom, Aperture or plug-ins such as Nik Software's Silver Efex Pro 2

An alternative option is to

use the Monochrome Picture Style in your camera to add filter effects to an image as you take it. Or you could set your camera to Monochrome mode then use optical filters on the lens, though you'll produce better images by shooting in Raw (colour) then converting to black & white later.

Here's a quick rundown of the effect that different black & white filters will have on your image:

- Yellow: Lightens warm colours and darkens cool colours. Also gives a slight increase in contrast, but the effects are subtle.
- Orange: Lightens warm colours and darkens cool colours, enhances skies and gives a significant boost to contrast.
- Red: The most dramatic filter of all - blue sky goes almost black, clouds stand out starkly and contrast is significantly increased. Darkens greens in the landscape

- and lightens warm colours. Green: Lightens greens and blues while darkening warmer colours. Handy for landscapes as it separates out shades of green.
- Blue: Not a good choice for landscapes generally as greens and blues go very light so it tends to ruin dramatic skies.

There are certain filters that you can use on your lens when shooting images in colour to convert to black & white later, and they include a polariser, neutral density (ND) grads and ND filters.

POLARISER Has a similar effect on the sky to a red filter, darkening blue and making clouds stand out, but it also improves

clarity and increases contrast, and all of these effects will be seen in the image when you convert it to black & white.



ND GRADS These are used to reduce the difference in brightness between sky and land so

when you expose for the landscape, the sky is also correct. A 0.6ND grad is fine for general use, but a darker 0.9ND grad is better when the sky is bright or for dramatic effect



ND FILTERS Allow you to increase the exposure so you can record movement in the

landscape. Traditional NDs such as a 0.6, 0.9 and 1.2 are handy for blurring the water in waterfalls, rivers and coastal views, but in recent years, extreme NDs such as the Lee Filters Big Stopper have become popular as they allow you to use exposures of a minute or longer in daylight to capture motion in the landscape.



66 MONOCHROME LANDSCAPE PHOTOGRAPHY OFFERS ENDLESS SCOPE FOR CREATIVE EXPRESSION 99

simply to shoot as normal, in colour, then decide later which images you want to convert. Some will work, others won't, but there's no reason why you won't end up with some great pictures. The reality is, most of us like to shoot both colour and black & white rather than one or the other exclusively, and we may chop and change between the two while at the same location, or even decide months later to convert a colour shot to black & white. There's nothing wrong with doing this - all that matters is the end result.

The great thing about mono landscape photography is that it offers endless scope for creative expression and experimentation. You've stripped away reality by removing colour, so after that it doesn't really matter what you do. You can go dark and dramatic even if the original scene wasn't, or soft and

gentle, and control the mood of the final image. You can also use filter effects to change the tonal relationship in the image and boost contrast (see panel opposite). Basically, you make your own rules.

Black & white suits all types of landscapes, from grand, sweeping views to small details and everything in between, so no matter where you are you'll find mono inspiration. It's also possible to produce stunning black & white images in situations where colour simply wouldn't work, such as on flat, grey days, so it can offer a creative escape route that you may not have thought of. The images used in this feature should give you a good idea of what we're talking about. Black & white can take your landscape photography to a whole new level – all you have to do is throw caution to the wind and give it a go.

Blaek & white FAQs

Q Does it matter if I shoot in JPEG then convert my images to black & white, or should I ideally shoot in Raw?

Alt's always better to shoot in Raw as the Raw file is like a black & white negative it contains all the information you need but you can interpret that information in different ways to control the mood of the final image. With JPEGs, a lot of that information has already been deleted in-camera so it's a less versatile image format. That said, you can still produce great black & white images from JPEGs!

Q What's the best software for converting images to black & white?

A The most popular is Nik Software's Silver Efex Pro 2, part of the Nik Collection (see page 89). It offers lots of presets that give you great effects at the click of a mouse, allows you to tone your images and add the characteristics of specific black & white films, but it also gives you a high degree of control over the image so you can adjust contrast and exposure in localised areas. Photoshop, Lightroom and Aperture are also excellent options.

Q I want to buy a ten-stop ND filter. Which one would you recommend for black & white images?

A There are three main options: the Lee Filters Big Stopper (£150); the B+W 110 3.0 (£125 for 77mm thread); or the Hitech Pro Stop 10 (£75). Based on price, the Hitech is the winner, but based on image quality, the Lee Big Stopper is a better option. In terms of versatility, the Lee and Hitech options are better as the B+W is screwed on and therefore tricky to use with other filters such as ND grads (which you will need to stop the sky from overexposing). All things considered, we'd go for the Lee Filters Big Stopper.

Q I have an infrared-modified DSLR. Can you give me a few tips on using it for black & white landscapes?

- A Follow these steps for the best results: Shoot in full sun and include foliage or grass, which really show off the infrared effect well.
- Include plenty of sky and cloud formations; they look amazing in infrared.
- Watch the exposures you may need to dial in exposure compensation to get well-exposed images.
- When editing images, create a duplicate layer and add a little diffuse glow to it (Filters>Distort>Diffuse Glow) to enhance the infrared effect. Adjust the Opacity slider until you're happy with the effect.

Hueless app

Whether you use it purely to shoot b&w or alongside your DSLR for quick analysis of what a scene looks like in b&w, the Hueless iPhone app is highly recommended. It offers live exposure controls, filters and modes. Buy it at the App Store for £1.49.





WEATHER AND LIGHTING

An immediate benefit of shooting landscapes to convert to black & white is that the quality of light becomes far less important than it does when shooting in colour. You still need good light to create great black & white images, but that light may be found in weather conditions that wouldn't suit colour photography. For example, on a dull, overcast day the landscape appears rather flat and lifeless, colours are muted, and other than shooting small details, your colour options are limited. But the quality of light you get on an overcast day is actually very high. The light is soft and contrast is low, so you don't have to battle with deep shadows or shimmering highlights, and it reveals a huge amount of detail that might be lost with stronger light. This makes it perfect for black & white landscapes. The sky may be rather washed out on overcast days, but you can beef it up later if you like. In fact, the same applies to the whole image. Just think of the original Raw file like a digital negative - it contains all the information and detail you need, but how you interpret it is up to you.

Black & white comes into its own in dark, stormy weather. You really need the sun to break through when shooting in colour, to

Above: With so much drama in the cloud formations, this shot calls for a black & white treatment. Note the tonal differences in the light across the landscape.

Right: A gritty feel is achieved with the use of an ND grad, making the dark and brooding sky even more moody. So many different tones mean the overall effect works brilliantly in monochrome.

light up the landscape so it contrasts with the sky. With black & white, though, you can manage well without the sun and just concentrate on bringing out the brooding nature of the scene, perhaps using a strong ND grad filter to intentionally darken the sky more than it was in reality, or increasing contrast during post-production. Black & white landscape photography is about creating a mood, not recording reality.

Sometimes the light is so monochromatic that if you shoot in colour the images still appear to be black & white. When that happens it's a no-brainer as to what you should do with the image. In dense fog or heavy mist, for example, just about every drop of colour is drained from the landscape. Shooting into the sun can have the same effect, especially if there's water in the scene, because you end up with silver patches of light dancing on the water and any solid elements



in the scene are reduced to black silhouettes.

Of course, don't be misled into thinking that you need grotty weather to produce good black & white landscapes - strong, directional light can work wonders when it comes to bringing out the texture in a scene. For example, if you shoot a beach on a dull day it will appear flat, but when light from a low sun rakes across the sand, you'll see every ripple. This is equally important for black & white photography as colour. In fact, in some ways texture is even more important in black & white images because you don't have colour to fall back on. Therefore, it's still worth venturing out early in the morning and staying out late for sundown, so you can take



Above: Snowy landscapes suit monochrome photography really well, with stark, bare trees almost silhouetted against bright white snow and grey skies.

Lighting app

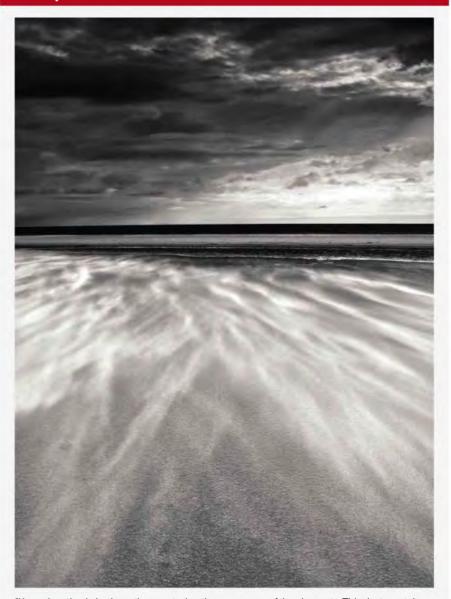
To find out when the best natural light is going to hit your location, download a neat little augmented-reality smartphone app called Sun Seeker. It uses your phone's camera and GPS to show the projected position of the sun at a given date and time,



66 B&W LANDSCAPE **PHOTOGRAPHY IS ABOUT** CREATING A MOOD, NOT RECORDING REALITY 99

advantage of the low sun raking light and long, weak shadows. Utilising the light from different directions can also pay dividends – shoot with the sun to one side of the camera so shadows are cast across the scene or keep the sun to your back so shadows act as lead-in lines that carry the eye into the scene (taking care not to include your own shadow). Contre-jour photography - shooting into the light - also suits black & white images. Leave the exposure to your camera and any solid shapes will be recorded as stark silhouettes. Alternatively, dial in a couple of stops of exposure compensation to blow out the background

Pro tip: Lee Frost



"I love shooting in bad weather, capturing the raw power of the elements. This shot was taken on Alnmouth Beach, close to my home on the Northumberland coast. Dry sand was being whipped up by a strong wind and blown towards the sea. As the sun came out it was as though the surface of the beach was alive - I could feel the sand hitting my legs as I walked. I'd never tried photographing this phenomenon before, but decided to give it a go. I experimented with different shutter speeds in an attempt to capture the ghostly effect of the blowing sand and this one, shot at 1/6sec, proved to be the best. I love the contrast between the light tone of the sand and the dark, angry sky, which I emphasised using an ND grad and also by boosting contrast during post-production."

Focal length: 24mm, tripod, 0.6ND hard grad filter, Exposure: 1/6sec at f/22 (ISO 50).

and create an atmospheric high-key effect.

When the light is colourful, your gut instinct will be to shoot in colour. At sunrise and sunset, for example, the warmth in the light and the vivid colours in the sky are usually what inspire you to pick up a camera. But don't assume that the same image won't work in black & white. Remove the colour and see what you think. Golden light is fantastic, but it can mask the real beauty of the scene and it's easy to get carried away by colour and ignore the shapes and tones that lie behind it. If you convert a colourful image to black & white, no one will ever know it was colourful anyway.

but they will see it in a totally different light.

In a sense, there's a pattern emerging here - namely, when the light's not good for colour it's perfect for black & white, and vice versa. For this reason, you don't have to pigeonhole yourself as one or the other, but simply be a creative photographer who embraces both mediums and switches between the two to make the most of whatever conditions you encounter. Purists may argue that by doing so you're compromised on both counts, but it is possible to embrace both mediums and produce fantastic work.





COASTLINES

For drama, beauty and mood, you can't go wrong with shooting the coast in black & white. It's a scene that constantly changes and evolves thanks to the ebb and flow of the tide and the physical effects of the weather - and it's for that reason that it's earned itself the top location for many a photographer. On first encounter, you might not think to shoot the coast in anything other than colour, but shooting in black & white achieves an atmosphere that colour can't rival. And if you struggle to 'see' in black & white (ie notice the different tones in a scene that lend themselves well to black & white conversion), the coast is the ideal place to begin your monochrome adventures. This is mainly because seascapes are full of tones, contrast, texture and strong shapes; the ideal ingredients for striking mono images. Luckily, many of the thought processes you go through for shooting in colour also apply to shooting in black & white. We'll start with finding your viewpoint.

When capturing the drama of a rocky coastline, find a high view looking down on a bay or inlet and use rocks or boulders in the

foreground to add depth and scale to your compositions. The same rules can be applied at sea level, too, where rock slabs extend down to the water's edge and you can use them to lead the eye into the scene, or fill the foreground with sea without getting your feet wet! By shooting in mono and removing the distraction of colour, all emphasis is placed on shape and form - meaning how you compose your image is all-important. You'll find simplicity is often your best bet.

How the sea records depends on how rough it is and the shutter speed you use. If you want to freeze a crashing sea, you'll need to shoot at 1/1000sec or even 1/2000sec. This approach works well if you're using a telezoom lens to fill the frame with pounding waves, or to capture them exploding against the shore and sending spray high into the air. To record motion in the sea, you'll need a slow shutter speed – the slower it is, the softer the sea becomes. Use 1/4sec to one second to record motion in the waves but still retain texture, then gradually slow it down. Once you get to 20 to 30 seconds, waves turn to mist and little texture on the surface of the sea Above left: Long exposures and ten-stop filters create shots like this. The sea is reduced to a misty blur that gives an air of intrigue.

Above: Rocky outcrops are fantastic for adding a bit of interest. Set a fast shutter to freeze motion in the sea; try 1/1000sec to begin with.

Right: Patterns and ripples in the sea are a blessing for b&w images. Set a long exposure. letting everything appear silhouetted.

is recorded. To take this idea to the extreme, use a ten-stop ND filter so exposures run into minutes rather than seconds, turning the sea to milk - or wait until light levels are so low that you can achieve exposures of several minutes naturally. Include static elements in the scene to contrast with the soft sea jetties, rocks, groynes and posts all work well. Converted to black & white, these long-exposure images look sublime.

You can use ripples in the sand to lead the eye, or rock pools reflecting the sky to fill the foreground. Seaweed, driftwood, barnacle-encrusted groynes, old lobster pots, fishing nets, rocks and pebbles found on the beach can also be used as foreground

Image ideas to try...



Receding waves

If you watch waves wash back down to the sea, they often leave streaks of bubbling foam that look amazing in black & white. To capture this effect, use a wide-angle lens and a slow shutter speed - around 1/2sec should be fine. Time your shot to catch the waves receding. A high-contrast b&w conversion will emphasise the effect.



Shooting sand

Ripples in sand are best captured early or late in the day with your camera when the sun is low, or when strong sunlight renders them as silhouettes – use them as lead-in lines in wide-angle shots or fill the frame from close range. Take a closer look in shallow outflow streams, too, where grains of sand are separated to create eye-catching patterns.



Rock art

Rocks are never far away at the coast and offer lots of potential. Pebbles and boulders worn smooth by the sea are ideal for pattern shots, while rocks below the high tide mark are often full of graceful curves and contours. On rock slabs, look for pebbles jammed into cracks and crevices, or move in close to reveal patterns and textures



Piers of the realm

Piers make great seaside subjects. Use them as the focal point in wide-angle views, or as the main element in long-exposure shots that record motion in the sea and sky. Standing under a pier and looking out to sea will reveal the complex pattern of legs, struts and braces. Shoot them in silhouette against the rising or setting sun, or basking under moonlight.



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interest. Set your tripod low to make the most of these elements, use an ND grad to tone down the sky and set your lens to f/11 or f/16 so you have enough depth-of-field to achieve front-to-back sharpness.

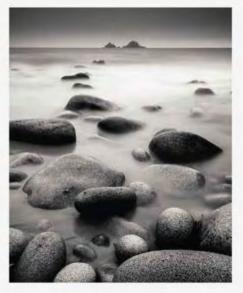
Coastal views often need a focal point to round off the composition. This could be anything: a castle or headland in the distance: a person; a boat; a lighthouse or an offshore island. And ideally place the focal point on the top right third to help you achieve a more balanced result for your image.

A final point about light and weather: they have a massive influence on the mood of your black & white coastal images. The great thing about shooting in b&w is that it doesn't matter how bad the weather gets, especially if you're using a ten-stop ND filter. In fact, it's true to say that the worse the weather is, the better your monochrome images because you can never have too much drama when you're shooting the sea! Dawn is a great time for atmospheric light. If the tide has been receding through the night, you'll also have the advantage of beaches being devoid of footprints and delicate sand ripples will still be fresh and wet. Standing water on the sand can reveal beautiful reflections, too.

Protip: Ross Hoddinott

"I love b&w photography. However, 'seeing' in b&w comes easier to some than others and I must admit I'm not a guy who naturally 'sees' in mono. But over time, I've taught myself what to look for - and the coast is one of the best places to do so. Simplicity is important. Removing colour places emphasis on shape and form, and composition and light. Often an 'active' sky helps - one with interesting cloud and drama. But failing that, use bold features and foreground interest - large, smooth boulders, piers, lighthouses and weathered groynes. Weather is key. Bad weather suits b&w, as it conveys mood and atmosphere. I also love the effect created by using extreme ND filters. Personally, I use a Lee Filters Big Stopper. With the filter attached, exposures of a minute or longer are possible, reducing the sea to an ethereal blur."

Filter: Lee Filters Big Stopper. Exposure: 91 seconds at f/11 (ISO 200).



LANDSCAPES

Landscape photography has always been perceived as an easy option - head into the countryside, find an attractive scene, set up your camera and fire away. Mother Nature's done all the hard work, all you're doing is recording it. Right?

If it were that easy we'd all be master landscape photographers. Clearly there's much more to it. Composition is the Holy Grail of photography. A well-composed landscape shot in average light will always beat a badly composed landscape taken in great light, especially when the final image is monochrome. Why? Because without a strong foundation, creativity crumbles - and composition is the foundation of every photograph we take.

Fortunately, composition isn't rocket science. Common sense, consideration and concentration, that's the crux of it. All you have to do is decide which bits you want to capture and how you're going to arrange it all in your camera's viewfinder.

Although telephoto and telezoom lenses have their place in landscape photography, wide-angle lenses win hands down for 'wow' factor. They give us a view of the world that the naked eye simply can't match. They bend, stretch and distort the truth, and the wider you go, the better it gets. Slight changes of viewpoint also make a huge difference to the impact of elements, while the extensive depth-of-field you get at small apertures such as f/16 and f/22 also guarantees front-to-back sharpness in your shot.

Using a wide-angle lens to exploit foreground interest also helps to make an image look three-dimensional, because as well as providing a logical entry point into the

Pro tip: Helen Dixon



"Some of my favourite monochrome images are so simple; often just a lone tree and big sky, like this one that I spotted while driving in the country. I walked around the field to find the best view, looking to incorporate the fence to add interest. The clouds added texture. form and helped the tonal range. Usually I'd opt for my wide-angle lens, but as the field was inaccessible I had to use a telephoto, which kept the shot uncluttered. The Raw image was processed in colour and then I applied a Black & White adjustment layer in Photoshop to adjust the tones. Finally, I used Curves to bring out the contrast and make it punchier.

Exposure: 1/20sec at f/13 (ISO 200).



image, it also helps to add a sense of depth and scale. If that rock filling the foreground looks bigger than the cottage in the distance, say, the cottage must be far away, hence distance and depth are implied and a three-dimensional feel is achieved

To make the most of foreground interest, get close and low. Shooting from eye level is fine, of course, but when the camera is six foot off the ground, interesting elements at your feet lose impact. Kneel down and get in close, however, and that humble mossy rock becomes a giant boulder that dominates the composition and you've bagged a dramatic shot simply by bending your knees

Lines are another powerful compositional device. Paths, tracks, roads, railway lines, fences, walls and avenues of trees all make great man-made lines. Rivers and streams are ideal natural lines. Diagonal lines work best if they travel from the bottom left of the frame to top right, because that's the natural way the eye looks at a photo. Converging lines are even better. Stand in the middle of a road and look along it through a wide-angle lens. The

Above: When you're presented with a scene, try to think what it might be like converted to black & white - if there are lots of different tones, as with this shot, it should work particularly well. Above right: Shadows and highlights are the making of a good mono image, along with a cracking composition. This is a perfect example of how all three combine for a lovely b&w shot.

effect of the parallel sides converging into the distance is dizzying and arresting. Including the vanishing point, where those lines appear to meet on the horizon, brings the composition to a satisfying conclusion. Lines don't have to be straight - the meander of a stream as it travels away from the camera is visually more interesting than a straight line.

Be aware of colours as you're composing and how they might relate when converted to grey tones - what looks great in colour may look flat post-conversion. Conversely, a scene that looks naff to the naked eye could make a fantastic monochrome image.

Confidence has a lot to do with success when it comes to taking cracking black & white landscapes. Digital photographers have

Shooting at high ISO

We constantly bang on about keeping your ISO rating low when shooting landscapes to minimise noise, but when it comes to black & white, a bit of noise can be a benefit. Noise on colour images tends to look naff, but once you convert that image to black & white it looks much like film grain, and the stark, gritty feel can look fantastic. Simple images suit the treatment - mist and fog, seascapes, shots taken on overcast days. You need plain areas of tones to really see the noise/grain, so avoid shooting cluttered compositions at high ISO. How high you go depends on how old your DSLR is. The latest DSLRs handle noise so well that even at ISO 3200 you'll get smooth images, and if you want to really go for it you'll need to shoot at ISO 6400 or beyond. With older



models, you may see lots of noise at ISO 1600 or 3200. Just experiment. If you find the image looks flat in black & white - high ISO images often do – boost contrast by adjusting Levels or Curves in Photoshop.



LEE FROST

Right: Meandering lead-in lines are brilliant for providing a fantastic composition, leading the eye on a journey through the image and treating the viewer to a certain amount of intrigue.

Far right: Shooting in black & white requires you to think differently about your picture-taking. Often your image will be above you, so look up – here the clouds form a frame for the church.

a mortal fear of black & white because it's usually an indicator of blocked shadows and blown highlights. But you need true blacks and whites in mono images, otherwise all you're left with are various shades of grey and that's just boring!

You have to be bold – don't be afraid to boost contrast, to darken that sky, to make localised adjustments to contrast and exposure (just as they did in darkroom days) by dodging and burning. Remember, you're no longer dealing with reality, so the rule book goes out of the window!





Imagc idcas to try..



My home town

We tend to associate the countryside with landscape photography, but the urban landscape is just as interesting – and often far more accessible. Set yourself a project to shoot a series of black & white images of your home town – not just big views, but details that capture its character. You may discover places you didn't know existed.



Sky high

When we shoot landscapes, the sky usually plays second fiddle to the foreground, but in some situations the sky will be much more interesting than the scene itself. Don't be afraid to tilt your camera up and make a feature of it – dramatic cloud formations look amazing when shot with a wide-angle lens and very often will create incredible pictures.



Minimalist images Black & white is a minimal medium

so use that to your advantage when selecting scenes. Go for simple, stark compositions such as trees against the sky or reflecting in calm water. The winter landscape lends itself to this treatment, especially when covered in a blanket of snow. Dull days do, too, as they provide a plain, featureless backdrop.



Moving water

Waterfalls, rivers and streams are a favourite subject among landscape photographers and make great b&w subjects. They're also best shot in dull weather, when the light's soft, so if the weather worsens, find yourself some moving water. To achieve an attractive blurry effect, experiment with shutter speeds from 1/4sec to several seconds.

Convert a Raw file to mono

Stripping a landscape image of colour can give pictures impact and mood. Learn how to create bold mono images from your Raw files



The origins of photography are rooted in black & white, but despite the arrival of colour film, and after that the dawn of the digital age, black & white

photography still remains a firm favourite of many photographers. Back in the days of film, photographers would have to use dedicated monochrome film combined with colour filters to alter the tonal range of specific colours. Thankfully, when dealing with digital the process is a lot easier and the colour filtration can be done at the post-processing stage. While colour images can use bold, vibrant hues to attract the viewer's attention, black & white photographs rely solely on the core aspects of photography - composition, exposure, lighting and perspective. Monochrome images have an artistic elegance about them, but not every image suits the

conversion. It works best with images that have a good tonal range from dark to light - images comprising a lot of mid-tones will end up looking flat and dull when converted to monochrome. You should look to include textures, lead-in lines and interesting shapes in your image. Moody skies and looming clouds work great in black & white, too.

Converting to black & white in Adobe Camera Raw is ideal as Raw files contain more information than compressed JPEGs or TIFFs. However, if you don't have access to ACR or your image is saved as a compressed file, you can get very similar results using a Black & White adjustment layer in Photoshop. While removing colour is as simple as pressing a button, to get the best from your black & white images, the process is more involved. With a bit of time and effort, however, you can produce truly stunning monochrome images.







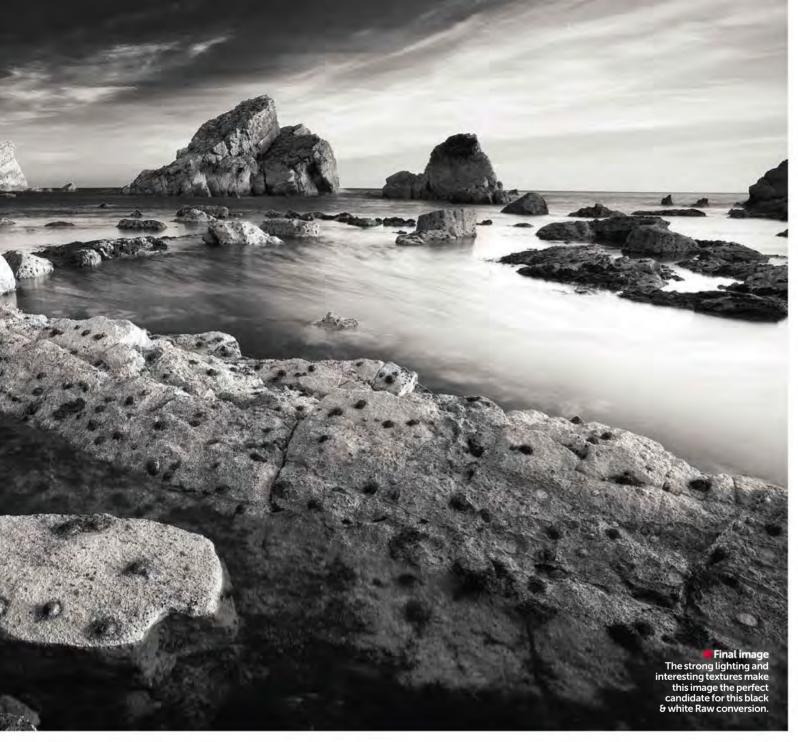




Reset your image To get the best out of your black & white image, some adjustment to the tones is required. ACR will automatically adjust some of the settings to tone your image, but we want to tone it ourselves, so click on the word Default above the sliders which will reset everything to zero.



Z Adjust your colour sliders We'll start by adjusting the Blues slider, as blue was the central tone in our image to begin with. Click and hold on the Blues slider and drag it to the left to darken the blue tones. Keep an eye on the histogram at the top of the screen to make sure no clipping occurs.





4 Target your adjustments As an alternative to adjusting the sliders, you can target your adjustments. Click and hold on the *Targeted Adjustment Tool* button at the top and select *Grayscale Mix*. Click and hold on any tone in your image and drag up or down to lighten or darken that tone and the surrounding tones, too.



5 Increase Grayscale Mix Some of the warmer tones now look a bit lost, so increasing the Grayscale Mix on the channels for *Oranges* and *Yellows* brings out the detail in the rocks and creates a strong contrast between them and the sea. This can be done manually or by using the *Targeted Adjustment Tool* again.



