MAGBOOK

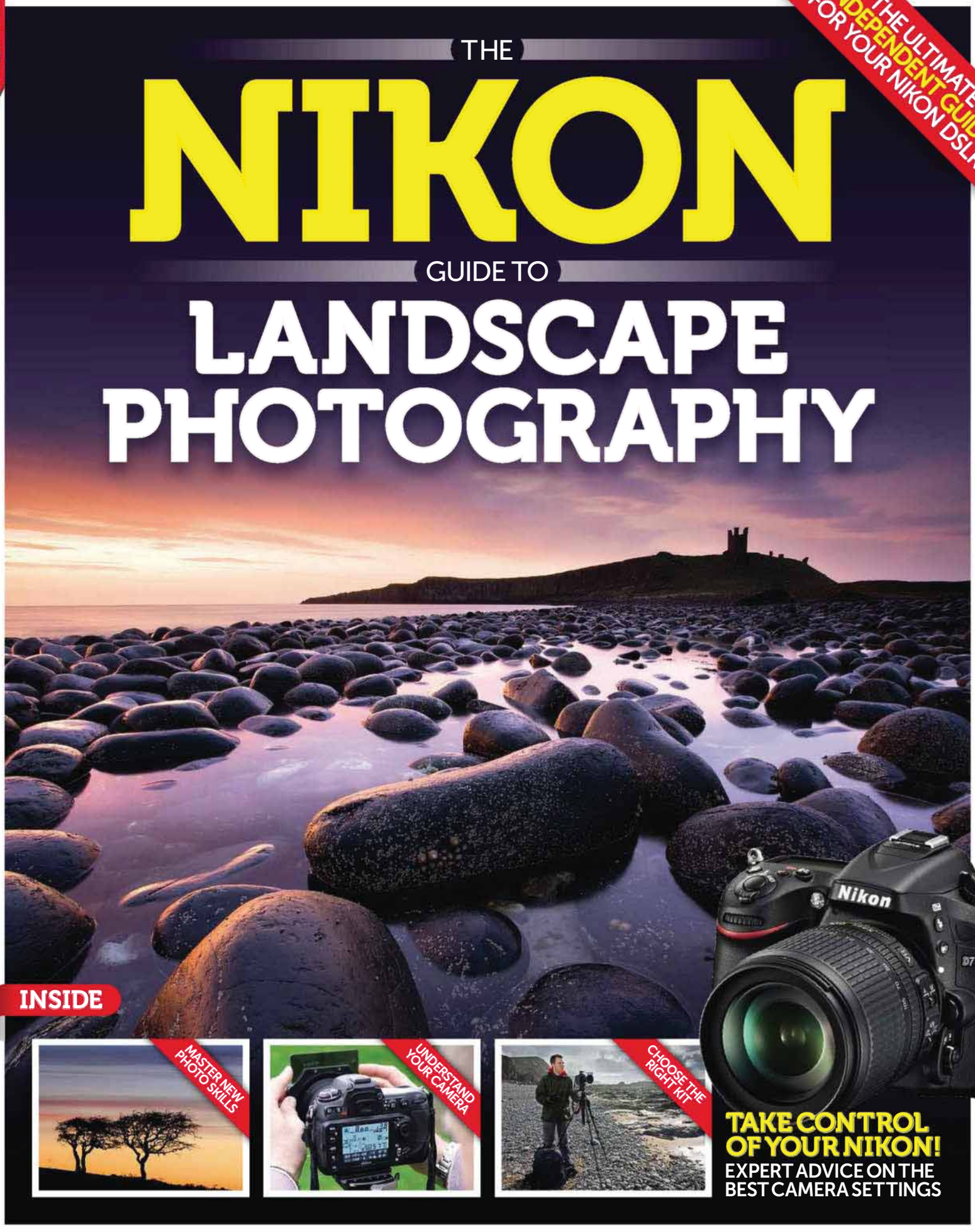
THE ULTIMATE INDEPENDENT GUIDE FOR YOUR NIKON DSLR

THE

NIKON

GUIDE TO

LANDSCAPE PHOTOGRAPHY



INSIDE

TAKE CONTROL OF YOUR NIKON!

EXPERT ADVICE ON THE BEST CAMERA SETTINGS

LEE FROST

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 *Nikon Guide to Landscape Photography* has been produced to allow Nikon DX and FX-format DSLR users to make the most of their Nikon 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 Nikon 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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Ross is an award-winning photographer with many years of experience capturing the diverse beauty of Britain's landscapes and wildlife.
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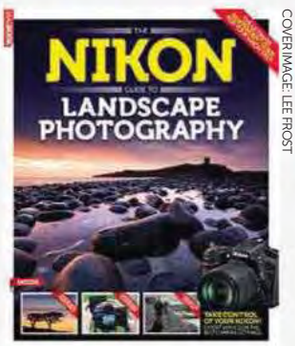

COVER IMAGE: LEE FROST

The Nikon Guide to Landscape Photography (First edition)
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The Nikon Guide to Landscape Photography ISBN 1-78106-344-6

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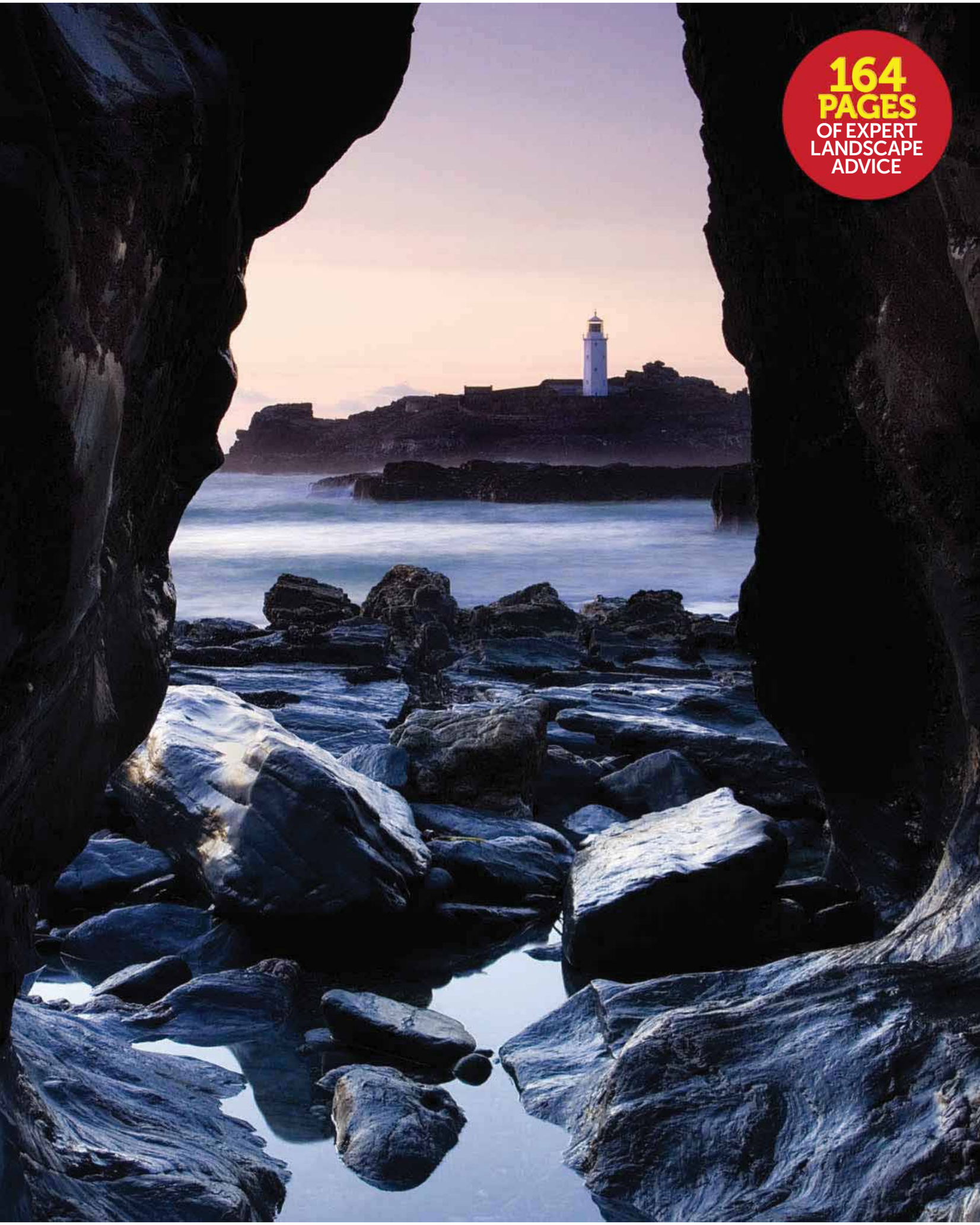
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ADVICE

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At the heart of the image

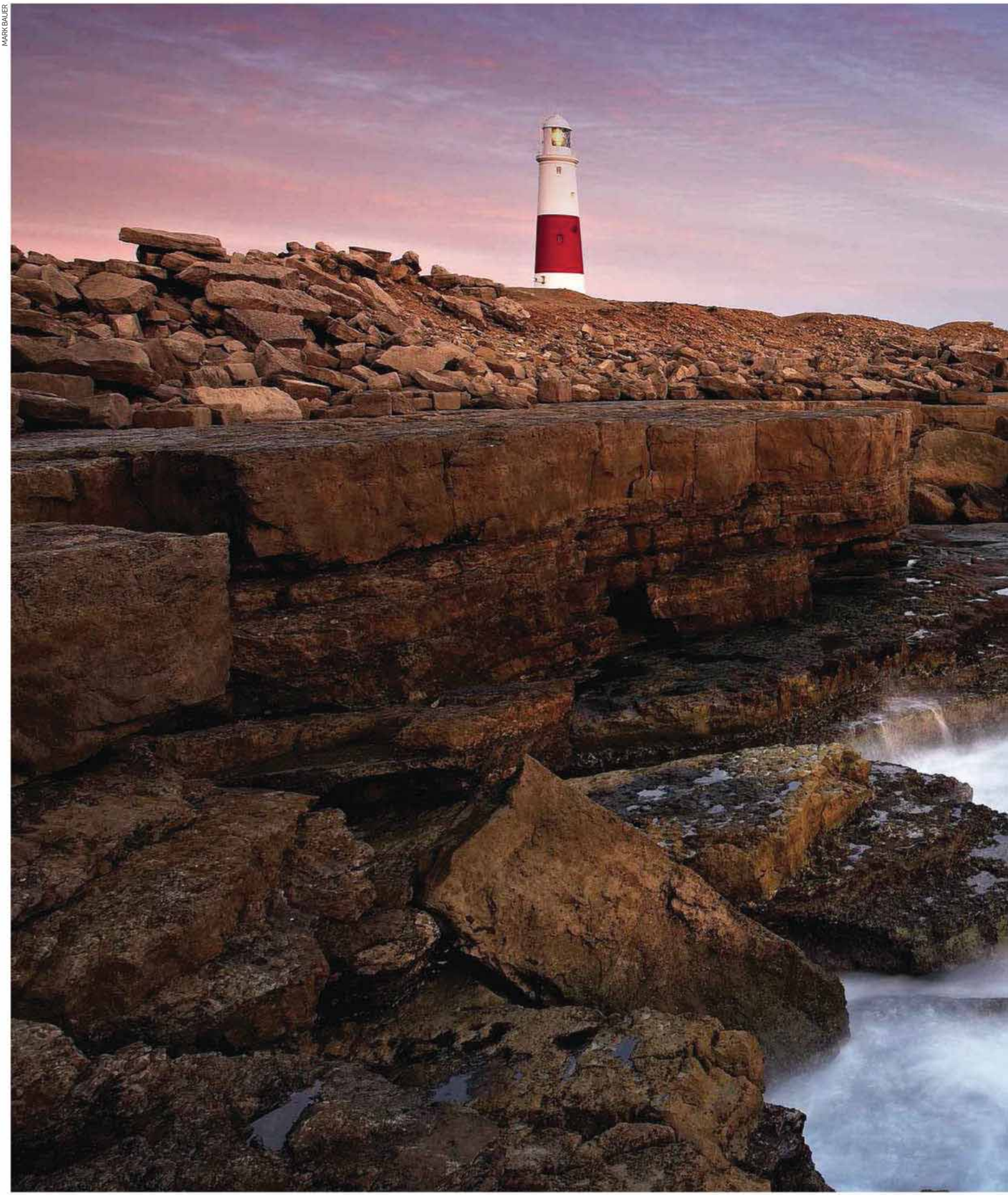
Nikon

THE BASICS

CAPTURE STUNNING LANDSCAPES – we all want to be able to 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.

ADAM BURTON

MARK BAUER



Composition

Learn the art of composition and you'll be halfway there to taking brilliant photos

MORE THAN ANY other factor, composition can turn an average image into a masterpiece. There are a small number of techniques that, once learned, will serve you well in many different situations.

Composing the elements in the frame is an important skill of taking great pictures. You need to carefully consider how points of interest are arranged and how they relate to each other in the scene.

Placing a subject centrally in the frame usually results in a static rather than dynamic composition. Placing the subject off-centre encourages the eye to move around the frame more. One way of dividing the frame up to achieve harmony is to use the rule-of-thirds (see below). There is research to suggest that our brains are wired to find these arrangements more attractive.

The rule-of-thirds

This is a simple way of organising the elements in the frame so that they create a balanced composition. As a compositional tool, it's been around for a few centuries and is a simplified version of the 'golden section', which is used in art and architecture.

Imagine two vertical lines dividing the viewfinder into thirds. Now do the same with two horizontal lines. You then organise the main elements of the picture within this grid. For example, with a simple landscape, place the horizon on one of the lines so that you have two-thirds land and one-third sky, or vice versa.

If you have a strong focal point, such as a tree or building, you can place it on one of the points where the horizontal and vertical lines intersect. This will make a much more dynamic composition than if you were to place the focal point centrally, which can make a picture look rather static. Inexperienced photographers often put the subject right in the middle and it rarely works.

Moving an element of a scene to a different intersection can create a startlingly different image, such is the power of the rule-of-thirds. Don't be afraid to experiment with different variations on a theme.

RULE-OF-THIRDS GRID: This image follows the rule-of-thirds quite closely. There is approximately two-thirds land/sea and one-third sky. The lighthouse and obelisk are divided by the left vertical, each equidistant from it.

Foreground interest

As the world is three-dimensional but a photograph is two-dimensional, 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).

BOTH: MARK BAUER

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.

HELEN DIXON

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.

HELEN DIXON

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.

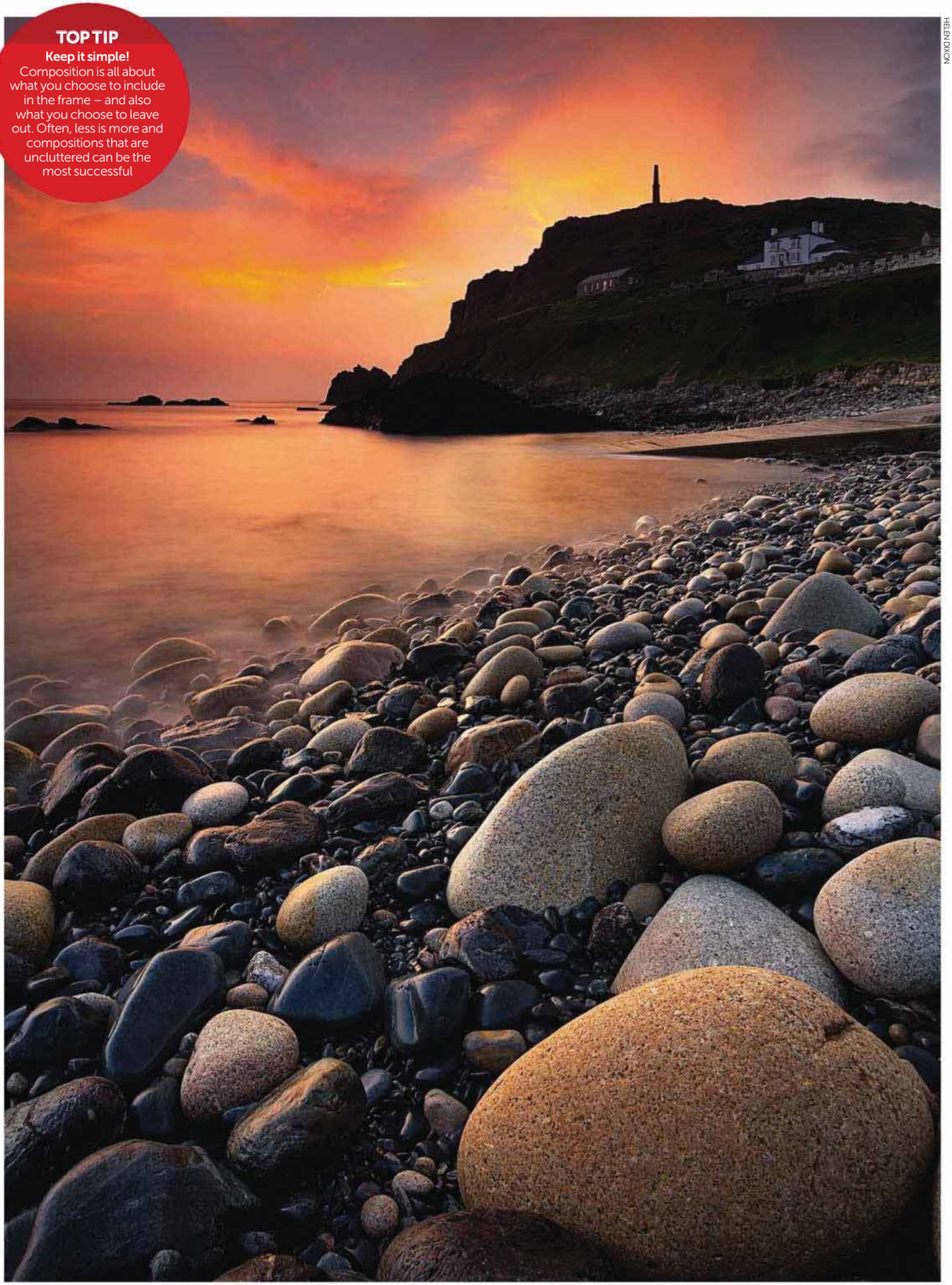
Layers and planes

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.

MARK BAUER



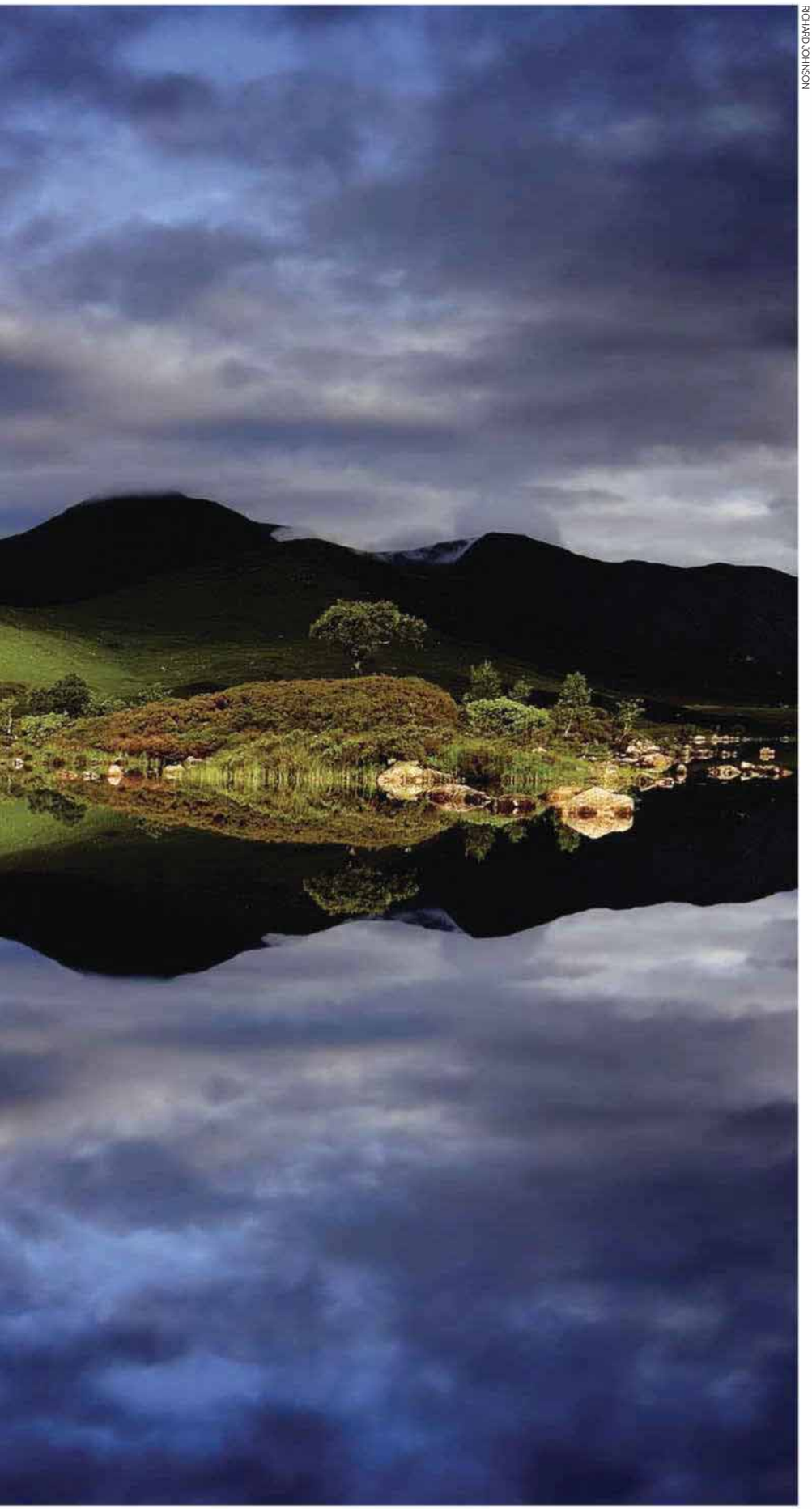
TOP TIP

Keep it simple!
Composition is all about what you choose to include in the frame – and also what you choose to leave out. Often, less is more and compositions that are uncluttered can be the most successful

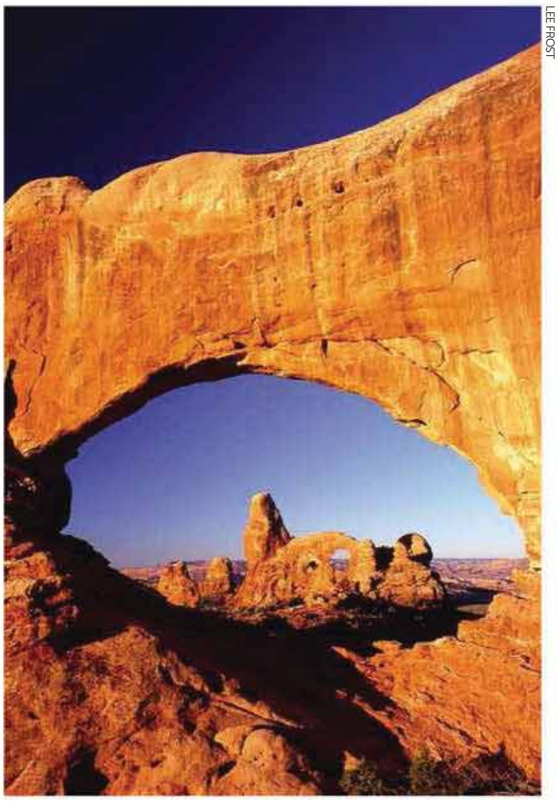
HELEN DIXON

Break the rules!
Like all rules, the rule-of-thirds needs to be applied with judgement rather than as a matter of course and there will always be situations where it can be ignored. For example, when shooting a scene where the sky is reflected in water, you might want to place the horizon across the middle of the frame, giving the two elements of the shot – sky and reflection – equal weighting.