6 Adjust Curves Finally, select the Tone Curve button at the top and choose the Point tab. Under the Curve tab, select Strong Contrast. If necessary, you can adjust the curve below by moving the individual points as required. This final step just adds extra drama and oomph to our monochrome image.



Turning b&w: a pro's process

Professional photographer Lee Frost explains his process for taking black & white images from Photoshop to print



The day I captured this picture I was exploring the Northumberland coast, looking for scenes to suit the effect of a ten-stop ND filter. When I saw this

old fisherman's hut, I knew a long exposure would work well to record motion in the drifting clouds and swaying grass, while the hut stayed static in the middle of the frame.

The original Raw image looked pretty dull, partly because the light was flat and also because the B+W ten-stop ND filter added a warm cast and some vignetting. However, none of this mattered because I knew the image would be cropped and converted to black & white later.

Bringing out that drama and impact was easy. I'm not one for spending ages working on Raw files and, in this case, I didn't employ any fancy software either - I only used Photoshop CS3. First I boosted contrast by adjusting the Tone Curve: moving the Darks slider a little to the left and the Lights slider a little to the right. I then opened the image in Photoshop and cropped it to square format. To get a basic monochrome image, I applied a Black & White adjustment

(Image>Adjustments>Black & White). Then I used the Polygonal Lasso Tool, with the Feather set to 100px, to select the sky. To improve the sky's impact, I then added a Levels adjustment (Image>Adjustments> Levels), using the Auto button to see if it gave me the look I wanted. Since it did, I stuck with it, but if it hadn't, I'd normally cancel the adjustment and make more controlled



alterations using Levels or Curves. I then inverted the selection (Select>Inverse), so everything other than the sky was selected, and reapplied the Levels Auto command, which boosted contrast in the shed and grass. The final stage was to bring out detail and texture in the shed, so I selected it with the Polygonal Lasso Tool, the Feather set to 30px, then adjusted Curves

(Image>Adjustments> Curves) to give the image more 'oomph'!

When it comes to printing my black & white landscapes, I always use the same paper – Hahnemühle Photorag 308. It's a heavy, flat white fine-art paper with a lovely dull finish and brilliant archival qualities. I print with an Epson Stylus Pro 7880 24in printer using Epson K3 Ultrachrome inks. To print black & white, I use the Advance B&W setting on the printer, which uses three black inks to produce pure mono images. I like to print big (usually 20x20in on 24in paper) - then I have the prints mounted in 32x32in window mounts so there's a 6in border on all sides and framed in natural oak frames. The final framed work is 34x34in, so it makes a big statement when hanging on the wall - the best place for black & white landscapes!

Choosing products

You can get fabulous results from at-home printing by combining the right products. We recommend trying matt fine-art papers by Hahnemühle, Ilford or Permajet, ideally suitable for black & white images. Also consider using a large-format Epson, Canon or HP printer with only a set of black inks, rather than colour, to optimise details in the shadows and highlights.



Black & White adjustment layer

While some photographers prefer the simplicity of a straightforward black & white conversion, you can get great results using a Black & White adjustment layer (Layer>New Adjustment Layer>Black & White...). Not only does it allow you to use the colour channels to adjust the tonality of your black & white image, similarly if you are using colour filters in-camera, any adjustments you make are nondestructive. At any point you can double-click on the Adjustment Layer in the Layers palette and re-edit your conversion, if necessary. It's a very flexible and effective way to edit your b&w images.

Selectively adjusting black & white

Often the monochrome images you get from a basic conversion can be flat and grey. For this reason, make improving the contrast using an Adjustment Layer your first priority: you could use Levels, Curves or Brightness/Contrast for this. If some areas of your image are still in need of help, consider being selective with your adjustments. Either use a selection tool to isolate the target area and apply a Levels adjustment (like Lee Frost has) or duplicate the image layer (Layer> Duplicate Layer) and use the Dodge and Burn Tools, set to Midtones and a low Exposure, to reveal detail in shadows and highlights.

Get speeifie with Silver Efex Pro

Looking for a quick and effective way to convert your landscapes to monochrome? Look no further than Nik Software's Silver Ffex Pro 2

Caroline Wilkinson



If you miss the grain quality you got from your Kodak T-Max P3200, the smooth tones of Agfa's APX Pro 100 or the deep blacks and pearly whites from an

Ilford XP2 Super 400 roll of film, you'll adore Nik Software's Silver Efex Pro 2, part of Google's Nik Collection. Carefully selecting film had a great deal to do with the art of black & white photography, but that enjoyment doesn't have to end with digital.

While there are a number of ways you can develop a black & white image in Photoshop CS, Elements and Lightroom for grand results, Silver Efex Pro 2 allows you to get more creative and elaborate with your effects. Not only can you replicate the look of your favourite film type with a few clicks, you can also apply colour filters to adjust tonality and pick from dozens of classic, vintage and modern presets for instant results. You can even make your usual selective adjustments to contrast, noise and exposure, and then finish off by picking a vignette, border and toning style. You can make it as classic or as creative as you want with very little effort, so don't worry if you're new to this digital editing malarkey - this software puts the enjoyment back into editing.

As a plug-in, Silver Efex Pro 2 works in conjunction with your main editing suite and is accessible via its Filters menu. This means you can continue to edit your image in Photoshop before and after working on it in Silver Efex Pro: it's one streamlined solution. Personally, while you can yield great results using the techniques we've already shown you in Photoshop, for me, nothing compares to the flexibility and ease of Silver Efex Pro 2. For the time it takes you to get one creative conversion in



Photoshop, you could produce a number of different looks using Silver Efex Pro - one of which I'll explain to you here.

Before editing this example image with Nik Software, I cropped the image in Photoshop. It's good to do this first if you plan to add a vignette or border to your finished image to avoid cropping the edge effects out afterwards. Before I made any selective adjustments to the image, I scrolled through the Preset Categories to see which preset best suited the image. Some, like Low Key, made the image look too dark, while others like Pinhole and Antique Plate II looked unusual but were too vintage for what I wanted

I chose the basic High Contrast preset then increased the Structure to sharpen and

Protip: Ross Hoddinott

"As with any creative profession, presentation is everything in photography. Beautifully composed, technically brilliant shots can be totally undermined if poorly printed or presented. Naturally, paper choice is important. There is so much choice when choosing paper, but



Ilford's Galerie Gold Fibre Silk is a favourite of mine. The paper has great archival properties and, arguably, is the closest thing you can get to a darkroom print - it looks, feels and even smells like traditional darkroom paper! Cropping is an important part of the compositional process and a square format, in particular, really suits black & white - enhancing its fine-art look. A small border - in the region of 1-2cm – will also help complete the look of your mono masterpiece.

boost contrast. To add noise for a grainy high-ISO effect, I set the Grain per pixel slider to 86. You can see the effect of the settings on your image almost instantly in the preview window. To finish off, I added a grunge frame by selecting Type 8 under Image Borders. As soon as I pressed OK, the effect was applied and the image automatically opened in Photoshop's main suite as a separate editable layer within the Layers palette. It really is as simple as that.

You can try before you buy with the Nik Software 15-day free trial, downloadable from the Google Nik Collection website - visit www.niksoftware.com. You can also buy the plug-in as part of Google's Nik Complete Collection for \$149.





Other ideas to try

- Canvas & acrylics If a framed fine-art print is a little too traditional for you, think about getting a stretched canvas print or your image printed on acrylic glass, or even aluminium for a more contemporary style. Consider brands like White Wall, Jessops, Point101 and Lucy Art.
- Professional printers If investing in a quality printer and inks is more money than you're willing to spend for the occasional b&w image, consider hiring a printing company to do it for you. The printspace, for instance, offers fine-art Giclèes and silver-based C-type prints that are sure to bring out the best of your image for a reasonable price. Look for companies that offer archival-quality products to avoid the colour fading over time.
- Web If you want to add your image to your online portfolio for a wider audience to see, make sure you change the Resolution (Image>Image Size) to 72, resize your image and apply a little sharpening before uploading to your site.

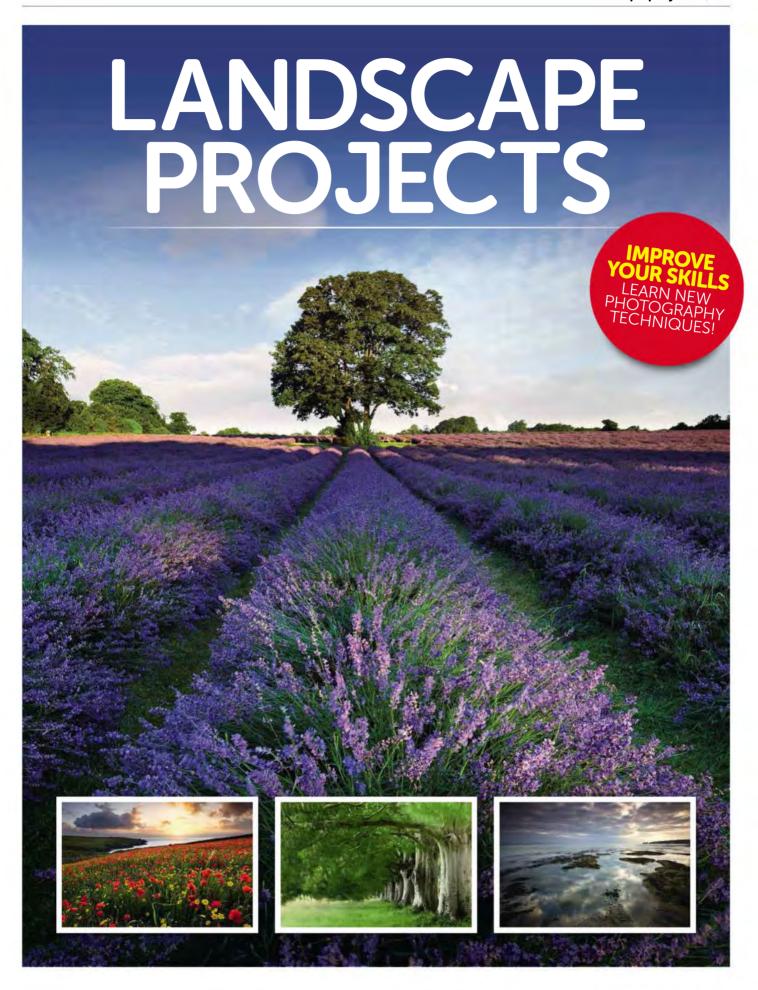


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How to create a stitched panorama

It's so easy to produce brilliant panoramas with this technique

Lee Frost



Panoramas are so simple to create, you'll use this technique again and again once you know how. All you have to remember is that it's very straightforward providing you stick to a consistent

working routine and don't make any silly mistakes along the way. Here, I'll show you how to create a stitched panorama using Adobe Photoshop CS3. First things first, grab your camera...



1 Set up Mount your camera on a tripod in either landscape or portrait format. Make sure the tripod head is level on the legs (a levelling base helps enormously) and also that the camera is level on the head by using a hotshoe spirit level, so that when you rotate the camera between shots it remains level.



2 Test shot Take an exposure test shot from an average part of the scene – not the lightest or darkest. Check the image and histogram; if it looks okay, set this exposure in manual mode. Also switch White Balance from AWB to the preset that suits the conditions. Swing your camera to the left, ready to create the first shot.



3 Start the sequence Focus the lens manually on the scene and make sure the aperture you use provides sufficient depth-of-field to record everything in focus that needs to be sharp – f/8 to f/11 is usually fine. Hold your left hand in front of the lens with your finger pointing right and take a shot; this marks the start of the sequence.



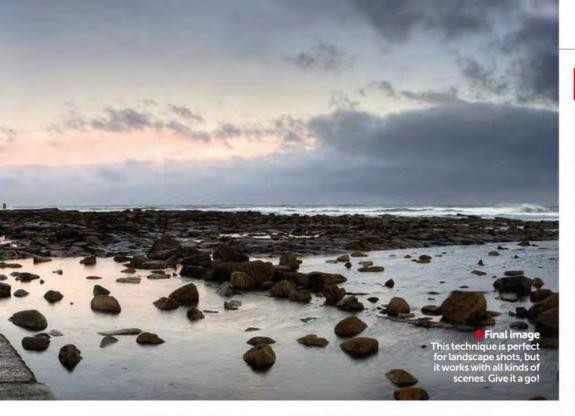
Overlap your shots Remove your hand from in front of the lens and take the first shot in the sequence. Immediately swing the camera slightly to the right and take your second exposure. Repeat this until you reach the other end of the scene, making sure you overlap each image by 30-40% to enable easy stitching.



5 End the sequence Hold your right hand in front of the lens with your fingers pointing to the left and take a shot to denote the end of the sequence. When you download the files, you'll know that all the images between the two hand shots are in the same sequence and it will be obvious which ones need to be stitched to create your panorama.



6 Batch-process Download the images to a computer. If you shoot in Raw, open all the files for the stitch together, select *All* and click *Synchronise*, so they all receive the same adjustments to exposure, colour temperature, contrast and so on. It's essential that all the images are consistent otherwise the stitch will look odd.



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Select your layout Put the processed images in a folder so they're in the same place. Next, open Photoshop and go to File>Automate> Photomerge. Select the layout style you want to use - Auto usually works fine, but Cylindrical and Perspective are worth trying. Then click on the Use tab, select Folders then click on Browse.



8 Employ Photomerge Click on the folder containing the images you want to stitch and they'll appear in the Photomerge dialogue box. Click **OK** and let Photomerge perform its magic. This can take a few minutes, as a series of layers are created and Photomerge decides which bits of each image it will blend together.



9 Flatten image Once the stitch is complete it will look something like this. If the camera wasn't level as you rotated it, you will need to crop the top and bottom edges to straighten them. The file size will be huge, especially if the source images were saved as TIFFs. To reduce it, go to Image>Layers>Flatten Image.

10 Check for seams Enlarge the image on screen to 100% and scroll around it to check that there are no obvious joins where the images meet. If there are, use the Clone Stamp Tool or Healing Brush Tool to erase them, though if you overlapped the source images enough, you should find that the stitch is seamless and looks fantastic.



Stitching software



Adobe Photoshop

If you're using Photoshop, Elements or Lightroom, you can stitch images together using the Photomerge function as described on this page. It's quick, easy and effective. Prior to Photoshop CS3 it wasn't so good, but from CS3 on, it does an excellent job. For PC and Mac. Cost: Free with Photoshop & Lightroom. Visit: www.adobe.com

PTGui

(Panoramic Tools Graphical User Interface) Available for both Mac and PC, PTGui is far more capable than Photomerge, allowing you to stitch multiple layers of images, create 360° cylindrical pans, 360x180° spherical pans, HDR pans, gigapixel pans from hundreds of source images and more. The latest version offers an Align to Grid feature that makes it easy to stitch multiple layers, plus you have manual control to fine-tune images when they're stitched. Great if you plan to use this technique often.

Cost: €79 for PTGui, €149 for PTGui Pro Visit: www.ptgui.com

PanaVue Image Assembler

Similar to PTGui in that it offers automatic and manual stitching, corrects lens distortion and misalignment, can handle multi-layer stitches and 1x1m pixel stitches, offers automatic cropping, single-step 360° image wrapping, stitches handheld sequences and creates dramatic vertical pans. PC only. Download free trial from PanaVue website. Cost: \$64 Std Edition; \$129 Pro Edition. Visit: www.panavue.com

Panoweaver 8

A good choice if you want to create cylindrical or spherical pans and use them for VR viewing using HTML 5, Flash VR, QTVR and other platforms. You can also use it to create Little Planet images, stitch multiple rows, handle images shot with full-frame fisheve lenses (for spherical pans), create HDR pans to handle exposure/contrast issues and much, much more. For PC and Mac. Cost: \$99.99 Std Edition. Visit: www.easypano.com

Arcsoft Panorama Maker 7

Relatively inexpensive and easy to use, it offers five stitching modes: Auto, 360°, Horizontal, Tile and Vertical – just select the one you want then choose your images. You can create panoramas from stills and video, create 360° virtual reality movies, 3D panoramas, export the pans in a range of formats, adjust colour balance, exposure and dynamic lighting. PC only. Cost: \$79.99.

Visit: www.arcsoft.com

Summer landscapes

Wildflower meadows are crying out for your camera – here's all the advice you need to capture them looking their very best...



Poppies are the first sign of summer for me. Weeks of rain and heavy cloud cover last year, though, meant all I could do was keep a keen eye out for potential poppy fields and hope for a clear day. So when that day arrived, I wanted to make the most of it in case summer was over before it began (which it usually is in the UK!). Unfortunately, poppy fields aren't as common as they used to be due to farmers spraying pesticides,

but they're making a comeback with organic farming. There's no predicting where you might find them either. If you can't find a whole field of poppies, look for bunches growing along the margins. You can often find other wildflowers growing alongside them, too.

Poppies start flowering in June and throughout the summer. I've even seen fields as late as October. I'd been to this area – West Pentire, near Newquay – before, so I knew the sun would set out to sea this time of year and planned my day's shooting to end by the cliffs. If it rains the day before you want to photograph poppies, wait until the afternoon. Rain damages their delicate petals, so give them time to recover: it doesn't take long; usually a morning or a day is enough for new flowers to appear and the broken flowers to be hidden. I set out late morning to start my shoot, as I knew the field I was visiting would look better backlit at sunset than at sunrise.





Camera settings & technique On days when the sky is much brighter than the land, you'll need to use an ND grad to balance their exposures. Start by taking a spot-meter reading for the sky and one for the foreground: make a note of the difference between the two. In manual mode, dial in a mid-aperture to get sufficient depth-of-field for your scene (I usually use f/13) and the shutter speed given by the foreground meter reading. Add a filter to balance the difference between the sky and land; I usually have Lee Filters hard ND grads 0.3 (one stop), 0.75 (2.5 stops) and 0.9 (three stops) to hand. Focus a third of the way into the scene, and use LiveView and the depth-of-field preview button to check that it's sufficiently sharp.











@2PM-5PM As the sun has now moved overhead, slightly pointing towards the camera, I change my viewpoint so that it is behind me again by walking down to the bottom of the field. As the cloud has built up, the sky isn't as harsh in the afternoon, so I add a 0.75ND grad to my B+W polariser and lengthen the exposure to balance the sky and foreground. I use a remote release just to be sure that I don't introduce camera shake when pressing the shutter button. Normally it's good to find a focal point in a scene like a tree or distant grouping of trees to add depth, but having changed my viewpoint I don't have any of this. Instead, getting closer and lower to the poppies allows me to emphasise the foreground more and to employ a simple composition. Later in the afternoon is also a good time of day to shoot close-ups as the light is softer and shadows are less harsh. Instead of a macro lens, why not try a telephoto lens like 70-300mm or 70-200mm to compress perspective and isolate poppies with a wide aperture?



Lcarn how to make the most of summer's luseious lavender

Pro Helen Dixon shares her secrets for shooting lavender landscapes and offers tips for making the most of these heady summer flowers



There are quite a few lavender farms in the UK: a taste of Provence right here on our doorsteps. But you better act quickly; they won't be around for

long. With such sporadic weather in the last couple of years, lavender has been a bit late arriving but generally is in full bloom between mid-June and the end of August.

Visiting a cultivated lavender farm just prior to harvest is a great way to get fantastic pictures as they can offer copious amounts of rich-lilac lavender in beautiful impactful lines. I shot these images all at the Mayfield Lavender Farm in Surrey – see panel on the right to see if there's one close to you, or do a little bit of online research to find out where your local lavender field is located.

Although wild lavender fields are rare and may not grow in rows, they do have the advantage that you can shoot them at any time of day, whereas a farm is restricted by opening hours - check their website first before setting off. Some farms also require you to get permission first for photography, so make sure you do this. Harvest time varies somewhat depending on the type of summer weather we have, so, again, check with the farm you plan to visit beforehand to make sure they haven't already harvested to avoid you making a wasted trip.

There are many ways of shooting lavender and numerous techniques to try - from lead-in lines to selective focusing to the various filters that give different effects so it's worth taking along a few lenses. An essential lens is a wide-angle zoom (10-20mm if you use an APS-C sensor, 17-35mm for full-frame) and consider a zoom like a 70-300mm lens to compress the flowers, along with a macro lens for



extreme close-ups. Taking along a longer lens means you won't come a cropper if you find out that the farm's rules restrict how close you can get to the lavender.

If you want stunning lavender landscapes, you also need to consider the lighting conditions you'll be faced with. As usual, the best time of day to shoot is during the golden hour, either when the sun is coming up or setting. Bear in mind during summer that the evening light lasts a little longer than it does in the morning so you can get a few more shots in before the glow's gone. But if daytime is the only time you can venture out, which is also normally the working hours of farms, avoid visiting between 11am-3pm and hope for some cloud cover to enrich the purple hues of the landscape. Harsh sunlight bleaches lavender, leaving images pale and flat with pink-tinged flowers. Make sure you pack a polarising filter to help enhance the colour impact of your pictures. Happy snapping!

Your nearest lavender farm

- Snowshill Lavender,
- nr Broadway, Cotswolds
- Long Barn, nr Winchester, Hampshire
- Hitchin Lavender, nr Hitchin, Hertfordshire
- Isle Of Wight Lavender, Isle Of Wight
- Castle Farm, Shoreham,
- nr Sevenoaks, Kent
- Norfolk Lavender
- nr King's Lynn, Norfolk
- Shropshire Lavender,
- nr Newport, Shropshire
- Mayfield Lavender, Banstead, nr Sutton, Surrey
- Lordington Lavender,
- nr Chichester, West Sussex
- Wolds Way Lavender, Wintringham, North Yorkshire
- Yorkshire Lavender, Terrington, nr York
- Millcroft Lavender, Argyll, Scotland
- Wye Lavender, Rhayader, Powys, Wales
- Somerset Lavender, Faulkland,
- nr Radstock, Somerset



Shooting close-ups Use a wide aperture -f/2.8-f/4 – and focus on a section of lavender using single-point AF to throw the rest of the image out of focus (best done when there's no wind as any movement will be captured). If you use a macro lens, you may be able to use a reflector to bounce light on to it but stop your lens down to increase depth-of-field. For this image, I used a Canon EF 100mm f/2.8 macro lens with the DSLR set to 1/125sec at f/4.5 (ISO 100).



Using filters A polariser will enhance the colour and remove any glare and reflections, although it isn't necessary in this example due to the amount of shade available from the clouds. I did use an ND grad filter here to balance the exposure as the sky was brighter than the land. You will need to use stronger filters if the scene is in shade; I have to fit a 0.9 and 0.75 to retain the detail in the sky area, giving me an exposure of 0.5 seconds at f/13 (ISO 100).



Composition Lavender is usually planted in rows giving you ready-made lead-in lines, so try to incorporate them in your images and adjust your tripod height for a different view. Experiment with a variety of compositions – portrait format may work, as well as a low vantage point, or alter the position of the vanishing point as central isn't always best. The more you try, the more chance you'll have of getting a winning shot.



Heather in bloom

Autumn is the best time of year to head out with your camera to the UK's heathlands and moorlands to capture beautiful and vibrant heather in glorious full bloom

Helen Dixon

Camera: Canon EOS 5D Mk II Lens: Canon EF 16-35mm f/2.8L II USM



NO MATTER WHERE you call home, you're never far from heather at this time of year. Heathlands, moorlands and coastal paths around the UK are home to both vast blankets and localised clumps of this

colourful perennial. There are several different types of heather, but by far the most common varieties found in the UK are Calluna, or ling as it's commonly known, and bell heather. Ling flowers in summer and autumn, while bell heather flowers in between early summer and late autumn. What does this have to do with photography I hear you ask? Well, it just so happens that heather, with its vibrant flowers and habit of growing in large clumps, makes for excellent foreground interest in landscape scenes, and knowing a bit about your subject goes a long way when it comes to planning a successful image!

As heather is a perennial, you'll likely be able to find it in the same location year after year, so it's worth keeping an eye out for it when you're out and about.

As with all landscape photography, the time of day and conditions present during your visit can make or break a shot. Typically, the best images can be created at the start of, or towards the end of the day, when the sun is low in the sky and the light warmer and softer. Clumps of heather undulate substantially, so you may have to contend with areas of shadow, made worse by direct, overhead light. Weather conditions are also important, too

- head out when scattered showers are forecast towards the end of the day in the hope of capturing cloud formations to add interest to your image – even better, you might witness a rainbow, which always helps boost a scene!

Remember to take care when walking around the heather – the best images can often be found off the beaten track so be wary of stepping on and potentially damaging the plants around you.





Location and timing Look for clumps of heather to form foreground interest, or that could be used as a lead into the scene. Different varieties of heather in different positions flower at different times of year, depending on how much sunlight they receive, so returning to a location weeks apart can offer fresh potential.



2 Find your composition Upon arriving on location, assess the possible compositions. Look for the most blooming examples of heather that you can find. Try to include items of interest in your composition - good features to look out for include lone trees, landmarks or rocky outcrops, as I've found here.



3 Use a tripod Heather can be surprisingly dense and springy, which can cause your tripod to move during the exposure. Look for firm ground and push the legs firmly down, being careful not to damage the heather. Hang a bag or weight from the tripod's bag hook, if it has one, to stabilise the set-up.





4 Dial in the settings Use a wide-angle lens to include plenty of the foreground in your image. Select aperture-priority or manual mode and choose an aperture that offers a good depth-of-field, between f/11 and f/13. Focus a third of the way into the scene, take a shot and check the screen for exposure and sharpness.



5 Add a filter Shooting into the light is tricky, as this can cause difficulties in exposing the scene correctly and can wash out the colour of the heather. Side lighting works well – you'll probably find that an ND filter is still required to create a balanced exposure. Start with a 0.6ND grad and add filters from there, as required.



6 Adjust the filter Be careful not to over-filter the scene, or the results will look unnatural. Also, take care when positioning your filters. Place the filter too high and you'll end up with an overexposed portion of sky, too low and you run the risk of underexposing part of the foreground, as I have done here.



Creatively blur trees

The clever use of slow shutter speeds can introduce a sense of motion and bring your landscape and nature images to life

Helen Dixon



Incorporating an element of motion into your landscape shots can add allimportant energy and life to an otherwise bland scene. Landscape photographers often use long exposures to blur movement in water, but there's no reason why this technique should be confined to use at the coast; grasses, trees, foliage and flowers all make great subjects, too. When composing your scene, you should

look to include one or more static objects that aren't affected by the breeze. This creates a contrast between movement and stillness within your image. Furthermore, it can make the difference between a shot that looks like it includes intentional movement and a shot suffering from bad camera shake. Trees make ideal candidates; the breeze causes the branches and leaves to sway while the thick trunks stand defiant.

Because you'll be shooting using a long exposure, your best option is to head out under overcast conditions. Bright sunlight causes too much contrast between areas in full sun and those in shade during the exposure, whereas a cloudy sky will diffuse the sunlight for a more even exposure. You'll need a breeze to cause movement in the trees, but you don't want to be out shooting when it's blowing a gale as this can cause camera movement, even with a tripod. A tripod is essential for this type of photography; if you try to shoot lengthy exposures handheld then you risk introducing camera shake into your image. Choose a composition where the lighting is diffused throughout the scene as any areas of bright light will cause hotspots in your final image. I chose this row of trees as they provided a consistent canopy overhead to prevent any hotspots and the thick tree trunks made for an interesting lead-in line into the image, with the branches at the top of the image framing the shot nicely.

Setting up and camera settings

In order to use a slow shutter speed without overexposing the result, I set ISO 100 and opt for an aperture of f/13 for optimum front-to-back sharpness. I fit a polariser to eliminate glare from the foliage, which has the added bonus of lengthening my exposure by two stops, although it still isn't enough to capture any real movement. Adding a Lee Filters 0.9ND filter takes me close to the exposure time required to capture the motion of the branches and grass. Stopping down further to f/16 gives a slower shutter speed and the right amount of motion.

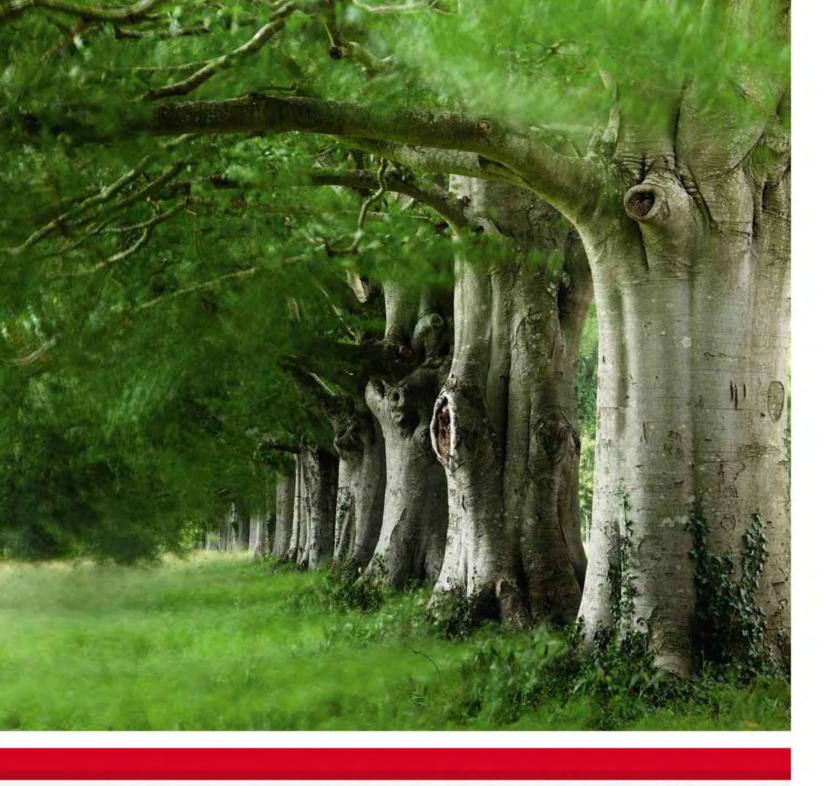




Common errors



Composition If the composition allows for too much variety in light then it can be difficult to get a balanced exposure throughout the scene. In this image, the light hitting the ground outside of the canopy cover is too bright and distracts from the rest of the shot.





➤ Too much grass The tree trunks are our fixed point of interest in this image and, as such, you should look to compose your shot with this in mind. Here, however, the trees are too close to the edge of the frame and fail to act as an effective lead-in line.



■ Blown highlights Despite the even canopy cover, the sun breaking through the clouds causes the areas of the ground not in shade to be completely blown out. Just a few minutes later the clouds move back in to place and I can continue shooting.



✗ Not windy enough The exposure is correct throughout and there is movement captured in the foliage, but there are still too many static branches. A smaller aperture and slower shutter speed is required to capture more effective movement in the final result.

Shoot a misty landscape

Mist and rolling hills – a landscape photographer's dream. Here's how to capture them...

Mark Bauer

Camera: Canon EOS-1Ds Mk II / Lens: Canon EF 24-105mm f/4L



LATE WINTER/EARLY spring is an excellent time for shooting atmospheric landscapes, especially if you're prepared to get up early. As one season slips into another, it often brings interesting weather with it, and at this time of year, misty mornings are common, often combined

with a touch of frost. Foggy scenes convey a sense of romance and mystery, and add an element that can lift otherwise bland scenes out of the ordinary. With the right technique and careful planning, it's possible to capture dramatic, atmospheric scenics.

Kit for mist

Using a tripod is good practice for shooting landscapes, but essential if you're heading out for predawn misty pictures, as exposures can be long. A medium telezoom is probably the most useful lens as its focal length compresses perspective and enhances the misty effect. A set of Neutral Density graduated filters will be necessary in predawn shots, as the sky will be much brighter than the land, which has no direct light falling on it.



Choose your day Fog and mist are formed when mild, moist air passes over cold ground – the lower layers of the air get cooled down rapidly to the temperature at which fog or mist forms. Keep an eye on the forecast and look out for cold, clear nights with a light south-westerly wind, as this gives a high chance of mist or fog. Even if the conditions seem right, however, an atmospheric sunrise isn't guaranteed – often, for example, you can get a thick fog rather than mist – so persistence is important. Be prepared to make multiple visits to your favourite locations.

Perfect metering

Mist and fog tend to fool the camera into underexposure, so be prepared to add at least a stop over the metered reading using exposure compensation. If shooting Raw, you'll record the maximum amount of tonal information by exposing 'to the right' (pushing the exposure as far into the highlights as you can without actually 'clipping' the highlights). You'll need to do work in the Raw converter on exposure, brightness and contrast, but the end result will be a better image.



★ Normal exposure: The meter assumes that whatever it's reading from is a mid-tone, and underexposes the mist so that it records as grey rather than white.



Expose 'to the right': Around +1 stop compensation should keep the mist looking white. I've added a little more, following the 'expose to the right' theory.



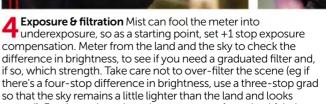
Be well prepared Mist often forms at the bottom of valleys, where the ground is colder, so the hills above a valley are a good place to be, as this enables you to shoot from above a layer of mist, with hills rising out of it. Being near water also helps, as this helps to cool any air moving over it. Research suitable locations well in advance and arrive a good half an hour before sunrise, as the predawn light can be magical. For this shoot, I set up overlooking the west Wiltshire Downs, with mist lying at the bottom of the hills. Also, be sure to wrap up warm - gloves, a hat and a thick fleece are essential!





3 Check your composition You need to look for strong, bold shapes, as mist hides shapes and dilutes colours, making a scene monochrome. I like to look for overlapping and interlocking shapes that help add a sense of depth to the scene. Backlit scenes can also work well, as the shapes of hills are silhouetted in the mist. Flare isn't too much of a problem, as the mist diffuses the sunlight. For this shot, I selected a hill rising out of the mist as the main focal point, and arranged it according to the rule-of-thirds. Behind the foreground hill, the layering effect leads the eye into the backdrop.





natural). For these shots, I used a one-stop soft grad as I felt that the sky needed a little bit of help to add interest.

Rock pool reflections

Professional photographer Mark Bauer goes paddling among rock pools to show us how to master reflections in water





Reflections make great subjects for landscapes. There's something unique about the symmetry of a perfect reflection in a still lake, but reflections can work equally well

in smaller ponds, puddles or rock pools. They may not always work as the main

subject in a coastal shot, but rock pools make excellent foreground interest in wide-angle landscapes, with reflections creating extra depth in a shot and adding brightness and colour, which can break up dark foregrounds.

You'll find rock pools on any rocky coastline when the tide is low - the trick is to find one that will photograph well. If they're too small, they won't have enough impact, and if they're too shallow or if the bottom is sandy and light, the reflections won't be strong enough. The ideal time to arrive is as the tide is going out, so that you can set up as rockpools are being revealed, and shoot while the surrounding rocks are still wet and shiny. This is also easier than having to rush your pictures before an incoming tide covers up the perfect rock pool.

Weather conditions are also important. It needs to be still enough that there are no ripples on the water to break up the reflection, and there also needs to be interest in the sky - dramatic clouds or colours - as unless your rock pool is very close to a point of interest such as a lighthouse, it's the sky that will make the reflection. In terms of technique, accurate focusing and depth-offield are crucial, as this type of image looks best when both the immediate foreground and the reflection are sharp. This isn't as easy as it may seem, as the focal plane of the reflection is much further away than the reflective medium. One last thing to be aware of is correct filtration, which can be used to balance the light in the scene overall and enhance the reflection itself.



Begin early Arriving at dawn, I look for suitable foreground interest. I like the foreground here, but the rock pool doesn't work - it's too small and shallow to reflect the sky well.

Essential kit

- An ultra wide-angle zoom to help you get in close and fill the foreground with your rockpool of choice.
- A tripod that allows low-level shooting. A low viewpoint will reveal more of the sky in the reflection and make for a beautifully balanced shot.
- A polarising filter to enhance the reflection. Contrary to popular belief, polarisers don't simply remove reflections, but reduce glare too, which can actually enhance reflections. You have to be careful to set the correct polarisation, though, because you can kill the reflection if you get it wrong. Look through the viewfinder and rotate the polariser slowly. Stop when you see the effect you want.
- ND grads to help balance contrast in the scene. Take care not to 'overgrad' the scene, however, because in real life, reflections are usually darker than the sky and your picture won't look natural if it's the other way round.
- Solid ND filters. If conditions aren't still and there are ripples on the water, you can add a Neutral Density filter to lengthen the exposure and render the water smooth.

Exposure & focusing

Reflective surfaces are by their very nature bright, and this can fool your camera's meter into underexposure. Add +0.5 to +1 stops of exposure compensation, and check the histogram after shooting to make sure. You need to be careful when focusing, as the focal planes of the water's surface and the reflection are not the same. If you leave vour camera on autofocus, it could focus on the surface of the water which means the more distant reflection could fall out of focus. To make sure the scene is sharp from front to back, switch to manual focusing and focus a third of the way into the scene and use a small aperture, such as f/16.



Try a different viewpoint This one works a little better, but without any filtration, the highlights in the sky have blown, and the shadows in the foreground are beginning to block up.





3 Add an ND grad An ND grad enables me to retain detail in the sky and rays of light are starting to break through, adding drama to the scene. But I feel the reflection can be enhanced.





4 Add a polariser My next step is to add a polariser. However, as you can see, if you set it incorrectly, you can kill the reflection rather than enhance it. It's time to tweak the polarisation.



5 Turn the polariser Just half a turn of the polariser helps to make the reflection stand out. However, I feel the image can be improved by smoothing out the water in the middle distance.



6 Add an ND filter Adding a solid ND filter allows me to increase the shutter speed to ten seconds, which smooths the sea and improves the look of the water in the rock pool.

Capture 'natural-looking' waves

Professional photographer Mark Bauer explains the best technique for capturing the movement of breaking waves as they hit the shore



There's a lot of debate about how best to photograph wave movement. Long exposures result in a 'misty' look that is popular with many photographers

(see over the page), but is certainly not to everyone's taste as it's not authentic. When we watch waves rolling on to the shore, we see the whole movement - we don't see a moment frozen in time or mist drifting over rocks. One way to truly appreciate wave motion as the eye sees it is to use video rather than a stills camera, but by paying careful attention to shutter speeds, it is possible to

record 'natural-looking' waves on your DSLR.

The trick is to record the right amount of movement: if the shutter is open too long there will be too much motion blur; not long enough and the wave appears too static. You need to find a middle ground where there's misty blur but the waves still keep their shape.

There is no simple recipe for this; the best shutter speed depends on the size and speed of the waves, how they're falling onto the shore, and also personal taste. Experimentation is the key – be prepared to

shoot a lot of frames and spend a lot of time looking at the LCD monitor reviewing your images and tweaking the camera controls.



Select your viewpoint I compose the shot so that the waves are falling onto the foreground rocks and then check the exposure for the sky and ground separately using my DSLR's spot meter.

Take a test shot Set to shutter-priority mode,

Take a test shot sect to should prove the movement.

For large waves this might convey drama, but



Use an ND grad As the sky is much brighter 2 Use an ND grad AS trie Sky is inden Signing than the ground, I add a three-stop ND soft grad filter to balance the contrast. A soft grad means the transition line won't be too obvious.



Increase filtration To lengthen the exposure, I wait for the light levels to drop and replace the three-stop ND filter with a four-stop ND filter, giving me a ten-second exposure at f/22.

Shutter speeds

Although there's no ideal shutter speed for capturing a breaking wave, as it depends on the conditions at the time, a shutter speed of between 1/4sec and a couple of seconds usually provides the result you'll want.

Unfortunately, though, it's not just a matter of putting the camera into shutter-priority mode and setting the shutter speed. You will also need to make sure you're using the right aperture in order to achieve the appropriate depth-of-field and an accurate exposure. For landscapes, this is usually between f/8 and f/22 for maximum depth-of-field.

There are other ways you can control the shutter speed, too. Apart from waiting for the light to change, for a faster shutter speed, you should increase the camera's ISO rating. Normally this will raise the level of noise, so you do not want to go much above ISO 800 unless you're using a professional digital SLR that handles noise well.

For shutter speeds of more than 30 seconds, you will need to set your camera to Bulb mode and time the exposure manually. However, this can often result in overexposed shots, so you may need to add a solid Neutral Density filter to reduce the amount of light falling onto the sensor. ND filters come in various strengths; the most common being one, two and three stops, and you can use several together, along with a polarising filter, too, for times when you want to set extremely long exposures.



Not quite... This time the exposure is still not **5** Not quite... I his time the exposure is said to long enough to give an ethereal misty look to the water, but it doesn't capture the drama of the scene by freezing the water either.



Shorten exposure Opening up the aperture to f/11 and swapping the four-stop ND for a two-stop enables me to shorten the exposure time to 0.3 seconds. The result is almost there, but the wave is frozen just a little too much.



Lengthen exposure slightly One more attempt, with the light levels a bit lower, I get the shot I want at around 0.6 seconds. There's enough movement to create a sense of drama, but the waves still keep their shape.



Shoot moving water

Lee Frost reveals how the correct shutter speed is essential when scenes include running water

Camera: Canon EOS-1Ds Mk III / Lens: Canon EF 17-40mm f/4L



ALTHOUGH IT HAS become something of a cliché, using a slow shutter speed to record moving water as a graceful, milky blur is an undeniably effective technique, which is why so many photographers, including myself, like to use it. From tumbling mountain streams to bubbling brooks

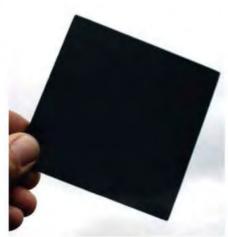
and thundering waterfalls, wherever you find moving water, the same basic approach can be used to capture it and turn an ordinary scene into a creative image that's full of atmosphere. Even better, moving water is best shot on an overcast day with soft light so there are no blinding highlights to contend with, caused by sunlight reflecting on the water. This makes it a perfect subject for those dull, grey days photographers in the UK know so well!

Shutter speed

When shooting moving water, you need to use a shutter speed that's slow enough to blur the water, so it records smooth, but not too slow that areas where the water is more concentrated start to overexpose and burn out. This is a matter of trial and error, but an exposure of one second usually makes a good starting point. The great thing about digital capture is that you can check each shot you take to see how it looks, then shorten or lengthen the exposure time until you get the perfect result. If tiny areas of water burn out, don't worry – when you download the images and view them as full-size files, chances are those highlight warnings will have disappeared. And if they haven't, it's a simple job to use the Clone Stamp Tool in Photoshop to copy and paste water from a different part of the image over the overexposed areas.



Position your tripod Because a slow Position your tripod because a sale shutter speed is used to blur the water's movement, you should always mount your camera on a tripod to keep it steady. It's also a good idea to attach a remote release so you can trip the shutter without touching the camera, which risks vibrations that could ruin your images by shake.



2 Settings and filters In dull weather, stopping your lens down to f/16 or f/22 and setting a low ISO may give you a shutter speed slow enough to blur the water. If not, use a Neutral Density (ND) filter to increase the exposure. A polarising filter can also be used to increase the exposure by two stops so 1/4sec becomes one second.



3 Watch out for water! Before taking a shot, check the lens or filter for water droplets. If you're shooting close to a waterfall, splashes or spray may be an issue. In this case, drizzle was the culprit. Wipe the glass with a clean microfibre cloth or image quality will suffer. Holding an umbrella over the camera can help in rainy weather.



Take a test shot Take your first shot and review it. I was initially attracted to this spout of water hitting a rock and cascading in all directions. Shooting side-on proved to be a good angle and a shutter speed of one second provided enough blur. The shot worked, but there were many other options to explore.



Consider composition I decided to try a wider view, using the **5** Consider composition in declared to try a wide., so water spout in the previous step as foreground interest, carrying the eye up the ravine towards the distant peaks of the Cuillin Ridge. It took a few attempts to get the shutter speed just right so no areas of the moving water were overexposed.



Create poetry in motion

Lee Frost reveals how camera movement isn't always a bad thing, especially when it's in the name of art

Lee Frost

Camera: Canon EOS-1Ds Mk III Lens: Canon EF 24-70mm f/2.8L USM



IT'S FUNNY HOW some photographic techniques come about purely by accident. For example, it's said that solarisation was discovered when American

photographer Lee Miller (working as Man Ray's assistant at the time), turned the darkroom light on while a print was still in the developer, causing a partial reversal of the image tones. I can't claim that my latest

technique will achieve the same level of fame or popularity, but I discovered it under similar circumstances, while taking pictures on the Northumberland coast just before Christmas. I was planning to shoot a sequence of images for a stitched panorama, so I levelled the camera and scanned the scene I wanted to record. Confident that everything was ready. I tripped the shutter to expose the first frame but, without thinking, I swung the camera to the right, ready to shoot the second frame before the exposure for the first had ended. Annoyed by my impatience, I waited for the image to appear on my camera's preview screen so I could erase it. But when the image did appear, far from being a load of old rubbish, as expected, it looked fantastic - an eye-catching abstract of coloured lines and streaks, more like a painting than a photograph. Surprised by my happy accident, I decided to try to repeat the effect, but this time doing it on purpose. Since then, I've produced a whole series of these images. Not only are they easy and fun, but the results look fantastic. Here's a step-by-step guide so you can try it yourself.



Find a suitable location I live by the sea and favour coastal views because there are defined lines of colour in the scene, created by the beach, then the sea, then the sky. However, any scene containing bands of colour is suitable. In the spring, fields of yellow oilseed rape against blue sky works brilliantly. The same goes for poppy fields in summer. Urban scenes at night are worth a try too, as the colourful lights record as streaks. The important thing is that you have clearly defined areas of colour that are wide enough to form strips across your shot. Remember, though, breaking the rules is allowed!

Tripod head

If you want to produce smooth, consistent results, you need the right type of tripod head. I've been using a Manfrotto 410 Junior geared head for the past few years. It is great for precise adjustments, but not so great when you want to make bigger, fluid movements. I recently replaced the geared head with a ball head, which can be unlocked on one axis, making it easy to pan the camera evenly. Pan & tilt heads are even better because they have adjustment arms on each axis, so you can lock forward/backward tilt and vertical adjustment and simply move the camera on the horizontal.



5 Level your camera If you want the lines and streaks in the image to be straight (or as straight as possible), you need to make sure the camera is level and that it remains level when you pan across during the exposure. I do this by first using the spirit level on my tripod, and then using a second spirit level, mounted on my hotshoe, which helps me to level the camera itself.



3 Set shutter speed The streaking is created by moving the camera during exposure, so the shutter speed you use is important. Anything between 0.5 seconds to two seconds is ideal. To set this, I set the camera to aperture-priority mode and stop the lens down to f/16 or f/22. In low light, such a small aperture may not be necessary, while in bright conditions I often need an ND filter.





4 Try panning Once you're set up and ready, do a few practice runs without taking any pictures. Hold the tripod head or adjustment arm, position the camera to the left of the scene you want to shoot, then smoothly pan from left to right. When you're happy you know what you're doing, try it for real. The results may be a little jerky to begin with, but you'll soon get the hang of it.



5 Post-process images Back home, download the images to your computer. I shoot in Raw, so the first step is to process them using Adobe Camera Raw. Adjustments to Clarity and Vibrance add impact, while Tone Curve boosts contrast. Once opened in Photoshop, I select the sky, make further adjustments to levels and curves, and then do the same to the foreground.

Spcetaeular star trails

If you're in a remote location, take advantage of clear night skies by capturing stunning star trails

John Patrick



Star trails are rewarding subjects that can add an element of magic to a landscape shot, revealing the scene in a way that isn't visible to the eye. They allow you to extend the day's potential shooting time, and to get out with your camera especially if you work through the week and can't get outdoors

during the daylight hours in winter. If there's any secret to the technique, it's getting the exposure right, but that's simple when shooting digitally...

TOPTIP

Get away from the city The glow from urban areas is known as light pollution and can be seen from miles away on a clear night. This might not be obvious to the naked eye but will show up clearly on a long exposure





You'll need to keep the shutter open for the long exposure and the best way to do that is to use a remote release with a lock to hold the shutter open. This helps avoid inadvertently knocking or moving the camera. A sturdy tripod is important, too, and a wideangle lens is handy as it helps you get plenty of sky in the shot. Other than that, star trails don't need any particularly specialist kit. Don't forget plenty of warm clothing, though. Even if you're used to being out in cold weather, standing around for half an hour or more in the dark in sub-zero temperatures can bring a whole new level of chilliness, so pack a few extra layers to keep you comfortable.

Find the location If you can, it helps to find your location in advance, in the daylight hours. Midday is a good time to do this for a couple of reasons. One is that it's often dead time in the landscape photographer's day when the light is too harsh for shooting. The other is that, with the sun to the south, shadows will point north towards where the stars will be circling around Polaris later. Visualising that will help you create a good composition. You'll need to ensure that you're a decent distance away from major light pollution, too.





Set up Pick your night (a night with a 2 Set up Pick your rilignic an lignic what a half-moon is a good choice, if possible) and set up the camera on the tripod. If it's too dark to see properly through the viewfinder, you can take a few shots with a high ISO and wide aperture, gradually making adjustments to fine-tune the composition. Autofocus is unlikely to work in very low light, so you'll need to focus manually either by using the distance scale or by placing a torch somewhere in the scene to focus on.





Meter the scene You can meter the scene Meter the scene rou carrie and see before taking the final shot by taking test shots at a high ISO and wide aperture. I'm using ISO 1600 and f/4 here. Set the camera to manual and start with an exposure time of around 20 seconds. Take a shot and check the histogram, then simply alter the exposure time and retake test shots until the histogram looks correct. After a bit of experimentation, I find that one stop underexposed works best.







4 Settings for the final shot When you're happy with the exposure, set the camera to Bulb mode. Select ISO 100 and set a wide aperture. I tend to use f/5.6. Now you can use the exposure time from step three to work out the time needed for the final shot, compensating for the change in ISO and aperture by increasing the time. For instance, if you needed a 30-second exposure in step three: 30 seconds x 2 (for a one-stop change from f/4 to f/5.6) x16 (for the change from ISO 1600 to ISO 100) gives a 16-minute exposure.



5 Take the shot Turn all lights out, note the time and lock the shutter open with the remote release. Get out some coffee and chocolate, have a break for a while and enjoy staring at the stars. Just don't do what I did and discover at this point that the coffee's back down the road, still in the car! If you need to put a light on at any point to read the time, be careful not to illuminate the foreground at all, as it will show up in the final shot (unless you're deliberately attempting light painting, but that's another topic).

Moonlit landscapes

The brightness of the moon can create other-worldly landscape scenes – use it to your best advantage for shots full of mood

JUST BECAUSE THE SUN has gone down doesn't mean you can't capture beautiful landscapes. Using moonlight is in fact simpler than photographing at dusk as the light is less variable. Shooting moonlit landscapes is not that different from shooting in daylight, but a lot easier than shooting at sunset, because moonlight is a lot stronger than the last light of the day. That said, you need to pay similar attention to the angle and position of the moon, as you would the sun. A high moon casts strong downward shadows, while a low moon creates long shadows and much softer lighting. It's the optimum light for landscapes and occurs shortly after sunset, just as the moon begins to rise.

Exposure is a photographer's main challenge when it comes to moonlight, as it's several thousand times weaker than sunlight. A further complication for anyone taking pictures at night is the fact that the moon moves fairly quickly, so exposures that are more than a couple of minutes long can render it a streak in the sky. One solution is to keep the moon out of frame and simply shoot a landscape exposed by its light. Landscapes illuminated exclusively by a full moving moon that softens shadows can make eerie. ethereal pictures. Use too long an exposure, though, and the light becomes flat. If you want the moon in the picture, but the exposure is too long, take the correct exposure for the foreground, immediately followed by a shorter exposure for the sky, and then merge the two in post-production.

The length of an exposure depends on the intensity of the moon: a full moon on a clear night is great for illuminating landscapes where you want extensive depth-of-field. But if the moon isn't as strong or prominent, you'll find you may need to compromise on depth-of-field by using a wide aperture to reduce exposure times. Remember, though, if you use a wide aperture, accurate focusing

is critical. The best times to shoot are when there's a full moon or during the two days before and after the full moon, when it wanes into and out of its full phase. Note also that layers of cloud affect the exposure, just like it does during the day.

For extra visual interest in your photographs, try shooting with a river, lake or sea in the foreground, so you can capture the light beams glistening off the surface - you'll find that the reflected light also brightens the whole scene. You could also introduce flash or a torch into your shoot, using it to paint the foreground

When setting up your camera, apply the same techniques already explained in this guide: use Bulb or manual mode, work out the exposure, focus manually if possible and fire the shutter using a remote release. When working out the exposure for a moonlit scene, multi-zone metering works well. Then follow this technique: take a test shot in aperture-priority mode at your highest ISO rating and widest aperture to give yourself a base shutter speed, then use reciprocity failure to work out the exposure for a decent aperture and low ISO rating. Alternatively, switch to spot metering and meter off the brightest part in the scene, then add two stops of extra exposure because the metering system will otherwise render your highlights as a mid-tone.

Once you've mastered star trails and moonlit landscapes, try shooting auroras, meteor showers or even have a go at deep-space photography - you'll open up a whole world of photo opportunities!

Right: For every exposure of this scene, the f/stop and ISO had to be adjusted to keep the shutter speed between 15 and 30 seconds in order to freeze the moon's motion. Below: This shot of Swaledale comprises a

four-minute exposure for the foreground and a 30-second exposure for the sky.





Reciprocity law

With low-light photography, it's important to remind yourself about the interchangeable relationship between shutter speeds and apertures so that you can work out the required exposure. It takes a bit of brainpower, but you can now download apps to your smartphone that can help you calculate equivalent exposures. Basically, every time you stop down your aperture, you need to increase your shutter speed to double the exposure time, so if you go from f/4 to f/5.6, the shutter speed needs to double from, say, two seconds to four seconds. Reciprocity law failure is when the camera fails to accurately meter a scene in low light and fails to meter a sufficient exposure time for the length of shutter speed. It's much less common with digital cameras than film, but you may find you need to add an extra stop or two of exposure to ward off underexposure when shooting moonlit shots like the ones on these pages.