If there is no interest in the sky, place the horizon higher in the frame or crop it out altogether. To increase a sense of emptiness and isolation, the horizon can be placed very low in the frame. The beauty of shooting digitally is the ease at which you can review your efforts and experiment to ensure the perfect composition.



RICHARD JOHNSON



LEE FROST

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.

BOTH: MARK BAUER

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 well-known 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 guises, 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.

ADAM BURTON

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.

HELEN DIXON

ROSS HODDINOTT

ADAM BURTON

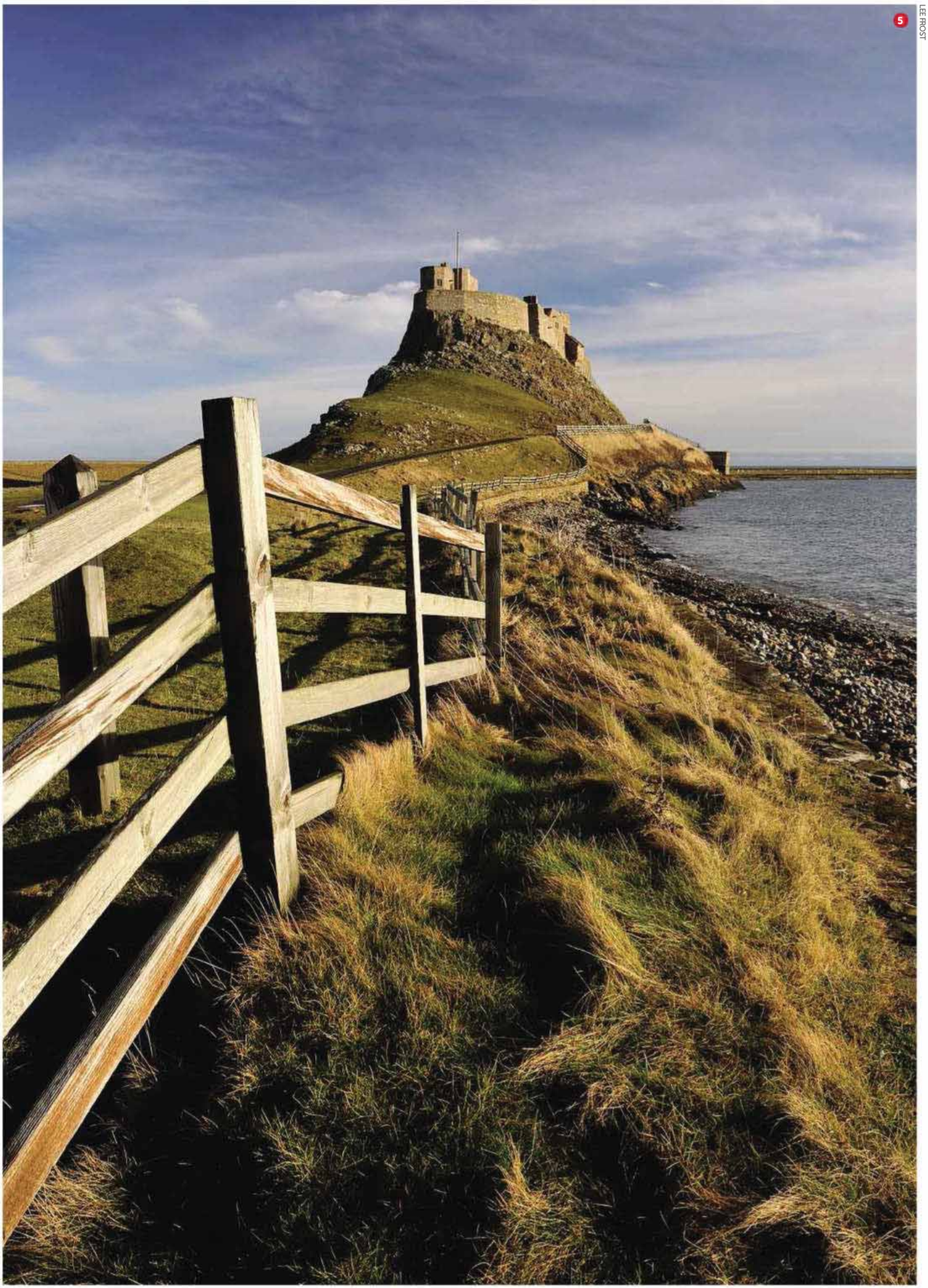
Think differently

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.


Shadows
HELEN DIXON


Texture
HELEN DIXON


Footprints
LEE FROST



LEE FROST

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 (24-27mm 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 (15-22mm 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.

ADAM BURTON

LEE FROST

LEE FROST

1) Use a wide-angle lens to 'stretch' perspective and a low viewpoint to make the foreground interest more prominent.

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.

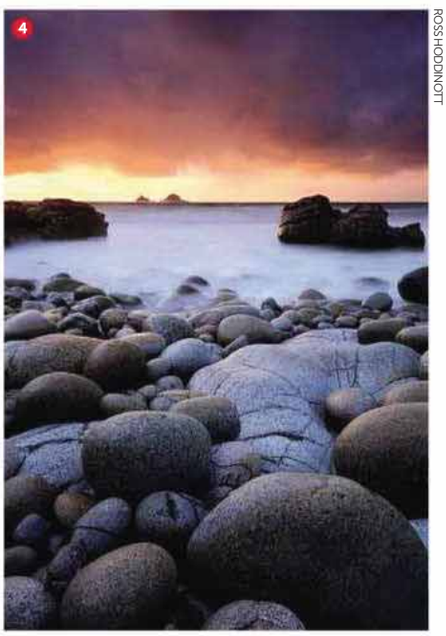
3) Instead of using foreground interest as a prelude to a distant focal point, try composing pictures where the dominant subject is in the foreground and keep the background simple.

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.

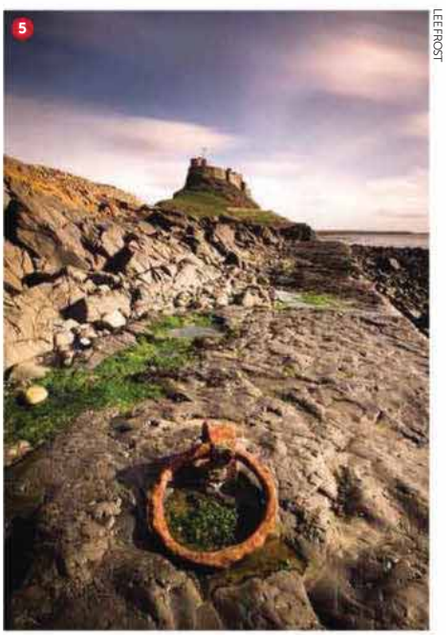
5) Practically anything can work as foreground interest, as long as it's composed well and fits with the rest of the scene. Look for unusual subjects or for objects that you may never have considered using before, such as driftwood, shells or wreckage remains.

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.

LEE FROST



ROSS HODDINOTT



LEE FROST

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.

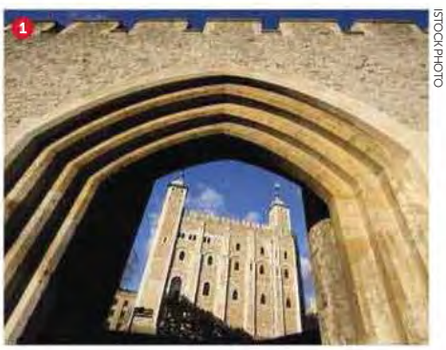
When shooting using a frame and the sun is behind you, light will fall onto the entire scene, so everything will be of a similar brightness and should record more or less as you see it. If you're shooting into the light, however, or the sun is to the side of the camera's position, the main part of the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

ISTOCKPHOTO

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.



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LEE FROST

LEE FROST

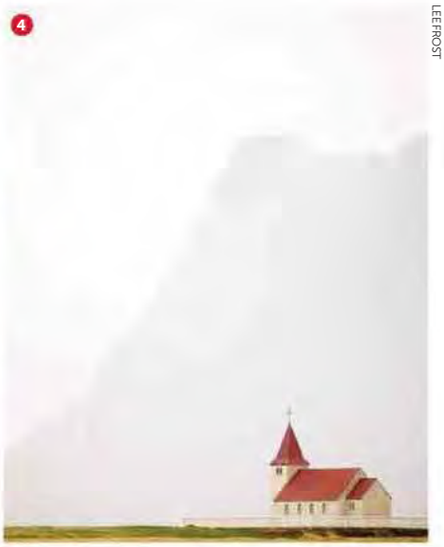
1) Using archways is something we've seen many times before, but they always lend themselves beautifully to frame a focal point. It works particularly well with this church because the detail in the frame complements the subject.

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.



LEE FROST

5

IAN WOOLCOCK

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:

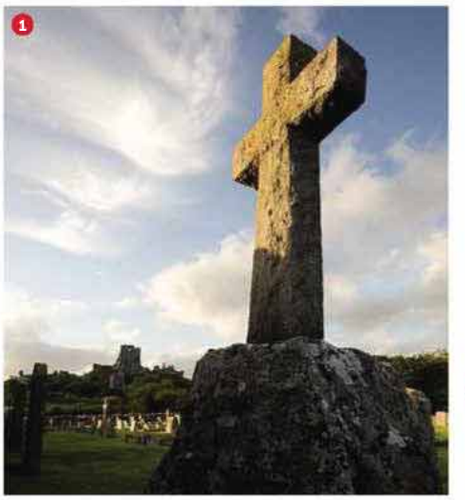
1) This is what the camera's multi-zone meter came up with, without the aid of any filtration. The scene is high in contrast, and the camera has struggled to capture all the tonal information.

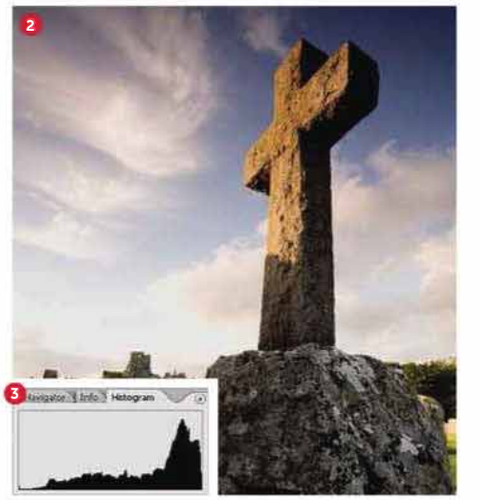
2) Spot meter readings from the base of the cross and the sky revealed a difference in brightness of about 4.5 stops. Setting an exposure for the land, I fitted a 0.9ND grad (three stops) and pulled it down below the horizon to the edge of the darkest shadow area. I used a soft grad so that it wouldn't 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.

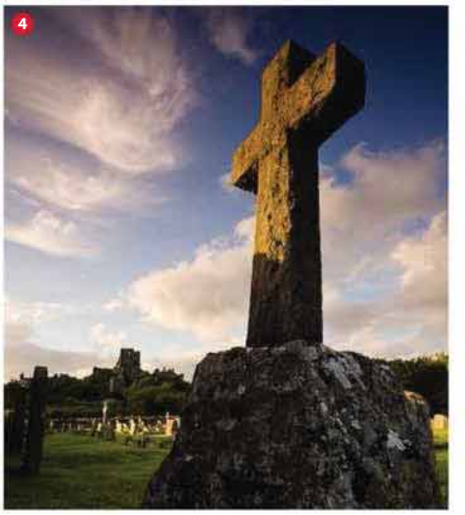
3) The result is that the image has now been 'exposed to the right' (see over the page for details), without 'clipping' the highlights. The histogram shows that there are still dark tones, but also plenty of information in the top section, and no clipped shadows.

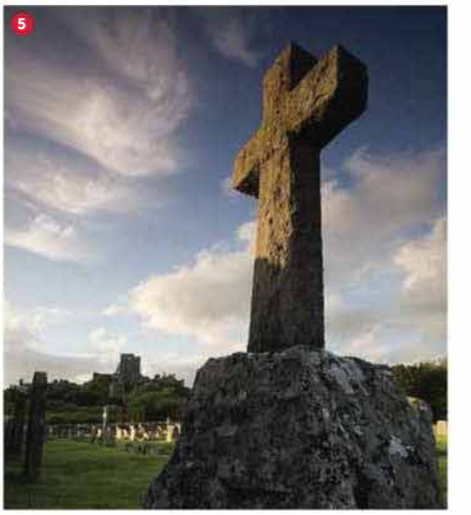
4) A straight conversion of the Raw file looks dull, the picture lacks contrast. For the final version, I've brought the exposure down slightly and added more contrast, especially in the shadows, to recreate the drama of the original scene. I've also tweaked the White Balance to add warmth and increased 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

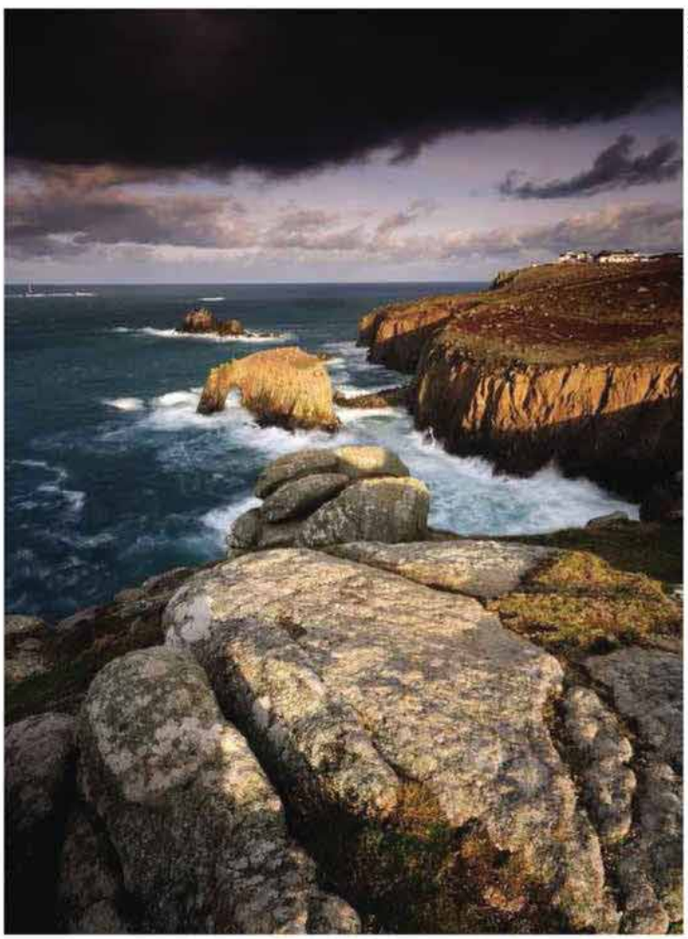
These two examples on the right show why it's not a good idea to underexpose your shot and then try to open up the shadows during post-processing. The nearest image is around one stop underexposed (to maintain highlight detail) and the shadow curve has been pulled up to match the exposure in the correctly 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.


HELEN DIXON

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.


ROSS HODDINOTT

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.


ADAM BURTON

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.

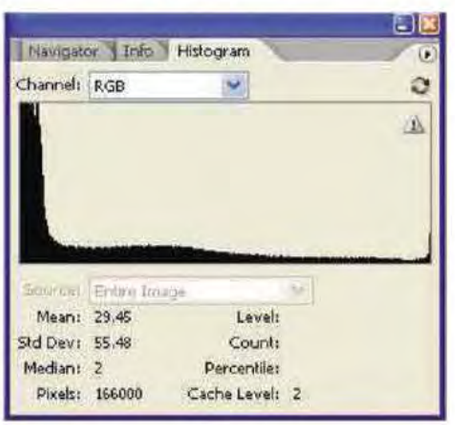
So what should a histogram look like? This is a tricky one to answer. Despite what some people may say, there is no such thing as the perfect histogram. It simply tells us how a picture is exposed, allowing photographers to decide whether – and how – to adjust exposure settings. Therefore, a histogram 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 Nikon 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.

Exposure warnings

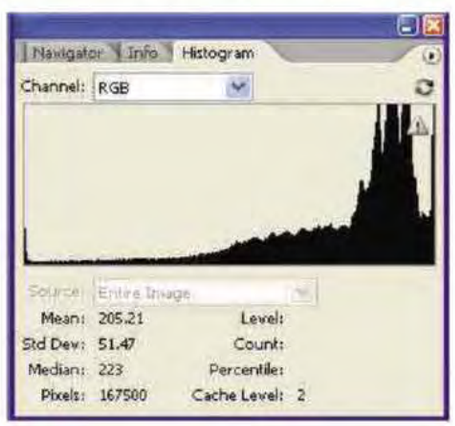
Most DSLRs are designed with a playback function known as the 'highlights screen'. While histograms provide a graphic illustration of an image's tonal extent, helping you assess exposure overall, the highlights screen – or highlights alert – helps photographers to avoid highlights burning out. White 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 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.

ROSS HODDINOTT



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.

TOP TIP

Colour histograms

Some DSLRs allow you the option to view separate histograms for the red, green and blue channels. You're better off ignoring this option and using the standard greyscale histogram

Expose to the right

'Exposing to the right' is fast becoming a widely accepted approach to help maximise image quality – although it only applies if you shoot in Raw. With this technique you effectively push exposure settings as close to overexposure as possible without actually clipping the highlights. The result is a histogram with the majority of pixels grouped to the right of the mid-point – hence the name 'expose to the right'. So, when you're confident you understand exposures well enough, give this technique a try and push the exposure as far to the right of the histogram as you can, without clipping the highlights. The image will probably look a little light once in the Raw converter, but this is easily corrected with the brightness and contrast controls, and will give much better results than trying to lighten a darker image.

CCD and CMOS sensors count light in a linear fashion. Most digital SLRs record a 12-bit image capable of recording 4,096 tonal values over six stops. But the tonal values are not spread evenly across the six stops; each stop records half the light of the previous one. So, half of the levels are devoted to the brightest stop (2,048), half of the remainder (1,024 levels) are devoted to the next stop and so on. As a result, the last and darkest of the six stops only boasts 64 levels. This might seem confusing but, simply, if you do not properly use the right side of the histogram, which represents the majority of tonal values, you are wasting up to half of the available encoding levels. If you deliberately underexpose to ensure detail is are retained in the highlights – a common practice among many digital photographers – you are potentially losing a large percentage of the data that can be captured.

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.

MARK BAUER

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 (S) 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.

ROSS HODDINOTT

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

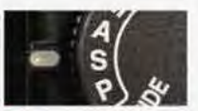
Choosing aperture-priority mode is simple – all you need to do is turn your exposure dial (or in some cases push the exposure mode button) and select A. Your Nikon digital SLR will then be set to aperture-priority mode and all you need to do is rotate the small adjustment dial (found either on the handgrip 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 modes 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.

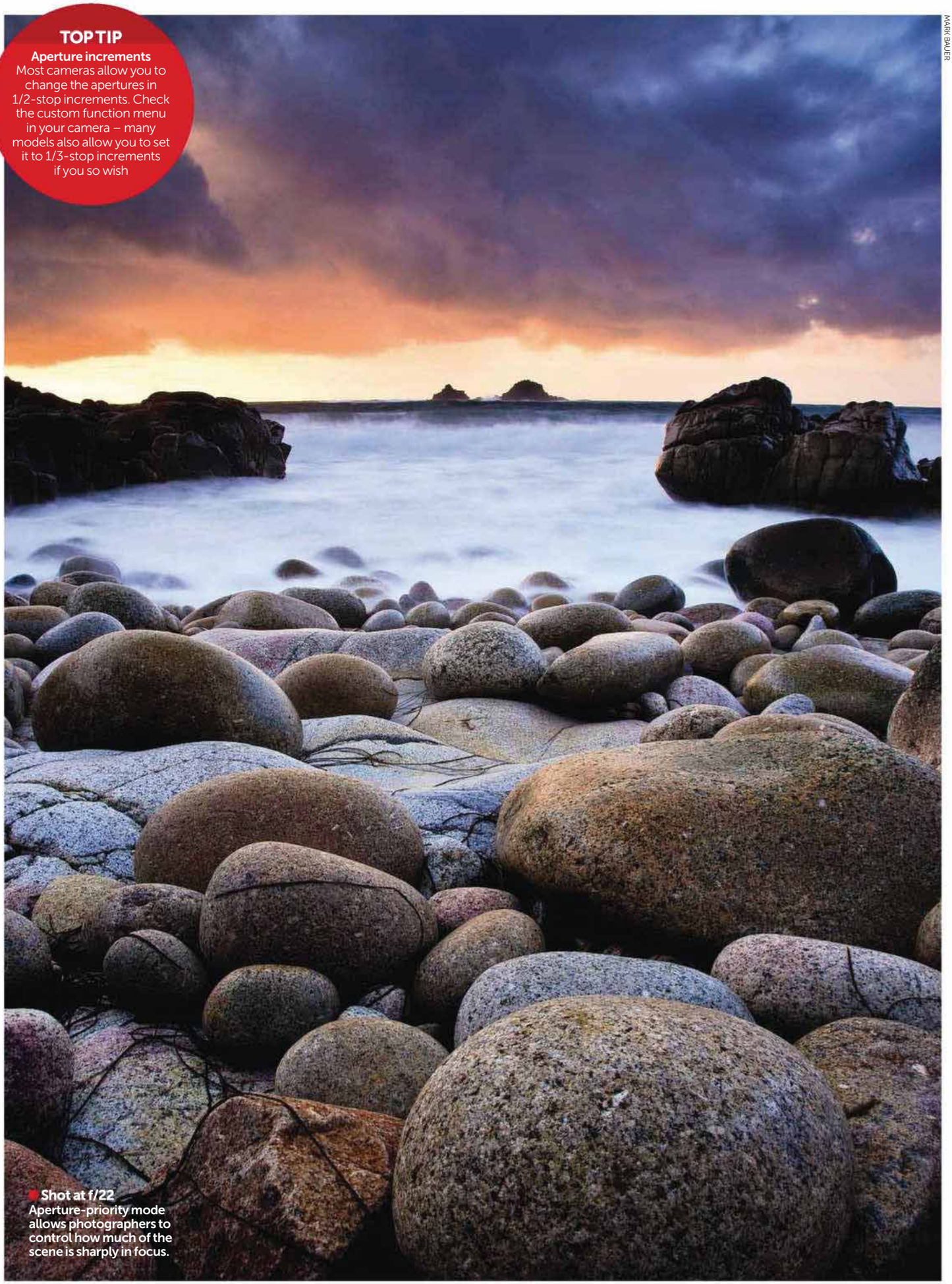
Metered manual
You manually set both the aperture and shutter speed independently of each other, so neither changes unless you adjust them, even if light levels fall or rise.

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.

TOP TIP

Aperture increments

Most cameras allow you to change the apertures in 1/2-stop increments. Check the custom function menu in your camera – many models also allow you to set it to 1/3-stop increments if you so wish



MARK BAUER

Shot at f/22

Aperture-priority mode allows photographers to control how much of the scene is sharply in focus.

Shoot landscape movement

Don't let a blustery day put you off from heading out with your DSLR. Grab your tripod and master capturing movement in the landscape

Ross Hoddinott
Camera: Nikon D800E
Lens: NIKKOR AF-S 16-35mm f/4G ED VR

When photographing landscapes, motion can prove a powerful aesthetic tool – giving your shots added interest, life and depth. By intentionally blurring motion, your images will appear less static and more atmospheric. Naturally, this technique relies on there being some degree of movement within your scene. By employing a relatively long exposure, any subject motion within the time the shutter is open will blur, creating dreamy, ethereal-looking results.

Without doubt, water is the most popular subject to blur. Look through the pages of almost any issue of *Digital SLR Photography* magazine and you will notice a number of waterfall and coastal images where a slow shutter speed has been employed to render water as a milky blur. Admittedly, the effect is one you either love or hate. The results can look amazing, though, and it is a popular technique among landscape photographers.

Water isn't the only subject that you can creatively blur. The landscape is full of movement and the same technique can be applied to such things as moving cloud or wind-blown grasses, flowers, leaves or crops. Using a slow shutter speed, foliage or crops swaying in the wind can create intriguing waving patterns in the foreground of wider views. Effectively, you are generating your own foreground interest. This type of implied motion can transform an otherwise mundane scene into one bursting with life.

Summer is a particularly good time of year for capturing this type of image, with trees in full leaf, meadows brimming with tall grasses and crops fully grown. You shouldn't have to venture far to find a suitable scene. In order to capture good images of motion in the landscape, a tripod is essential. Ideally, you also need a Neutral Density filter. These are designed to absorb light and therefore lengthen shutter time. They are available in different strengths. A filter with a three- or four-stop density is ideal. A polariser is also useful, as it also absorbs up to two stops of light. Ten-stop ND filters are popular, but their effect can prove too extreme, creating exposures so long that the subject becomes unrecognisable or important detail is lost.

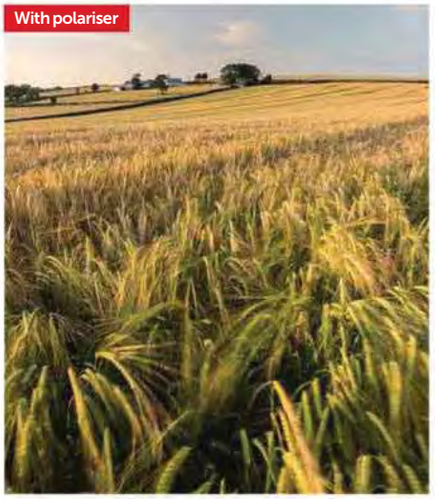
In addition to your camera, tripod and ND filter, you also need it to be windy! Look at the weather forecast and pick a day with a predicted wind speed of at least 15-20kph – this will create a nice level of motion.

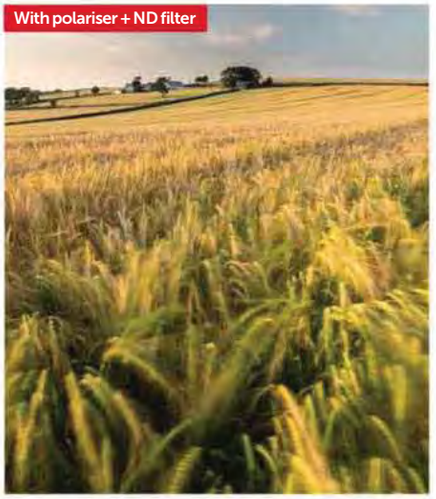
Check the weather

In order to photograph subject motion, you need wind. Keep an eye on the forecast and look for a day where the predicted wind speed is at least 15-20kph – this will create a good, constant level of subject movement. I rely on *www.metoffice.gov.uk* and *www.metcheck.com.*

A wide-angle lens, in the region of 16-28mm, is ideal, allowing you to fill your foreground with your subject in order to emphasise its movement. As your priority is a slow shutter speed, select your camera's lowest ISO speed, together with a small aperture of f/16.

The key ingredient to capturing images of motion is exposure length. The trick is to achieve enough motion that the effect looks creative and intentional – too little or too much and the shot won't work. Sadly, there is no magic formula here. The optimum shutter length will greatly depend on the amount the subject is moving and the effect desired. A degree of trial and error is often needed, but a good starting point is using an exposure of around 1/2sec. However, depending on the wind speed an exposure of several seconds may be required. Timing can also be important. If the wind is gusty, you will need to release your shutter to coincide with the gusts of wind. This type of motion shot is great fun, no two shots will ever be identical!





1 Set up On location, lock your camera on a tripod and compose the shot, filling the foreground with the gently swaying crop. Select a low ISO and a smallish aperture to drag out the shutter speed – I choose ISO 100 and f/16. The resulting shutter speed of 1/30sec is too fast to create any visible motion.

2 Use a polariser To create a longer shutter speed, I need filtration. I decide to attach a polarising filter – doing so absorbs a couple of stops of light and also boosts colours. Keeping the ISO and aperture constant, the shutter speed increases to 1/8sec. Movement is noticeable, but it doesn't look deliberate enough.

3 Use a Neutral Density filter To lengthen shutter speed further, I attach a three-stop ND filter. The resulting shutter speed is one second long. I trigger the shutter again and this time there is obvious subject blur. The effect looks deliberate and adds interest and implied movement to my foreground.

TOP TIP

Although tempting to select f/22 or f/32 to help generate a slow shutter speed, avoid doing so if possible – the softening effect of diffraction will grow obvious at very small f/stops.

Final image
Towards sunset, my exposure lengthens considerably. I continue to shoot, triggering my shutter to coincide with the wind.

Exposure: 20 seconds at f/16 (ISO 100)

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.


1/60sec


1/20sec


0.4 seconds

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-for-money price tag.

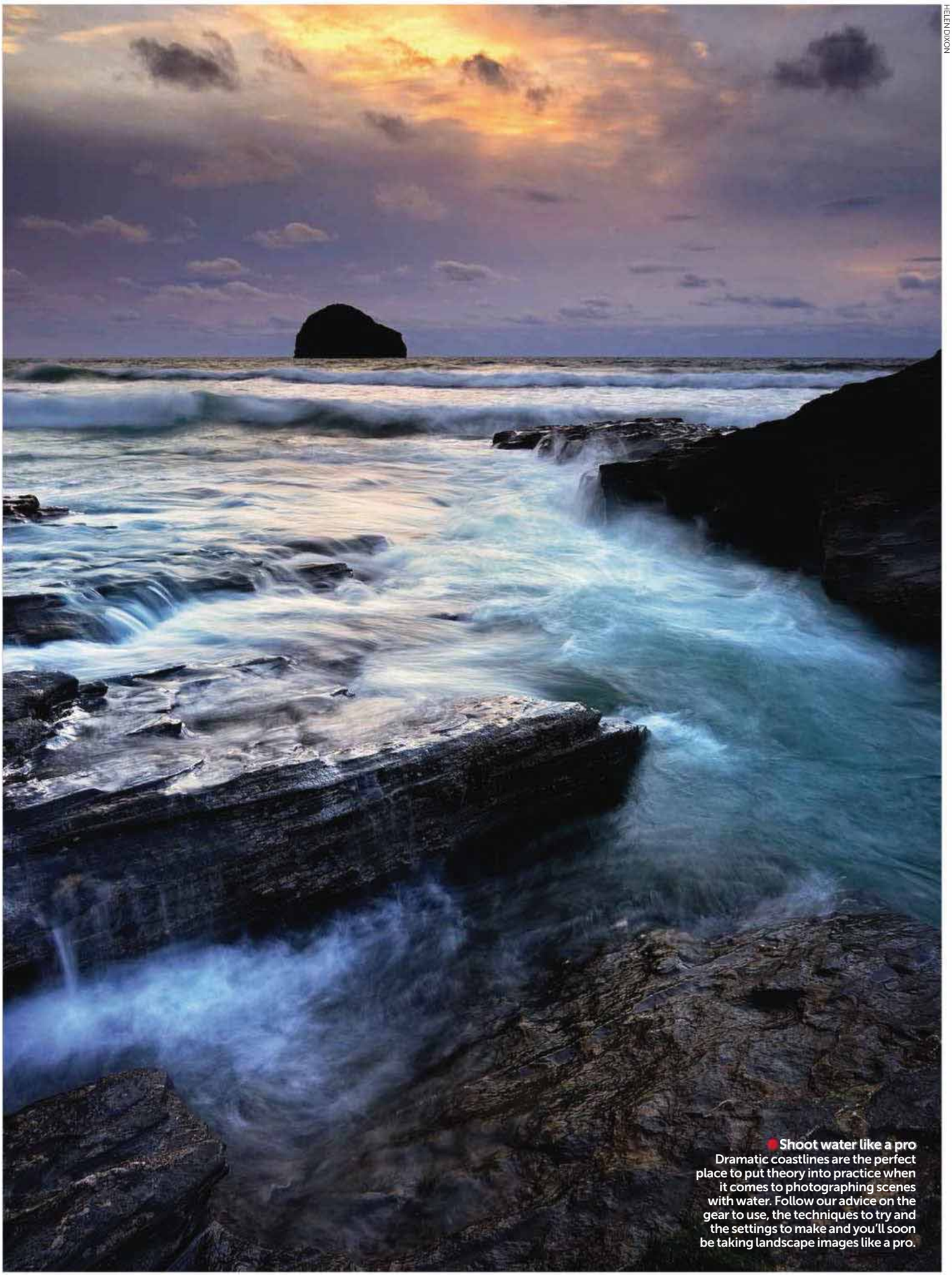
Spirit level: If your tripod kit has a spirit level, use it to ensure horizons are even – you don't want to spend ages in Photoshop levelling them if you can avoid it at the picture-taking stage. Otherwise, buy a basic £10 spirit level to slip into a hotshoe or treat yourself to a funky £30 Seculine 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-of-field 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.



HELEN DIXON

Shoot water like a pro

Dramatic coastlines are the perfect place to put theory into practice when it comes to photographing scenes with water. Follow our advice on the gear to use, the techniques to try and the settings to make and you'll soon be taking landscape images like a pro.

SIGMA

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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!

ADAM BURTON

How to maximise your depth-of-field

Including foreground interest can make it difficult to achieve front-to-back sharpness, but this guide will get you there...

Ross Hoddinott

Flick through the pages of any photo or country magazine, and you will quickly notice that foreground interest is an important component in the majority of great landscape images. It provides an entry point into the composition and helps add context, depth and interest to views. As long as it complements the overall scene, practically anything can work as foreground interest – rocks, a stone wall, winding footpath, colourful reflections or reeds. Flowers are another good subject to include in the foreground of your shots. Not only do they help to add scale to wider views, but they also add a welcome splash of colour. There is no better time of year than spring to look for flowers to include in your shots, particularly along the coast where pink thrift grows. Thrift can carpet clifftops, providing colour and interest to views of sandy bays and rugged coastline.

Including foreground interest typically requires a large depth-of-field to render everything from front to back acceptably sharp. Opt for a small f/stop in the region of f/16, but avoid stopping down even further as the effects of diffraction (softening of the image) will grow more apparent. You also need to select your point of focus carefully. Depth-of-field falls roughly two-thirds beyond the point of focus and one-third in front of it. Therefore, if you focus too far into the frame, you waste the depth-of-field available to you. A rough-and-ready method to maximise front-to-back sharpness is to simply focus a third of the way into the frame (see p34 for details). However, a more precise method is to focus on the hyperfocal distance (see panel). It seems like a complicated calculation, but it's much easier than you may think.

To help give your images a three-dimensional appearance, opt for an ultra wide-angle lens – in the region of 17-24mm – and get near to your foreground. This exaggerates the size of foreground subjects and stretches perspective, resulting in eye-catching shots.

Hyperfocal point

The hyperfocal distance is the point where you can maximise depth-of-field for any given aperture – everything from half this distance to infinity will be recorded acceptably sharp. Calculating and focusing on this point is important if you require extensive depth-of-field. Although the hyperfocal distance can seem daunting, it is not actually as complex as it first seems. If you use a prime lens with good distance and depth-of-field scales, simply align the infinity mark against the selected aperture. However, few modern lenses – particularly zooms – are designed with adequate scales, meaning photographers have to calculate it themselves. Thankfully, there are depth-of-field calculators and hyperfocal charts available to download online. Visit www.dofmaster.com – it also offers an app for your smartphone.

Below are two hyperfocal distance charts covering the most popular focal lengths and various apertures for full-frame and APS-C sensors. Photocopy or cut out the chart relevant to your camera type and keep it handy for when you come to compose and focus your shots.

APS-C size sensors

Aperture	12mm	15mm	17mm	20mm	24mm	28mm	35mm	50mm
f/8	3.2ft	5ft	6.4ft	8.9ft	12.6ft	17ft	27ft	55ft
f/11	2.3ft	3.5ft	4.5ft	6.2ft	9ft	12ft	19ft	39ft
f/16	1.7ft	2.5ft	3.3ft	4.4ft	6.4ft	8.6ft	14.5ft	27ft
f/22	1.2ft	0.9ft	2.3ft	3.2ft	4.5ft	6ft	9.5ft	19.2ft

Full-frame sensors

Aperture	16mm	20mm	24mm	28mm	35mm	50mm
f/8	3.8ft	5.6ft	8ft	11ft	17ft	35ft
f/11	2.6ft	3.9ft	5.8ft	7.8ft	12ft	25ft
f/16	1.9ft	2.9ft	4ft	5.5ft	8.5ft	17.5ft
f/22	1.4ft	2ft	2.9ft	3.9ft	6ft	12.5ft

1 Find your view Images lacking foreground interest can look flat and boring. Despite finding this impressive vista, by not including anything of aesthetic value in the foreground to complement the view and direct the eye into the photo, this shot is nothing more than a snap.

2 Alter your viewpoint By simply moving a few metres, my next image is much better. By including some flowering thrift in the foreground, the image immediately has more depth and interest. However, the sky is overexposed, so filtration or exposure blending is needed.

3 Set your exposure I take a meter reading from the sky and another from the foreground thrift. The difference in light is around four stops. I don't want to even out the light completely as our eyes naturally perceive the sky to be brighter than the land. Therefore, I attach a two-stop (0.6) graduated Neutral Density filter to help me record detail throughout the scene.

4 Perfect your composition With the correct exposure achieved, it is time to focus on composition. To place more emphasis on foreground, and to create depth, a low, close viewpoint is often best, together with a short focal length. I do this, opting for the wide end of my 17-35mm zoom. The nearest flowers aren't in sharp focus, though, due to inaccurate focusing.

5 Calculate the hyperfocal distance To ensure everything from nearby foreground to the distant view is acceptably sharp, focus on the hyperfocal distance. The chart tells me that, with a focal length of 17mm and aperture of f/16, the hyperfocal distance is just over 2ft. I manually focus the lens to this distance and reshoot. This time, I achieve front-to-back sharpness.

Final image
I switch to a vertical composition as the portrait format usually places more emphasis on foreground subjects. The thrift creates a logical entry point into the composition and directs the eye into the image. Remember, foreground interest shouldn't dominate the composition or be included for the sake of it – it should complement the view, creating depth.

Using small apertures

How to use small apertures for the sharpest landscapes

Lee Frost

We've already explained that small apertures give increased depth-of-field so you can record more of the scene in focus. Ideally, when shooting landscapes you want to record everything in focus, from the immediate foreground to the distant background. Stopping your wide-angle or zoom lens down to its minimum aperture – usually f/22 – and focusing on infinity is a rule of thumb that many use to achieve this. More often than not it works because wide-angle lenses give so much depth-of-field at small apertures. However, it's not best practice to always use the minimum aperture, as it doesn't always give you the sharpest results. The purpose here is to show how you can get the best from your apertures when shooting landscapes, without necessarily always resorting to the lens's minimum aperture.

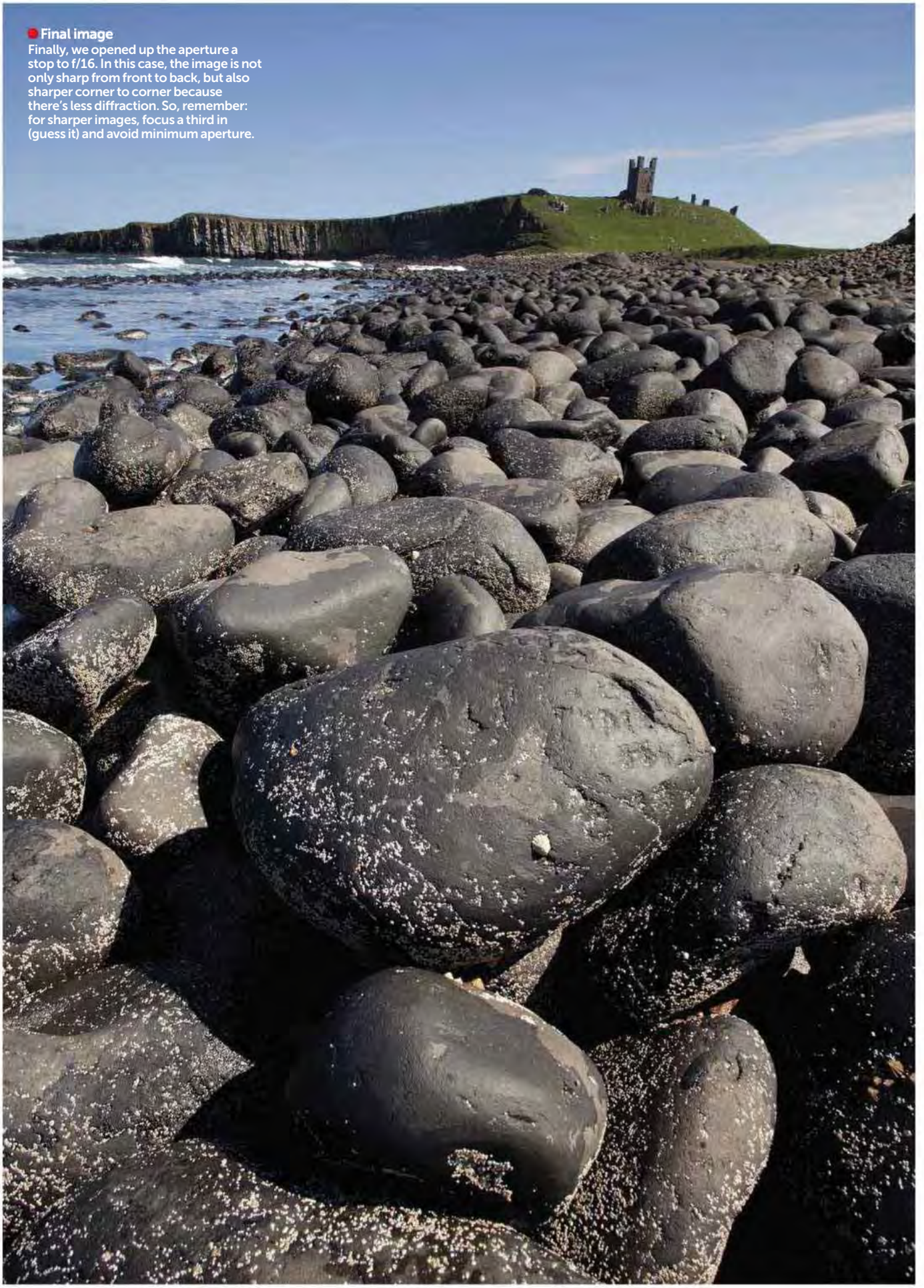
1 Wide aperture This scene was shot using a full-frame DSLR and ultra-wide-angle zoom set at 17mm. The lens was focused manually on the boulders nearest to the camera and the aperture was set to f/4 – the widest aperture. As you can see, the boulders in the foreground are sharply focused, but by the time we reach the middle distance, depth-of-field has run out and the castle in the distance is out of focus.

2 Focus on foreground Stopping the lens down to a smaller aperture will increase depth-of-field so that it extends further and further into the scene. However, with the lens still focused on the foreground, we need to stop right down to the minimum aperture – f/22 – before the castle in the distance is recorded in focus. This is because depth-of-field is reduced when the focusing distance is small, as it is here.

3 Focus on infinity The other option is to focus the lens on infinity, which is a technique that most photographers use when shooting landscapes with a wide-angle lens. If you do this and stop down to f/22 as in the example above, the whole scene is in focus because of the combination of an ultra-wide focal length, minimum aperture and the increased focusing distance.

4 Open up the aperture But do you really need to stop down to f/22 when focused on infinity? We shot this scene with the lens at infinity and opened up the aperture a stop at a time to see how wide open we could go with the aperture before the foreground started to slip out of focus. Actually, we couldn't open any wider than f/22 in this case either, so focusing close to the camera or far away is clearly not ideal.

5 Focus a third in Depth-of-field extends both in front of and beyond the point you actually focus on. That's why focusing on the foreground or at infinity doesn't work so well; you're wasting depth-of-field. So what about using the old trick of focusing a third into the scene? We tried that at f/22 and, as expected, everything is sharply focused because depth-of-field is being utilised more effectively.



Final image
Finally, we opened up the aperture a stop to f/16. In this case, the image is not only sharp from front to back, but also sharper corner to corner because there's less diffraction. So, remember: for sharper images, focus a third in (guess it) and avoid minimum aperture.

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 well-exposed 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

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 you can choose a suitable location.

Everything's rosy
The colours and textures in the sky can be spectacular, especially if you pick the moment as the sun rises above or falls below the horizon.

ALL IMAGES: LEE FROST

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.

GARY MCPARLAND

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!

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. I use 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.

HELEN DIXON

TOP TIP
Mirror lock-up
Many digital SLRs have a facility that allows the mirror to be raised prior to the exposure, to minimise shake when the shutter is fired. You'll most likely find this is activated via a Custom Function

Shining through
I waited for the sun to rise above the horizon – I used the small clump of trees to help diffuse the sunlight.

Exposure: 0.5 seconds at f/22 (ISO 100)

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 90º 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 eye 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.

MARK BAUER

TOP TIP

White Balance

The White Balance you set has a major effect on the final result. Avoid using the AWB setting. If you shoot in Raw, you can try out all the settings later on your computer and choose your favourite

Get your rocks off

The low sun picks out the details of the rocky ledge and gives the cliffs a warm glow. A 0.6ND grad, angled so as not to cut into the cliff, helps retain details in the sky.

Exposure: 1/5sec at f/16 (ISO 100)

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 sea-worn 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 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.

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.

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ROSS HODDINOTT

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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

Seasonal landseape 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...


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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


HELEN DIXON

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.


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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 quilts 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.


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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.


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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.


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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.

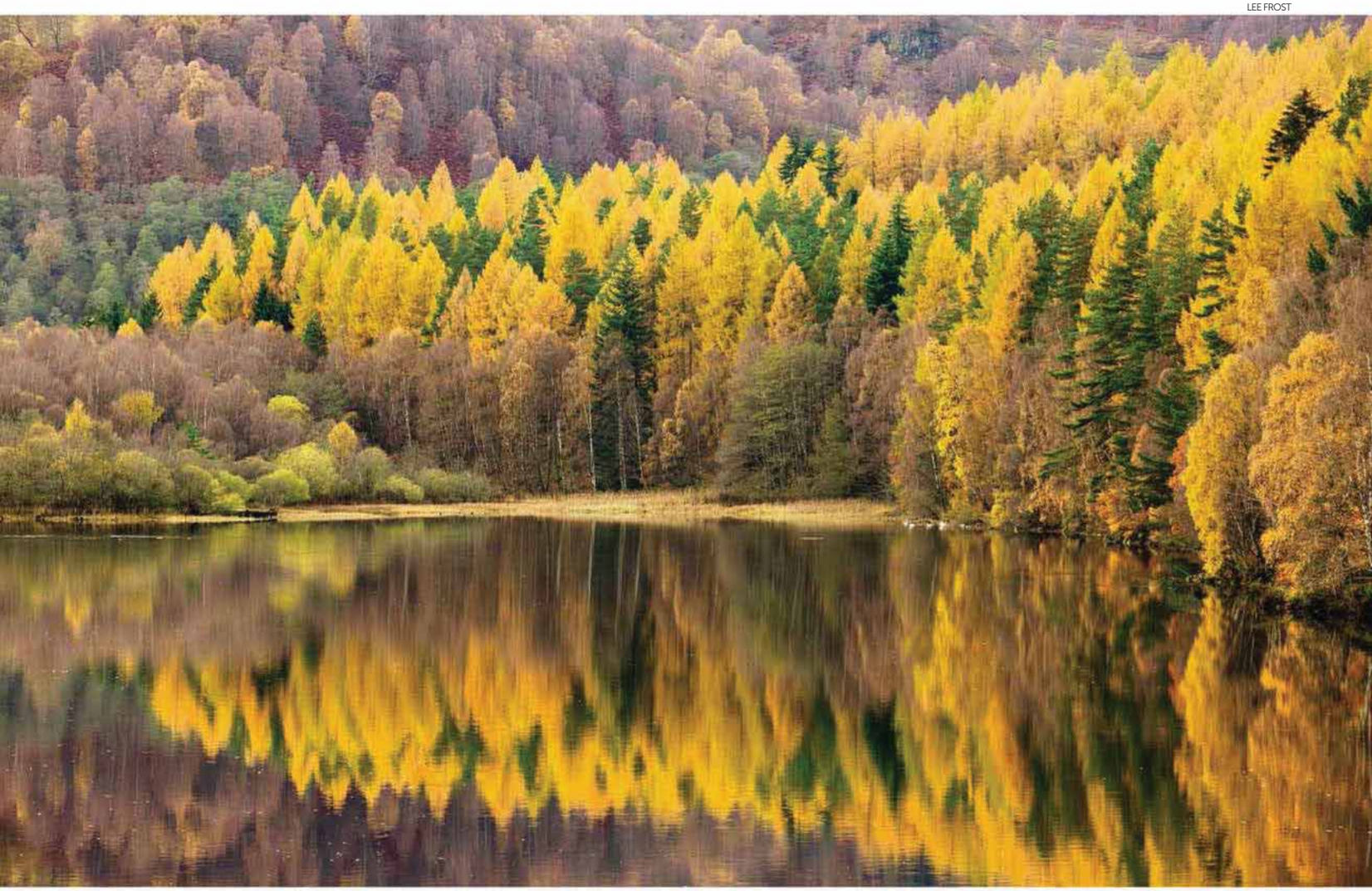
Summcr Q&A

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.