How to shoot the moon

For those of us who don't have the resources for deep-space photography of the Milky Way galaxy, the nearest thing we have to the mysticism of space is the moon. You don't need any special equipment to photograph the moon, only what you'd normally use for most night photography, but a decent telephoto zoom would be an asset – in particular, those extending to at least 300mm. If you don't have a suitable lens, you could invest in a teleconverter to extend the reach. Remember that an APS-C camera has a crop factor of 1.6x, so the equivalent focal length of a 200mm lens is 320mm.

It's easy to underestimate the moon's brightness, which is why getting the exposure correct can be quite tricky. Most first attempts at lunar photographs result in an overexposed circle where the moon should be. The first step to avoiding this is to pick a spot where there is no ambient light from traffic or streetlights, on a clear night, with no cloud. There is a little trial and error needed to get the perfect exposure as

it changes depending on the shooting conditions, but set your camera to manual mode and use 1/250sec at f/8 (ISO 100) as a starting point. Take a series of bracketed exposures (in one-stop increments) around this setting and review them on the LCD monitor.

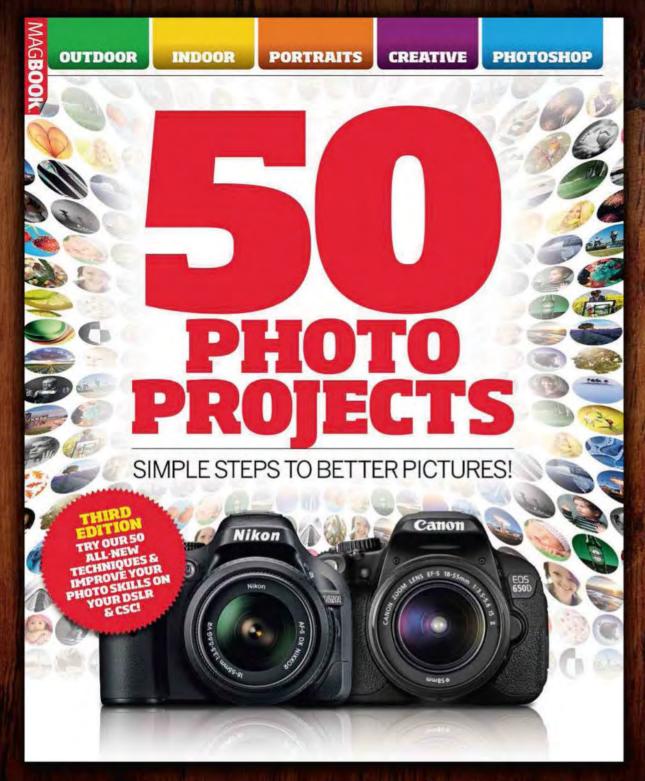
We'd recommend you change the shutter speed rather than the aperture. Depending on the phase of the moon, its brightness, your location and the atmospheric conditions, you may find you need to lengthen or shorten the exposure to capture enough tonal detail on the lunar surface.

Position your focus point over the moon, lock on to it using autofocus and then switch to manual focus to stop it hunting. Use a remote release or the self-timer to minimise the risk of shake blurring the result.

You're likely to have to crop the image in Photoshop and do a little work on the tonality by adjusting the Levels to draw out more detail on the moon's surface.

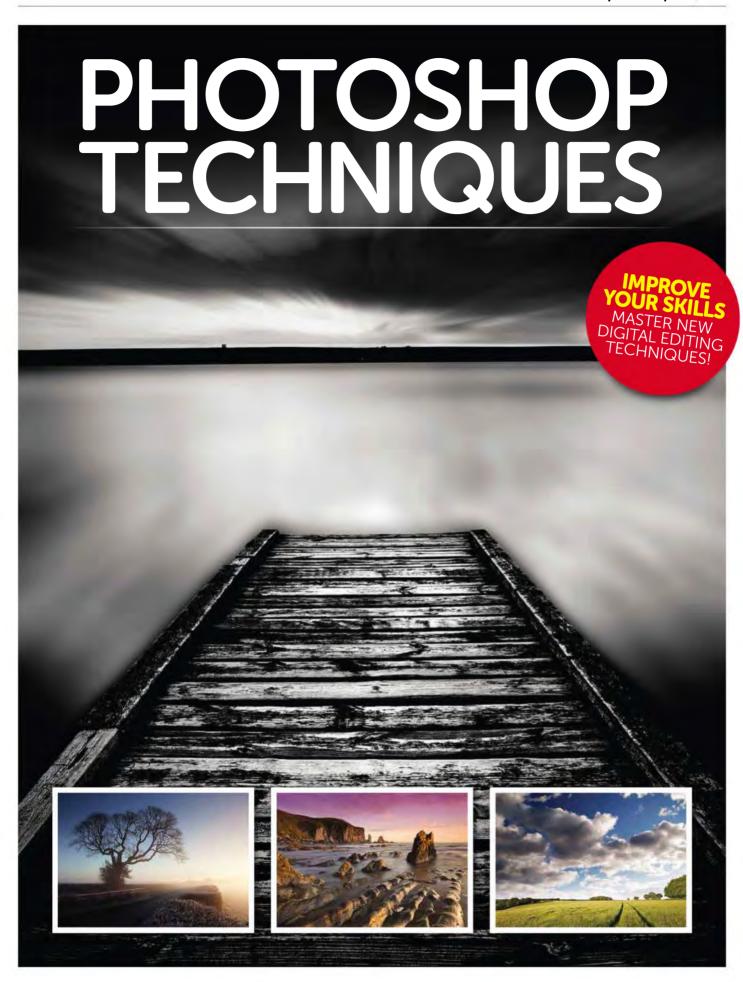


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Jordan Butters



Mist and fog add a wonderful atmosphere to images. Nothing quite conveys the mood of a chilly autumn or winter morning like the early morning sun

piercing through a beautiful heavy haze. More often than not, though, misty landscapes are hindered by a lack of contrast. But not to worry, as with the addition of an Adjustment Layer and some experimentation with Blend Modes, you can apply the punch to your misty landscape images. While this tutorial has been done in Elements 10, the same features and methods can be applied to images being worked on in Photoshop CS as well. Similarly, some CS tutorials in this guide can be done in Elements, too



Add an Adjustment Layer You'll need the Layers and Adjustment palettes visible, so first go to the Window menu and make sure that both Adjustments and Layers are ticked. Then click on the Create new fill or adjustment layer button at the bottom of the Layers palette and, in the drop-down menu that appears, select Levels.

Adjustment Layers

We would usually advise duplicating your original image layer before you start editing your photograph, just in case you make any mistakes. However, a major benefit of Adjustment Layers is that they are nondestructive, meaning that any changes you make using them do not affect the original image data. What's more, the parameters and values of an Adjustment Layer can be tweaked in the Adjustment palette at any time throughout the editing process, or if you're not entirely happy with the effect, you can simply delete that Adjustment Layer and start afresh.



2 Try the Auto feature In the Adjustment palette, first try using the Auto button to allow the software to decide which adjustments are made to your image. This works better on some images more than others. The Auto levels tool adjusts each of the Red, Green and Blue channels independently so you may now notice a colour cast appear in your image.



3 Correct the colour To correct the colour cast, make sure that the *Levels* layer in the Layers palette is selected and, using the Blend Mode menu at the top, change the Blend Mode of the layer to *Luminosity*. This will remove the image's colour cast by ensuring that the Adjustment Layer only affects the contrast in the image below it and not the colours.







4 Try a manual adjustment If you aren't happy with the effect from using Auto levels, delete your Adjustment Layer by clicking on it in the Layers palette and dragging it to the *Delete layer* icon at the bottom; this reverts the image back to its original state. Add another Adjustment Layer by clicking on the *Create new fill or adjustment layer* button and selecting *Levels*.



5 Manually set Levels This time, rather than using the Auto adjustment, click and drag on the *black, grey* and *white* point sliders in the Adjustment palette to tweak the contrast of your image. Be careful how far you push the black and white points so you don't clip the shadows and highlights and lose detail. You can be more liberal with the grey slider for the mid-tones.



Experiment with Blend Modes Back in the Layers palette, experiment with the different *Blend Modes* to alter the effect. *Overlay, Soft Light* and *Hard Light* will all offer slightly different effects. You can also use the *Opacity* slider at the top of the Layers palette to weaken the effect or you can revisit the Adjustment palette at any time to tweak the parameters.

Lcarn how to eontrol eolour

No one wants dull and washed-out images, but oversaturation can be just as bad. Here's how to take careful control of your colour



Vibrance & Saturation

There's often confusion between the Vibrance and Saturation sliders in Adobe Camera Raw. At first glance they appear to do much the same thing, but there are clear differences. The main one is that the Vibrance slider doesn't affect colours that are already sufficiently saturated; useful for applying a universal adjustment without oversaturating colours which are already nice and bright. It will also not affect hues similar to those found in skin tones, which makes it useful for increasing saturation in portrait shots without turning your subject's skin a strange shade of orange. This comparison shows the difference an adjustment of +75 on each slider makes to the original image.



Jordan Butters



Autumn, especially, is a beautiful time of year for capturing colourful landscapes. Deep blue skies, rustic reds, lush green grass and golden oranges. When

shooting to capture colour like this, it's only right to assume that we want to do these fantastic colours justice with accurate reproduction. Failure to replicate the hues we see in a scene isn't always down to the photographer - digital cameras are still

nowhere near as advanced as the human eye. But there are steps that you can take to ensure good colour reproduction incamera, such as ensuring that you have the correct White Balance set and shooting under the best lighting conditions.

Most of us want to capture maximum detail in our images, which is why we advise you expose to the right when shooting in Raw format (meaning that you should overexpose your image slightly, but not to the extent that the highlights become clipped).

Doing this, though, does sacrifice colour saturation – the brighter the original colour, the worse the image appears bleached. Thankfully, this can be addressed with Photoshop's Adobe Camera Raw, as there are a number of controls that allow you to adjust colours universally and individual hues.

On the surface, many of the controls, such as Luminance and Saturation, seem to have similar effects but there are subtle differences. For the best results, learn what each slider does - which we show you here.



Open the image This image has been exposed to the right without losing any highlight detail, but the colours are washed out as a result. Open your Raw file in ACR and first make any changes to Exposure and Contrast as these parameters will affect the colours in your image.



Decrease luminance selectively Select the HSL/Grayscale tab and choose the Luminance tab within to target the brightness of the individual colour channels. Reduce the luminance of the Blues channel to darken the sky. Monitor the image preview to assess the changes.

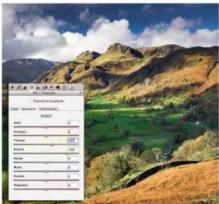


3 Adjust surrounding channels Quite often you'll find that you need to adjust more than one channel to make the changes look natural. By making subtle adjustments to the neighbouring Aquas channel, the transition in colour between sky and clouds is improved.





4 Increase saturation manually The Saturation sliders control the intensity of each colour. Click on the *Saturation* tab and drag the *Green* slider to adjust the channel. Make any changes gradually, as oversaturation can look as bad, if not worse, than undersaturation.



5 Adjust the surrounding channels As before, neighbouring channels may benefit from some slight adjustment. In this case, the green grass looked more natural when a small increase was made to the saturation of the Yellows channel as well.



6 Adjust the Hue To change the colour of an area – like these orange hills – select the Hue tab. Next move the Orange slider until you are happy with the result. You may find only small changes are needed to alter the hue - but be watchful that it doesn't look unnatural.

Brcathc lifc into flat photos

Want to create an HDR effect but don't have Raw files or a set of bracketed exposures? Don't despair! Use Shadows & Highlights...



We all have images that didn't guite render the scene how you remember it. Maybe the sky's not as moody or the ground is too dark, or maybe the overall appearance of the image lacks contrast or is badly exposed. Well, Shadows & Highlights can resurrect

these images. This nifty adjustment is a fantastic photographic tool, which is often overlooked by users since dedicated HDR software like Photomatix and Photoshop actions became available from third-party companies. In the simplest terms, the adjustments allow you to recover detail from over- or underexposed areas by adjusting the Highlights or Shadows controls respectively, or you can improve the overall tonal range using the Midtone Contrast slider. It's really very simple.

The key to success with Shadows & Highlights is subtlety. As with any process that plays with tonal range, Shadows & Highlights can produce photographic Frankensteins if used too eagerly. So why not give it a go? The controls may seem daunting at first, but after a little experimentation and a better understanding, you may find you'll be using this feature regularly.

Hot Kcy

Alt to reset

When working in Shadows & Highlights, hold down *alt* to change the Cancel button to a *Reset* button in case you want to take the filter back to its default settings. You can also uncheck Preview to toggle between the blurred and original image.





Duplicate original Our chosen image is a bit lifeless, yet clearly has potential texture in the sky and detail in the foreground that could be pulled out using Shadows & Highlights. First, create a duplicate layer from the original by going to Layer>Duplicate Layer..., naming the layer accordingly for reference later.



Shadows & Highlights On the duplicate layer go to Image>Adjustments>Shadows & Highlights... As the image is generally flat, concentrate on the Shadows and Midtone Contrast, with only minor adjustments to the Highlight field. At this stage you want to be focusing more on getting the foreground right.



Duplicate adjusted layer Now duplicate this edited layer with / and edited layer with Layer>Duplicate Layer... Then add a Layer Mask by going to Layer>Layer Mask>Reveal All or by clicking on the Add Layer Mask icon at the bottom of the Layers palette (circled). The purpose of the Layer Mask is so that the next edit only affects the sky area of this layer.



Add a gradient Click on the Layer Mask thumbnail and select the Gradient Tool, ensuring the Foreground and Background Color are set to the default Black and White. With the shift key held down to ensure a straight line, click near the horizon and drag, letting go at the top of the image. This adds a gradient to the mask.



Create a stormy sky With the mask in place, **5** Create a stormy sky where the sky area. Open Shadows & Highlights as instructed in step two, but this time work mainly on the Highlights and Midtones Contrast to pull all the detail back into the sky. You may want to increase the Black Clip to improve the overall contrast.



Reduce the saturation One final tweak is to remove some of the colour to enhance the storm-like appearance of the image. With the top layer still active, go to Layer>New Adjustment Layer>Hue/Saturation... and reduce the Saturation slider by around 20%, then click OK. Now save as a *PSD*, to preserve all the lavers.



Behind the mask

Combining Adjustment Layers and Layer Masks opens up a world of options for selectively tweaking and perfecting your shots

TOPTIP

To apply an adjustment

to a single layer rather than the whole image

select the *Clip to layer* button () in

the Adjustments

palette.



Without a doubt, one of the most powerful features of Adobe Photoshop CS is the ability to selectively edit your images in a nondestructive manner using Adjustment Layers and Layer Masks.

Adjustment Layers offer a series of effects and adjustments, each with adjustable parameters to suit your images. Furthermore, they can be applied to the entire image at once, clipped to just a single layer or applied selectively using a Layer Mask.

Layer Masks, as the name suggests, mask the layers that they are applied to, allowing you to edit or affect only selected parts of your image at a time. If you've been using Photoshop but haven't yet delved into the world of Layer Masks and Adjustment Layers, you're missing out on myriad options for improving your images and it's time to harness the full power of CS.

Layer Masks

Layer Masks can be applied to image layers as well as Adjustment Layers. For images with two or more layers present, select the layer you wish to mask and check Add vector mask in the Lavers palette. Then use the **Brush Tool** to brush over and mask your image. Remember - White reveals the layer, Black masks it.





Show the Layers palette With your image loaded in Photoshop, make sure the Layers palette is visible by going to Window>Layers. In the Layers palette you will only see a Background layer at present. Duplicate this layer by going to Layer>Duplicate Layer, or by pressing Cmd+J if you're on a Mac or Ctrl+J if you're using a Windows-based PC.



2 Add a Quick Mask I want to retain the warm tones in the sky but add a neutral tone to the foreground. Press the Q key to enable Quick Mask mode, select the *Brush Tool* and use the top menu to customise the brush to suit. Brush over the area you wish to remain unaffected by any changes. If you make a mistake, press the Xkey and brush back over to remove the mask.



Add an adjustment With your area masked off, press the Q key again to turn this mask into a selection and, in the Layers palette, click on the Create new fill or adjustment layer button and select Photo Filter from the drop-down menu. In the Adjustments palette, select one of the three preset Cooling Filters and adjust the Density slider to alter its effect.



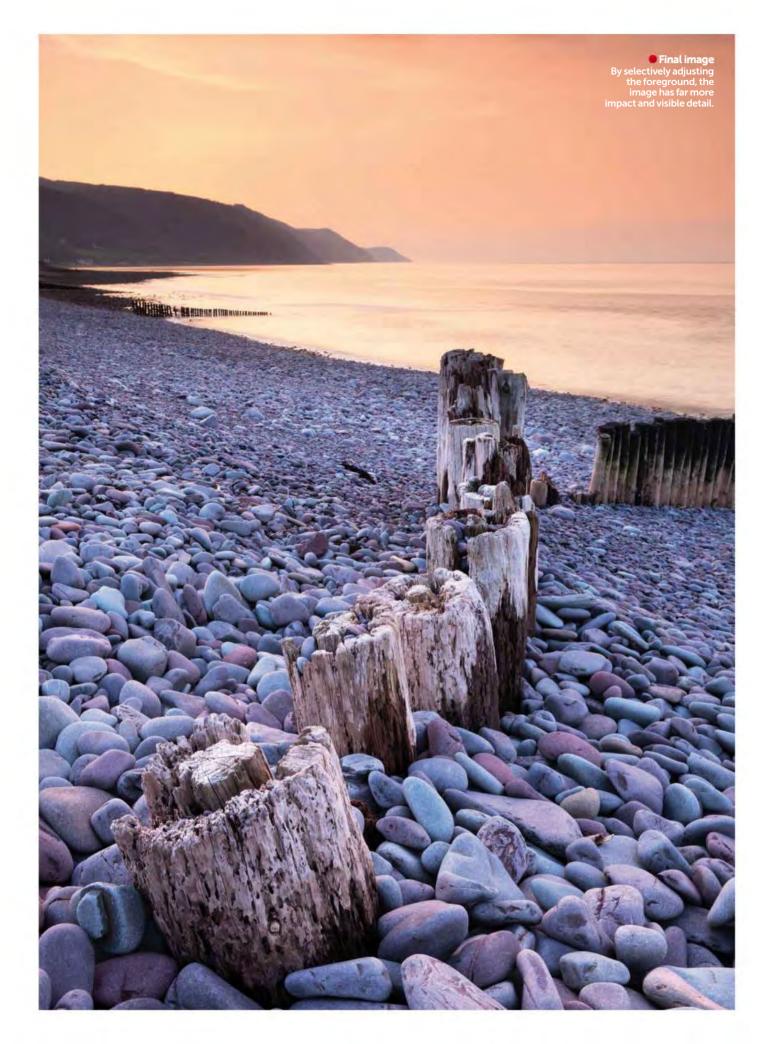
Add another adjustment To bring out detail in the foreground, click on the *Create new* fill or adjustment layer button again to create a new adjustment and this time select Levels. In the Adjustments palette, adjust the sliders until you are happy with the effect. These changes will be applied to just the foreground in the next step, so don't worry about the sky for now.



Apply a gradient mask Click and hold on the Paint Bucket Tool to select the Gradient Tool and press the D key to make sure that your colour palette is reset. In the top menu, make sure that the *Mode* is set to *Normal*. Click and drag on your image in the direction of foreground to background to apply the mask The longer the line, the softer the gradient.



Tweak the mask Don't worry if you don't get the gradient right first time, you can click and drag as many times as you need to get the right transition. The gradient cuts through the final wooden post in my image and doesn't look natural. Select the Brush Tool and, with White set as your Foreground Color, paint in the post. If you go too far, press X to paint back over.



Crcatc a misty morning

The Gradient Tool is ideal for adding an eerie wintry feel to your images. A few other little tricks are necessary to pull it off, though



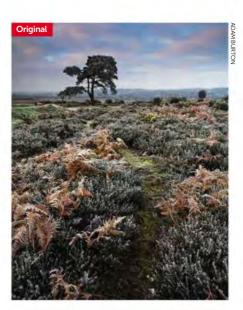
Mist is one of those elusive elements that rarely appears when you want it to but when it does it can transform the atmosphere of your landscapes. Now this step-by-step is no substitute for the real thing, but it can be used to improve your current

landscape images or to occasionally relieve you having to wake early on a winter morning to search for natural mist.

Deep valleys and rolling hills make beautiful scenes for misty landscapes, as do frost-bitten fields. Refer to some example images before you try this technique just to see how mist naturally acts in different situations. Mist tends to look gradually heavier the further it is away from you, which is why you'll notice we handle the image treatment in sections – background, middle-distance and foreground - with each having a different intensity of mist.

Hot Key

Flip between the Foreground and **Background Color** When using Layer Masks or the Gradient *Tool*, use the X key to change between the Foreground and Background Color, which is set to Black and White as default.





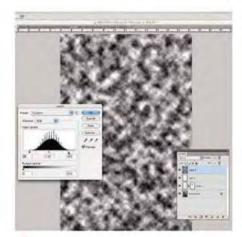
Add a gradient Use Layer>New Layer... to create a layer above the original. Select the Gradient Tool and ensure it's set to Linear gradient in the options bar, and that the Foreground Color is set to White and the background to Black. Click and hold, then drag from the top of the image to just under the horizon to create the background layer of mist.



Reveal the tree In reality, the mist would be 2 Reveal the tree irreality, the tribe weeks and behind the tree. To give it this appearance, add a Layer Mask by clicking the icon in the Layers palette (circled). Next, select the Brush Tool, set to Black and an appropriate Size, and begin to work over the tree, removing the mist. If you go too far, you can change the Foreground Color to White and paint over the area to bring back detail.



Focus on the middle-distance To add fog to The middle-distance 10 and to the middle-distance, create another new layer via Layer>New>Layer... Use the Gradient Tool with the same settings, and draw a line from the top to the bottom of the image and release to create an even gradient across the frame. Reduce the Opacity by changing the amount to 50% in the Layers palette (circled).



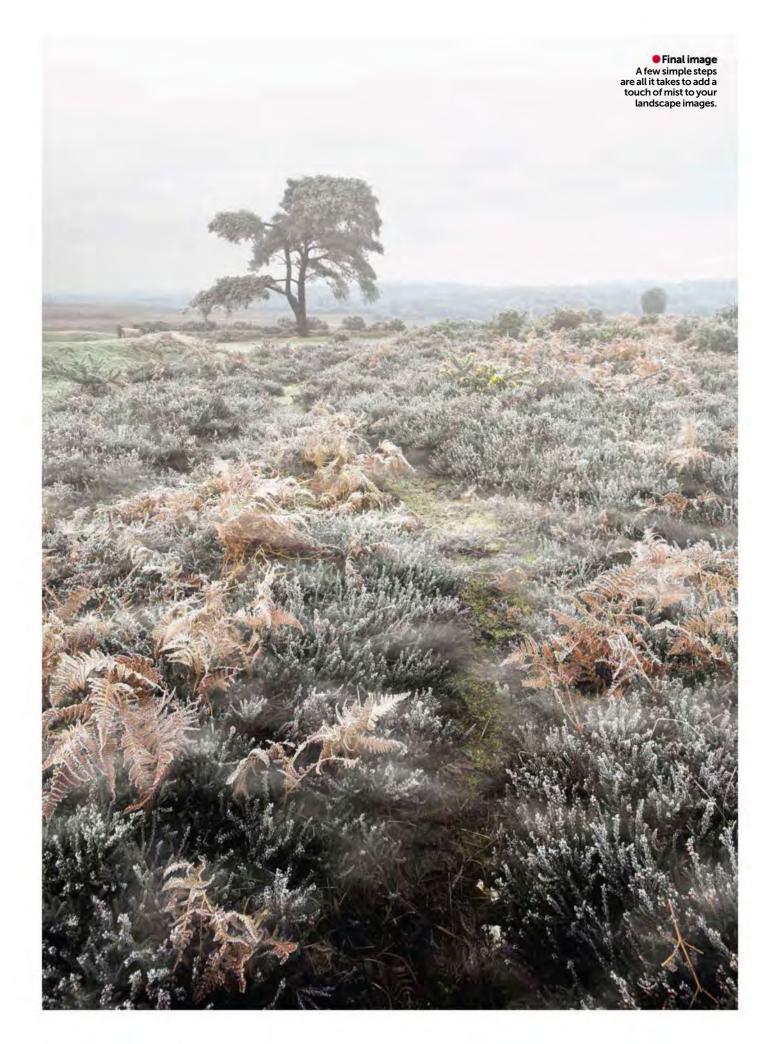
Add foreground mist To create eerie foreground mist, again add a new layer (Layer>New Layer...), then go to Filter> Render>Clouds to fill the layer with a textured cloud effect. Use Image>Adjustments>Levels... and the black and white sliders to boost the contrast on the image. Finally, change the layer's Blend Mode to Screen to make the layers interact.



Adjust perspective To add perspective, go 5 Adjust perspective 10 and policy 1 to Edit>Free Transform>Scale and reduce down to the foreground area by dragging the top-centre tab. Before applying, change the Transform to Perspective and drag one of the bottom corner tabs outside the pasteboard until you're happy. You may need to zoom out to move the tabs out far enough, as shown here.



Tweak colour & contrast Create two adjustment layers by selecting the icon at the bottom of the Layers palette (circled). First, create a Hue/Saturation adjustment layer, and use the Saturation slider to desaturate the colours slightly, and, finally, create a Brightness/Contrast adjustment layer to boost the contrast sufficiently to enhance the appearance of diffused misty light.



Add a colour graduated filter

Learn how to control Photoshop's gradients to create a colour graduated filter effect and transform ordinary skies into something glorious

Jordan Butters

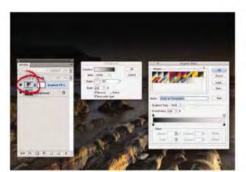


In an ideal world, landscape photographers would always have an array of ND grad filters close to hand; one for every situation and effect that you want to create. But

this isn't always practical. Thankfully there are a range of effects in Photoshop that simulate the results of using filters. This technique is great for emphasising existing colours in the sky or completely changing the mood of your image by emulating a different time of day to when image was taken.



Add the gradient Before we begin, press the D key on your keyboard to reset your colour palette to default. Click on the Add new fill or adjustment layer button in the Layers palette and select Gradient from the drop-down menu.



3 Open the Gradient Editor Double-click on the thumbnail on the Gradient layer in the Layers palette to open the Gradient Fill menu again and click on the Gradient thumbnail at the top to open the Gradient Editor palette.

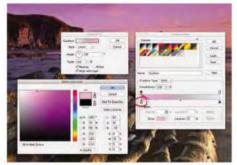


Alter the opacity The two Color Stops above the gradient scale control the gradient opacity. Move the White Color Stop in the top-right corner to control the depth and hardness of the gradient to suit your image. Once done, click OK.





2 Adjust the gradient In the dialogue box, click on the Reverse box to place the gradient at the top of the image as opposed to the bottom and then click OK. Back in the Layers palette, change the Blend Mode of the Gradient layer to Multiply.