LEE FROST



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.

HELEN DIXON

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

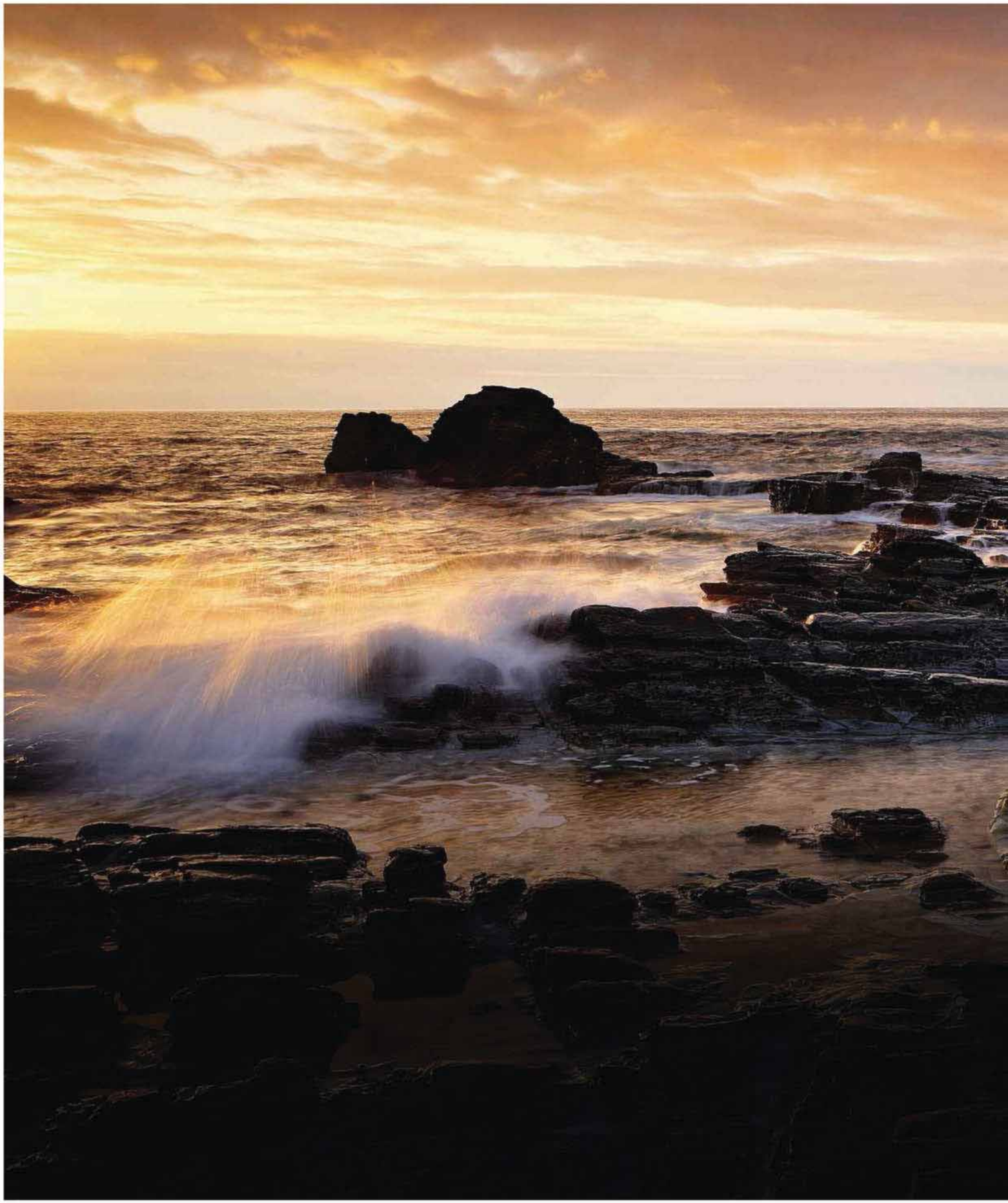
Q What causes foliage to change colour in autumn?

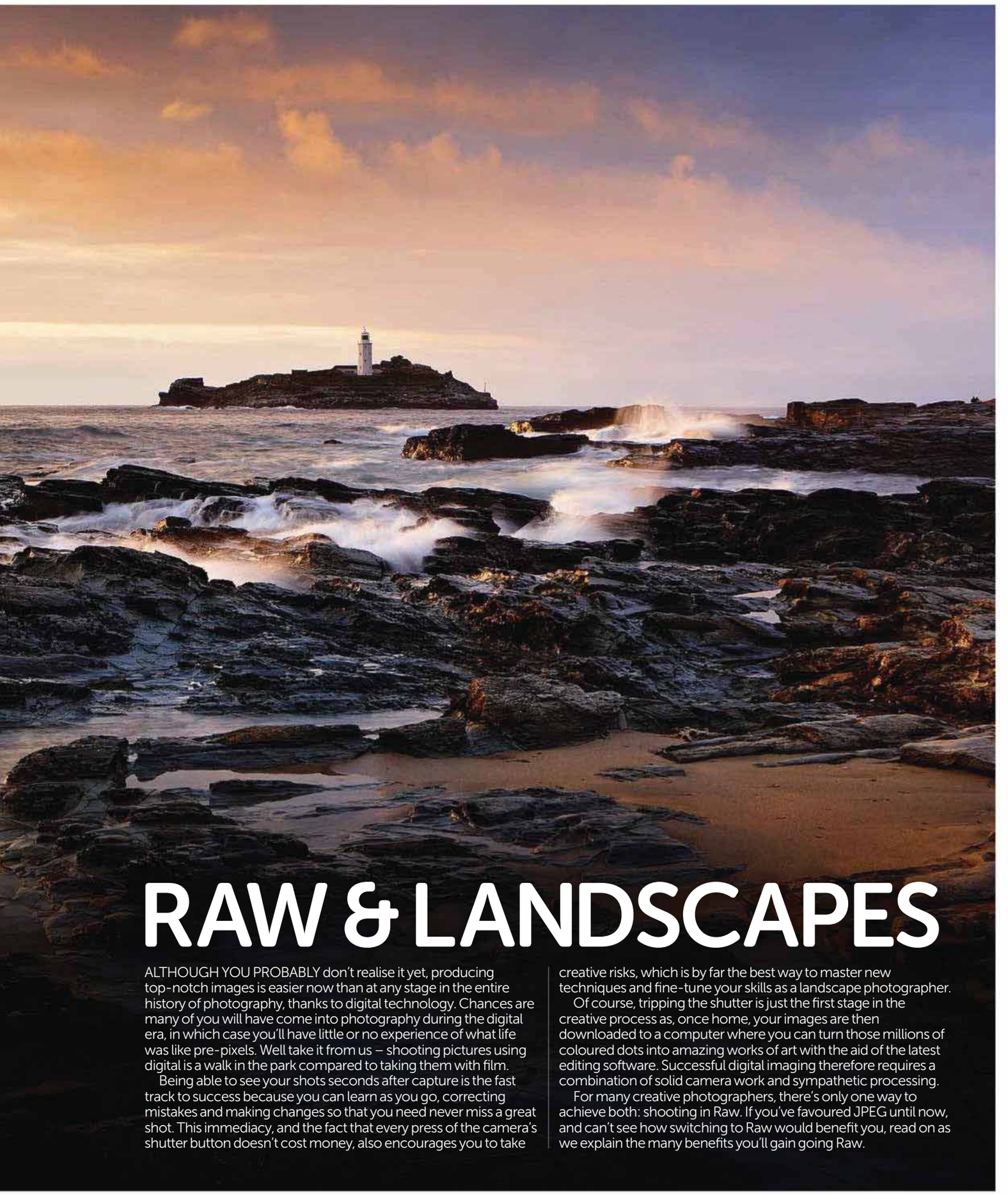
A Deciduous trees drop their leaves in readiness for winter when there's too little light for photosynthesis to occur, and they live off sugar reserves stored through the summer. Chlorophyll, which gives leaves their green colour, is necessary for photosynthesis to take place, but as the days grow shorter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





RAW & LANDSCAPES

ALTHOUGH YOU PROBABLY don't realise it yet, producing top-notch images is easier now than at any stage in the entire history of photography, thanks to digital technology. Chances are many of you will have come into photography during the digital era, in which case you'll have little or no experience of what life was like pre-pixels. Well take it from us – shooting pictures using digital is a walk in the park compared to taking them with film.

Being able to see your shots seconds after capture is the fast track to success because you can learn as you go, correcting mistakes and making changes so that you need never miss a great shot. This immediacy, and the fact that every press of the camera's shutter button doesn't cost money, also encourages you to take creative risks, which is by far the best way to master new techniques and fine-tune your skills as a landscape photographer.

Of course, tripping the shutter is just the first stage in the creative process as, once home, your images are then downloaded to a computer where you can turn those millions of coloured dots into amazing works of art with the aid of the latest editing software. Successful digital imaging therefore requires a combination of solid camera work and sympathetic processing.

For many creative photographers, there's only one way to achieve both: shooting in Raw. If you've favoured JPEG until now, and can't see how switching to Raw would benefit you, read on as we explain the many benefits you'll gain going Raw.

An introduetion 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.

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.

Q I 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.

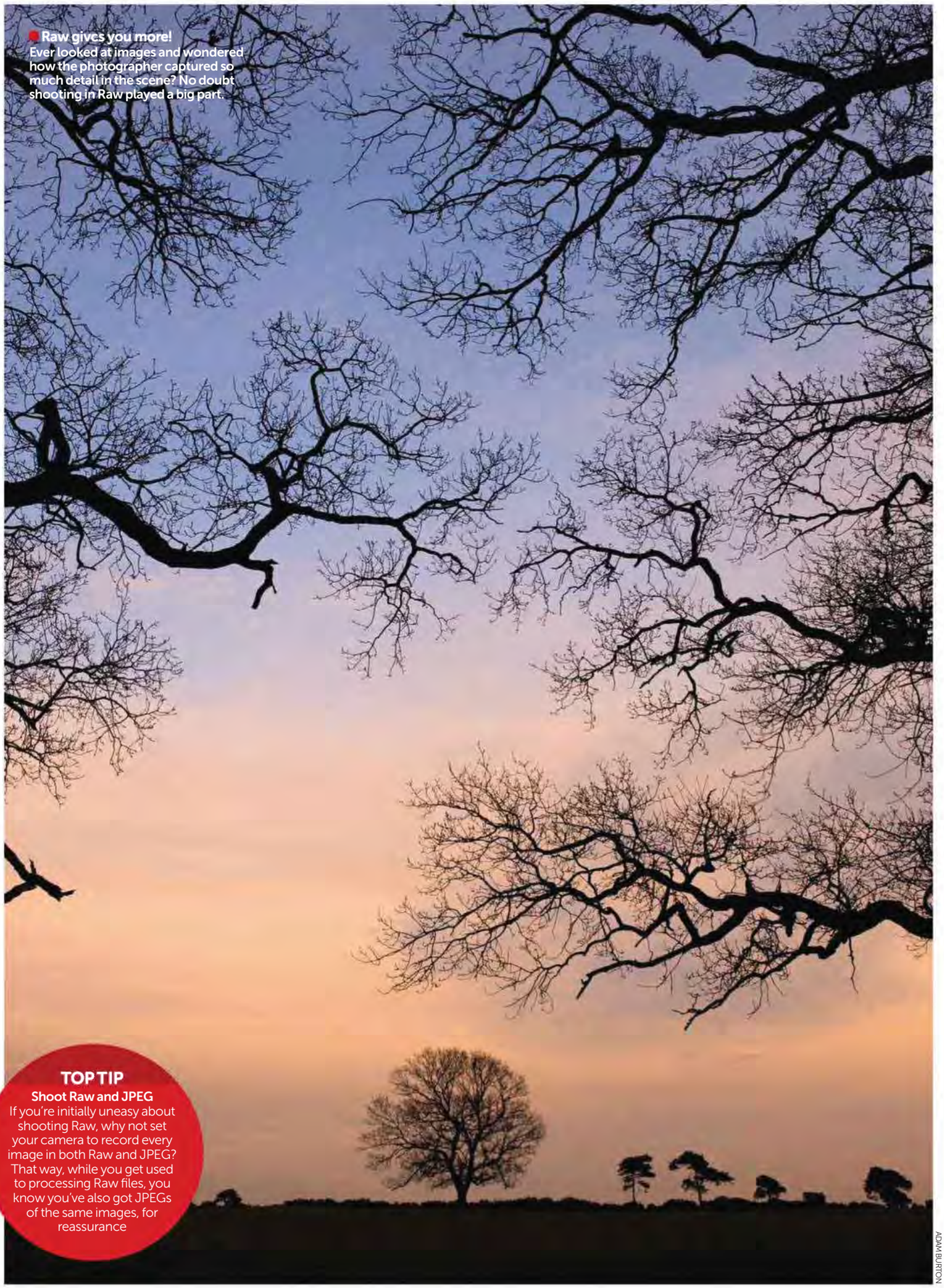
Shoot & process Raw

Setting your camera to shoot in Raw is easy: simply select the Image Quality setting via the LCD menu screen and choose NEF (Raw), or NEF+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. Your Nikon digital SLR comes supplied with a CD-ROM containing Nikon View NX2 processing software (Nikon also offers a more powerful suite, Capture NX2, for £135). 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/



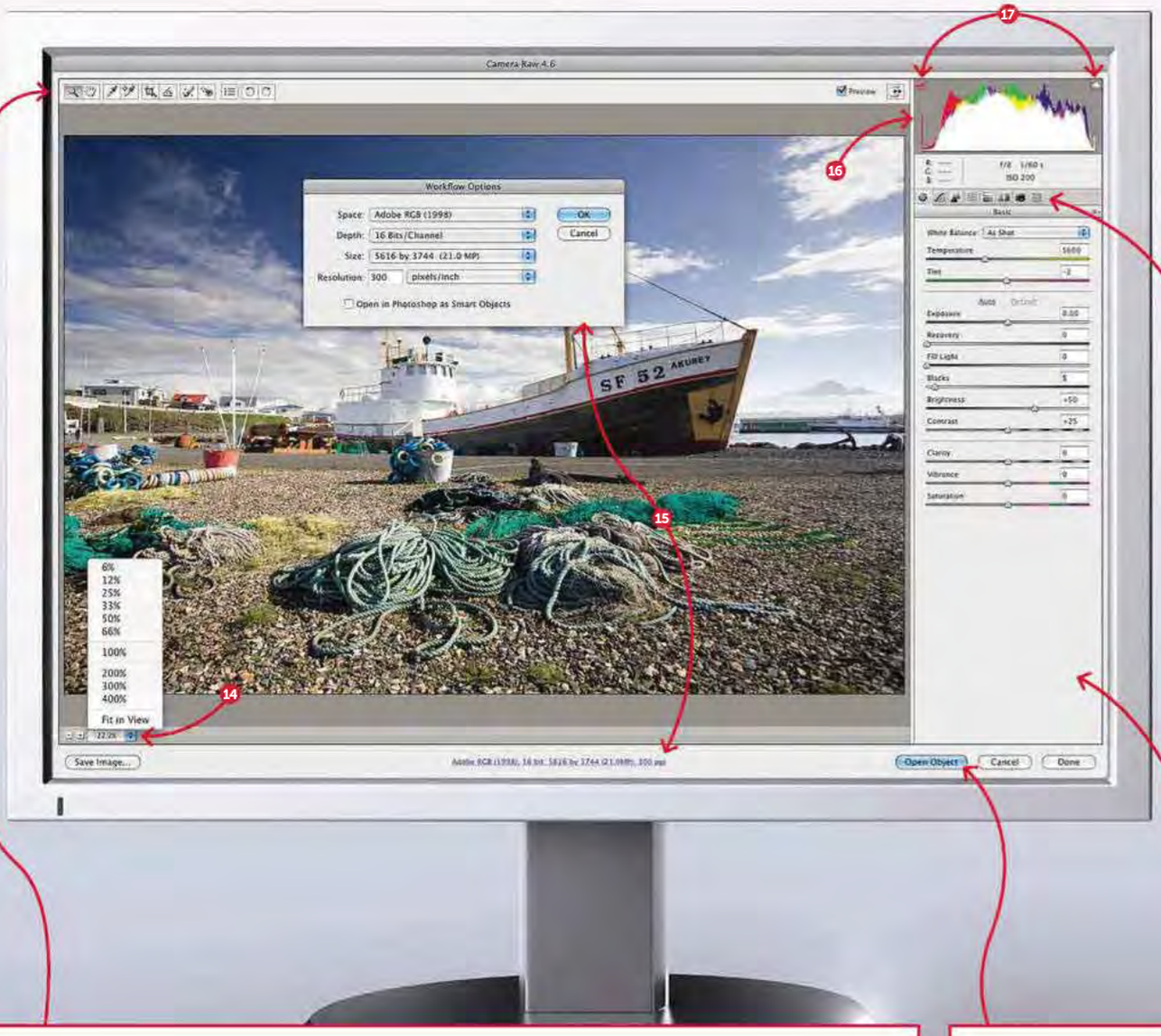
Raw gives you more!
Ever looked at images and wondered how the photographer captured so much detail in the scene? No doubt shooting in Raw played a big part.

TOP TIP

Shoot Raw and JPEG

If you're initially uneasy about shooting Raw, why not set your camera to record every image in both Raw and JPEG? That way, while you get used to processing Raw files, you know you've also got JPEGs of the same images, for reassurance

ADAM BURTON



Thc 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).

Opcn objcct

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 eonverter

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 basie tools for Raw eonversion

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 Basics tab:

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 in-camera 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 interfaee

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 proeess a Raw file

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

Luke Marsh

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.

1 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.

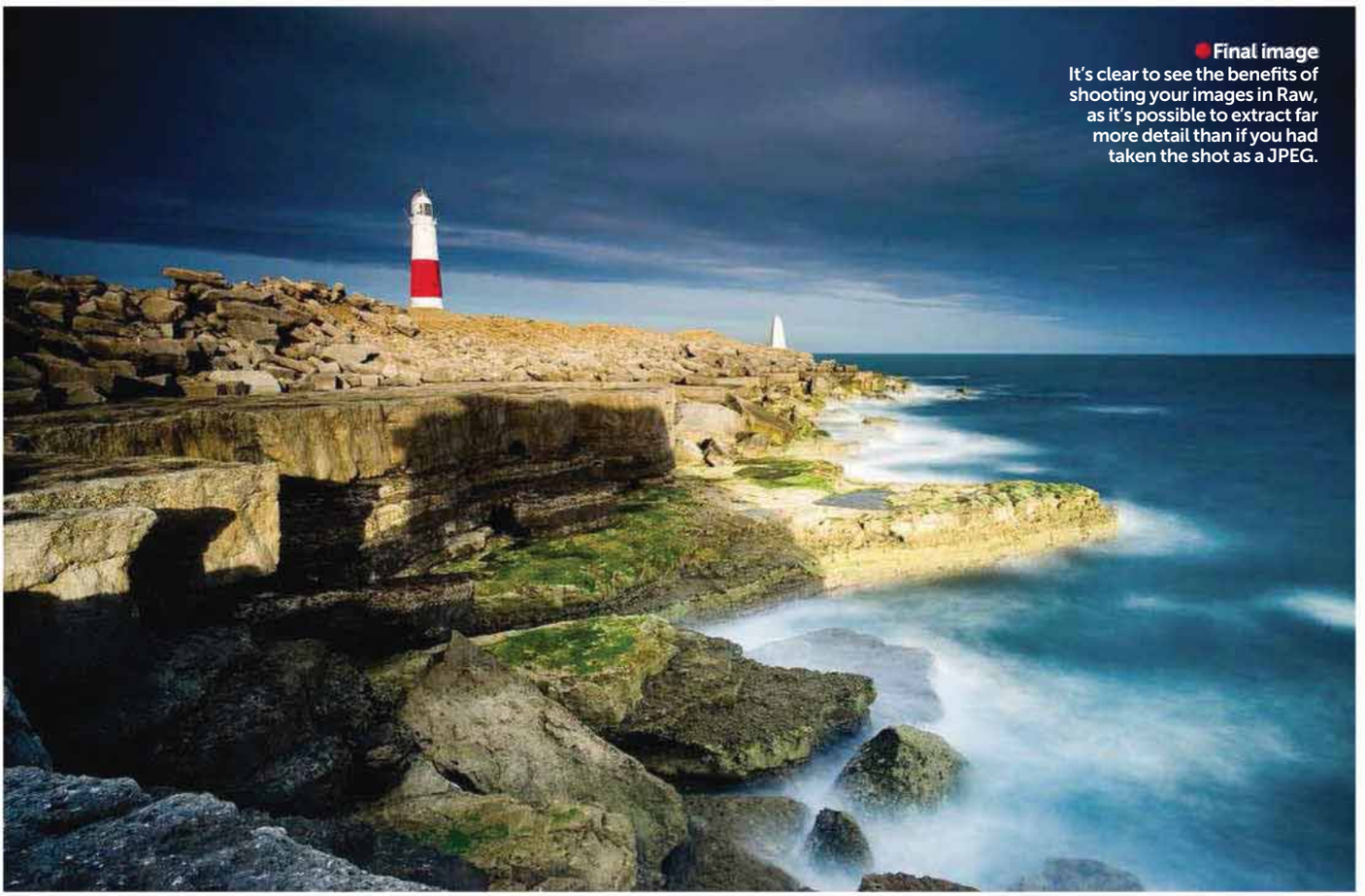
2 Assess the highlights First check if there's any highlight detail that might be clipped by clicking on the triangle on the top right of the histogram to turn on the highlight clipping display. When active, any clipped areas flash red. The whites of the distant lighthouse here are clipped, which means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

4 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.

5 Watch for clipping You'd normally look to avoid clipping any highlights or 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.

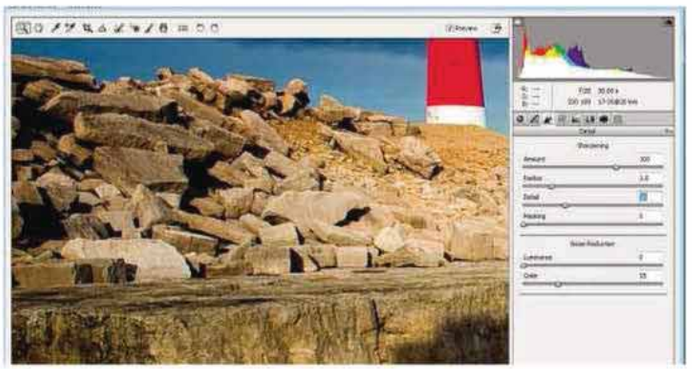
6 Boost the colour Now adjust the Vibrance slider (here we set it to 30), or the ***Saturation*** slider if your software doesn't feature Vibrance, to pump up the colour a little. Press ***I*** to access the ***White Balance Tool*** and check that you have got the correct White Balance by clicking on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



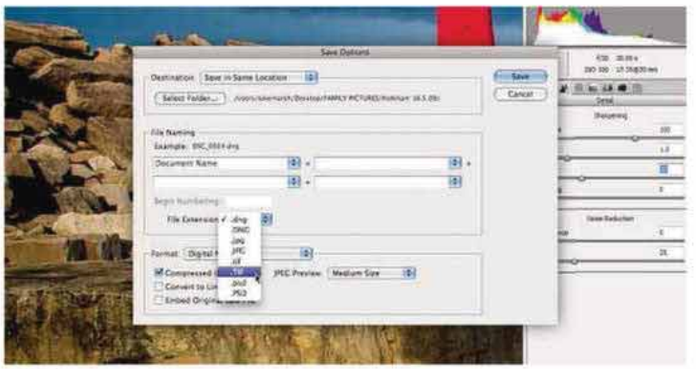
Final image
It's clear to see the benefits of shooting your images in Raw, as it's possible to extract far more detail than if you had taken the shot as a JPEG.

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***.

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.



9 **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.



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 filcs

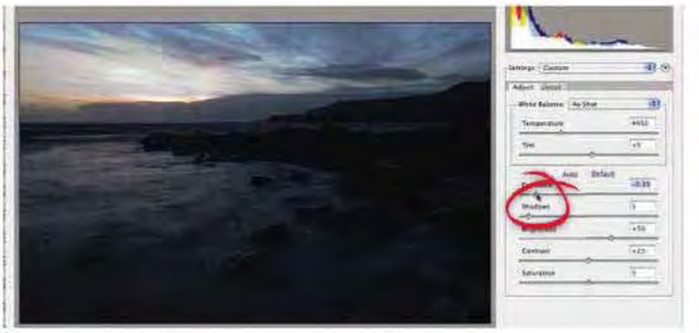
Get the perfect image by merging two shots for ultimate quality

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.

Raw file

1 Open the file When you open a Raw file in Elements the image appears in the Raw control window (above). As the foreground in the original Raw file is well exposed, little work is needed at this stage on the image. Simply click *Open*, leaving the settings as they are, then go to *File>Save As* and create a Photoshop file (.PSD) as we are going to be working with layers.



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.

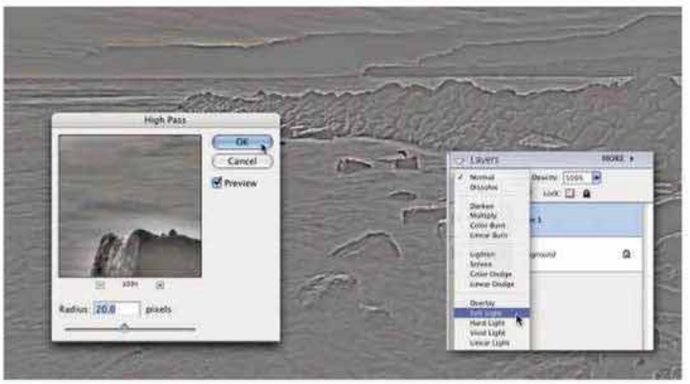
3 Copy & paste You now have two files open. One contains the original exposure and the other is the new underexposed image. With the underexposed file active, click *Select>All then Edit>Copy*, placing the image into the pasteboard memory. Now you can close this file and use *Edit>Paste* to place this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

4 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.

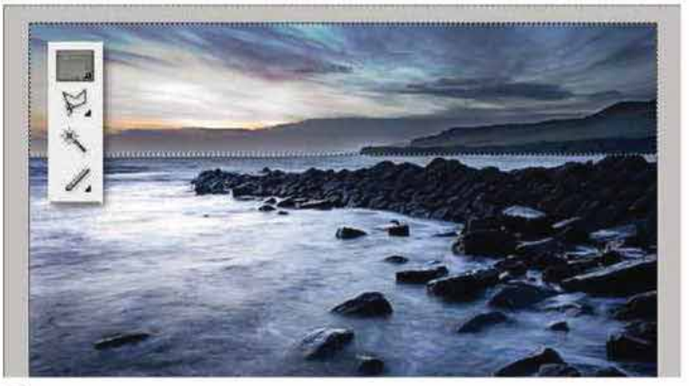
6 Enhance The initial layer work is complete, so to save your work so far, go to *Layer>Flatten Image* then *File>Save As* to create a new file. With both layers merged, it's time for some overall enhancement, so click on *Enhance>Adjust Lighting>Levels* to lighten up the image and improve the definition.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

Final image
Stormy skies overhead! It's clear to see the benefits of shooting your images in Raw, as it's possible to rescue more detail than if you'd captured the scene as a JPEG.

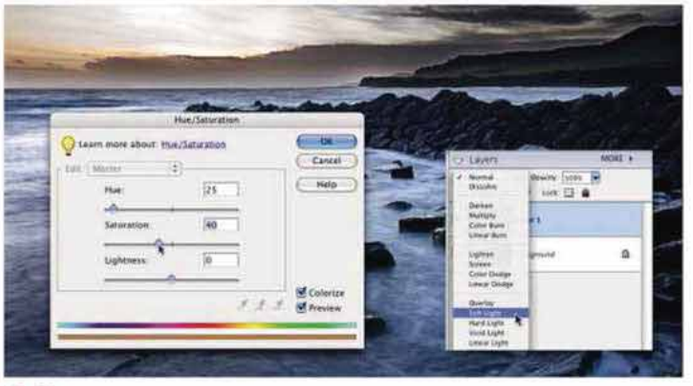


7 **High Pass** The High Pass filter is a far more forgiving way to enhance detail than sharpening. To use it, first go to ***Layer>Duplicate Layer*** to preserve the original image. Then go to ***Filter>Other>High Pass***, adjusting the ***Radius*** to around ***20*** pixels before clicking ***OK***.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

8 **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.



9 **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 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.

1 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.

2 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.

3 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.

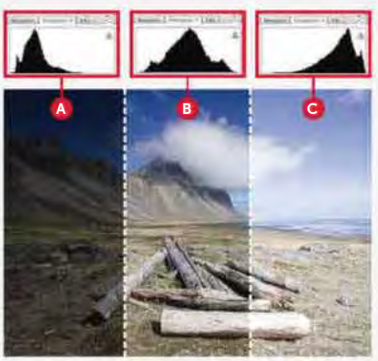
Increasing the exposure

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.

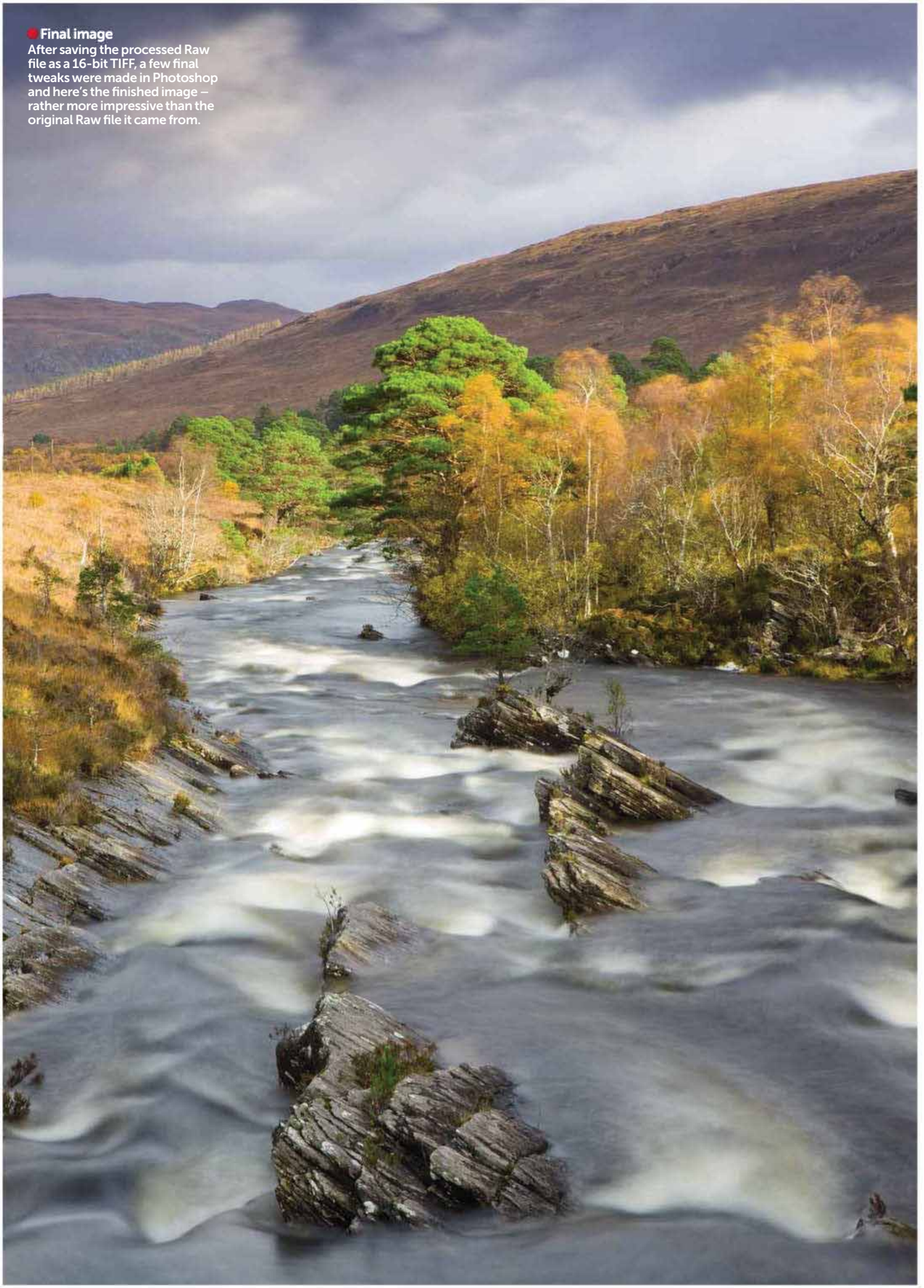
B) There is nothing wrong technically with this image or histogram: the tonal graph is central and neither highlights or shadows have been clipped. If you saw this shot on the preview screen, you'd probably be happy. However...

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!



4 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.

5 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.



Final image
After saving the processed Raw file as a 16-bit TIFF, a few final tweaks were made in Photoshop and here's the finished image – rather more impressive than the original Raw file it came from.

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?

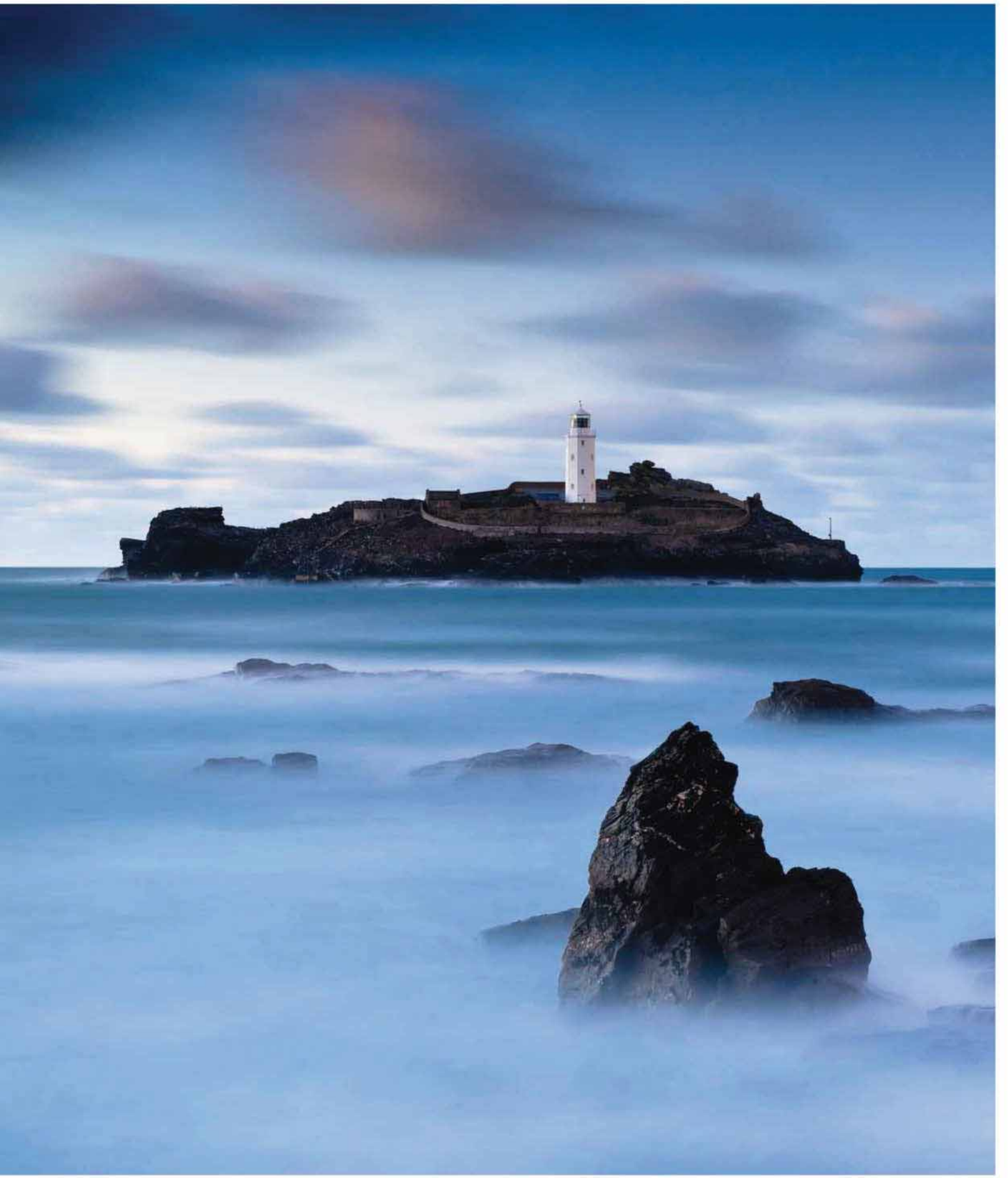
For information on filter systems, take a look at the panel below, then read on to see the difference my three favourite filters could make to your landscape images.

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.

Another fine mist
Mystery, drama, atmosphere... using filters in your photography can make your good shots great.



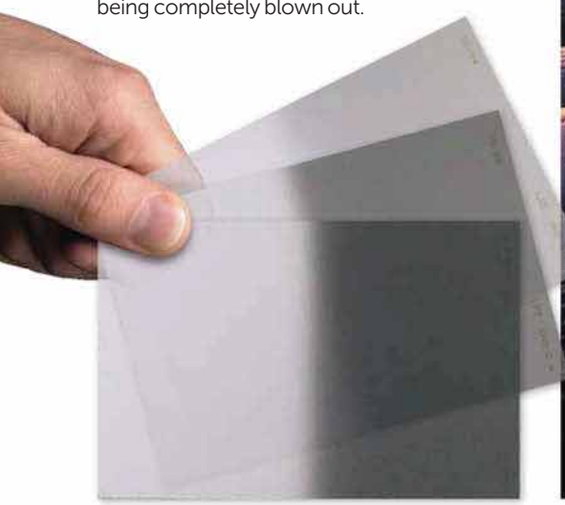
ND graduates

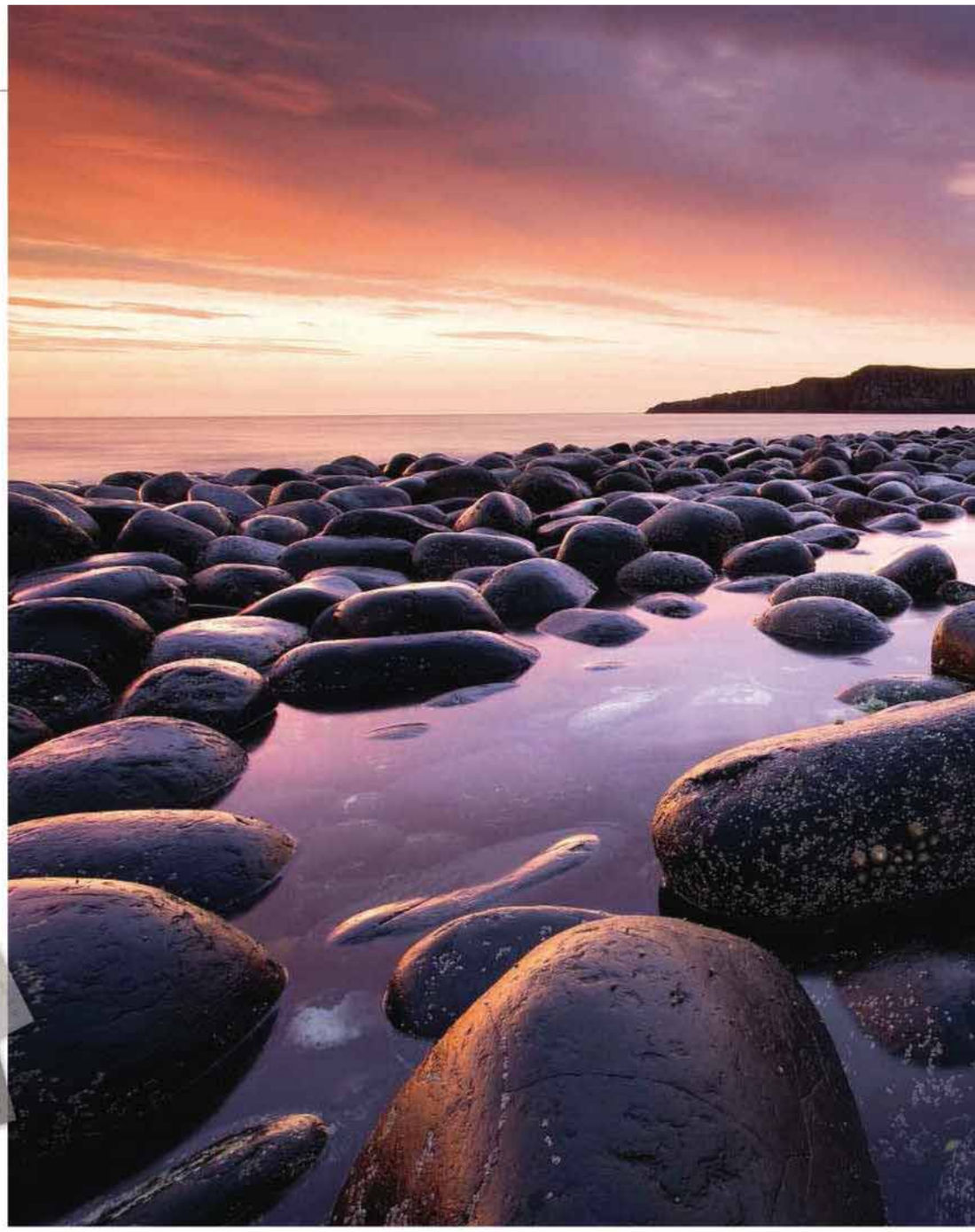
Make bland skies a thing of the past by learning how to use a Neutral Density graduate filter

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.





ND grads & exposure

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 multi-zone 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.

Reaeh for the sky Experienced landscape photographers consider an ND graduate an essential item and not an optional accessory.

ALL IMAGES: LEE FROST

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.

1 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 than 24mm (16mm 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.

Polarisers & exposure

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.

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.

Blue sky thinking
Beef up your blue sky and add visual impact to scenics by using a polarising filter.

ALL IMAGES: LEE FROST

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.

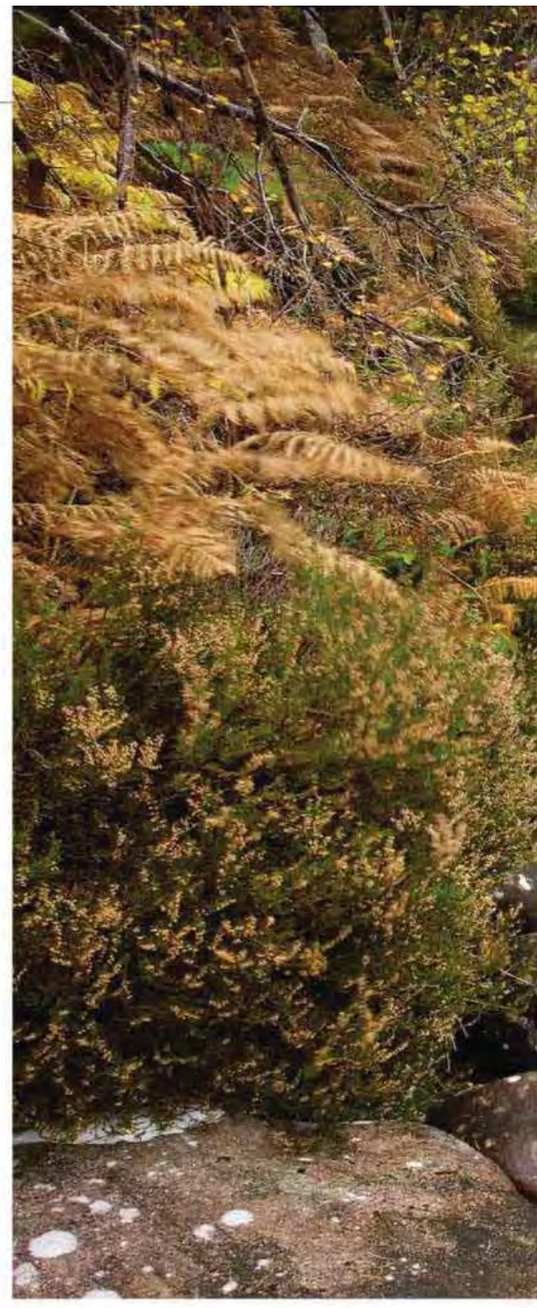
Exposure chart

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

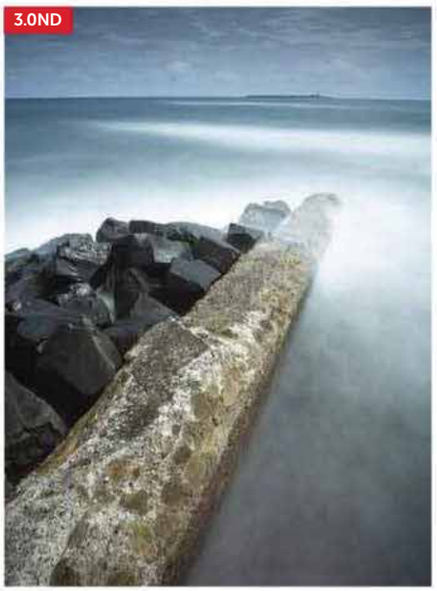
The amount of exposure increase an ND filter requires depends on its density. The weakest ND worth bothering with is a 0.6ND (4x), which requires a two-stop exposure increase. A polariser also requires an exposure increase of two stops so can be used like a 0.6ND filter. Next up is a 0.9ND (8x), which 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!

World in motion
Using an ND filter allows you to use longer shutter speeds in daylight: ideal when shooting waterfalls.

ALL IMAGES: LEE FROST

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 & 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.

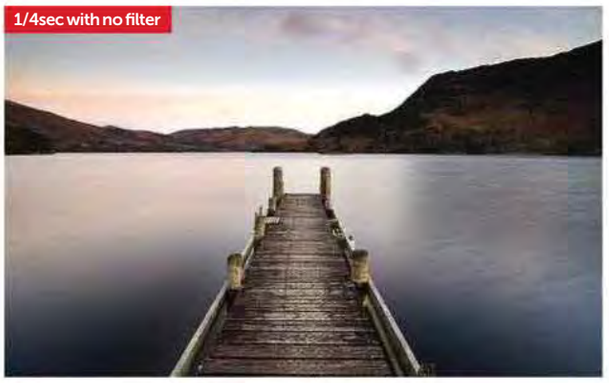
In terms of subject matter, any scene containing moving elements is ideal. The sky is an obvious candidate: on a windy day, clouds are transformed into ghostly streaks as they drift overhead, and you won't know quite how they're going to record until the exposure ends and you can review the shot. Trees 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.