4 Change the colour Click on *Black Color Stop* in the bottom-left corner of the gradient. Then click on the Color thumbnail below to open the Color Picker window. Select your colour - I chose pink to emulate the sky at dusk. Click OK.



Add a Photo Filter In the Layers palette, click on the Add new fill or adjustment layer button again and this time select Photo Filter. Select one of the Warming Filters and click OK - this will warm the entire image to suit the dusk colours.



Multiple filters

You could always try adding more than one colour filter to your image. Simply duplicate your Gradient layer by selecting it in the Layers palette and going to Layer>Duplicate Layer and change the gradient colour as was done in steps three through to five. Try placing the gradients at different angles using the Angle dial in the Gradient Fill menu for different effects











Duotone your black & white photographs

We reveal how to add colour to your shadows and highlights – the trick is to be subtle and not overcook it

Caroline Wilkinson



There are many ways you can alter a black & white photograph but one traditional technique that's still increasingly popular is colour-toning. All too often it's a

technique that's done horrendously badly: images look like they've been dipped in a purple or magenta wash, or like they've been taken using the wrong White Balance.

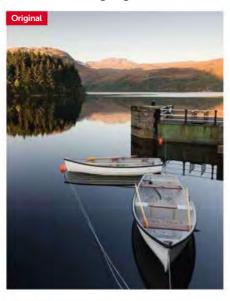
Subtly altering the temperature of the highlights or shadows with a yellow/orange hue or blue tint can add warmth or coolness. So, as a rule of thumb, err on the side of caution: you want the tint to work with the scene, not overpower it. We're going to split-tone an image, otherwise known as duotone, which requires you to separately tone the shadows and highlights. The difficulty comes from finding colours that work well together: putting complementary colours in the mix is a good place to start.



Convert to monochrome Add a Black & White adjustment layer (Layer>New Adjustment Layer>Black & White...) and adjust the colour sliders until you reach the level of contrast that best suits your image. You can also select one of the options under Preset for one-click effects. Here, I decide to opt for the High Contrast Red Filter.

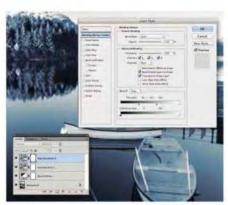


Tone the shadows In the Layers palette, change the Hue/Saturation layer's *Blend* Mode to Color. Now go to Layer>Layer Style> Blending Options. Hold alt and click the white triangle to split it in two and drag them until you find the balance between excluding highlights from the tint and a smooth graduation in tones. Best positions here are around 100 and 200.





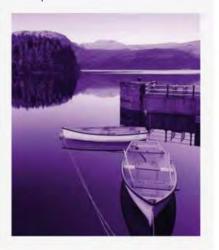
Apply colour Add a Hue/Saturation 2 Apply colour Add a ride, odded way by adjustment layer the alternative way by clicking on the Add new fill or adjustment layer icon at the bottom of the Layers palette. With the adjustment panel open, click on the Colorize box and drag the Hue slider to pick the tint for the shadows, ignoring the effect on the rest of the image for now.



Tone the highlight Repeat step three, but focus on the shadows. Add a *Hue/Saturation* adjustment layer, change its Blend Mode to Color, click Colorize and adjust the Hue slider to tone the highlights – ignoring the shadows. Access Blending Options and split the black sliders to remove the tint from the shadows Good positions here are around 80 and 155.

How not to do it

It can be tempting to take the easy route and colourwash your pictures using a *Hue/Saturation adjustment* layer or to be too heavy-handed with applying colour. You'll know you've gone too far as you'll start to lose details and will have very little graduation in tone. Often the best results come from picking a colour that isn't so vibrant that it overpowers the scene.

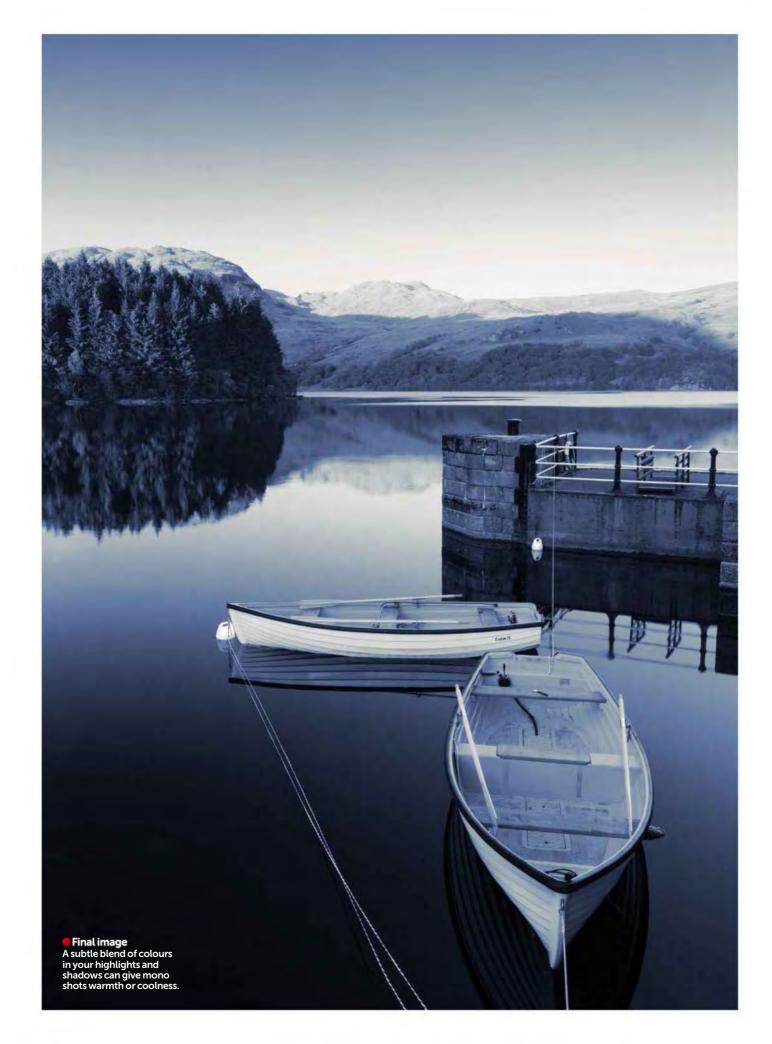


Alternative method

Color Balance adjustment laver Although the results sometimes aren't quite as good, a really quick way to split-tone an image is to use a Color Balance adjustment layer on a black & white image. Control the tinting of tones using the Shadows, Midtone and Highlight settings.



5 Tweak your contrast One of the reasons for working with Adjustment Layers is so you can revert back to previous adjustments and tweak them once you've finished. The contrast in your black & white conversion greatly affects the duotone treatment, so double-click on the Black & White adjustment layer to re-edit the sliders and see if you can improve the results.



Bland to beautiful: learn how to replace a sky

Improve your landscape images ten-fold with this simple technique where you can swap an uninspiring sky for one with more drama

Jordan Butters



The British weather is well known for not doing quite what you want it to and rarely do all of the elements play ball when it comes to landscape photography. You

can be perched above a beautiful vista, camera ready on a tripod and remote in hand, but the one thing you can't do much about is a bland sky. All is not lost, though: in a few simple Photoshop steps you can replace the sky and transform your landscapes from drab to dramatic. You'll need to find a replacement sky to swap in, of course, and it's worth keeping a small library of skies in a folder on your computer for such occasions.

Try to shoot a range of different skies from different times of the day: it makes it a lot easier when the sky you are replacing is of a similar colour and time of the day to the replacement. Trial and error is the key to finding the right sky for your scene.



Select the sky Open your image, choose the Quick Selection Tool and begin painting across the sky. If your image contains objects on the horizon, as ours does, you will need to zoom in and adjust your brush Size in the Options toolbar to make a more accurate selection. If you select an area by mistake, simply hold down the alt key and erase the selection. Once happy with your selection, go to Select>Inverse.



3 Bring in the new sky Open your replacement sky image in a new window and, using the Rectangular Marquee Tool, select the sky only. Copy your selection by going to Edit>Copy and close your sky image without saving. Head back to your original image and paste the sky in by going to Edit>Paste. It's very unlikely that your new sky will fit your image straight away, so don't worry if this is the case.







Refine the selection Go to Select>Refine 2 Refine the selection Go to Select Allines the Edge to bring up the Options window. Click Default and the sky will appear white. Using the Contract/Expand slider, adjust the selection so that it closely follows the lines of the horizon. You can alter the preview that you see by selecting one of the preview options at the bottom. Once done, click OK. Then go to Select>Inverse again and press the backspace key to remove the sky.



4 Adjust the proportions Go to Edit>
Transform>Scale and, holding down the Shift key, drag the corners of the sky image out or in to match the width of your landscape. Once happy, click on the tick at the top, or press the *enter* key. Use the *Move Tool* to line the sky up so that it completely covers the white area of the image. Don't worry about any overlap onto the horizon at this point.



5 Create a gradient Click on the Add Vector Mask button in the Layers palette. Select the Gradient Tool and, at the top of the screen, make sure that the Black/White gradient is selected. On the image, click and drag the line from just below the horizon towards the top of the sky, then release the button. This part involves some trial and error, but you can repeat as many times as you need to until you are happy with the effect.







6 Tidy up the horizon Some of your new sky will still overlap onto the landscape, so to tidy this up, select the *Brush Tool*, lower the *Opacity* to 25% and set the brush's *Hardness* to 25% in the Brush Options toolbar. Select *Black* as your *Foreground Color* and brush over the horizon, building up areas that you wish to reveal. If you go too far or make a mistake, simply select *White* as your *Foreground Color* and brush back over.



7 Adjust the contrast In the Layers palette, click on the *Create new adjustment layer* button and select *Levels* from the menu. First make sure that the adjustment is clipped to the layer below only by clicking the button at the bottom of the Adjustments palette. Then adjust the contrast of your sky to match the rest of the image using the middle (mid-tones) level slider. Once done, save your image using *File>Save As*.

Quick selection

The Quick Selection Tool was released with the launch of Photoshop CS3 and Elements 6, and has featured in all versions since. It works by detecting contrast differences, and makes a selection based on this; ideal for separating skies from horizons. Just be aware of horizons with low cloud or mist cover, as the tool may struggle to separate them accurately.



Crcatc a tcn-stop ND effect

ND filters require dedication to get great results. Here's a technique for those of you who don't have the time to attempt the real thing



For any of you who aren't already aware, the ten-stop ND filter is amazing! By significantly lengthening a camera's exposure, the filter allows the camera to capture motion so clouds are rendered as streaks and water becomes a fine mist – it's truly magnificent, but

it takes skill and patience to perfect. As great as this in-camera technique is, often the key to its success is the location, and as exposure times can often run into tens of minutes it demands extreme dedication and time – if you're anything like me, those are two things I can't always spare in my hectic schedule.

There is, however, a shortcut to getting a very similar effect using Photoshop's Blur filters, and while it may not be one for the photo-purist, it can produce a very convincing comparison when combined with the right kind of image. Feel free to experiment on any image, but it's usually coastal scenes that produce the most dramatic results. For further inspiration of what images might work, it's worth looking at contributor Lee Frost's Motion Studies (www.leefrost.co.uk), taken with an actual ten-stop ND filter.

Layer Mask

A Laver Mask allows you to hide detail from the layer it's applied to, revealing the image beneath without erasing it. When the Layer Mask is selected, simply add Black to the mask to hide image detail and change to White to restore the detail. Use the X key to quickly switch the colours.





Create duplicate layers First, create a duplicate layer from the Background layer by going to Layer>Duplicate Layer..., naming the layer accordingly – here, it's called 'Water Blur'. Then click on the Add layer mask icon at the bottom of the Layers palette to add a Layer Mask. Repeat this process to create an additional duplicate layer - this one was named 'Sky Blur'.



2 Apply Radial Blur On the sky layer, ensure the image thumbnail is selected (circled), then go to Filter>Blur>Radial Blur... In the Radial Blur window, make sure that the **Blur Method** is **Zoom** and Quality is set to Best. Next, enter a large Amount - no less than 50 - and move the Blur Center to an area where the horizon would roughly be positioned on the image, and click OK.



3 Hide foreground blur The Radial Blur should only affect the sky portion of this layer, so click on the Layer Mask thumbnail in the Layers palette (circled) and, with the Brush Tool set to a large soft-edged brush and Black colour, paint across the foreground area to hide the blur across the water and jetty. Switch to a smaller brush when working near the horizon.



4 Blur the water Switch to the water layer by clicking on it. Add a *Radial Blur zoom blur*, with all the settings as in step two, but reducing the Amount down by half, just to make the cloud reflections more realistic. Then go to Filter>Blur> Gaussian Blur..., setting the amount to no more than 15 pixels. This adds a hazy sheen to water, common with many long-exposure images.



5 Reveal the jetty Now edit the Layer Mask to reveal the jetty. First, click on the *Layer Mask* thumbnail (circled), then select the Polygonal Lasso Tool and draw a selection around the edge of the jetty. Once complete, go to Select>Modify> Feather... and add a value of 1 pixel to avoid a harsh edge to the selection. Now take the Brush Tool, still set to Black, and paint over the selection.



Convert to mono To turn the image mono, go to Image>Adjustments>Black & White... and click **OK** to use the default settings. Conversions from colour to mono often leave an image looking a little flat, so use Image>Adjustments>Levels... to add contrast. Use the black point and white point sliders (circled) to boost the blacks and whites respectively, taking care not to burn out any detail.



Make the year a blur with a four-seasons special

Give your seasonal landscapes a creative twist with this simple but striking motion-blur technique

Caroline Wilkinson

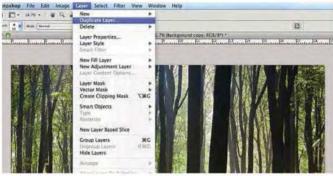


Every season offers new possibilities to photograph striking colour-filled landscapes, whether it be ruby-red poppies, sun-kissed oilseed rape, blankets

of burnt orange leaves or black & white scenes in winter - you're never short of opportunities. While there are a million and one ways to photograph these classic scenes, each as beautiful as the other, it's good to find a technique that gives these seasonal scenes a fresh, artistic appeal.

You may have come across motionscapes before where you pan the camera across a coastal horizon to create streaks of colour. This technique is very similar but applies vertical streaks instead, using Photoshop. You can do a similar technique in-camera using a three-way pan & tilt tripod head to pan the camera up and down in a fluid movement, but it will blur the entire image, whereas here I only want to blur half of it. Plus, while the purists may be cursing, the effect is much easier to control, with better results, using the Motion Blur filter in Photoshop instead.

After some trial and error, it was clear that to get the best results for the seasonal quadtych (series of four images), I'd need images where there was as much interest in the top of the frame as the bottom, otherwise you wouldn't be able to tell what was blurred or in focus. I found that the best scenes were forests or landscapes where trees fill the height of the frame, so with this in mind the Digital SLR Photography team rummaged through their hard drives for suitable images to illustrate spring, summer, autumn and winter.



Create a duplicate layer Open your first picture and duplicate the image by clicking on the *Background layer* in the Layers palette and going to Layer>Duplicate Layer, or by dragging it down to the Create a new layer icon at the bottom of the Layers palette. From now on you'll only be working on this duplicate layer. Leave the original image untouched



Apply motion blur Click on Filter>Blur>Motion Blur to open the filter's dialogue box. As you want to apply a vertical blur, set the Angle to 90° by either typing the amount in or moving the angle finder. You'll notice that by clicking and dragging on the angle finder the direction of the blur will change in the preview screen.

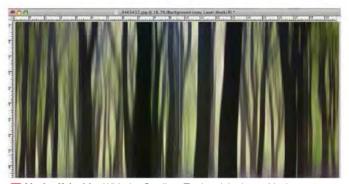




3 Increase the strength Adjust the *Distance* slider to increase the strength of the blur effect. The bottom of the image needs to be heavily blurred but not to the point that the subjects become unrecognisable. It will be different for every image (we used 409 pixels). When you're happy, click OK.



Apply a Layer Mask To add a Layer Mask to the blurred image, click on the Add Layer Mask icon at the bottom of the Layers palette. You'll notice this adds a white box next to your image in the Layers palette. Then select the *Gradient Tool* from the toolbar or press *G*.



5 Mask off the blur With the Gradient Tool and the Layer Mask selected (black lines appear around the mask's corners when it's activated), click at the top of the image and drag the cursor down to the point where you want the blur to start.





6 Repeat What you've done is create a gradient in your Layer Mask that allows the blur to graduate through your image. You can change the graduation by repeating step five. You'll find the images look better if the blur is heavier at the bottom of the picture than the top.



7 Apply the technique to all seasons Repeat steps one to six with the other three images of your choice. We've picked a colourful autumn woodland scene, bright sunshine passing through trees for summer and a black & white picture of a snowy forest.

KIT FOR LANDSCAPES

Landscape photographers are a dedicated bunch ready to battle the elements for great images. If you're heading into the great outdoors, our guide ensures you've packed all the key essentials

LANDSCAPE PHOTOGRAPHY is easy, right? You just sling a camera over your shoulder, head into the countryside and great images will be staring you in the face. If only it were that simple! The reality is ridiculously early starts to catch the first light of the day, late finishes to shoot the sunset. routinely being battered by bad weather and tackling long walks shouldering heavy packs with the gnawing knowledge that it may all be for nothing if the light doesn't play ball.

But despite the setbacks, landscapes continue to be one of the most popular subjects to photograph, simply because when things do go to plan, you could be moments away from taking the best photographs of your life. To do that, though, you do need the right gear - and we've got brilliant suggestions right here, whether you're a novice, enthusiast or semi-pro/pro.



Do not forget to pack...

Waterproof cover:

Protects your kit if you get caught in a sudden downpour. They're inexpensive and available from most camping shops.



Mini groundsheet:

A square of polythene or a bin liner. Make that two so you can keep your knees and bag dry when they're placed on wet ground.



Microfibre cloths: Pack several cloths to keep lenses and filters clean. Put them in plastic bags to keep them free of debris that could scratch delicate surfaces.



Maps and compass: Handy tools for knowing your location and establishing where the sun will rise and/or set. You can also buy apps for your smartphone.



Spirit level: Helps keep the camera level when it's mounted on a tripod, so you don't get a wonky horizon in your shots. Some cameras offer an electronic level.



Snacks & drinks: Pack high-energy snacks (energy bars, peanuts and chocolate are ideal) and drinks to keep you going. Please don't litter the countryside!



Air blower: Use it to remove sensor dust if necessary. Visible Dust, Giotto's and GreenClean are all specialists with a range of products.



Bug spray: Heading to Scotland between May and September? Take spray to keep midges at bay. You'll find bug spray at Boots and other pharmacies.





Contents

Arctic Butterfly

www.visibledust.com

B+W

www.bpluswfilters.com

Canon

www.canon.co.uk

Cokin www.intro2020.co.uk

Depssi

www.bluepondimages.com

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Giottos

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Lowepro

Hähnel

Hoodman

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Lee Filters

www.leefilters.com

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Really Right Stuff

www.reallyrightstuff.com

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www.sandisk.com

Sprayway

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www.sigma-imaging-uk.com

by Op/Tech, but several brands offer a choice of colours and styles.

www.intro2020.co.uk

Tamrac

www.intro2020.co.uk

www.intro2020.co.uk

ThinkTank

www.snapperstuff.com Tokina

www.daymen.co.uk

Vanguard

www.vanguardworld.co.uk

www.intro2020.co.uk

1) The landscape novice

So you fancy yourself as the next Joe Cornish or David Noton? You're probably drawn to the landscape by a general love of the great outdoors but have never taken more than snapshots while out on walks or enjoying other pursuits. Now you've added photography to your list of other hobbies it's time to up the ante. Here's a rundown of what you'll need to do just that...

Filter system

In terms of value, the Cokin P System is the best there is. The filters are 84mm wide so the holder is big enough to avoid vignetting on lenses as wide as 14mm on DSLRs with APS-C sized sensors (22mm on fullframe) and there are adaptor rings available for lenses with threads up to 82mm. The holder costs around £5 and adaptor rings are £11 each. Whichever brand you buy, make sure you invest in a circular polariser and a set of ND grads. Cokin's P164 Circular Polariser costs £90, while its ND grads cost around £22 each

Superzoom

Focal lengths from moderate wide to telephoto will cater for all your landscape needs, and if you want to have an easy life and compact kit, this can be covered in a single 18-200mm or 18-270mm zoom (equivalent to 27-300/405mm in full-frame format). Canon's £420 EF-S 18-200mm f/3.5-5.6 IS is worth checking out, but don't write off independents such as the £320 Sigma 18-250mm f/3.5-6.3 DC OS HSM or highly rated £330 Tamron 18-270mm f/3.6-6.3 Di II VC PZD

Backpack

You'll be working with a fairly small kit so there's no need to invest in a giant backpack. A 'Zoomster' case for your SLR and lens like the £43 Think Tank Photo Digital Holster 20 may be okay but a backpack is better. Models like the £145 Lowepro Flipside Sport are ideal as they hold your kit, plus have a section for snacks and spare clothes, plus a laptop pocket. Also consider the £90 Vanguard UP-Rise 45 and the £50 Lowepro CompuDay Photo 250.



Entry-level **APS-C digital SLR**

There are no poor DSLRs or CSCs even the least expensive models give you fantastic image quality - so don't worry if your budget won't stretch to a pro-spec model as you really don't need one. What you do need is a relatively compact and lightweight DSLR that you can carry around all day and not notice, that's quick and easy to use and has the features to let you gradually take more control as your knowledge and experience grows. Models to consider include the £350 Canon EOS 1100D and the £500 Canon EOS 100D

Memory cards

You'll have to be quite shutter-happy to fill a 4GB card, even on a good day, so one in the camera should be more than enough - though it's worth carrying a spare 4GB card just in case you get carried away.

Remote release

When your camera's mounted on a tripod, firing the shutter with your finger can cause shake. Avoid it with a remote release that plugs into a socket on the side of your camera. Go for a basic model from Hama, Yongnuo or Hähnel, The £25 Hähnel 280 Remote Shutter Release is a great choice as vour first remote.

Basic outdoor clothing

If you plan to be outdoors all day, you need to make sure you're suitably dressed for the elements. The £25 Sprayway Explore Tee is a comfortable base layer, while the £68 Paramo Challenger is lightweight, reversible and offers excellent protection from wind and rain.

Tripod

You may not like the idea of carrying a tripod around, but trust us, it is worth the effort – especially when you're shooting in low light at dawn or dusk. It's far better to use a tripod and set a low ISO rating for high image quality than trying to handhold at high ISO. Decent models to consider include the £120 Velbon Sherpa+ 630 and the £150 Slik Pro 700DX.

2) The advanced enthusiast

So you've been shooting seriously for two or three years now, you've picked up a lot of knowledge and experience along the way and your images are pretty good. Family and friends are asking you for prints for the wall and you're feeling pretty confident about your photography, so the time has come to upgrade your landscape kit. Here's the gear that you might want to consider...

Remote release

A decent remote release is a must. You could stick with a corded release, like the Hähnel 280 Remote Shutter Release shown on the previous page. However, you might also want to consider a wireless remote too, such as the £50 Hähnel Combi TF. As well as offering a four-second timer, it can be used in the studio to fire your flash system, making it a better choice if you also shoot portraits.

ND grad filters

When shooting landscapes, the sky is almost always brighter than the land so when you expose for the land, the sky blows out and looks horrible. The quickest and easiest way to avoid this is to pop an ND grad filter on your lens. A 0.6ND (two-stop) grad is fine for general use, while the 0.9ND (three-stop) grad is better at dawn and dusk. Cokin's Z-Pro ND grads cost £50 each, while Hitech's ND grads cost from £50 upwards for its 100mm filters

Filter system

Although you could still get away with using a Cokin P-system holder with lenses as wide as 14mm, the fact that you've bought an ultra wide-angle zoom will probably be encouragement enough to go for a larger 100mm system. Lee Filters will probably be over your budget, but the Cokin Z-Pro system or Hitech 100mm system are a more affordable alternative. Holders cost around £50 each and adaptor rings are under £20 each.

Tripod and head

Serious landscape photography means using a tripod all the time, so go for a well-made and sturdy model that's going to last, but isn't so big and heavy it's a chore to carry. The £250 Manfrotto 190CXPRO3 is a worthy contender as is the £190 Giottos MTL 8261B. Both will need a head unless you buy them in kit form. The £55 Manfrotto 804RC2 head is an excellent option, as is the £55 Giottos MH5001 three-way head

Backpack

It's worth investing in a decent backpack that will take all your gear, offers a good degree of weather resistance and is comfortable to carry when walking long distances over rough ground. The Lowepro Vertex 100 AW is an older model but a great buy if you can find it. Also consider the £200 Tamrac Expedition 7x and £90 Lowepro Flipside 400 AW.



Top-cnd APS-C digital SLR

You want the best that you can afford in APS-C format so that you can produce top quality images and print the files to 16x12in or bigger, without worrying about them looking unsharp or grainy. Canon offers a selection of suitable models all boasting 18-megapixels. The £900 Canon EOS 700D is a lightweight option but not too robust. For heavy use in poor weather, check out the feature-packed £1,000 Canon EOS 70D and the robust £1,700 Canon EOS 7D

Standard zoom

If you've been using a kit zoom up to now, it's time to upgrade to a quality standard zoom. Focal lengths around 16mm are ideal for general use as they're wide enough to produce dramatic compositions. Around 35mm you'll get a similar angle of view and perspective to the human eye, while 50mm and beyond takes you into short telephoto territory. Digital SLR Photography ran a comparison test of standard zooms and gave the £550 Canon EF-S 14-85mm f/3.5-5.6 a Highly Rated award. If that's a bit too pricey, the Tamron 17-50mm f/2.8 Di II VC XR also received a Highly Rated accolade in the same review.

Serccn protcetor

If you want your DSLR's monitor screen to do its job properly, it needs to be kept in good condition, so buy and fit a screen protector. The plastic clip-on variety available for some cameras are okay but are rather on the thick side and with a tendency to take on a 'frosted' look after a while. Self-adhesive protectors, like the £6 protector by Hama, are actually better options and also a lot more wallet-friendly.

Protcetive elothing

Comfort and protection is a must when your job involves being out in all weather shooting landscapes - if you get wet and cold you won't perform at your best and your work will suffer. Thankfully, technical outdoor clothing is better than ever so there's no excuse for getting caught out. In addition to wearing layers to trap heat and keep you warm, plus a hat to stop heat loss through your head, a breathable waterproof outer layer will protect you from both wind and rain. Regardless of whether you're a beginner, enthusiast or serious landscape photographer, the need to stay dry and warm is the same. Brands to consider include Páramo, Berghaus, The North Face, Mountain Equipment, Sprayway and Mountain Hardwear, among others.

The £190 Velez Adventure Smock offers one large kangaroo pocket, which can fit an OS map or filters. It's a short, comfortable waterproof top that's also light in weight. As with other Páramo waterproofs, the Velez Adventure pumps away perspiration so that when you stop, you don't get cold as you don't have any liquid close to your skin cooling you down.

While a pair of jeans are ideal for everyday use, they're not a good choice when you're spending a day out shooting as they're not weatherproof and will become clammy and heavy should you get caught in a shower. You are far better off wearing rainpants, which are comfortable, durable and above all waterproof. Shown here are the £40 Sprayway Havana pants, which offer a decent budget option.