1/4sec with no filter


Four minutes with a ten-stop

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
1/4sec	Four minutes
1/2sec	Eight minutes
One second	16 minutes
Two seconds	32 minutes
Three seconds	48 minutes
Four seconds	One hour

Set the mood
The ten-stop ND is the filter of the moment. Don't leave home without one.

ALL IMAGES: LEE FROST

Stand Amazed - WASDALE

Photographing people in the landscape on assignment for the National Trust, I frequently work handheld with a Nikon D-700. Here I had to respond quickly in fast-changing weather, aiming to capture the essence of the light as it transformed the scene before us second by second. Shooting towards the sun necessitated a LEE 0.9ND hard grad; this allowed me to keep the clouds predominantly mid-tone while ensuring good quality noise-free detail in the landscape and on the young people. No other approach would have worked here.

I have used LEE Filters for nearly twenty years now for one over-riding reason: quality. The sharpness of my lenses are totally unaffected by the filters because of their optical clarity and plane parallelism (flatness). And the neutrality of LEE's ND filters (graduates and standards) is legendary. They are the best in the business, which means less post-processing time spent correcting unwanted colour casts. Finally, the filter holder is easy to use, flexible and a virtually indestructible design classic. Of the two I carry on assignment, one is over fifteen years old.

Joe Cornish

www.joecornish.com

LEE 0.9 ND
hard grad filter

LEE Filter Holder

Nikon D-700,
24mm Lens,
1/320 sec @ f/14

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.

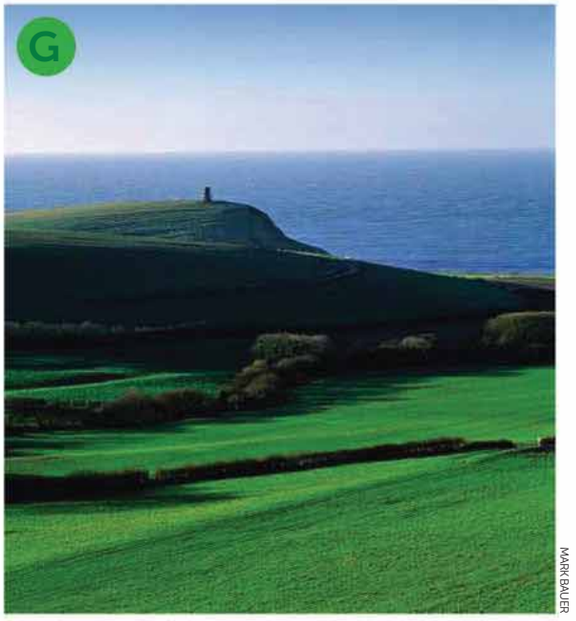
Also, colours that are on the 'warm' side of the wheel harmonise with each other, while all those on the 'cool' side also harmonise. Harmonious colours are more calming to look at, and blues and greens in particular are very tranquil. Contrasting colours are more dramatic and create a tension that can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

ADAM BURTON

ISTOCKPHOTO

CRAIG ROBERTS



MARK BAUER

COLOUR AND EMOTION

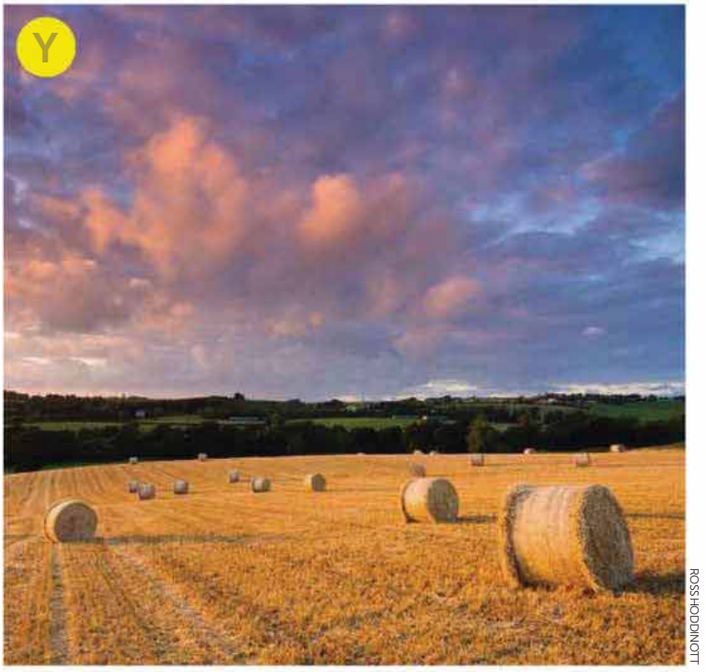
As well as having visual impact, colours can suggest different moods, evoke various emotions and can have symbolic significance related to our culture and background. Think about the effect a dominant colour might have on your image. It might be appropriate to subdue a colour, or emphasise it. Consider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

R **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.

B **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.

G **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.

Y **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.



ROSS HODDINOTT

USING ONLY ONE COLOUR

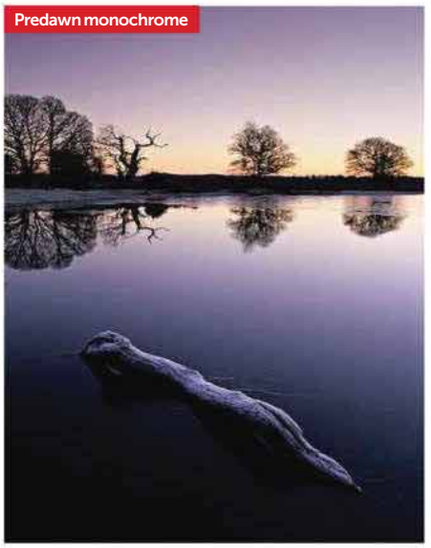
Single colours often give an image a particular mood and it's possible to make successful compositions using just one colour – or shades of one colour.

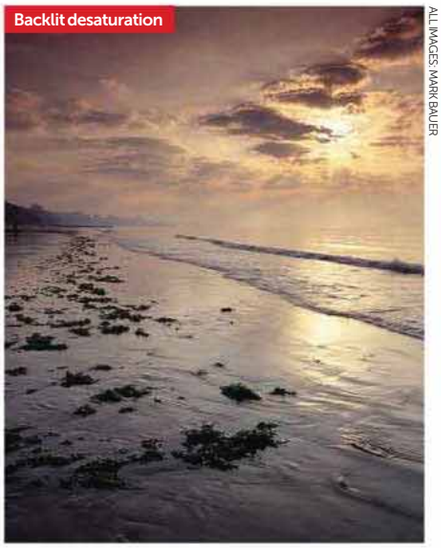
Certain lighting conditions can create this effect and add atmosphere to a scene. An intensely orange or red sunset gives every neutral colour a strong bias, bathing a scene in a fiery warmth.

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.


Predawn monochrome


Backlit desaturation

ALL IMAGES: MARK BAUER

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.

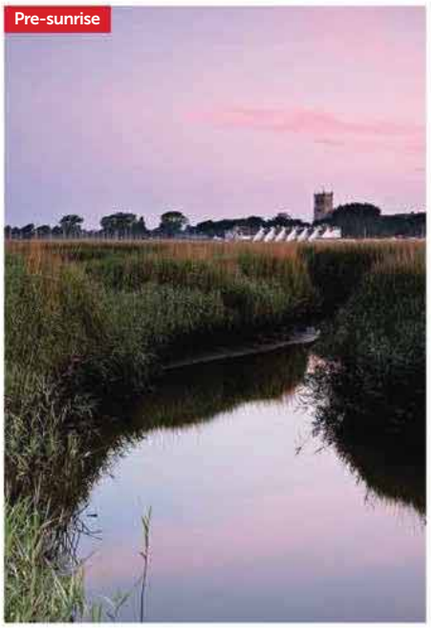
The time of day has an impact on colour saturation. Early morning and late-evening light, with the sun low in the sky and less glare, produces more intense colours than at other times, as does front lighting rather than side- or backlighting.

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.

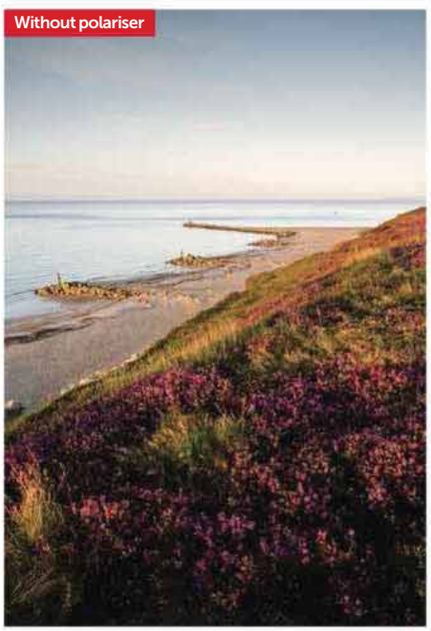
There are a couple of things to watch out for. It's possible to over-polarise a scene, resulting in near-black skies, and also, when using wide-angle lenses (wider than 28mm on a full-frame DSLR or 17mm on an APS-C sensor), the degree of polarisation can be uneven across the frame.

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.


Pre-sunrise


Midday


Without polariser


With polariser

Types of polariser

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.

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.

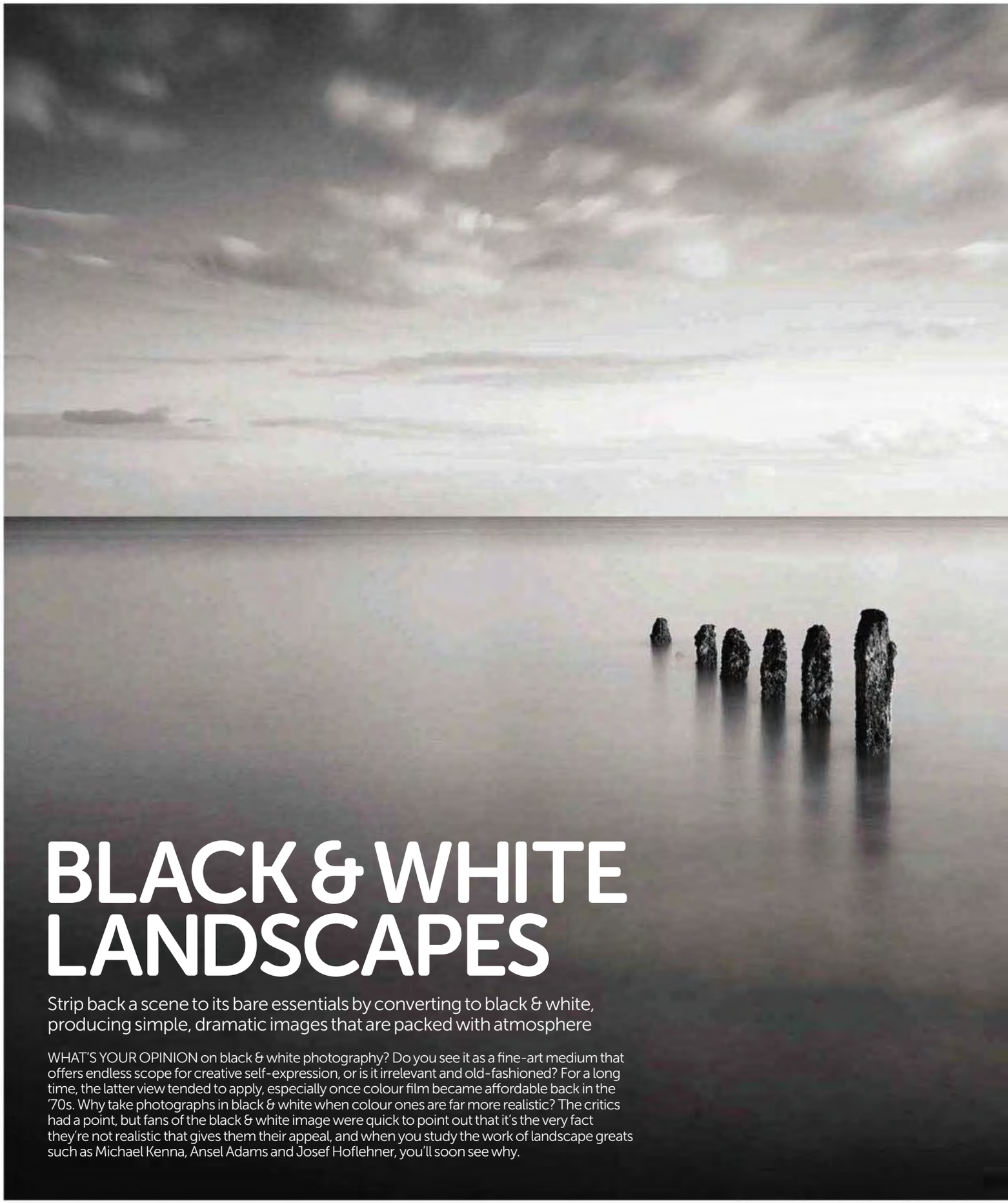
2 Use Auto White Balance Once you've composed your scene, select AWB (see your camera's manual if you're not sure where it is) and set aperture-priority mode to at least f/13 to get adequate depth-of-field. If your autofocus struggles in the low light, switch to manual focus. If you struggle to balance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

3 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.

4 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).

Fluorescent
Fluorescent WB has rendered the best results, enhancing the deep blue tones and the pinks in the sky.

Exposure: Two seconds at f/13 (ISO 100).



BLACK & WHITE LANDSCAPES

Strip back a scene to its bare essentials by converting to black & white, producing simple, dramatic images that are packed with atmosphere

WHAT'S YOUR OPINION on black & white photography? Do you see it as a fine-art medium that offers endless scope for creative self-expression, or is it irrelevant and old-fashioned? For a long time, the latter view tended to apply, especially once colour film became affordable back in the '70s. Why take photographs in black & white when colour ones are far more realistic? The critics had a point, but fans of the black & white image were quick to point out that it's the very fact they're not realistic that gives them their appeal, and when you study the work of landscape greats such as Michael Kenna, Ansel Adams and Josef Hoflehner, you'll soon see why.

HELEN DIXON

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 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 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

LEE FROST

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

The basie rules

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.

Filters for blaek & 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.

LEE FROST

TOP TIP

Black & White Mode

To switch your Nikon to Monochrome mode, press the Menu button and enter the Shooting Menu. Go down to Set Picture Control and select Monochrome before pressing OK.

> "MONOCHROME LANDSCAPE PHOTOGRAPHY OFFERS ENDLESS SCOPE FOR CREATIVE EXPRESSION"

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.

Black & 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?

A It'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.

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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 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.

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.

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.

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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

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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, allowing you to return to the location under optimum lighting conditions. Sun Seeker is available from the Apple App Store for £4.99 or the Google Play store for £3.79.

> "B&W LANDSCAPE PHOTOGRAPHY IS ABOUT CREATING A MOOD, NOT RECORDING REALITY"

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).

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 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.


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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 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

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.

Image ideas to try...


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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.


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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.


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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.


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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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"SHOOTING IN BLACK & WHITE ACHIEVES AN ATMOSPHERE THAT COLOUR CAN'T RIVAL"

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.

Pro tip: 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 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 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

HELEN DIXON

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.

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).

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

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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.

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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.

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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...

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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.

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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.

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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.

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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

Jordan Butters

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.

Original Raw

1 Open up your file First things first, open your original Raw file in Adobe Camera Raw and select the ***HSL/Grayscale*** tab on the right-hand side of your screen. Converting your image to mono is as easy as clicking on the ***Convert*** to ***Grayscale*** tick box at the top, but a few more steps will ensure you get the best possible result.

2 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.

3 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.

Final image
The strong lighting and interesting textures make this image the perfect candidate for this black & white Raw conversion.

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

Lee Frost

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 non-destructive. 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 Efex 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 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.

Pro tip: 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."

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. Theprintspace, 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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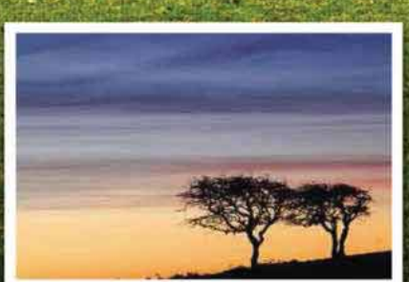



Capturing waterfalls

There is something magical about waterfalls – especially when our cameras have the ability to make them look even more beautiful. Our step-by-step guide shows you how to shoot them

Ross Hoddinott

Camera: Nikon D800E

Lens: Nikon AF-S 24-70mm f/2.8G ED

WHY IS IT we find water so irresistible and mesmerising? I'll leave it to the more intellectual types to debate what it is that connects us so closely to water. All I know is that, like many photographers, whenever I'm faced with them, I just can't resist the urge to photograph large bodies of reflective water, crashing waves and meandering rivers. Arguably, waterfalls are the most photogenic form of water and the UK – particularly Scotland, mid-Wales and the North of England – are home to some stunningly beautiful rapids and falls. The big question is, though, how do you capture great waterfall photographs?

Having located a suitable fall – maybe somewhere close to where you live or are holidaying – consider the weather. Bright, sunny days are best avoided, as strong, directional light will create a high level of contrast, making it difficult to avoid burnt-out highlights on the water.

Bright, overcast days are better, as cloud cover acts as one giant diffuser.

Also, it is often worthwhile visiting after rainfall, as this will ensure water levels are good and that there is a nice amount of movement and interest. The time of year can also be a big influence in your shots. Many of the best waterfalls are found within woodland, so in autumn, surrounding seasonal colour can add extra interest to your shots, while in spring, fresh foliage will add vibrancy and a stark winter woodland will be full of mood. At these times of year, footpaths can be muddy, so wear your wellies – they'll also allow you to wade into the water slightly, giving you the opportunity to capture more interesting viewpoints.

As always, kit choice is an important consideration. A relatively wide focal length – in the region of 24-70mm – is a good choice, as it gives you the option to capture dynamic-looking compositions. A medium telephoto can also be useful should you wish to isolate your waterfall or for when you have to shoot from further away. A tripod is a must – particularly if you intend to employ slow shutter speeds. A polariser and an ND filter may also come in handy. Keep a lens cloth close to hand as well; this will be invaluable to quickly wipe away any water splashing up onto your lens or camera.

The biggest decision you face when photographing waterfalls is how you are going to capture its motion – do you freeze the water or blur it? This is a very subjective thing. However, whatever you decide, you must ensure it looks intentional – if the water isn't sharp or blurred enough, it will just look messy and as though you haven't achieved what you set out to do. Most photographers favour blurring the water's movement, with the effect generally considered more aesthetically pleasing. Blurring motion is relatively easy to do – simply employ a slow shutter speed of 1/2sec or longer. If you would prefer to freeze motion, you will need a shutter speed exceeding 1/500sec. However, achieving such a fast shutter speed is often difficult when you are shooting in overcast light, unless you select a very high ISO speed, together with a large aperture. Ideally, you don't want to do either of these things, though, as a high ISO rating will increase noise while a large aperture will reduce depth-of-field. Therefore, unless you really detest the milky-water effect, your best bet is to blur the water's motion.

Lastly you need to consider context and viewpoint. Waterfalls can be photographed in various ways and from a multitude of angles. Tightly cropped shots can look very effective, but usually wider views – capturing the waterfall in context with its surroundings – will create a far more striking image. Whenever possible, try using the water flowing away from the fall as foreground interest or a lead-in line. Using moss-covered boulders or fallen leaves trapped by the water's edge can also help to give your waterfall images more interest, depth and colour. You'll find a low viewpoint will often work well, but be careful not to get wet feet!

HANDY HINT

Be careful!

Take care when shooting photos by the water's edge. Rocks will be slippery and it is easy to lose your balance when you are carrying a heavy backpack and tripod. Always put your welfare – and that of your valuable kit – above taking photos.

1 Choose your location After a little online research, I decide to visit Sgwd Ddwli Uchaf – one of Wales' most impressive falls. I opt for the versatility of my 24-70mm zoom and, using the long end, fill the frame with the falls. However, by composing my shot so tightly, the photograph lacks context and looks static and boring.

2 Freeze the motion I zoom out to include more of the waterfall's environment. I want to see what the water looks like if I freeze its motion. To generate a shutter speed fast enough to do this, I raise the ISO to 6400 and select a large aperture of f/5.6. This results in a shutter speed of 1/500sec. However, the water looks messy.

3 Lengthen exposure As the water didn't look right frozen, I decide to blur it instead. I lower the ISO to 100 and set a smaller f/stop of f/16 – this helps lengthen exposure time, and increases depth-of-field too. The resulting one-second exposure creates a nice level of subject blur – my tripod is essential to keep my image shake-free.

4 Use a polariser I review my last image – the shot lacks colour saturation. There is a lot of glare reflecting from parts of the foliage and the river. Therefore, I attach a polariser and rotate the filter in its mount until the reflections and glare disappear. The filter absorbs up to two stops of light, so it blurs movement even further.

Final image
I switch to a vertical composition to make more of the foreground and create a stronger, more balanced result. I also attach a three-stop ND filter to lengthen the exposure to 20 seconds. The result is an ethereal-looking waterfall image.

Exposure: 20 seconds at f/16 (ISO 100)

Shoot a misty morning seene

Ross Hoddinott reveals how early morning mist provides a wonderful opportunity for you to shoot ethereal, magical scenes

Ross Hoddinott

Misty mornings are one of the key traits of spring. Mist can look magical, filling valleys and hanging atmospherically above fields. By reducing colour and contrast, mist simplifies the look of objects, placing more emphasis on shape instead. There are different types of mist and fog, but the most photogenic is 'radiation fog', which forms during clear, still nights when the ground loses heat by radiation and cools.

The ground chills nearby air to saturation point and mist forms. It often stays confined to low ground, forming a thin white layer at the bottom of valleys. When looking at the local weather forecast, watch for clear skies and cool, still nights – perfect conditions for mist. Also, look at the forecast for clarity. If clarity is predicted to drop to average or poor during the night, then there is a good chance you will be greeted with mist in the morning. Set your alarm early. Allow enough time to get to your intended viewpoint before sunrise, so that you can get set up and ready in advance of the best conditions. If you are driving, remember your journey will be slower due to the conditions.

A high viewpoint, from the top of a hill or valley, is often best; allowing you to get above the mist to shoot atmospheric vistas.

Often, objects are reduced to nothing more than a simple silhouette in misty weather. Therefore, look for strong, bold objects to photograph within the landscape – a church steeple, castle ruin or tree, for example. Longer focal lengths suit misty scenes the most, foreshortening perspective and allowing photographers to isolate points of interest. Light scatters and is more diffused in mist, adding to its mystical effect – often the most dramatic results come from shooting into the light. A medium telephoto lens, in the region of 100mm, is often ideal.

Mist – like snow – has a habit of fooling a camera's metering system. This is because it is designed to assume that the subject is mid-tone (18% grey). Subjects that are significantly lighter or darker than mid-tone, like a misty landscape, can be exposed incorrectly. TTL metering has a tendency to underexpose mist, rendering it too dark. Consult the camera's histogram screen regularly when shooting mist. If the graph is biased to the left, this is an indication of underexposure. Apply positive (+) exposure compensation to make the image brighter, and then reshoot. You may only need to apply a +1/3 or +1/2 of compensation, but in extreme instances, you might have to dial in a stop or more of compensation. Again, use the histogram as your guide.

Having dragged yourself out of bed early to shoot the morning mist, don't overlook the picture potential of smaller, less obvious subjects – for example, dew-laden cobwebs glistening in the morning light.

Weather sites & apps

Outdoor photographers rely heavily on local weather forecasts, especially when waiting for ideal conditions leading to mist. While long-term forecasts aren't always reliable, 24- and 48-hour forecasts are often accurate. Therefore, keep a regular eye on them. Mobile phone apps are an ideal source of information but you should also use websites such as *www.metoffice.gov.uk*

Time	Weather	Temp	Wind			Visibility
			Dir	Speed	Gust	
2100		4 °C	ENE	8 mph		Very Good
0000		3 °C	ENE	7 mph		Good
0300	FOG	2 °C	ENE	6 mph		Very Poor
0600	FOG	2 °C	ENE	6 mph		Very Poor
0900		4 °C	ENE	4 mph		Good
1200		7 °C	NE	7 mph		Very Good
1500		7 °C	NE	8 mph		Good

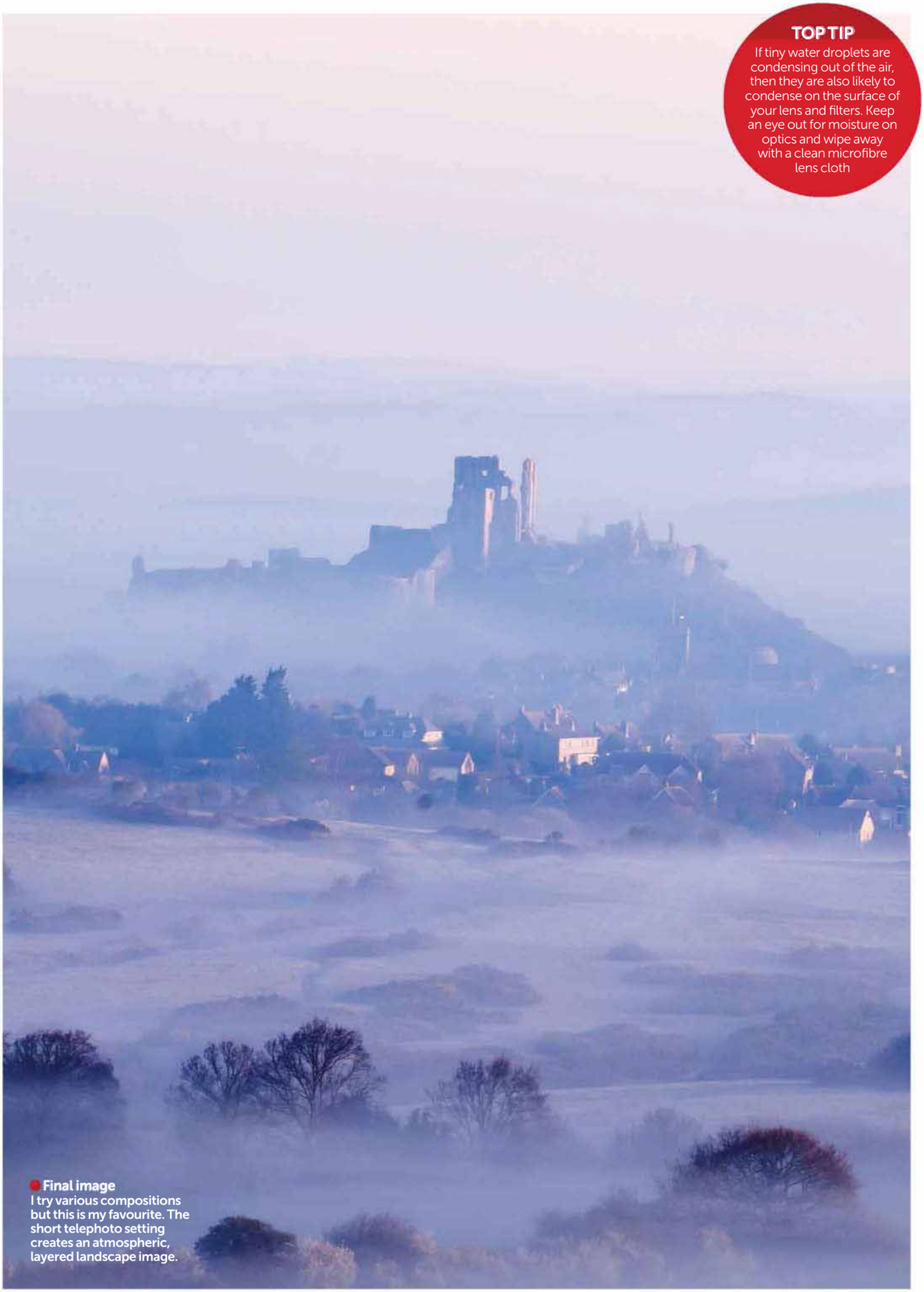
1 Planning I check the local weather forecast daily and notice that a clear, still night is predicted. Clarity also dropped during the night, so I am optimistic that it will be misty in the morning. I prepare my camera outfit, then set my alarm for just before sunrise.

2 Viewpoint Sure enough, the landscape is shrouded in morning mist. I drive to a high viewpoint, which offers good views over the misty landscape and set up my kit. A telephoto is a good lens choice for mist as it compresses perspective, exaggerating the effect.

3 Metering Mist helps to simplify the look of the landscape, giving it a 'layered' effect. I compose my shot, and release the shutter, but the result is too dark. By looking at the histogram, I can tell the exposure is biased to the left, confirming the image is underexposed.

4 Exposure override The brightness of mist can fool metering systems designed to assume scenes are mid-tone. Using the camera's exposure compensation button, I dial in one stop of positive (+) compensation to lengthen the exposure time. The result is far better, but the scene lacks a focal point.

5 Composition I scan the landscape for a key point of interest to give my shot more purpose and notice a church tower sticking out above the mist. I recompose the picture to make this my main point of interest and also try a vertical composition. The result is a great springtime misty image.



TOP TIP

If tiny water droplets are condensing out of the air, then they are also likely to condense on the surface of your lens and filters. Keep an eye out for moisture on optics and wipe away with a clean microfibre lens cloth

Final image
I try various compositions but this is my favourite. The short telephoto setting creates an atmospheric, layered landscape image.

Shoot a scene at dawn

Ross Hoddinott says you can't beat a sunrise for adding extraordinary colour to your landscapes...

Ross Hoddinott
Camera: Nikon D700
Lens: NIKKOR AF-S 17-35 mm f/2.8D IF-ED

AS A TEENAGER, I never thought I would say this, but... dawn is the best time of the day. The light is pure, skies are beautiful and you often have the world to yourself. I love my bed, but once up, the excitement of what you might photograph is unrivalled.

The best dawn shots are rarely the result of chance, so plan ahead. Calculate the time and direction of sunrise for the time of year, and select your location accordingly. The weather forecast is also important: if you're hoping for light and colour, but blanket cloud is forecast, you'll be disappointed. Colour can begin forming in the sky up to an hour before sunrise, so arrive in plenty of time. Check your kit bag the night before, ensuring everything is in the right place and batteries are fully charged. Pack a torch, too. Finally, start shooting straight away, even in extremely low light; exposure times will be long, but this can generate interesting cloud or water movement.

1 Be prepared Plan your shoot carefully to maximise your chances of success. Study the sun's position as this will dictate suitable dawn viewpoints. You should also know the time of sunrise and tide times if you're heading to the coast. Check the weather forecast beforehand, too. A number of good websites and phone apps can help (one of the best is www.photoephemeris.com).

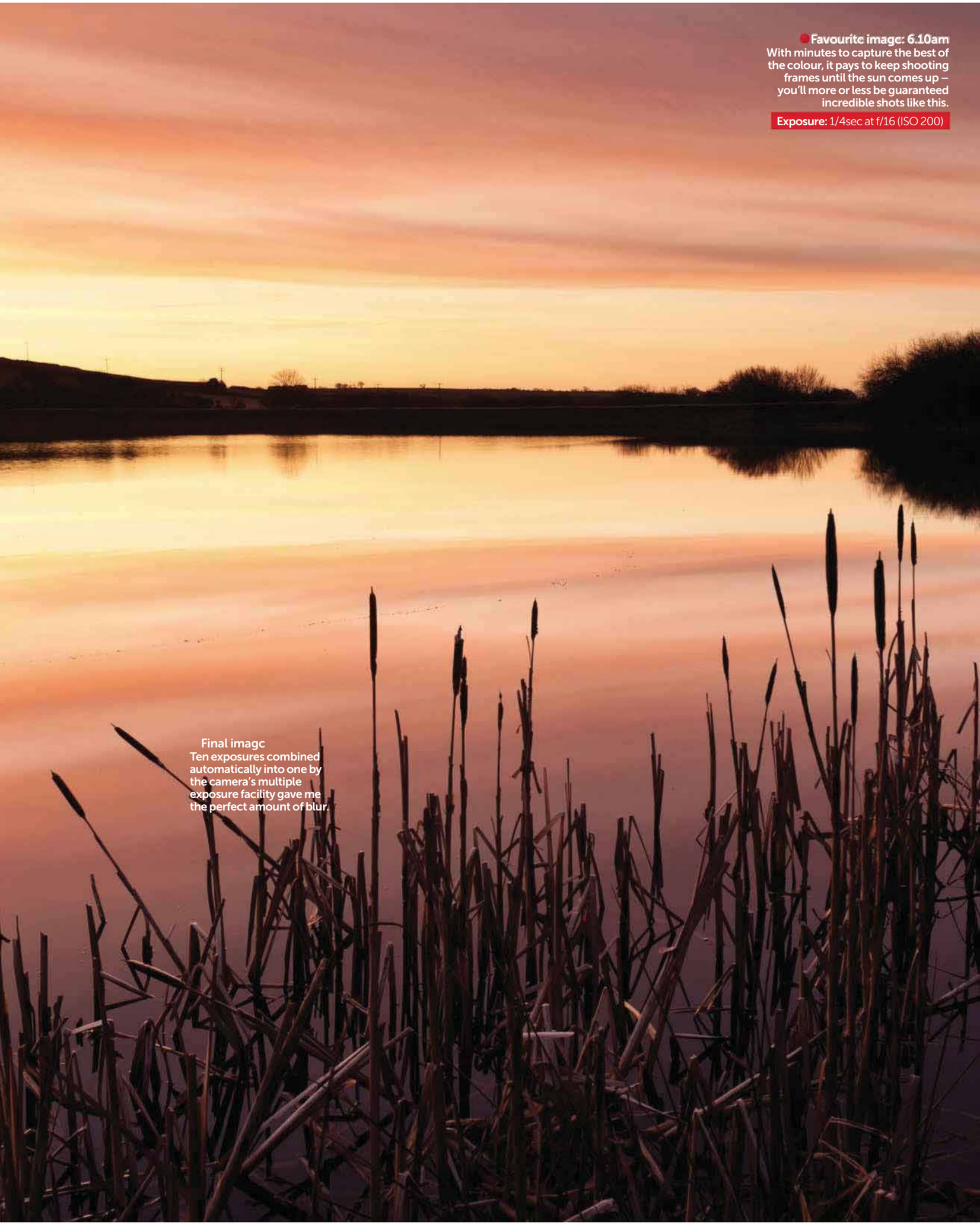
2 Travel Having chosen a location, plan to be ready to shoot at least 30 minutes before sunrise. Allow time for driving, walking to your viewpoint and setting up. The best dawn colours and glow often appear long in advance of sunrise itself. Allow too much time, rather than too little; you don't want to be driving to your location as colour begins appearing in the sky as you've probably missed half your shoot.

3 Overexposed sky With colour already beginning to form, I compose my shot. To guarantee front-to-back sharpness, I selected a small aperture of f/16 and focused on the hyperfocal distance. In the low light, a tripod is essential to ensure sharp results. Using multi-zone metering, I took my first frame. The foreground is correctly exposed, but the brighter sky is blown out.

4 Graduated ND At dawn, there is usually a large contrast in light between the sky and land. To produce correctly exposed results in-camera, you could take two frames – one exposed for the land and one for the sky – and blend them during post-processing, or attach an ND grad filter. I aligned the filter, using a three-stop grad to lower contrast to within the camera's dynamic range.

5 Predawn glow Predawn light is soft and shadowless, which contrasts well with a colourful sky. Opt for a viewpoint facing east for the best colours. Around 20 minutes before sunrise, the colours are at their best. Water scenes work well, reflecting the sky's colour and light. With the sky's intensity changing quickly, the look and feel of your images can change from one frame to the next.

6 Sunrise Just minutes later, the sky's intensity grows too strong to control as the sun appears above the horizon. The best of the colour has gone and the highlights are burnt out. However, due to the sun's low position, the light is warm and good, so don't pack up and go home just yet; instead find a different viewpoint – pointing farther away from the sun's position – and keep shooting.



Favourite image: 6.10am
With minutes to capture the best of the colour, it pays to keep shooting frames until the sun comes up – you'll more or less be guaranteed incredible shots like this.

Exposure: 1/4sec at f/16 (ISO 200)

Final image
Ten exposures combined automatically into one by the camera's multiple exposure facility gave me the perfect amount of blur.

Capture the best from a coastal sunset scene

For beauty, nothing beats a sunset over the sea. Ross Hoddinott shows you how to make the most of it

Ross Hoddinott

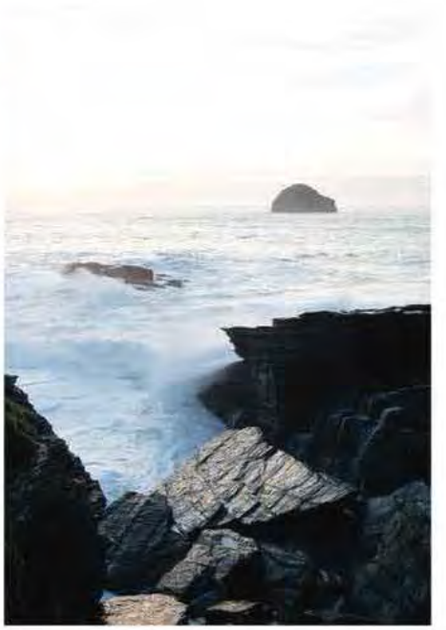
There aren't many photographers who can resist a good sunset. Fairly ordinary scenes can be transformed by the extraordinary colour and glow, and one of the best places to be at that time is by the sea. Water reflects light and the sky's warmth, while the movement of incoming waves adds motion and interest to wide-angle shots.

Shooting coastal sunsets is far from easy. In reality, most sunsets are hugely disappointing, barely materialising at all. Perfect conditions are those that don't have too much or too little cloud in the sky – just enough to radiate the sunset's warmth, but not so much that it obscures the sun. Predicting them is almost impossible, too. Great colour can be brief and unexpected. In practice, the only way to guarantee good sunset images is to head out with your camera at every opportunity – sooner or later, your persistence will be rewarded with an amazing sky to photograph.

Winter is a great time of year to try out this technique. Sunset is early, meaning you don't have to be out late, and beaches are quieter, resulting in fewer footprints in the sand. If you are visiting a location for the first time, arrive two hours before sunset to allow time to explore and identify suitable compositions. Look for viewpoints where you will not only be able to shoot in the sunset's direction, but also include interesting foreground – rocky outcrops, sand patterns, a weathered groyne or reflective pool, for example. Also check the tide time – not only is this important from a safety aspect, but the tide's height greatly dictates where you can shoot from.

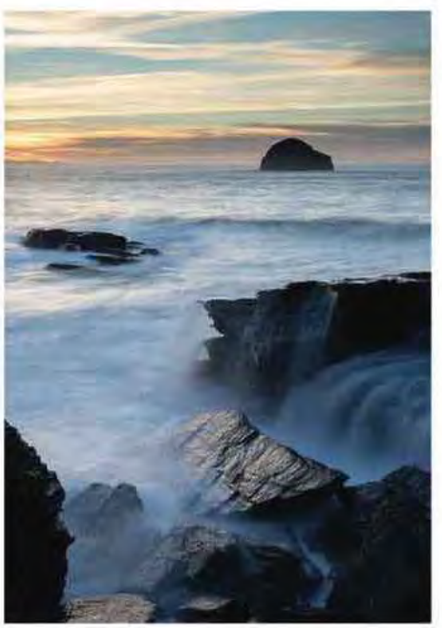
In terms of kit, a tripod is essential, as are ND grads – unless you prefer exposure blending. When there is great colour, you normally want to go wide and include lots of sky, so a short focal length in the region of 17-35mm is a good lens choice. In terms of set-up, aperture-priority mode is best for scenics, giving you full control over depth-of-field, and selecting an aperture of f/11 to f/16 provides good front-to-back sharpness. So with your camera bag all packed, it's time to head to the coast, with fingers tightly crossed for a cracking sunset...

1 Do your research Before you visit, check tide times for the area (www.tidetimes.org.uk) and also plot the sun's position using a sun/moon calculator like The Photographer's Ephemeris. Check the time of sunset and arrive at least an hour beforehand to locate the best viewpoints. If you have a smartphone, I recommend downloading the Sun Scout app to plot where the sun will set once on location, enabling you to select your viewpoint accordingly.

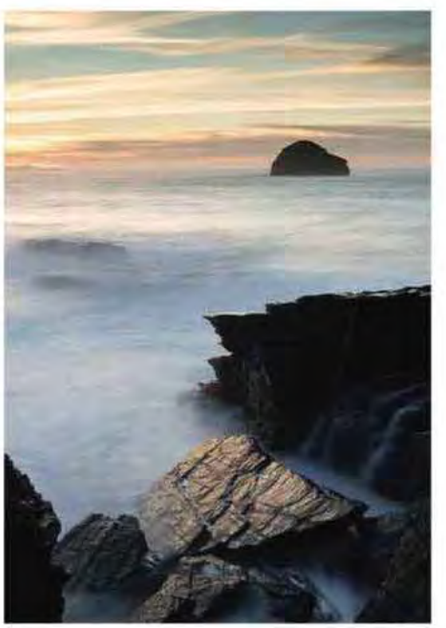


2 Scout the area Look for a good viewpoint where you can shoot towards the setting sun. Rocks, sand patterns and pools are great compositional aids for coastal sunsets. Unless diffused by cloud, the sun's intensity is normally too great to take photos long before the sun disappears below the horizon. Therefore, you need to be patient. If you try to take pictures too soon, your images will suffer from flare and skies will be overexposed and blown out.

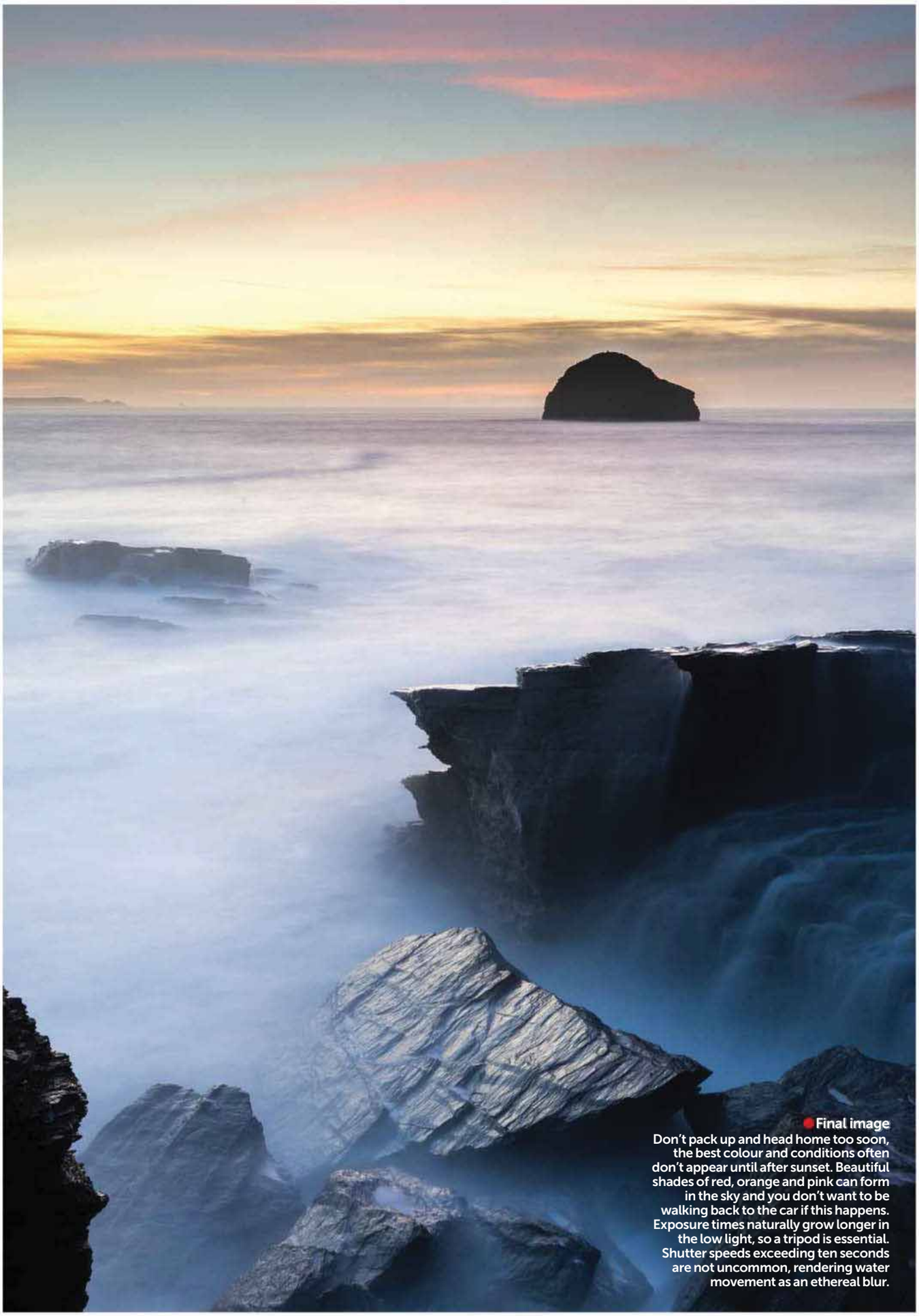
3 Use an ND grad filter Even when the sun is low and its intensity reduced, the sky will still be considerably brighter than the foreground. As a result, your camera will either correctly meter for the sky, resulting in foreground that is too dark, or it will meter for the foreground, resulting in an overexposed sky. Unless you fancy Photoshop work afterwards, the only in-camera solution is using graduated ND filters. One with a two- or three-stop density is most useful.



4 Align your filter In this instance, I use a three-stop ND hard grad filter, attaching it to my camera via a Lee Filters filter holder. An ND grad with a hard transition is often best for coastal sunsets, as the horizon is usually fairly even. When using ND grad filters, carefully align the transitional zone with the horizon for seamless results. The image here is much improved, but looks on the cool side, rather than showing off the warmth of the sunset.



5 Adjust the White Balance When shooting sunsets, don't overlook the usefulness of White Balance. Although your camera's Auto White Balance usually does a great job, it can be worth switching to the Cloudy or Shade preset to give sunsets a boost – particularly if capturing JPEGs. Doing so will warm up and enhance your sunsets. If you are shooting in Raw, you can always adjust colour temperature during post-processing.



Final image
Don't pack up and head home too soon, the best colour and conditions often don't appear until after sunset. Beautiful shades of red, orange and pink can form in the sky and you don't want to be walking back to the car if this happens. Exposure times naturally grow longer in the low light, so a tripod is essential. Shutter speeds exceeding ten seconds are not uncommon, rendering water movement as an ethereal blur.

Exploit the beauty of bluebells

Plan to take a day off in spring and head to a bluebell wood to try out one of several creative techniques to capture striking images

Ross Hoddinott

The UK is the best place in the world to photograph common bluebells – it is estimated that around 70% of their entire population is found here. So, wherever you live in the UK, you will not be far from a bluebell wood. They flower between mid-April and the end of May, but the time when they are at their peak can vary slightly from year to year. Typically, they are most photogenic at the start of May, but it is worthwhile making an early visit just to assess what stage they are at – doing so ensures you time your visit correctly and don't miss them at their best.

Weather and timing are key considerations. There is no bad weather for photographing bluebells, but a bright overcast day can often yield superb results. As the light is low in contrast, it makes it easier to achieve the correct exposure. The quality of light is soft and muted, and the colours of woodland flowers and fresh green foliage look naturally more saturated. Early morning and late evening can produce magical light for woodland photography, too. The light is warmer and the long shadows add depth to your shots. In bright overhead sunshine, the sun-dappled woodland floor can look attractive to the eye, but the level of contrast can often exceed the capabilities of your sensor's dynamic range. With so much contrast, achieving a good exposure can be difficult, if not impossible – so it is often better to avoid shooting in midday sun. It is also a good idea to visit on a still day, when bluebells remain still during exposure.

Identifying 'the shot' in woodland with large swathes of bluebells can prove tricky as your choice of composition is almost limitless. To ensure you take great images, a creative eye is vital. Keep composition simple. Avoid clutter, like fallen branches, and look for interesting woodland detail that you can make a feature of, like a mossy stump or large ferns. Narrow paths winding into the distance can be used to draw the viewer's eye into shot.