In the bag...

1) ULTRA WIDE-ANGLE ZOOM

Though you still tend to reach for your standard zoom first, it's worth adding an ultra wide-angle zoom to your kit as well so you can start to experiment with dramatic compositions, exploiting lines and foreground interest and creating images with a powerful sense of depth and scale. This is likely to become your standard lens as you discover its benefits so make sure you buy a good one. The £370 Sigma 10-20mm f/4-5.6 EX DC HSM and £460 Sigma 10-20mm f/3.5 EX DC HSM are goof independents, while the Tokina AT-X 12-28mm f/4 Pro is even better. If you can afford it, the Canon EF-S 10-22mm f/3.5-4.5 USM is brilliant.

2) TELEZOOM

You won't use a telezoom as much but it's worth it for effects such as perspective compression (great in mist), shallow depthof-field and for filling the frame with details in the landscape. A 70-200mm is effectively a 112-320mm with APS-C sensors, while a 70-300mm equates to 112-480mm – more than powerful enough. Check out the £100 Sigma 70-300mm f/4-5.6 DG Macro, £150 Sigma 70-300mm f/4-5.6 DG APO Macro, £315 Canon EF-S 55-250mm f/4-5.6 STM IS and £290 Tamron 70-300mm f/4-5.6 USD VR.

3) MEMORY CARDS

Though most shoots only last a day, you are venturing further afield and spending weekends on location, so you need extra cards. If you have four good days you could easily shoot 20-30GB of Raw files, so carry at least five 4GB cards.

4) HOOD LOUPE

Viewing images on your digital SLR's preview screen can be tricky in bright light and though you can resort to pulling your jacket over the camera or cupping your hands, the best solution is the £78 . Hoodman Loupe as it always gives a bright, distortion-free 1:1 view.

5) DEPSSI CARD

It only costs £2.99, but this handy accessory helps pinpoint the location of sunrise and sunset throughout the year - just align the card with True North and read off the indicator. Turn the card over and you've got a hyperfocal distance chart that tells you where to focus your lens to maximise depth-of-field

6) ND FILTERS

Use ND filters to increase exposures when shooting moving water to record that lovely blur effect. The Cokin Z-PRO NDs will set you back around £34 each and the ND4 and ND8 will be the most useful. Hitech's ND filters cost around £25 each.

7) POLARISER

A polarising filter will deepen blue sky, reduce glare so colours appear richer, cut through haze and eliminate reflections. The £249 Cokin Z-PRO polariser is the ideal choice for use with the Z-PRO filter system, while Hitech's costs £130. If you can't stretch to a slot-in polariser, consider screw-in circular polarisers. Hoya offers an excellent range of polarisers, prices vary according to size, but expect to pay around £65 for a 72mm or 77mm filter















3) The semi-pro/pro

Making a good full-time living from landscape photography is very difficult, but some manage it by diversifying – shooting stock images, selling prints, self-publishing cards and calendars, writing books and magazine articles and leading workshops. Semi-pros combine profitable photography with other ways of making money. Either way, if you fall into this category or want to, you're going to need gear that can withstand regular and sustained use in harsh conditions. Think of it as an investment in your future...

Glass polariser

If you've invested in a Lee Filters kit, you might as well complement it with a top-quality polariser. The £220 105mm Lee circular polariser attaches to the Lee filter holder via an optional £33 105mm adaptor ring. However, the polariser has a deep mount so if you use ultra wide-angle zooms or lenses, consider a slimmer polariser, such as the expensive but optically superb £230 Heliopan Kasemann.

Ultra wide-angle zoom

Focal lengths from 16-35mm on a full-frame digital SLR are invaluable for landscape photography. An ultra wide-angle zoom is therefore likely to be your standard lens, so make sure you buy the best there is. From Canon, there's the £1,200 16-35mm f/2.8L Mk II USM, which is a favourite with many professionals, or the £580 17-40mm f/4L USM. The latter offers very high image quality and costs half the price, while its slower maximum aperture isn't an issue for landscape photography. It won a Highly Rated award in tests of ultra wide-angle zooms in Digital SLR Photography. Also check out the Sigma 12-24mm f/4.5-5.6 II DG HSM, which also scored Highly Rated in the test.

Filter system

There's only one filter system that pro landscape photographers use: Lee Filters. It has no rival in terms of versatility and quality and, though expensive (the basic holder is £55 and adaptor rings £19-£55), it's built to last. More importantly, the 100mm wide holder comes as a kit and can be set up with anything from one to three filter slots, allowing you to adapt it for use with wide-angle lenses. Fit two slots and you'll get vignette-free images with focal lengths as wide as 16mm on a full-frame DSLR. There's also an SW150 system for use with the Nikkor 14-24mm and other ultra wide-angle zooms that have a protruding front element.

Tripod head

Tripod legs are only as good as the head you attach to them, so don't blow your entire budget on fancy pins. A good, solid head is the £55 Giottos MH 5001 head - it's well-made and ideal for both single shots and sequences for stitched panoramas. If you prefer ball heads, professional photographers love Arca Swiss and Really Right Stuff.

Tripod

A solid, sturdy tripod that will keep your heavy full-frame DSLR/ zoom combo still in high winds is essential. Carbon-fibre is common now amongst today's tripods, with Gitzo being the most popular brand with pros. Check out the £600 GT3541 Mountaineer. If you don't like the Gitzo's twist leg locks, consider the £220 Manfrotto 055CXPRO3. If weight and space are a major issue, then two models that will appeal are the £210 Giottos Silk Road YTL 8354 and the £250 Giottos Vitruvian VGR8255, both designed with travel photographers in mind.



Full-framc DSLR

In pre-digital days, medium- and large-format film cameras were the weapons of choice among pros, but now medium-format quality can be achieved using a full-frame DSLR, so it has become standard issue. Image quality aside, top-end full-frame DSLRs also boast excellent build quality, including full weather-sealing, so they can cope with daily use in extreme weather conditions and not even flinch. Rain, snow, wind, sand, volcanic ash - you name it. Avoid flagship models, there are more affordable full-frame DSLRs to choose from. You should strongly consider the £1,800 20.2-megapixel Canon EOS 6D, which offers a decent resolution and is relatively compact. We'd suggest it's a better overall option to the £3,600 Canon EOS 5D Mk III.

Glass screen protector

The rear screen on your DSLR will come in for some punishment so protect it with a £25 Giotto's Aegis Pro Glass screen protector. You won't know there's a screen protector there at all and you can clean it as often as you like, safe in the knowledge that the real screen beneath it is as good as new.

Rcmotc rclcasc

Although you can get away with using a basic remote release, being a pro you might want to splash out on something a bit fancier, like the £115 Canon TC-80N3. It can be pre-programmed to make long exposures - handy if you use a ten-stop ND filter or shoot sequences of images at set intervals, which is useful for star trail photography. A cheaper option that has pretty much every facility you'll need is Hähnel's feature-packed £60 Giga T Pro II.

Ultimate outdoor clothing

It's well worth investing in quality waterproof clothing if you plan to regularly shoot outdoors. Paramo's £300 Halcon jacket has nine pockets, including large pockets that can fit most filter systems (including Lee), with plenty of room for batteries, memory cards and other accessories. Shown is the best-selling £115 Paramo Cascada trousers, which offer full weather protection and excellent comfort. You can further preserve body heat by wearing a woollen hat from outdoor brands such as Patagonia or Berghaus

Sensible footwear

When you spend hours on your feet and regularly walk miles over rough terrain – all in a day's work for a landscape pro - you need a decent pair of boots that are comfortable, warm and protective. Check out boots by The North Face, Asolo, Meindl, Berghaus and Solomon. When shooting on boggy terrain, near water or on beaches, a good pair of wellies is far more useful as they will keep your feet bone dry. Aigle and La Chameau are reputable brands to try.

Backpack

Invest in a backpack that's big enough to house all your camera kit as well as have extra space for maps, food, water, spare clothes - and is weather resistant. Lowepro is the brand of choice among landscape pros and one of the best packs is the £120 Pro Runner 450AW. Styled like a traditional rucksack, it has loads of features including mesh side pockets, fully padded interior and a laptop compartment. Also check out top-end models from Vanguard, Kata and Tamrac.

In the bag...

1) Fast standard zoom

A zoom from moderate wide to short telephoto is a vital part of the pro landscaper's kit. Go for one with a fast f/2.8 maximum aperture so you get a bright viewfinder image. The £1.800 Canon EF 24-70mm f/2.8L II USM is the best choice, but it's also the most expensive. Tamron's SP 24-70mm f/2.8 Di VC USD is worth consideration at around £850 II lens, while Sigma's 24-70mm f/2.8 EX DG HSM costs around £600.

Though it's likely to be your least-used lens, a telezoom is still worth having for compressing perspective and shooting details in a scene. Canon EOS users can save a lot of weight, bulk and cash by opting for the £980 70-200mm f/4L IS USM instead of the £1,980 f/2.8L version - you don't always need the extra speed for landscapes. Sigma's £900 70-200mm f/2.8 EX DG OS HSM boasts a Digital SLR Photography Best Buy award, while the £1.100 Tamron SP 70-200mm f/2.8 Di VC USD scored a Highly Rated accolade.

3) Back-up DSLR

If your budget will run to it, a second body is worth having just in case your main one decides to malfunction or you damage it on location. Ideally you'd have two of the same model but realistically, a good safe option is an enthusiast-level APS-C DSLR like the £1,100 Canon EOS 70D.

4) Spare batteries

Goes without saying really – nothing worse than running out of batteries in the middle of nowhere when the light's great. Always set out with two fully charged batteries. As well as branded batteries, Delkin, Hama and Hähnel all offer alternatives.

5) Memory cards

Trips away can last a week or more and with you shooting every day from dawn to dusk when the weather plays ball, you'll soon start filling up your memory cards. Downloading full cards to a laptop is a daily routine, but if you prefer not to reformat cards until you're home, then carry at least 50GB of capacity, in other words six or seven 8GB cards.

6) ND filters

As well as your ten-stop ND filter, it's worth carrying a couple of weaker NDs so you can use slower shutter speeds when shooting waterfalls and rivers to capture motion. A polariser can be used like an ND filter as it loses two stops of light (equivalent to an 0.6ND), but also add 0.9ND (three-stop) and maybe 1.2ND (four-stop) as well so you have more options. Lee Filters ProGlass NDs cost around £110 each.

7) Tcn-stop ND Filtcr

No self-respecting pro would be without one. Go for the £130 Lee Big Stopper or the B+W 3.0ND screw-in filter. Prices vary depending on the filter size – for example, a 52mm filter costs around £41, while a 77mm costs £130.

8) ND grads

The most useful filters of all for landscape photography are Neutral Density (ND) grads as they allow you to produce a well-exposed landscape and a well-exposed sky in one shot, in-camera. Invest in a £200 ND grad set from Lee Filters, which contains 0.3, 0.6 and 0.9 density grads, and we advise going for the hard grads rather than soft grads as they're more effective and easier to use.

9) Piece of card

A sheet of 10x8in stout card is handy to use as a lens shade when shooting in strong sunlight, to shield the front end of the lens and prevent flare. A lens hood would do that, but when using a filter holder, the hood that came with the lens obviously won't fit!

10) Sensor cleaning kit

You may not want to carry it in your backpack, but keep a kit in your car. It's worth having access to a decent sensor cleaning kit in case you should need it, such as the £75 Arctic Butterfly 788 Brite sensor brush

11) Apple iPhone 4s or 5

Not only invaluable for keeping in touch, and taking decent photos with its eightmegapixel camera, the Apple iPhone 4S is a powerhouse of technology. For example, if you take reference shots using the camera, you can pinpoint their location on Google Maps by tapping the Places option in the Camera Roll. The Apple iPhone's GPS capability lets you know exactly where your landscape shots are taken, so you can find your way back to the same spot - or share the information with others. You can also download the app The Photographer's Ephemeris (http://photoephemeris.com), which allows you to establish the time and direction of sunrise and sunset anywhere in the world



Types of wide-angles

There are three main types of wide-angle lenses available, each offering its own pros and cons. Here, we explain the virtues of each...

1) ULTRA WIDE-ANGLE ZOOMS

This group of lenses has become increasingly popular. That's no surprise as the range they cover offers incredible versatility in such a small and inexpensive lens. In fact, the ultra wide-angle zoom is arguably one of the best value lenses you could own, which is why we've concentrated our series of tests on this type of wide-angle. There are a variety of focal lengths available, with those around 11-22mm being the most suitable for cameras with an APS-C sized sensor. In truth, all cover a very similar range, although there are one or two exceptions. The most noteworthy is the Sigma 12-24mm, which is designed to be used on both full-frame and APS-C cameras. Finally, while the 16-35mm lens is popular with photographers using full-frame sensors, the 25-56mm range it covers when fitted to a DŠLR with an APS-C sensor is a little limited, so we'd suggest you look for zooms with a wider coverage, such as a 10-24mm.



2) FIXED WIDE-ANGLES

Small, lightweight and compact. with high-quality optics, these are very desirable lenses that are available in various focal lengths and have been designed to offer the ultimate in wide-angles for digital photographers. They start with the ultra wide-angle 14mm, which is particularly suited to architectural photography, when trying to fill the frame with a building from a short distance. Wide-angles from 20mm to 28mm are ideal for landscape photography and are also used by travel photographers. However, their use with cameras sporting an APS-C sensor is limited especially as a standard kit lens covers this range.

3) FISHEYE LENSES

The fisheve offers the most extreme field-of-view. There are two types - the circular and the full-frame fisheye, both producing very different results. Circular fisheve lenses, when used on a full-frame camera, provide round images with a 180° angle of view. They distort perspective, especially when the subject is close and, with close-focusing capabilities, are perfect for comical portraits. The full-frame fisheye (also known as a diagonal fisheye) offers a 180° field of view and can capture incredibly wide vistas. They're very specialist, very expensive and have limited use, so hire one from a pro dealer before you buy

Lens anatomy

- 1) Petal hood Ultra wide-angles come supplied with a dedicated hood to avoid vignetting and flare.
- 2) Large, concave front element The front element normally has a prominent curve, leaving it exposed to dust and scratches, so take care to keep it covered in transit.
- 3) Manual focus ring Normally it's towards the front of the lens and is reasonably wide. You'll rarely need to use it, as wide-angle lenses have excellent autofocus.
- 4) Zoom ring This is normally found towards the back of the barrel. Most are wide with a grooved surface to allow you to grip it easily.
- 5) Focus distance Many lenses have the focus-distance scale marked on the barrel, while some of the more upmarket models have a focusdistance window.
- 6) Hyperfocal scale (see inset) This scale allows you to estimate how much of the scene will appear sharp at your choice of aperture.
- 7) Internal focusing If you're planning to use filters, lenses with an internal focusing system have the benefit of the front of the lens not rotating when focusing, so you don't have to keep readiusting them.



Why use a wide-angle?

Ever wanted to photograph a subject or a scene and found that you can't fit it all in the frame? Then you need a wide-angle lens. With a field-of-view that extends far wider than the human eye, it's the perfect optic for capturing wide vistas or cramming large objects in the frame. Using such a lens comes at the price of characteristics like exaggerated perspective and distortion, but knowing what to expect and how to use it creatively allows you to take shots that aren't possible with any other type of lens.

Understanding focal lengths: Wide-angles

The focal length stated on a lens usually relates to cameras using 35mm film or full-frame sensors. If your camera has an APS-C sized sensor, then you're effectively cropping the image and so giving the effect of a longer focal length lens. The chart below shows popular wide-angles and how the effective focal length changes when matched with popular sizes of sensor on interchangeable-lens cameras.

Focal length on lens	Sensor sizes Full-frame 1x	APS-H	APS-C	APS-C (Canon)	Four-Thirds						
						8mm	8mm	10mm	12mm	13mm	16mm
						14mm	14mm	18mm	21mm	22mm	28mm
15mm	15mm	19mm	22mm	23mm	30mm						
20mm	20mm	26mm	30mm	32mm	40mm						
24mm	24mm	31mm	36mm	38mm	48mm						
28mm	28mm	36mm	42mm	45mm	56mm						
10-17mm	10-17mm	13-22mm	15-25mm	16-27mm	20-34mm						
10-20mm	10-20mm	13-26mm	15-30mm	16-32mm	20-40mm						
10-22mm	10-22mm	13-29mm	15-33mm	16-35mm	20-44mm						
11-18mm	11-18mm	14-23mm	16-27mm	18-29mm	22-36mm						
12-24mm	12-24mm	16-31mm	18-36mm	19-38mm	24-48mm						
16-35mm	16-35mm	21-45mm	24-53mm	26-56mm	32-70mm						
17-35mm	17-35mm	22-45mm	25-53mm	27-56mm	34-70mm						
17-40mm	17-40mm	22-52mm	25-60mm	27-56mm	34-80mm						

Digital-only lenses

When choosing a lens, check it's suitable for the sensor size of your camera. Some are for use with APS-C sensors only, while others are designed for both full-frame and APS-C sensors. Manufacturers have designations for each type. These include: Canon EF-S (APS-C) and EF (full-frame & APS-C); Sigma DC (APS-C) and DG (full-frame & APS-C); Tamron Di II (APS-C) and Di (full-frame & APS-C).

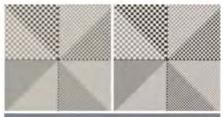
How we test the lenses

OUR TESTS LOOK at the key factors influencing image quality - sharpness, distortion, chromatic aberration and vignetting. We also test performance of the AF and image stabiliser (IS) systems. For IS, we use an oscillating platform custom-made to mimic handholding the lens. The platform's great virtue is that it's an absolutely standard test, so all lenses are tested in exactly the same way for accurate comparisons.

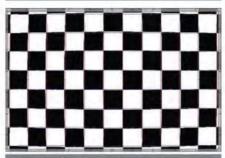
Sharpness: What we call sharpness is a combination of resolution (the fineness of details) and image contrast (how clearly those details are shown). Resolution and contrast are directly linked and when one goes up, the other goes down. We use Modulation Transfer Function (MTF) analysis to measure sharpness, as do lens manufacturers. Results are shown as % MTF at 24 lines-per-mm for full-frame lenses and at 36 lines-per-mm for APS-C to adjust for the crop factor, so sharpness is generally slightly lower than full-frame, in line with actual use. Multiple readings are taken and averaged, and edge readings are taken from points 1-2mm from the sensor edge. Peak resolution shows maximum cpmm at 20% MTF, which is the lowest level where light and dark tones can be reliably measured, though the difference is faint.

Unlike most lens test procedures that use a relatively small test target that often has to be shot at very close range, eq wide-angles, we use multiple individual targets of different sizes to keep distances realistic. A focusing wedge ensures absolute accuracy and automatically adjusts for field curvature and focus shifts that can skew other methods. A Nikon V1 cutomised for Canon DSLR lenses is used with a precision custom adaptor to position any area of the test image over the centre of the sensor. This provides both a level playing field and also an extremely high resolution (equivalent to 74 megapixels on full-frame) to ensure the camera is never the limiting factor.

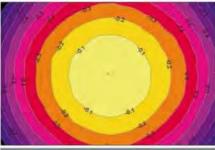
- Distortion: Distortion makes straight lines towards the frame edges appear curved. It changes with focal length and is less noticeable on APS-C. Barrel distortion lines curve outwards (indicated as a positive percentage value, eg +1.5%); pincushion distortion curves inwards (indicated as a negative value, eg -0.5%). The lower the stated figure, the better: 1% or less is good, 2% or more being increasingly noticeable.
- Vignetting: Vignetting is darkening towards the corners. It changes with focal length and is also less prominent on APS-C Vignetting reduces quickly as the aperture is closed down. It's easily removed in post-processing, but when it's strong this results in greater noise. Vignetting is measured in Exposure Values (1EV equals one stop). -1EV is usually not a problem.



Sharpness: How clearly fine detail is recorded



Distortion: Straight lines have a slight curve



Vignetting: Progressive darkening to corners

- Chromatic aberration: Also known as CA or colour fringing, is usually only slightly reduced at higher f/numbers, and is more noticeable on APS-C format due to the crop factor. Distortion, vignetting and CA can all be substantially reduced or eliminated with post-processing software.
- Autofocus: Autofocus speed and accuracy is a game of two halves - half camera, half lens. On the lens side of things, most of the differences relate to the mechanics and build quality, and this is commented on in the reviews.
- Image stabilisation: We use an oscillating platform, custom-made to hold a DSLR body in place and mimic handholding characteristics, and in our testing it has proved very realistic. The platform's great virtue is that it's an absolutely standard test.

Lens terminology

AF motors

Micro-motors are the older and more conventional type of system used to focus lenses and remain a fast and reliable option. Better still are motors using 'sonic waves' to rotate the lens, which are faster and quieter. Most brands now offer lenses that boast sonic motors that are faster, quieter and far more responsive. These include: Canon's Ultrasonic (USM) Motor, Sigma's Hypersonic (HSM) Motor and Tamron's Ultrasonic Silent Drive (USD). All perform brilliantly.

Aspherical lens element

High-quality elements designed to improve performance, particularly towards frame edges. Aspherical lens elements are usually made from glass, but there are also many moulded glass/plastic hybrid elements, too.

Image stabilisation

Many lenses have a 'floating' element linked to sensors that move it to counteract movements when handholding. Most brands offer lenses with lens-based stabilisers. They include: Canon's Image Stabiliser (IS), Sigma's Optical Stabiliser (OS) and Tamron's Vibration Compensation (VC).

Internal Focusing (IF)

Also called inner focusing, this system rotates elements within the lens during AF so that the front of the lens doesn't rotate. This is useful when using filters as you don't have to adjust filters after the lens has focused. Most ultra wide-angle zooms use internal focusing.

Premium glass elements

High-quality elements ensure the best possible image quality, delivering maximum sharpness, superior colour reproduction and contrast, and minimal chromatic aberration. Common types include: Canon Fluorite & Ultra Low Dispersion (UD), Sigma Extraordinary Low Dispersion (ELD) & Special Low Dispersion (SLD), Tamron Extra Refractive (XR).

How to read the lens sharpness graphs

Our bar graphs provide you with a visual representation of lens sharpness. Each graph shows the centre and edge performance of the lens at full f/stops from maximum aperture to f/16 at different focal lengths of the zoom. Centre sharpness is shown in red; edge in green. The higher the bar, the better the sharpness, with ratings as follows: Below 10: Poor; 10-29: Fair; 30-49: Good; 50-69: Very good; Over 70: Excellent. All our lens test analysis is performed using Imatest software.



Canon EF 17-40mm f/4LUSM £580

HANDLING: Light, compact and with a reassuringly solid feel. Focus and zoom controls are smooth and nicely weighted excellent, just as you would expect from a Canon L-grade lens.

FEATURES: Ultrasonic (USM) focusing, weatherproofed construction, and inside 12 elements in nine groups take care of the imaging, including exotic glass and aspherical surfaces. Canon's L-grade lenses come with particularly good lens hoods, robustly made and lined with black flocking for the best flare resistance. It's unusually large, though, which is a good thing in terms of shading, but takes up more space in the bag. Filter size is 77mm, in common with many pro-spec lenses.

AUTOFOCUSING: Canon's USM rarely disappoints - always fast, smooth, quiet and accurate. Full marks.

PERFORMANCE: Canon's EF 17-40mm follows a traditional pattern for sharpness. Unlike other lenses we have tested that have very high levels right from maximum aperture, on full-frame this lens meets our very good rating at f/4, then jumps right into the excellent zone from f/5.6 and holds on to it, only starting to dip slightly with the inevitable effects of diffraction at f/16. Much the same pattern is reflected on APS-C, only with the higher resolution demands of the smaller format pushing the numbers down. Overall the standard is very high at most commonly used apertures. If you're looking for microdetail, in the peak resolution test at MTF 20%, the Canon scored 110 lines-per-mm at f/8, which rates as excellent.

Aberration control is typical of all super-wide zooms, with significant barrel distortion and vignetting, particularly 17mm at f/4. While this is very much par for the course with super-wide zooms, compared to longer focal length lenses it rates as a relatively poor-to-fair performance on full-frame. On stopping down, however, and on the smaller APS-C format, vignetting figures are dramatically improved as you'd expect, though distortion still remains an issue at wider settings. Also at the higher end of the scale is chromatic aberration, but the good news is that all these things can be either substantially improved or eliminated in post-processing, or even in-camera these days, so the reality is not too bad at all.

VERDICT: Launched ten years ago, the Canon 17-40mm is still a great lens. It's about the cheapest L-grade lens you can buy, which means it's built like a tank and features that red ring and therefore is coveted by those with gear acquisition syndrome. Optical performance is slightly bettered by more modern designs, but that's really only at f/4. It's still very usable at that aperture, and from f/5.6 through to f/11. performance is excellent at all focal lengths.

HANDLING	20/20
FEATURES	18/20
PERFORMANCE	34/40
VALUE FOR MONEY	20/20
OVERALL	92/100

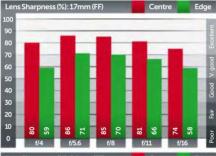


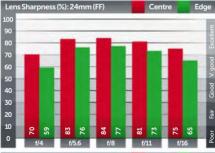
DISTORTION (Full-frame) Poor

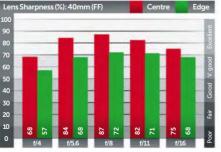
VIGNETTING (Full-frame) Fair

CHROMATIC AB (Full-frame) Good

Canon EF 17-40mm f/4L USM (full-frame)





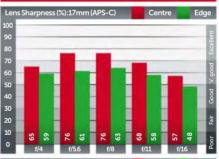


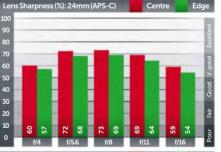
DISTORTION (APS-C) Poor

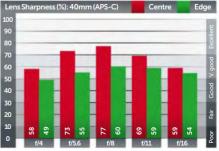
VIGNETTING (APS-C) Excellent

CHROMATIC AB (APS-C) Fair

Canon EF 17-40mm f/4L USM (APS-C)







Sigma 12-24mm f/4.5-5.6 II DG HSM £650

HANDLING: This is a well-made lens, with Sigma's newer smooth black surface finish that's more resistant to marking than the older matt black. It's moderately heavy, and both focus and zoom rings are well weighted and silky smooth.

FEATURES: Standout feature is the mega-wide zoom, which goes down to an incredible 12mm. This is way wider than anything else in fact, it's the widest rectilinear (non-fisheye) lens of any kind made for full-frame. At 122°, the field-of-view is incredible! The flipside of that is the focal length at the longer end only extends to 24mm, and another downside is the bulbous front element that prevents the use of normal filters. There are specialist grad filter kits available (eg Formatt Hitech), but they're both enormous and costly, so you'd best bone up on your HDR technique as an alternative some prefer it anyway.

AUTOFOCUS: With so much depth-of-field available, the Hypersonic AF system doesn't have much to do, but it works very quietly and efficiently, so you won't have any problems.

PERFORMANCE: Under the hood, there's a whole stack of exotic glass and aspherical surfaces, totalling 17 elements in 13 groups. Just as well, as they have a hefty task managing that vast angle-of-view, and delivering sharp images without too much distortion, vignetting and flare. Sigma has done a remarkable job and performance is a lot better than you might expect, in fact it stands shoulder to shoulder with the best, despite its relatively low cost.

The modest maximum aperture, only f/4.5 at 12mm rising to f/5.6 at 24mm, gives it a bit of a head-start on the optical challenge, but even so the lens is sharp, very sharp, hitting the excellent standard right across a full-frame image from maximum aperture. Only the edges lag a little at the tele end, which is a common characteristic. There's plenty of distortion, vignetting and chromatic aberration, as there always is with ultra-wides, but the Sigma's not any worse than most others. Peak resolution is a high 118 lines-per-mm, recorded at 17mm f/5.6 in the centre. An area of caution is to watch out for flare. Given the extensive field-of-view, areas of sky and sun are bound to be included in the frame, and the protruding front element naturally falls victim to picking up specula highlights. This is mostly inevitable, and more something to be aware of than to worry about.

VERDICT: This is an amazing lens. In short, it is sharp, built to a very high quality, has a smooth operation and, all things considered, reasonably priced. And at 12mm, the field-of-view is incredibly wide, producing a unique style of image unmatched by any other lens, zoom or prime. If you're in need of as wide a coverage as possible in a zoom, then this Sigma is well worth serious consideration.

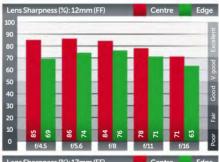
OVERALL	90/100
VALUE FOR MONEY	18/20
PERFORMANCE	36/40
FEATURES	16/20
HANDLING	20/20

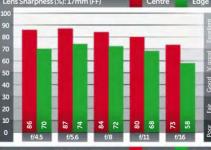


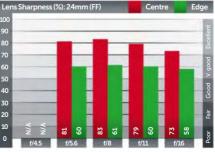
DISTORTION (Full-frame) Poor VIGNETTING (Full-frame) Fair

CHROMATIC AB (Full-frame) Good

Sigma 12-24mm f/4.5-5.6 II DG (full-frame)





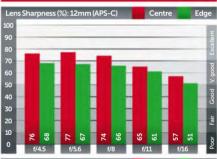


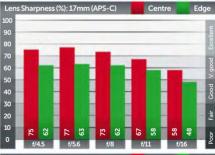
DISTORTION (APS-C) Fair

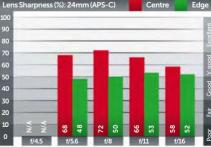
VIGNETTING (APS-C) Excellent

CHROMATIC AB (APS-C) Fair

Sigma 12-24mm f/4.5-5.6 II DG (APS-C)







Canon EF-S10-22mm f/3.5-4.5 USM £490

HANDLING: Sweet handling, with very light weight and lightly weighted zoom and focusing rings. Top quality build.

FEATURES: Focal length range is broad and versatile, and good overlap with a standard range zoom means less lens changing. Maximum apertures are modest though.

AUTOFOCUS: Canon's Ultrasonic focusing is fast, positive and quiet and offers full-time manual override.

PERFORMANCE: Sharpness is high, especially in the centre, where it kicks off well into the 'excellent' zone and this is maintained at all focal lengths, only dipping under at f/11. Edge sharpness is notably lower, but still consistently around the 'very good' level and unlike some, there's no drop-off at the longer end. Peak resolution is the highest here at 129 lines-permm. Aberrations control is the usual mixed bag with ultra-wides. Barrel distortion at 10mm is +2.4%, which rates as 'poor', though others are worse and it quickly gets much better at longer focal lengths. Vignetting is relatively high, but never much of a problem even wide open, and chromatic aberration (CA) is about average.

VERDICT: Versatile zoom range, great AF. and a high standard of sharpness – very high in the centre - is maintained at all focal lengths and apertures. It comes in a very light and compact package with excellent build quality, and best of all the price has been reduced by over £100.



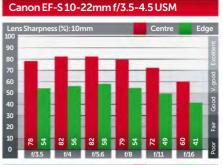
DISTORTION: Strong barrel +2.4% at 10mm. Overall rating: Very good

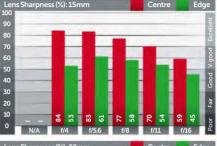
VIGNETTING: Moderate 1.4EV at 10 mm f/3.5. Overall rating: Excellent

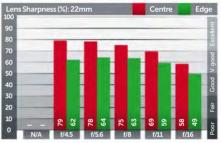
CHROMATIC ABERRATION: Reduces at 22mm. Overall rating: Fair

PEAK RESOLUTION: 129 lines-per-mm at MTF 20%, 15mm f/4 centre

OVERALL	91/100
VALUE FOR MONEY	18/20
PERFORMANCE	37/40
FEATURES	18/20
HANDLING	18/20







Sigma 10-20mm f/4-5.6 EX DC HSM £370

HANDLING: High build quality and finger-light, super-smooth controls. Excellent, but Sigma's velvet-matt finish can show scuff marks.

FEATURES: 10mm is as wide as they come, but 20mm is a bit less than average. Maximum aperture f/4-5.6 is also modest. Lens hood and case supplied.

AUTOFOCUSING: Sigma's Hypersonic Motor (HSM) autofocus drive is as good as any, ie excellent, and there is full-time manual override, too

PERFORMANCE: Sharpness in the centre is always high, well into the 'excellent' zone up to f/11 before diffraction takes hold. As always, edge sharpness is lower, though never less than 'very good' with the exception of 10mm at f/4 that stands out a bit as being disappointing. However, it ramps up very quickly and by f/5.6 it's 'very good' and from there onwards sharpness is uniformly high across the frame. Peak resolution hits 121 lines-per-mm. Barrel distortion is a high +3.5% at 10mm, but falls quickly and turns to -0.6% mild pincushion at mid-range and longer focal lengths. Vignetting is a little higher than average, but still 'very good' overall, while CA control is a little better than some, rating 'good'.

VERDICT: No prizes for low-light performance, but from f/5.6 to f/11 - probably the most useful range for an ultra-wide - sharpness is very high at all focal lengths. At only £370, the price is even sharper.



DISTORTION: Severe barrel +3.5% at 10mm. Overall rating: Good

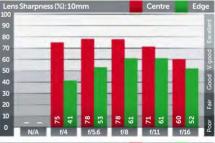
VIGNETTING: Moderate 1.3EV at 10 mm f/4. Overall rating: Very Good

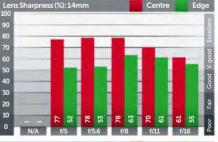
CHROMATIC ABERRATION: Highest at 10mm. Overall rating: Good

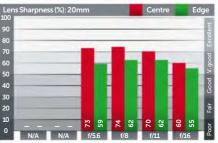
PEAK RESOLUTION: 121 lines-per-mm at MTF 20%, 10mm f/5.6 centre

HANDLING	18/20
FEATURES	16/20
PERFORMANCE	35/40
VALUE FOR MONEY	20/20
OVERALL	89/100

Sigma 10-20mm f/4-5.6 EX DC HSM







Tamron SP 10-24mm f/3.5-4.5 Di II LD £370

HANDLING: Compact and light, well made, too. Main handling difference is the focusing ring turns during AF, and has to be switched over for manual.

FEATURES: Great focal length range, broadest in this class, for high versatility. Maximum apertures less so at f/3.5-4.5. Hood provided.

AUTOFOCUS: No ultrasonic focusing, and the micro-motor is a little slower as it whirrs along, but works well enough.

PERFORMANCE: Sharpness is lower than other comparative models. On average, ultra-wides tend to be 'excellent' in the centre and 'very good' towards the edges, while the Tamron 10-24mm runs one step lower – 'very good' in the centre, and 'good' at the edges. Peak resolution is also low, reaching 107 lines-permm, recorded at 24mm f/8 in the centre. Distortion levels are 'fair' overall, with strong +3.2% barrelling at 10mm, rating 'poor', steadily reducing to +1.6% barrel at 24mm. Vignetting is well controlled, never more than 0.9EV at 10mm f/3.5, rating 'excellent', and usually less than that. CA is prominent, higher than average. rating 'poor' overall.

VERDICT: The focal length range is excellent. The maximum apertures are modest, but perfectly workable, and the AF mechanism, while not quite as sophisticated as the other ultrasonics, does the job. It's only the optics that disappoint, and there are better buys, even at £370.



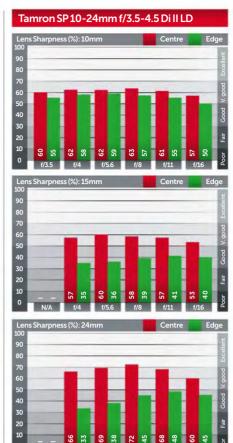
DISTORTION: Severe barrel +3.2% at 10mm. Overall rating: Fair

VIGNETTING: Mild 0.9EV at 10mm f/3.5 Overall rating: Excellent

CHROMATIC ABERRATION: Highest at 10mm. Overall rating: Poor

PEAK RESOLUTION: 107 lines-per-mm at MTF 20%, 24mm f/8 centre

32/40 15/20
32/40
70/40
17/20
17/20



Tokina AT-X 12-28mm f/4 Pro DX £535

HANDLING: Slightly larger and heavier than most, the build quality is obvious. Switching from AF to manual focus is by pulling the clutch-ring, though this usually moves the exact distance slightly.

FEATURES: It's an all-new lens, sitting alongside the acclaimed Tokina 11-16mm f/2.8, trading constant f/4 maximum aperture for much greater 12-28mm zoom range. Hood included.

AUTOFOCUS: Tokina's SD-M Silent Drive-Module works quickly and quietly. Top marks.

PERFORMANCE: Tokina has a reputation for high image quality, so no surprises here. In the centre, sharpness is well into the 'excellent' zone at all focal lengths up to f/11. Edge sharpness is lower, but never less than 'very good'. Performance is consistent at all settings - no peaks, and no nasty surprises either. Peak resolution measured a high 123 lines-per-mm. Barrel distortion is +3.2% at 12mm, rating 'poor', though it quickly drops to +0.4% at 18mm ('excellent') and hovers around zero to 28mm. Vignetting is effectively insignificant throughout; CA is a little higher than expected, rating 'fair' overall.

VERDICT: A fine lens. It feels good and works great, with consistently high image quality at all settings. The extra focal length at 28mm is useful, but at the expense of a couple of mms less at the wide end. The price has dropped a little since launch, too.



DISTORTION: Severe barrel +3.2% at 12mm. Overall rating: Good

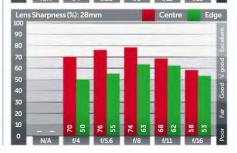
VIGNETTING: Mild 0.8EV at 12mm f/4. Overall rating: Excellent

CHROMATIC ABERRATION: Reduces at 28mm. Overall rating: Fai

PEAK RESOLUTION: 123 lines-per-mm at MTF 20%, 12mm f/5.6 centre

HANDLING	18/20
FEATURES	18/20
PERFORMANCE	37/40
VALUE FOR MONEY	18/20
OVERALL	91/100





Make the most of wide-angle lenses

Shooting wide ensures your shots are full of detail and impact. Here's why...

Adam Burton



Wide-angles are the lens of choice for the vast majority of landscape photographers for very good reason. These lenses allow you to squeeze as much of a location into your viewfinder as possible and capture a scene absolutely

brimming with detail and interest. This is an advantage for landscape photographers as it means you can include foreground interest as well as lots of detail in the far scene, giving your image plenty of depth. By choosing interesting foreground subjects, you can also grab the viewer's attention and pull them in to the picture.

Using wide-angle zooms can be so addictive that you automatically use their widest setting at every opportunity. But this can pose problems. Some lenses can be set so wide that they show the corners of your equipment (lenses, filters and holders) in the frame; this is known as vignetting. Another issue with using extreme wide-angle lenses is barrel distortion, which causes horizons to bend and buildings to lean.

All this can be avoided by training yourself to set your wide-angle lens according to your subject matter. If shooting a straight horizon, like a seascape, then using the focal length a few millimetres up from the widest will reduce the appearance of a bendy horizon. A mountainous terrain, which already has an uneven horizon, can be shot as wide as you want. As well as focal length, pay attention to the height and the angle of your camera when you set it up on a tripod. Trees will lean when composed from low to the ground, so try setting the camera at head height and you may notice a big difference.

The benefits of shooting with wide-angle lenses far outweigh these few considerations. The impact they can give on your photographs is astounding, which is why it comes as no surprise that most pro landscape photographers wouldn't shoot without them.



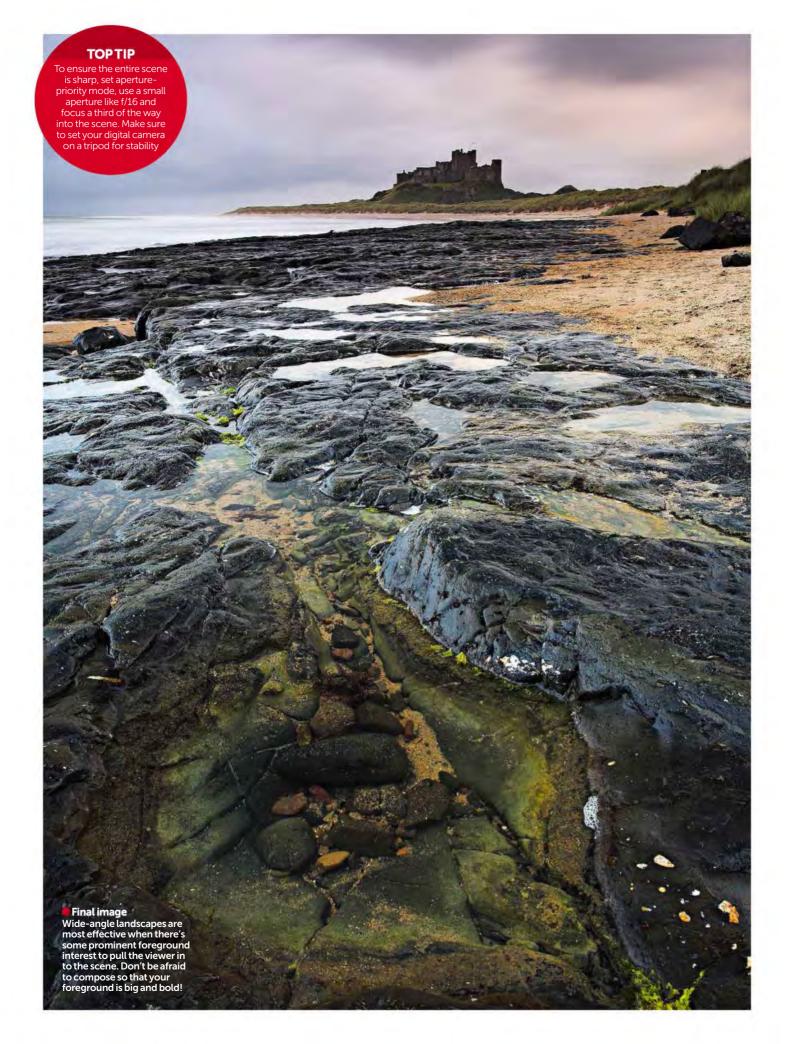






CHOOSE A FORMAT: My first image was taken in a horizontal format, which is often the natural orientation for landscapes. However, a vertical format can work just as well with wide-angle shots. It allows more room for foreground details while still including lots of sky. NOT TOO WIDE: Using the widest end of your zoom may cause barrel distortion (when the horizon curves downwards) and vignetting (when dark areas appear in the corners of your frame). The wider your focal length, the greater the chance the camera has of including parts of your kit (eq filter holders). Avoid these problems by not setting your lens to its widest focal length. GO LOW:

A viewpoint closer to the ground dramatically increases the impact of the foreground subject matter and provides a more dynamic composition. Now the viewer can focus their attention on the rockpool, which leads their eye into the frame and towards the distant castle.



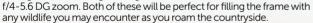
Perspective compression

Photographers often talk about using a telephoto to compress perspective, but what does it mean?

TECHNICALLY SPEAKING, telephoto lenses don't 'compress perspective', but, practically speaking, you do get a different feeling of perspective from a telephoto shot than from a scene captured with a wide-angle lens. Wide-angle lenses open up perspective and create a sense of depth because nearby objects appear big, and further objects appear to be small, suggesting distance. Wide-angle lenses also create strong diagonals, enhancing the sense of depth. On the other hand, telephotos make distant objects appear larger, apparently compressing the planes of the image and reducing the impression of depth. Lines tend not to stretch into diagonals and parallels remain parallel, increasing the twodimensional feel. Compared to a wide-angle view, this all adds up to an image that is more static. And, of course, the longer the lens, the greater the effect. So what kind of images benefit from this compression effect of longer lenses? The static character of telephoto images suits tranquil scenes; hilly landscapes are ideal, especially where there are several planes or 'layers' that can be visually pulled together so they appear to be almost stacked on top of each other. The feeling of tranquility can be enhanced by early morning mist, with the tops of the hills rising above the haze. More dramatic images can be created in the right lighting conditions, too – look for alternating bands of light and dark, creating a 'layering of light'. Urban landscapes also work well as you can use compression to contrast elements or suggest a crowded environment.

Telephoto zooms

There is no argument that landscape photographers should place a decent wide-angle lens (be it prime or zoom) at the top of their wishlist. However, that's not to say there shouldn't be a little room allocated in the gadget bag for a telezoom. While you'll predominantly be filling the frame with wide-angle vistas, you'll also find times when a telephoto can prove useful. This will usually be when you want to isolate a specific area or feature within the scene or when you want to create a layering effect through perspective compression (see below). There are a variety of telephoto zooms available but we'd recommend you opt for a focal length of around 55-200mm if you use a DSLR with an APS-C sized sensor, or a 70-300mm or similar zoom if you have a full-frame DSLR. You'll find the Tamron 55-200mm f/4-5.6 Di II to be great value, along with Sigma's 70-300mm

















Landseapc filters: systems and types

Filters have long been the simplest and most inexpensive way to improve or alter your images in-camera. Even in the digital age, they have their place in every landscape photographer's kit bag. We explain the main types of filter systems, our recommended filter types and the major brands to consider...

THE WORTH OF FILTERS, now that we have Photoshop, is a topic that still divides opinion amongst amateur photographers. But for those that like to get it right in-camera, filters are still invaluable tools, in particular with outdoor photographers.

While some filters can give an image a colour cast, other popular types are neutral in tone and instead enable photographers to balance bright and dark areas of a scene, or have more scope for their choice of apertures and shutter speeds. There are many different uses for filters to suit all types of photography but in this guide, we help you decide which type of filter, as well as what filter system, is the best choice for landscape photography.

Filters come in two main types: screw-in, which attach directly to the filter thread at the front of your lens barrel; and slot-in, which slip into a holder held in place on the front of your lens by adaptor rings screwed on to the filter thread. Both have their pros and cons, which you should consider before deciding which to buy. As you'll no doubt discover as you read on, a combination of both types is often the best solution for most photographers.



Sercw-in filtcrs

These are quick and easy to attach and remove from your lens, so are a very convenient choice. As they're made from glass, they are of high optical quality and more difficult to scratch. Screw-in filters come in various sizes, with 52mm to 77mm being the most common. If you own a number of lenses, each with different filter threads, you will either need a filter in each size or take the more affordable option of a stepping ring (see tip below). Another negative point worth considering is that grad filters aren't well suited for use as a screw-in, which will be off-putting for



landscape photographers in particular. You also need to take care when using more than one screw-in filter at a time, as you run the risk of vignetting (darkening at the image corners), especially with wide-angle lenses. Another disadvantage is that occasionally you may find a filter won't budge, in which case you'll need a filter clamp to help remove it.

Stepping rings: A cheaper option than buying the same type of filter in various sizes is to buy the largest size you need and a step-down ring, which allows you to fit a large filter on a smaller thread. For instance, if you have a 72mm filter and buy a 72-67 ring, you can screw the filter to the ring, which attaches easily to the lens. Don't go for a step-up ring for attaching smaller filters to larger lenses, as these can cause vignetting.



Slot-in filtcrs

With these systems, you only need to buy one filter even if you have several lenses of different sizes. This is because the filter slips into a holder, which attaches to the lens via an adaptor ring. So, instead of needing costly screw-ins in various sizes, you can simply buy affordable adaptor rings in the sizes you need and swap the holder between them. It does mean the initial investment is higher but, over time, it proves to be far more economical, especially if you have several lenses. You'll find there is an extensive range of filters available, in particular graduates, which are among



the most popular types of filter for landscapes. Unlike screw-in filters, slot-in filters are made from optical resin, which is incredibly tough and lighter than glass, although more prone to scratches. Optically, they offer excellent quality, with little discernible difference to screw-ins. For the ultimate quality, look at pro brands like Lee Filters, which use the very best materials.

Compatibility: You'll find most brands make more than one size of slot-in system to suit different types of DSLRs. The standard size is 67mm but if you have wide-angle lenses, we'd recommend you consider the 85mm or 100mm formats. Note that as these sizes are standard, similarly sized holders will accept filters from other brands.



Our favourite filter types

There are literally hundreds of different types of filter available, but our shortlist below highlights those that prove most beneficial to your landscape photography



Skylight/UV/Protection filters These are essentially clear glass screw-in filters that protect the front element of your lens from dust, marks and damage. The UV filter can also aid in the removal of haze, but all three are more or less the same. We would recommend that you attach one to each of your lenses



Polariser

If you shoot outdoors regularly, buy a polarising filter. It saturates colours, in particular blue sky, as well as minimising glare and reflections from shiny surfaces like foliage or water. The effect of a polariser can't be replicated accurately in Photoshop, which is why most landscape photographers never leave home without one. Avoid linear polarisers - you need a circular polariser; otherwise your camera won't meter correctly. Polarisers have a filter factor of 4x and reduce the exposure by two stops, so watch out for camera shake. While one of the most expensive types of filter, they're definitely



Close-up filters

On bright days when the sun is high in the sky and not particularly suitable for landscape photography, many photographers turn their attention to shooting detail. Closeup filters are useful if you don't own a macro lens and want to shoot small objects at high magnification.







Neutral Density

These aren't essential filters, but are very useful. A Neutral Density filter is grey in colour and doesn't alter the colour balance of an image but instead reduces the amount of light passing through to the lens. They are mainly used in bright sunlight, when you need to use a wide aperture to minimise depth-of-field or a

slower shutter speed to emphasise movement.



0.3 4x 0.6 0.9 8x

worth the investment. 0.9ND grad





ND graduate filter

Graduates have a dark area that fades to clear and are used to balance bright sky with a darker foreground. They're available in a variety of colours, but we'd say the only grad to buy at first is the ND (Neutral Density) graduate. These have a gradual ND effect that does

not change the colour balance of the sky, but allows detail to be recorded in the scene. ND grads are available in various densities, with the 0.6ND grad being a good first choice. You'll find that there are soft- or hard-edged variants, too, relating to how the grad effect falls off - we'd suggest you begin with a soft-edged grad.

ND filter factors: This table explains the relationship between exposures and filter factors. Light loss is stated in stops.

Using slot-in filters







1) Screw in the appropriate adaptor ring

- 2) Attach the holder to the ring
- 3) Slide the filter into the holder

Screw-in filters

Guide prices for popular brands

	UV	Polariser	ND
B+W 52mm 55mm 58mm 62mm	£23 £23 £23 £26	£76 £87 £89 £94	£34 £34 £34 £36
67mm	£32	£111	£37
72mm	£40	£128	£43
77mm	£45	£144	£47
52mm	£14	£40	£25
55mm	£14	£40	£28
58mm	£16	£40	£30
62mm	£20	£40	£35
67mm	£25	£40	£38
72mm	£25	£60	£45
77mm	£30	£80	£55
Kood	£10	£24	£12
52mm	£10	£24	£13
55mm	£10	£24	£15
58mm	£10	£30	£15
62mm	£11	£30	£19
67mm	£11	£36	£28
72mm	£13	£38	£29
7iffen 52mm 55mm 58mm 62mm 67mm 72mm	£10 £10 £13 £15 £16 £23 £24	£31 £31 £35 £39 £46 £57	£22 £22 £22 £39 £39 £50 £50

LOOK AFTER YOUR FILTERS!

Filters can be easily scratched so be sure to return them to their storage case or a filter wallet when not being used. Use a microfibre lens cloth to remove fingerprints and marks.

Filter brands

There aren't too many brands of filter but the choice they offer can be confusing. We've highlighted the tried-and-tested filter brands that offer great value as well as high-quality products

B+W

www.bpluswfilters.co.uk

This prestigious German brand is renowned for producing screw-in filters with optimum quality, both in terms of the metal filter ring and the manufacturing process behind its premium optical glass. It's a very popular brand with pros but it does cost around twice as much as other brands. If you need the ultimate in quality from a screw-in filter, then B+W is the option for you, otherwise Hoya is a great choice. One string in its bow is the ten-stop ND filter, which has proven incredibly popular for daytime long-exposure photography.



Hoya

www.intro2020.co.uk

Hoya makes around 60% of the world's optical glass, so you can be assured it offers excellent quality. Hoya offers the most extensive range of any screw-in filter system, with literally every type of filter you can imagine. What's more, for popular types of filter such as polariser or UV, it has a number of options to suit all levels of photographer, from amateur through to pro. Its filters boast several cutting-edge technologies, for instance, the HD series boasts hardened glass and several layers of multi-coating to improve contrast and reduce flare, while the Pro 1 Digital series has been exclusively designed for use with digital cameras. The extensive Super HMC series covers the majority of filter types and provides fantastic quality at a great price. Revo is its latest series, offering the ultimate in quality. Download Hoya's filter brochure for a better idea of its full range of filters.



Cokin

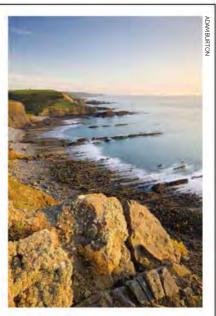
www.intro2020.co.uk

For many photographers over the decades, the search for high-quality and affordable slot-in filters started and ended with Cokin. This isn't a surprise as this manufacturer was the innovator of creative filters for amateur photographers and has led the way ever since.

Cokin offers four filter sizes: 67mm (A-series); 84mm (P-series); 100mm (Z-Pro): and 130mm (X-Pro). The A-series is aimed more for use with compacts or camcorders, so the P-series is the best introductory option. If you use wide-angle lenses with a focal length wider than 28mm, you should consider the Z-Pro range, while the X-Pro is more for medium-format photographers. All the ranges offer plenty of options but the P-series has everything the DSLR photographer may ever need, with over 140 filters to choose from, including polarisers and a variety of ND grads. Filter rings are available for threads up to 82mm and the P-holder accepts up to three filters at a time. The Z-Pro series is a better choice for landscape photographers - in particular those with ultra-wide zooms. Adaptor rings are available from 49mm to 96mm and filters are 100mm square, except for the grads which are 100x150mm.

All the filters are made from CR39 optical resin and deliver high-quality results, and because it's such a popular range, filters are very well priced. The ND Grad Kit for the P-series is affordable at £50 and consists of a Cokin P filter holder, one P121L ND2 Light Grad, one P121M ND4 Grad and one P121S ND8 Soft Grad filter. The Cokin P164 circular polariser is around £50, while for the Z-Pro, you're looking at around £225 for the Z164! Adaptor rings cost in the region of: A-series: £8; P-series: £11; X-Pro: £50; and Z-Pro: £22.





Lee Filters

www.leefilters.com

Lee Filters is the ultimate choice for the discerning photographer. Loved by pros and relished by enthusiasts, Lee Filters are as good as it gets in terms of optical quality, but due to the stringent manufacturing processes involved, expect it to command high prices. Its brilliant 100mm system is the cornerstone of its success, with a high-quality and versatile holder that can be made to your own specification to hold varying numbers of filters. The filters themselves are brilliant quality and are manufactured from a number of materials, including glass, resin and polyester. Various kits are available and we'd recommend the £200 Digital Starter Kit, which comprises an assembled holder, 0.6ND ProGlass ND hard grad, 0.6ND and cleaning cloth, all packed neatly into a pouch. The other kit is the £150 Starter Kit, which includes an assembled filter holder, 0.6ND grad, cleaning cloth, Coral 3 grad and pouch. Its ten-stop 'Big Stopper' ND (around £110) is the best on the market. Adaptor rings from 49mm to 77mm cost £19; 82mm and 86mm are £41; while 93mm, 95mm and 105mm rings are £55. The filter holder (the Foundation Kit) is £55. If you intend making a living from photography and investing in expensive lenses, then these are the filters you should aspire to own





Formatt (Hitech)

www.formatt.co.uk

Formatt makes a range of filters for movies and stills photography. Its Hitech filters are aimed specifically at digital SLR photographers, made from optical resin and are manufactured in the UK to extremely high standards to provide excellent optical quality. The 67mm, 85mm and 100mm filter systems are compatible with other slot-in brands and include an extensive range of graduates. As well as hard- and soft-edged ND grads (from 0.3-1.2), it offers a huge choice of colour grads, as well as the Blender, which graduates the effect through the entire length of the filter. Hitech also boasts the ProStop, a ten-stop ND filter that costs only £60 for the 85mm version, or £90 for the 100mm. An ND grad kit with 0.3, 0.6 and 0.9ND grads costs £38 (85mm); £85 (100mm); and £111 (100x150mm). The circular polariser costs £133 (85mm) or £139 (100mm). A plastic holder costs under £10 and plastic adaptor rings cost around £5 from . 49mm to 77mm.



Kood

www.kood-international.com

Kood has its own range, with screw-in filters imported from Japan and slot-in filters manufactured in the UK. The range of screw-in filters isn't large but includes polarisers, protection and close-up filters, as well as various special-effect items such as starburst and colour-correction filters. Kood also has a good range of stepping rings, too. Kood offers four sizes of slot-in filters - 67mm, 84mm, 100mm and 130mm - so its filters are compatible with all the major slot-in brands. Made from CR39 optical resin, they offer decent quality and are a good budget buy. Kood isn't available from all high-street outlets, so visit its website for your nearest stockist. Kood's Circular Polariser and ND grads in sizes 84mm to 130mm cost between £25 and £45, and can be purchased from Kood direct as well as a number of camera dealers.



Tiffen

www.tiffen.com

Tiffen is an American brand that has been around for decades and is particularly popular in the movie industry. Its range of screw-in filters isn't as comprehensive as Hoya's, but it does cover all the key types including protection filters, polarisers and Neutral Density filters. It also has a number of special-effect filters, in particular lots of diffusion filters including soft-focus, mist and fog, but these aren't filters you'd use on a regular basis. While the range is relatively small, quality is very high and Tiffen filters come with a ten-year guarantee. You'll also find that prices are competitive, too, making them a decent alternative to brands like Hoya, although the latter is more likely to be stocked by your local photo dealer.



UNKNOWN BRANDS

Search the web and you'll find filters from little-known brands like Helios. Most stem from China and as there are no official UK importers, it's hard to judge optical quality - the safest bet is to stick with recognised filter brands

Tripods for outdoor use

Don't leave home without a three-legged friend

A TRIPOD SHOULD be viewed as an essential part of your outfit. You'll usually be using a small aperture setting to maximise depth-of-field, along with a low ISO rating to give the highest quality results, which will result in long shutter speeds. Handholding might be feasible with some shots, but with a tripod you never need to worry about the shakes. You'll also find that, by using a tripod, you can spend more time and attention on fine-tuning the framing of the scene to get the best possible composition.

There's a huge variety of tripods on offer, so choosing one isn't straightforward, but there are two key factors to consider. The first is stability - while cheaper models may be tempting, they may not provide a stable platform, so ensure you pick a model that is sturdy enough to keep your kit totally still when shooting. The second factor to think about is how much a tripod weighs, which is important as you'll be carrying it, along with the rest of your gear, for considerable distances. Most tripods are made from aluminium, which is sturdy and fairly lightweight, although decent models weigh around 2kg or more. If you want a tripod that's as sturdy but far lighter, you'll want a carbon-fibre model, although you'll have to be prepared to pay a premium. Our selection of tripods have all received the highest ratings in Digital SLR Photography magazine. We've chosen examples that cover various street prices (not the manufacturer's RRP) to ensure you find one that suits your budget. Bear in mind that with the more expensive models, you buy the tripod and the head separately.

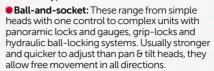
Features

- 1) Head There are various tripod heads available, from ball-and-socket to three-way pan & tilt. Some are also interchangeable. When choosing a tripod, attach your DSLR securely and ensure the head is free from movement
- 2) Quick-release plate These allow you to quickly attach and detach your DSLR to/from the tripod. All of the tripods in this review have one
- 3) Leg locks Most of the tripods here feature 'clip' locks, which are easy to use
- 4) Leg sections Tripods with three lea sections or fewer tend to be the most sturdy, as the more sections you have, the less stable they can become
- 5) Spirit levels Useful for landscape photography, many tripods feature builtin spirit levels to make sure your images are straight. If not, your local photo store should sell one that slots straight on to your
- 6) Bag hook Some tripods have hooks on the central column, from which a bag can be hung, using its weight to add stability to the tripod in windy
- 7) Tripod feet Spikes are good for grip outdoors but will scratch flooring. Rubber feet, on the other hand, offer good grip indoors and outside and are the best choice for general use



Interchangeable tripod

Most high-end tripods aren't supplied with a head, allowing users to choose their preferred legs and a specialist or general-purpose head. The two most common types of heads are as follows:



Three-way heads: Commonly known as pan-and-tilt heads, these are great for all types of photography. Panning gauges are useful for panoramic shots and fluid heads have the smoothest panning motion.





Velbon Sherpa+ 630 [120]

- Length (closed): 56cm
- Height (legs extended): 163cm
- Number of leg sections: 3 Weight: 1.6kg
- Maximum load: 4kg Website: www.intro2020.co.uk

Velbon's Sherpa 630+ is a decent all-rounder that's lighter than many of its similarly priced rivals. In the quest for weight saving, you might suspect that stability has been compromised, but while it's not quite the sturdiest model, it's not at all bad. The legs are grooved to prevent rotation and perhaps this also helps reduce flex. As usual, the legs can be fixed at three different angles to get down low, and the centre column (sans ballast hook) splits in half to go even lower. The centre column lock is unusual in being a lever rather than a ring or knob, and it all works rather well. Its key feature is weight, so if that's important to you, check it out!



Slik Pro 700DX + 700DX pan & tilt head [150]

Length (closed): 76cm

Height (legs extended): 190cm

Number of leg sections: 3 Weight: 3.2kg

Maximum load: 6.8kg Website: www.intro2020.co.uk

The largest tripod on review, the Pro700DX feels like it could withstand any treatment. It's sturdy and stylish, and certainly looks a tripod for serious use. Although it's heavy, it is still portable. The locks are strong and secure, yet easy to open, while the reversible central column allows users to take low-level and macro shots with ease. It is particularly effective when used with the legs open wide, which is easy if using the three-position locks to hold them firmly in place. The pan & tilt head features a panning lock and a smooth panning motion. The quick-release plate is circular, making it easy to attach and detach the camera There are two spirit levels but no bag hook.



Manfrotto 804RC2 head **E55**

- Weight: 712q
- Height: 110cm
- Base diameter: 60mm
- Maximum load: 4kg
- QR system: Manfrotto RC2

Website: www.manfrotto.co.uk

the job well and is one of Manfrotto's

bestsellers. It's a good size, about average weight, with ample load-bearing capacity. The three axes each have graspable control handles, are logically positioned, and marked with degree scales and a spirit level. The RC2 quick-release plate is one of the best, slotting in easily and locking automatically. A neat feature is that the up/down movement is spring-loaded, increasing resistance as the camera is tilted forwards or backwards. If you're looking for a tripod for video use, though, you'll be better off looking at other options.



Giottos MTL 8261B E190

- Length (closed): 66cm
- Height (legs extended): 169cm
- Number of lea sections: 3 Weight: 1.6ka
- Maximum load: 8kg Website: www.giottos-tripods.com

You can't have it all, and the ideal requirements of high strength, low weight and competitive price tend to be mutually exclusive. Compromise is the name of the game, and some tripods make a better fist of it than others - like this Giottos. İt's tall and strong, very light at only 1.6kg, and although it uses pricey carbon-fibre to achieve that, the cost is reasonable at just under £200. This is a classic three-section tripod, which puts it in the middle of the popular size scale as the best all-rounder. It's more than big enough for most, strong enough to take anything short of the heaviest super-teles and light enough to be carried anywhere. It does everything you need.



Giottos Silk Road YTL 8354 [210]

- Length (closed): 54cm
- Height (legs extended): 138cm
- Number of leg sections: 4 Weight: 1.38kg
- Maximum load: 5kg Website: www.giottos-tripods.com

Released in the summer of 2013, this innovative model became an instant favourite with outdoor photographers especially those who regularly travel. It's the first to feature a 'Y'-shaped column that allows the legs to fit more snugly together when closed, saving around 30% space while retaining the strength and stability of a conventional column. The design and the use of carbon-fibre means it's relatively light, too. With legs fully extended, the height of 138cm is useful and can be raised further to 171cm via the centre column. It's sturdy and well designed, with foam covering much of the upper leg section. Combine it with one of the heads below and you've a versatile outfit.

Manfrotto 055CXPRO3 E220

- Length (closed): 66cm
- Height (legs extended): 175cm
- Number of leg sections: 3 Weight: 1.7kg
- Maximum load: 8kg Website: www.manfrotto.co.uk

Manfrotto is actually part of the same company as Gitzo, owned by the UK-based Vitec Group. Between them, they've got everything covered. This Manfrotto, part of the popular 055 series, is a decent size for serious work, similar to the Giottos MTL 8261B, and capable of handling all but the heaviest outfits. It's available with three or four-section legs, with or without the tilting column. This is a simplified version of the tilting column idea, and while it can only be locked upright or horizontal, in practice that doesn't compromise versatility. You can still get to ground level by adjusting the height with the normal leg levers or by selecting one of the four leg angle positions.



Manfrotto 190CXPRO3 + 494RC2 head £250

- Length (closed): 58cm
- Height (legs extended): 146cm
- Number of leg sections: 3 Weight: 1.62kg
- Maximum load: 5kg Website: www.manfrotto.co.uk

This Manfrotto is light and its sleek design looks fantastic. Despite its thin legs, it was sturdy and supported our test camera with ease. The twist locks are strong and quick to use. The central column can be raised and moved into horizontal position without removing it from the legs, making the tripod perfect for macro and low-level shots. The multi-position leg locks have a depressible button, making them easier to use than those with clips that must be lifted. The ball-and-socket head is smooth and one switch controls everything, so it's ideal for quick positioning, but not as precise as some of the other heads on test. There is a spirit level and a bag hook.



Giottos Vitruvian VGR8255 kit £260

- Length (closed): 40cm
- Height (legs extended): 136cm
- Number of leg sections: 5 Weight: 1.28kg
- Maximum load: 4kg Website: www.giottos-tripods.com

The legs of the Vitruvian fold 180° to surround the centre column, reducing the length to 40cm. Open the legs and it extends to an impressive 1.36m (1.57m with centre column raised, too). Made from six-layer carbon-fibre, it's lightweight and stable with aluminium alloy in the main casting increasing robustness. Twist locks are fast and easy to use and the centre column can be removed to turn it into a monopod. The supplied ball-and-socket head moves smoothly and has a friction lock, spirit level and quick-release plate with safety lock. A maximum load of 4kg makes this a suitable choice for most. There's also a cheaper aluminium version (VGR9255).



Gitzo GT3541 Mountaineer **£600**

- Length (closed): 54cm
- Height (legs extended): 168cm
- Number of leg sections: 4 Weight: 1.9kg
- Maximum load: 18kg Website: www.gitzo.co.uk

You can tell this is a really good tripod just by looking at it. Another clue is the price. Gitzo makes nothing but the best tripods, and while some Chinese clones run close by on performance, and beat them on price, there's none better than this classy Italian brand. Weight is low, yet everything feels taught, rigid, locking solid. Making a good tripod is not rocket science; they all have three telescoping legs hinged to a central camera platform. The difference is in the design integrity of the joints, quality of materials and manufacturing precision. Gitzo has all that totally sorted If £600 is too much, Gitzo's aluminium and basalt versions are significantly cheaper and only a bit heavier.



Giottos MH 5001 head **E55**

- Weight: 848g
- Height: 109cm
- Base diameter: 59mm
- Maximum load: 6kg
- QR system: Giottos
- Website: www.giottis-tripods.com

This three-way Giottos head is substantially built, getting on the heavy side, and with large handles that offer plenty of leverage for fine control - although they can be unscrewed for

packing away and storage. Where it scores over the Manfrotto 804RC is in the smoothness of operation. It doesn't really make that much difference for stills, but it's not far off the standard of a fluid damped head, offering just the right amount of gentle resistance as you pan, without any jerkiness. . So if you're amongst the growing ranks of photographers who like a bit of video, too, the Giottos makes for a more versatile choice

Slik SBH-280E F90

- Weight: 303g + 39g
- Height: 100cm
- Base diameter: 51mm Ball size: 25mm
- Maximum load: 5kg
- QR system: Slik 6183
- Website: www.intro2020.co.uk

Very well made, with a design that's slightly unusual, the Slik SBH-280E head comprises one large knob to control everything, including locking the smallish 25mm ball. It's rated for a modest 5kg load but can take much more. This is a tough head and works well. There's minimal It's nice to use, too. The main knob has a finely machined grippy

shift on locking down - in fact, we found it to be one of the best tested. surface, locking solid in only 1/8th of a turn. The quick-release plate has a non-slip cork surface and drops easily into place as the lever snaps shut. All in all, this is a good offering from Slik at a reasonable price



Bags and baekpaeks

Expert advice on storage to protect your camera gear

MOST OUTDOOR PHOTOGRAPHERS prefer backpacks as they distribute weight over your shoulders and back, making it far easier to carry gear over long distances. The daypack holds photo gear in the bottom section and general items in the top compartment, while dedicated photo backpacks are designed with larger kits in mind. Consider the following:

- Comfort: As you carry more kit, the weight increases, so shoulder straps are important. The wider and more padded they are, the less they dig into your shoulders. Waist straps are useful, as they relieve tension from the lumbar region and help keep your back straight. Another important factor is the bag's frame. Some are sturdier than others which may seem uncomfortable at first, but it helps keep your back straight on long treks.
- Capacity: Think about how much kit you plan to carry. All the bags here have adjustable compartments, so are quite versatile.
- Build quality: How well the backpack is put together, including the stitching, zippers and weatherproofing, determines how long it ought to last, how strong it is and how well it protects your equipment.
- Features (see panel below): Some photographers just want a bag with lots of space, others are more demanding over specific features. Most have front pockets, designed to help you organise your memory cards and batteries into used and unused.
- Price: We have stated the average street price from a number of popular retailers and not the manufacturer's guide price.

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- 1) Straps Check to see if the straps are adjustable, padded and wide to stop them from cutting into your shoulders on long journeys. Also look for waist straps.
- 2) Padding Some bags have pressure pads on the back, which will take a lot of the strain out of long journeys and spread the weight of the gear over a larger area.
- 3) Storage/capacity Does the bag hold all the equipment you need for your photography? If there is too much empty space, the bag will be unbalanced, which can be bad for your back. All the bags featured here have adjustable dividers and offer quite a bit of versatility.
- 4) Weatherproofing/rain cover Most bags are weather resistant. Some are weatherproof, and others have all-weather covers that can be pulled out from a hidden compartment, usually on the base.
- 5) Laptop compartment Make sure that the laptop compartment is big enough for your computer, as they vary in size. The padding is also important here.
- 6) Accessory clips Some bags allow you to attach further bags, tripods and monopods, but be aware that some are only compatible with the bag manufacturer's own clip systems
- 7) Zips If you go out a lot in bad weather or near water, make sure that the zips are up to it. Wildlife photographers should also consider the noise made by the zips as animals can be easily frightened off.



Fitting and wearing a bag properly

If you're carrying a lot of heavy kit, it's important that your bag sits correctly on your back or at your side. This advice can prevent all kinds of back and posture problems. With a backpack, ensure that both straps are over your shoulders and tightened so that the bag sits in the centre of your back. If it has waist and chest straps, make sure you use them to distribute the weight evenly across your back, rather than just your shoulders. For shoulder bags, pull the strap over your head to the opposite shoulder. This should distribute the weight better than if it were on the closest shoulder and stop it from slipping off your shoulder or being easily snatched.





Lowcpro CompuDay Photo 250 E50

Dimensions: 40x32x18cm

Weight: 900a

Warranty: Lifetime

Contact: 01902 864646

Website: www.lowepro.com

This laptop bag has plenty of room for everyday items and a padded side compartment big enough for a DSLR with standard zoom. While the camera aspect is not exactly an afterthought, the large and deep main compartment is better suited to a flask and sarnies than anything specifically photographic. There are no dividers, but there's room for a spare lens or flashgun if protected in a soft wrap. The top zip also has a rain flap. It's a great concept for carrying a camera alongside your general workday kit. There are pockets for



documents and a separate interior bag for a laptop charger and leads. The harness is simple, just shoulder straps, though the contoured shape makes it easy to carry the bag over one shoulder with quick access to the camera.

Lowcpro Flipsidc 400 AW E90

Dimensions: 45x30x24cm

Weight: 1.540a

Warranty: Lifetime

Contact: 01902 864646

Website: www.lowepro.com

This is a serious backpack, designed for carrying lots of camera gear with comfort and security. The whole of the back unzips to open a storage area the full size of the bag, large enough for a couple of cameras, four or five lenses up to almost any length, flash and accessories. When you're carrying it, there's no access to the main compartment for you or anyone else. Comfort is assured by shoulder straps and a chest strap, the waist band is deep and heavily padded, and includes accessory loops. Lowepro claims you can rotate the bag around to your front and

access gear while it's attached to your waist, but that's asking a lot when it's full. The front compartment is quite shallow and thinly padded, but deep and large enough for small personal items and an iPad, but not a laptop.



Vanguard UP-Rise 45 E90

Dimensions: 43x32x22cm

Weight: 1,600g

Warranty: Limited lifetime Contact: 01202 651281

Website: www.vanguardworld.co.uk

The UP-Rise tag refers to Vanguard's expansion system, supposedly unzipping extra space when needed but, in practice with the 45, it makes barely any difference. Not that it is short on space, or features. The main compartment is large enough for a DSLR with up to 70-200mm zoom attached, plus two or three extra lenses and a flashgun. Grabbing the camera through the side flap is easy, with lesser-used items accessed by unzipping the back. The padded top compartment is large, and the bottom can be detached to swing down and form one very large holdall. There

are a number of thoughtful touches, like the camera compartment secured with fast-pull twin zips, plus Velcro and a clip. There are dual grab handles, a rain cover and a good tripod slot with adjustable straps.

Vanguard Heralder 33 [£100]

Dimensions: 42x27x35cm

Weight: 1,620g Warranty: Lifetime

Contact: 01202 651281

Website: www.vanguardworld.co.uk

You get a lot for your money just crammed with features, too many to mention here. Take for granted that this is a big bag with all the normal stuff, plus a generous helping of extras. For instance, the top zip opens wide for direct access to the main compartment, which can be removed completely so that the bag becomes a general holdall. The padded laptop pouch lifts out, too. A decent-sized tripod sling appears

like magic from the front, and a rain cover from the back. The shoulder strap has an extra support strap that you may need when this heavy bag is full (or go for the optional-extra full shoulder harness) and there's a handy mini-bag included for things like batteries and cables, too.



Tamrac Evolution 6 £120

Dimensions: 42x26x19cm

Weight: 1,510a

Warranty: Lifetime Contact: 01628 674411

Website: www.intro2020.co.uk

This is one of Tamrac's clever Evolution series, which includes two larger versions in the range. There are three ways of carrying it: as a backpack, or as either a left- or right-handed sling. There are three entry points to the main camera compartment: from both sides and the front. It works well as a sling for fast access, with the other shoulder strap and waistband tucked away behind the rear padding. Camera access is through the side, where there's room for a DSLR and medium-sized zoom. There's also enough space for another lens or maybe two, plus

flash, and you can get at those either through the front flap, or from the opposite side. The top compartment has useful extra capacity, wide enough for a 70-200mm zoom. The outer is well padded, but any equipment in there would need its own protection.

Lowepro Pro Runner 450 AW E125

Dimensions: 34x29x50.5cm

Weight: 2.700a

Warranty: Lifetime

Contact: 01902 864646

Website: www.lowepro.com

The Pro Runner 450 AW holds a lot of gear, with room for two large DSLRs with zooms attached, and space for several extra lenses, flashguns, a third body and a 17in laptop, too. The shoulder straps are thickly padded and adjustable, and the waist belt and carry handle will be appreciated when carting about all that weight. The compression straps help reduce the bulk on the 450 AW for easier transportation, there's a built-in all-weather cover and loops are handy for carrying a tripod. The front pocket will hold a few personal items, the

three internal pockets feature windowpane panels to help keep things like filters on display, and there are two dedicated memory card pouches, too. This bag is a great option for carrying a large outfit as well as personal gear.



Dimensions: 28x33x51cm

Weight: 900g

Warranty: Lifetime Contact: 01628 674411

Website: www.intro2020.co.uk

Tamrac's Adventure range includes four backpacks and this is the smallest, with light weight and mobility in mind. It features a clamshell design - the main compartment unzips and hinges open to reveal a modest space just big enough for a smaller DSLR with kit zoom and maybe an extra lens or flash, but no more. Protection is good. The top compartment is roughly the same size, and large enough for lenses up to a 70-200mm zoom, plus another lens or a flashgun, but the outer fabric has no additional padding. The front pocket takes a



couple of filters and a phone, and drinks can be tucked into the side pockets. The harness makes no concessions to size, offering good support and comfort. It's a full three-point jobbie with adjustable chest and waist straps, including accessory loops.

Tamrac Ultra Pro 13 £160

Dimensions: 46x31x31cm

Weight: 2,584q

Warranty: Lifetime Contact: 01628 674411

Website: www.intro2020.co.uk

This Tamrac bag is suited to larger outfits. Instead of a separate laptop case, there's a large slot in the front, plus two good ZipDrop front pockets and two more under the lid, all with Tamrac's see-through Windowpanemesh. When the bag is set down and open, there's good access to everything. The standard layout is to have two pro-size DSLRs with lenses attached across the top, though



the dividers can be customised. The top is secured by a zip, four clips and Velcro tabs to take the weight, with a large central handle. The rain cover is in an accessory pouch on the side where there are twin loops at either end. Tamrac's Strap Accessory System is similar to Lowepro's SlipLock and Think Tank Skins - good for expanding capacity



How to use your metering & White Balance cards

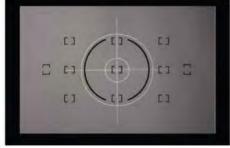
The 18% grey card can be used to ensure perfect exposures when shooting in tricky lighting conditions. Both reference cards can also be used to set a custom White Balance. Depending on the camera you use, you need to take a White Balance reading off the grey or the white card (your camera's instructions will show you how)

CANON Digital SLRs use sophisticated exposure systems and all work using the same assumption that the average of the scene that is being metered from is a mid-tone, or 18% grey to be exact; ie the average of all dark, light and mid-tones mixed together is 18% grey. It's the basis of all metering patterns and works surprisingly well, but while it's fine for the majority of shooting situations, it can lead to incorrect exposures when the scene or subject is considerably lighter or darker in tone than 18% grey. For example, very dark areas can fool the metering system into overexposure. Similarly, very light subjects, such as a snow scene, can fool the camera into underexposing them – making them appear darker than they are – as the light meter will take a reading designed to render them as a mid-tone. As a camera is trying to render an image 'grey', it's your job to ensure you compensate to keep the tones true to life. You can do this by using one of your DSLR's exposure override facilities, such as exposure compensation or

the AE-Lock button, or by metering from an area of the scene that has a mid-tone. And that's where our grey card comes in. Using it is very simple as our step-by-step guide below illustrates. Remember that you need to place the grey card in similar lighting to your scene: for instance, don't place it in a shaded area if your scene is bathed in sunlight. Also make sure that the card fills the metering area - we recommend you use spot or partial metering as the card won't need to fill the entire image area, but any is suitable. You can either lock the exposure using your camera's AE-Lock facility or note the aperture and shutter speed, and then switch to manual mode and set these (although this method isn't suitable to days where lighting is variable). The card has AF reference lines to help your camera's autofocus lock on to it. However, you don't necessarily need it to be in focus to work correctly. The grey card (as well as the white card) can also be used to take a custom White Balance reading from, too.



Getting started Place your grey card on the ground angled towards you and ensure it's located in a spot that is bathed in the same light as the majority of the scene you plan to shoot.

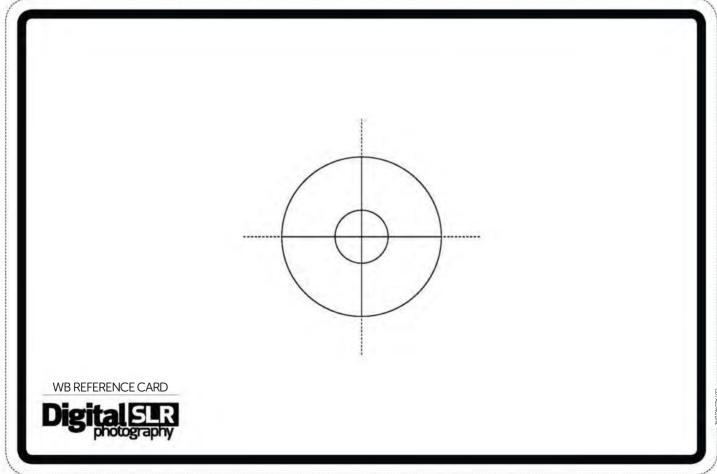


7 Take a meter reading Ensure that the entire metering area is filled by the grey card (in this instance we're using multi-zone metering) and lock the exposure with the AE-Lock button.



Compose & shoot With this exposure locked, you can compose your scene and take your shots. When you check it on your LCD monitor, the exposure should be perfect.









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