Lens choice is important so take a range of focal lengths with you. Wide-angles are great for capturing vast carpets of flowers, but often a mid-telephoto – in the region of 50-100mm – is best suited to photographing bluebells. A short telephoto will shorten perspective, creating the impression that the carpet of flowers is denser than it is. This type of focal length is also good if you wish to focus attention on a particularly photogenic group of trees. A macro lens, or the long end of a telezoom, is ideal to isolate individual flowers.

In overcast light, achieving the right exposure is relatively straightforward. Your camera's multi-zone meter shouldn't have any problems. In early morning or late evening light, it is often preferable to shoot in the direction of the sun, so that it 'bleeds' through foliage. However, when shooting towards the light, metering can be deceived and results underexposed. Keep an eye on the histogram and apply exposure compensation if required.

Shutter speeds are often slow in the shade of woodland, so a tripod is essential. For sweeping, wide-angled images of woodland interiors, opt for a small aperture, like f/13. This creates a large depth-of-field which will render everything in focus. However, a shallow depth-of-field will suit some scenes better. For example, isolate a single plant and select a wide aperture like f/4 or f/5.6 to render background flowers as an attractive blue haze.

Finding a bluebell wood

Search online for woods in your area. Below are a few, just to get you started.

- **Micheldever Wood, nr Winchester**
  OS Grid Reference: SU530363
  Visit: www.forestry.gov.uk
- **West Woods, nr Marlborough**
  OS Grid Reference: SU163667
  Visit: www.forestry.gov.uk
- **Yoxall Lodge, nr Burton upon Trent**
  OS Grid Reference: SK1521
  Visit: www.bluebellwoodsofyoxall.co.uk

For further information on bluebell woods, visit: www.woodlandtrust.org.uk

Other woodland flowers

- **Wood anemone:** Widespread and locally common woodland perennial, often growing in large clumps. Its white flowers are beautiful and delicate. Best shot individually in close-up or in context with its woodland surroundings using a wide-angle.

- **Ramsons:** Often growing among or near bluebells. They smell strongly of garlic and can grow in vast numbers in damp woodland. Very attractive backlit or in frame-filling close-up. Attach a polarising filter to saturate the colour of the leaves.

- **Herb Robert:** Common and widespread, its photogenic pink flowers appear from April onwards. Using a macro lens or close-up filter will reveal its delicate beauty. A small silver/white reflector bounces natural light and relieves harsh shadows.

STEP-BY-STEP TO BLUEBELL MAGIC

Bluebells are unquestionably beautiful, but that is not to say they are easy to photograph. Being such a popular, well-photographed subject makes it even harder to produce original, creative images. Ross Hoddinott provides inspiration by visiting his local woodland in order to see what variety of bluebell picture he could shoot. His expert advice will help you know what to look for, techniques to try, and what to avoid when shooting bluebells.

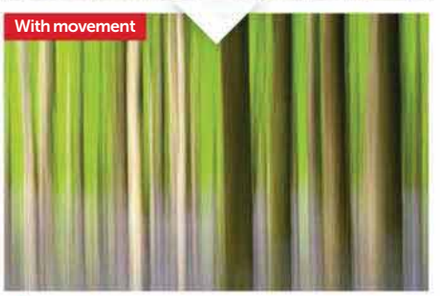
1 Avoid clutter and distraction When I took this image, I was seduced by the vibrancy and colour of the bluebells and overlooked the fallen branches and cluttered woodland floor. Keep compositions clean and simple.

2 Look for compositional aids A winding path or mossy stump can make for a strong lead-in line. This will give your images a three-dimensional feel. Without this, images may sometimes lack depth and interest.

3 Experiment with depth-of-field Shallow focus can work well when photographing woodland subjects. Select a wide aperture to diffuse background detail. This will place emphasis on your point of focus.

TOP TIP

Always place the welfare of your subject first. Keep to paths and never tread or trample on flowers for the sake of a better composition. Don't pick flowers either. Photographers are getting a bad press for their disregard to wild flowers – don't add weight to the argument



4 Be creative Set a shutter speed of one second and move the camera up and down during the exposure to artistically blur the trees. It is a hit-and-miss technique and may take many attempts to get a result that you like.

5 Try a zoom burst This is another easy, creative technique. Compose your shot using either the zoom's shortest or longest end. Then, during exposure, smoothly adjust the zoom ring to the opposite end of the lens's range.

6 Use a polarising filter A polariser will reduce the glare and reflections from foliage and flowers. The filter helps restore natural colour saturation and gives woodland images added impact. Note it will lengthen your exposure.

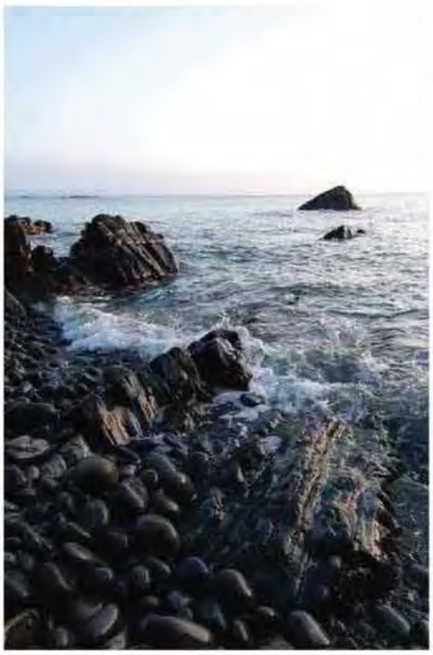
Blurring motion in water

Professional photographer Ross Hoddinott demonstrates how to render moving water as atmospheric, ethereal mist for creative effect

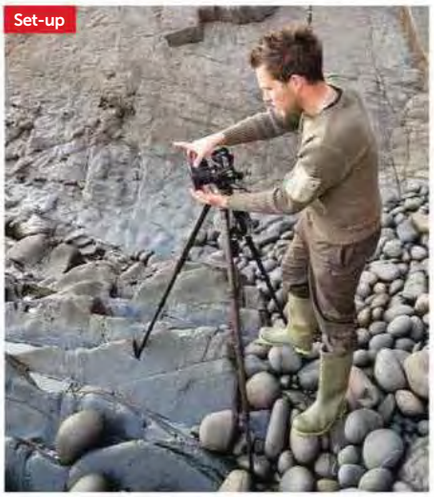
Ross Hoddinott

Blurry water – you either love it or loathe it. I love it. To render moving water milky, the right exposure time is essential; too fast and the water can look messy. A good rule of thumb is to select a shutter speed of around one second or longer. This should create an attractive level of blur. Lengthier exposures create even more atmospheric results.

To generate the longest exposure time for the available light, select your DSLR's lowest ISO together with the lens's smallest aperture (eg f/22 or f/32). In low light, achieving a lengthy exposure is relatively easy, with exposure times naturally longer. But when the light is good, it is not often possible to select a shutter speed sufficiently slow without overexposing the image. The solution is to use an ND filter. The stronger the density of the ND filter, the more light it absorbs, the longer the exposure and the greater the level of blur. For extreme effects, a Lee Filters Big Stopper (ten stops) can generate exposure times of several minutes, requiring the use of your camera's Bulb setting and a remote release. When shooting water movement using long exposures, every image will be different. Take a sequence of images and decide later which one is best.



1 Compose your shot It is evening and the tide is high. To blur the water as it washes over the rocky outcrops and pebbly shore, I carefully arrange my composition, using a tripod to keep my images shake-free. With the camera set to program mode it automatically sets a shutter speed of 1/80sec at f/8 based on the available light – not slow enough to blur water.



2 Select mode To blur the water movement, take control from the camera by selecting either shutter-priority mode and the slowest shutter speed available, or aperture-priority mode and opt for the smallest aperture. Either method sets the longest exposure obtainable in the given light. Also, select your camera's lowest ISO rating; typically ISO 100 on the majority of DSLRs.

3 Lengthen the exposure Having selected ISO 100 and aperture-priority mode, I set the minimum aperture of f/22 and wait for a large wave to wash around the foreground rocks. The exposure of 1/8sec at f/22 is longer, but as the water still isn't rendering milky, I add a polarising filter to help lengthen the exposure.

4 Use a polariser A polariser has a filter factor of two stops, so can be used as a makeshift ND filter by extending the exposure – ideal if you don't own an ND. It also helps remove glare, in this case from the rocks. The result is better, but in this instance, the exposure of 1/2sec at f/22 is still not long enough for the ethereal result I am after.

5 Add an ND filter For the blur I want, I have to add an ND filter. I leave the polariser in place and attach a three-stop ND filter. The camera's TTL metering automatically adjusts for the filter, but it also darkens the viewfinder so you will need to compose and lock the focus for the shot before attaching the filter to your DSLR.

TOP TIP

Using long exposures to blur water motion is a technique that relies on a sturdy tripod, otherwise camera shake will ruin the results. Quite simply, a tripod is essential, not optional

Shoot silhoucttcs

Backlight your subjects to create stunning silhouetted images – this guide shows you how

Ross Hoddinott

As photographers, we are always striving for the 'correct' exposure, aren't we? However, it could be argued that there is no such thing, as it greatly depends on the subject, the situation and the effect the photographer wants to achieve. For example, a silhouette can create a truly eye-catching image even though, technically speaking, it is the result of a poor exposure.

A silhouette is when the subject is recorded as a black outline, without colour or detail, against a lighter background – in other words, the subject is grossly underexposed. It is the most extreme form of backlighting but, when combined with the right scene or subject, the results can be stunning – particularly when the subject is contrasted against an interesting or colourful sky. Despite the lack of detail and colour, silhouettes can convey much about the subject and they prove that there really is no such thing as a 'correct exposure'.

One of the great things about shooting silhouettes is that they are easily achieved and you need very little in terms of kit to get a good result. I visited Dartmoor's windswept landscape to show you how to shoot perfect silhouettes...

1 Get your tripod low When shooting silhouettes, a low viewpoint often works best – helping you to set your subject starkly against a bright sky. Therefore, don't be afraid to get your knees damp and dirty to select a low angle. In this instance, I splay the legs on my tripod wide open, enabling me to shoot from a low perspective.

Metering

Your camera's Matrix multi-zone meter is designed to render the subject as a mid-tone. While this is perfect for the vast majority of situations, it will rarely produce the results you are looking for when shooting subjects that are considerably lighter or darker in tone. A silhouetted subject can create problems for metering systems. Although highly sophisticated, the camera's exposure system cannot predict the effect you are trying to achieve. Therefore, if the scene is dominated by a black silhouetted subject, the camera will attempt to render it as a mid-tone by selecting a longer exposure – resulting in overexposure. Alternatively, if the scene is dominated by sky and is very light, the camera is likely to underexpose the frame. Thankfully, avoiding this type of exposure problem is simple by switching to your camera's spot-metering mode. This metering mode is selected either via a dedicated button or through the camera's menu system. It calculates the overall exposure from just a small portion of the frame – usually a central circle. Point the spot-metering circle at a bright area of the frame and press the shutter release button halfway to take a reading. These are the exposure settings you want to employ to take your silhouette. Pressing the auto-exposure lock (AE-L) button, 'lock' the settings, compose your image and release the shutter. The result should be that your subject becomes underexposed and appears as a pure black silhouette.

TOP TIP

In silhouettes, we strive for the main subject to be devoid of detail or colour; so select subjects with a strong, recognisable outline. People, buildings, animals and trees make good choices

2 Crop into your subject Trees create a graphic, simple outline – perfect for silhouettes. It is easiest to take silhouettes in mornings and evenings, when the sun is lower in the sky, so having arrived early, I spot these two trees that I think will work well. Using the long end of a standard zoom, I crop in tightly to them, but the camera's multi-zone meter attempts to record them as a mid-tone, resulting in a disappointing, washed-out shot.

3 Use spot metering To ensure that the lovely colours of the sunrise are recorded faithfully, and that the trees are thrown into pure silhouette, I switch the camera's metering mode to spot (this is often illustrated by a dot, as seen in the picture above). If you are unsure how to select spot metering, check your camera's instruction manual. If your camera lacks a spot mode, use partial metering instead.

Final image
By zooming in a little from the last frame, I feel that I've struck the right balance in terms of composition. Placing the trees right-of-centre creates a stronger image than it would have if they had been central. Spot-metering has enabled me to capture the right exposure in-camera – all I had to do post-capture was intensify the sky's colour very slightly by clicking *Image>Adjustments>Hue/Saturation* and adjusting the saturation slider to +10.

4 Lock your settings I remove the camera from the tripod via the quick-release plate, and point the spot-metering circle at a bright area of the sky. I press the shutter release button halfway to take my meter reading, and then lock these settings by using the auto-exposure lock (AE-L) button. I replace the camera on the tripod and check that the composition hasn't changed. Then, using the new locked settings, I take another picture.

5 Review composition Although the exposure is now correct, I am feeling less happy with the composition. It looks a little cramped and I wonder whether I've cropped in too close. The joy of using a zoom lens is being able to quickly change composition without having to move. I zoom out to leave more space around the trees, allowing me to capture more of the sunrise. However, have I now gone too far towards the opposite extreme?

Create abstract images

Ross Hoddinott reveals how intentional camera movement can yield amazing results if you learn how to get the technique right

Ross Hoddinott
Camera: Nikon D800
Lens: NIKKOR AF-S 70-200mm f/2.8

HOW OFTEN DO you hear of the importance of image sharpness, or that you should always use a sturdy tripod, remote release and mirror lock-up when shooting landscapes? Well, there are always exceptions to every rule, and when capturing images using a technique called 'intentional camera movement' – or ICM – the rulebook gets thrown firmly out the window.

ICM is a Marmite technique – you either love it or hate it. As the name suggests, the idea is to move the camera during the exposure to creatively blur a static subject. This might sound like a recipe for disaster, but it's actually easy to achieve very artistic results with a little trial and error. Images can look painterly and convey a sense of mood or movement. Any focal length can work, but, generally speaking, a standard to medium telephoto length is the best option – in the region of 50mm to 135mm.

In order to capture ICM images, a slowish shutter speed is required – aim to use speeds around 1/4sec to one second. However, you could opt for a longer or shorter length depending on how fast you move the camera and the effect you desire. There are a couple of different ways to generate a speed of this length. You could select a combination of low ISO rating and small aperture of f/22 or f/32 – you don't need to worry about diffraction as results won't be sharp anyway. Alternatively, you could just shoot in low or overcast light. If you still struggle to achieve a slow enough shutter speed, try filtration – a three- or four-stop solid ND filter should do the job nicely, while a polarising filter will absorb two stops of light, so can also be used to artificially lengthen exposure. A polariser also has the added advantage of boosting colour saturation and reducing glare.

All types of subjects suit ICM, but woodland and beach scenes are particularly popular and well-suited to the technique. Opt for subjects that have strong shapes, which will remain recognisable even when creatively blurred. Also, areas of strong colour, lines and contrast suit ICM well. What you need to remember is that the final image will not closely resemble the subject itself, but instead will be an abstract representation of it.

So with your subject and exposure sorted, now comes the fun part. Trigger the shutter and move the camera during exposure. You can do this handheld or with a tripod, using a panning action to blur your subject. For smooth results, begin moving the camera before opening the shutter and continue panning until it closes. Often movement only needs to be relatively small – too much and your shot will be one big blur and your subject's definition will be lost.

Different types of motion yield varying results. Vertical and horizontal movement is most popular, but moving the camera back and forth, diagonal panning and rotation can also create striking ICM images. Moving the camera parallel to lines and edges that already exist in your composition will emphasise them – for example, vertical panning typically suits tall trunks best.

No two results will ever look the same. This is a real hit-and-miss technique – you might find you get the effect you want after one frame, or it might take you 40 or 50 attempts! You can never be sure what you are going to capture with ICM, which is one of the reasons why it is such a fun technique!

SET UP: If you are new to using intentional camera movement, woodland is a great place to begin. The strong, vertical lines and repetition/pattern of tree trunks is ideally suited to the technique. Normally, it is best to avoid strong or harsh sunlight. Overcast, diffused or early morning/late evening light is normally best. In this instance, I visited a local conifer woodland just after sunrise.

Original scene

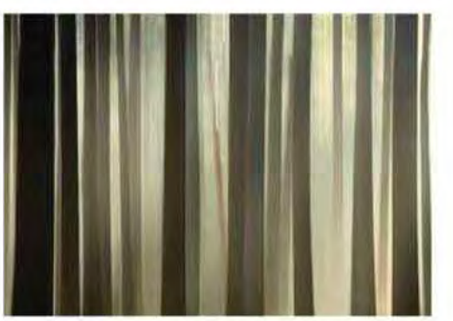
1 Set a slow shutter Selecting a slow shutter speed is integral to the technique. Try to use an exposure length of between 1/4sec to one second. Begin by selecting your DSLR's lowest ISO (typically ISO 100) and a small aperture. If this doesn't suffice, try filtration. A solid ND filter is designed to absorb light. However, in this instance, I attach a polarising filter, which has a factor filter of up to two stops – doing so helps me achieve an exposure of one second at f/22.

Final image
There is no right or wrong result – it all comes down to whichever image you're happy with.

Exposure: 0.6 seconds at f/22 (ISO 50)

2 Pan your camera Roughly compose your image and focus. To ensure a smooth panning action, begin moving your camera just before you trigger the shutter and continue to pan the camera smoothly throughout exposure. It is fine to do this handheld, but if your tripod head is a three-way pan/tilt design, you will probably find it easier using its controls. Experiment with different shutter speeds and the speed with which you move the camera.

3 Try various techniques Different types of ICM produce very different results. Try moving the camera back and forth diagonally, or – if you are using a lens with a tripod collar – why not create radial blur by rotating the camera during ther exposure? Often, you don't know what will work, and what won't, until you try it. Keep movement smooth and deliberate. Generally speaking, it is best to avoid too much sky in shot, as it has a tendency to overexpose.



4 Change settings and movement To a great extent, ICM relies on trial and error. Every image will be different from the one previous, and you just have to persist until you get the right combination of shutter length and camera movement. Vertical panning suited these tree trunks best and a smooth top-to-bottom motion, using a shutter speed of 0.6 seconds, produced just the level of blur and artistic abstraction that I wanted.

Shoot a solitary tree

Blessed with a sunny day? Make the most of the fine weather and head out into the countryside to shoot a vibrant rural image. Helen Dixon shares her expert advice to help you bag a cracking shot of a lone tree...

Helen Dixon
Camera: Nikon D800E
Lens: Carl Zeiss Distagon 21mm

SOLITARY TREES HAVE long been a loved subject for photographers. There's something alluring about a minimalist landscape containing a lone structure, standing tall amongst its surroundings. The resulting images are simple yet striking and are relatively easy to create.

In terms of your choice of subject, look for a tree that sits near the crest of a hill. Shooting uphill removes distractions from the horizon, isolating the lush, green foliage of the tree against the vibrant blue of the sky. The key to a successful composition is to keep it simple – if your sky contains interesting cloud formations then don't be afraid to compose the shot to include a big sky. Alternatively, you could try positioning the tree to sit centrally in the frame. When all else fails, the rule-of-thirds is a pretty sure-fire route to success. If composing the shot in portrait format, place the tree centrally on either the upper third or lower third dividing line; if composing in landscape format, consider placing the tree on an intersecting third for maximum impact.

Once you've found your ideal subject, a bit of planning will ensure that you capture a successful image. Visit on a sunny day to capture the tree set against a brilliant blue sky, and time your visit so that the sun is behind you, otherwise the foliage will be cast in shade. Once on location, look for interesting cloud formations, or clouds with interesting shapes that you can include in your composition – these can be used to create balance between foreground and sky.

Kit-wise, there are very few essentials, other than your camera, that you'll need to be able to successfully pull off this technique, although a circular polarising filter (see panel, right) will help make the most of the colours in your scene and a sturdy tripod will make composing and getting a sharp shot easier.

Once you've photographed your tree during the summer months, why not return to the same spot during different seasons to document the change? The results can be arranged together as a series of images.

Polarising filter

Polarising filters allow you to cut down the amount of reflected light in a scene – boosting contrast, making foliage greener and the sky clearer and more vibrant. They are available in a large range of thread sizes to suit a variety of lenses and can be rotated to alter the polarising effect. Best of all, you can look through your viewfinder to assess the exact effect that the filter is having on your image. Unlike many other types of filter, too, the effect of a good polariser is very difficult to mimic in digital software, making it a must-have piece of kit.

1 Find the right angle Once you've identified the ideal candidate for your solitary tree, have a good walk around to assess the best angle to shoot from. This tree is ideal, being in the middle of a grassy field – however, from this angle it doesn't stand out from the background.

2 Compose the shot Moving down the hill towards the lake offers much better shooting options, with relatively few distractions on the horizon. Set up your camera on a tripod and try a variety of compositions. I first try a landscape-format image, positioning the tree using the rule-of-thirds.

3 Dial in the settings Select aperture-priority mode and choose a mid-aperture. I'm using Matrix metering, but if this doesn't work, try spot-metering from grass or foliage for a good exposure. Take a test shot and check the histogram – dial in exposure compensation if required.

4 Use a polarising filter Attach a polariser to add contrast and saturation to the scene. Rotate the polariser, assessing the results through the viewfinder until you are pleased with the effect. Be mindful of dark areas in the sky caused by overpolarisation if using an ultra wide-angle lens.

Final image
I change my composition for a portrait image in my final shot, and position the tree to make the most of the cloud formations and blue sky.

Exposure: 1/30sec at f/13 (ISO 100)

Crcating motion blur using multiple exposure

Want to capture dynamic movement in clouds or water but lacking an ND filter? Ross Hoddinott shows you the ropes...

Ross Hoddinott
Camera: Nikon D800
Lens: NIKKOR AF-S 16-35mm f/4

LOVE IT OR hate it, creatively blurring subject motion is a popular technique among photographers. It's hard to deny that it implies motion and adds energy, depth and mood to photographs. The most popular subject to 'blur' is water, but moving clouds, foliage and even people can also suit the technique.

The question is, how do you create the effect? The simple answer is to employ a slow shutter speed, typically of 1/4sec or longer. By doing so, any movement during the time the shutter is open will appear blurred. To generate an exposure of around this length, you could shoot in low light, when shutter speeds will be extended. Alternatively, photographers can attach a Neutral Density (ND) filter, which absorbs light, in order to artificially lengthen exposure time. However, what do you do if the slowest shutter speed possible is too fast to create blur and you don't have an ND to hand? All is not lost...

Although less regularly discussed, a DSLR's multiple exposure facility can be employed to generate a very similar effect to that of an ND filter. Basically, instead of taking a single long exposure, you make multiple exposures of a normal length. When combined, the result looks almost identical to what you would have achieved using a solid ND. For example, if you captured and combined ten images taken at 1/20sec, the result of the completed multi-exposure would effectively appear as if it had been shot using a single 1/2sec exposure. By using the technique, you can blur water ripples, cascading waterfalls and fast-moving clouds.

Multiple exposure modes allow you to take a predefined number of frames before combining them. Not all digital SLRs offer this feature, though many Nikon models do, from entry-level right up to pro. Quickly check your camera's user manual to find out if your camera has the facility or not. On my Nikon D800, the multiple exposure facility is found within the Shooting Menu.

Having selected this function, I am presented with three options: Multiple exposure mode On/Off; Number of shots; and Auto gain On/Off. Most cameras will offer the same or similar options. Typically, it is best to keep Auto gain switched on to prevent overexposure. It is normally best to select a number of shots between six and ten to generate an intentional-looking level of blur, although the amount of frames required will vary depending on shutter length and subject speed. After the last image is captured, the camera combines them automatically in-camera to create a single file.

Normal exposure

1 Use a tripod When using your camera's multiple exposure facility to create a long exposure, it is important to employ a good, sturdy tripod and a remote release. This will not only maximise image sharpness, but also ensures each frame is identical.

2 Establish a good exposure I compose my image so that water cascading over boulders forms my foreground, while a Welsh mountain creates a dramatic backdrop. At ISO 100, using an aperture of f/11, the resulting shutter speed is 1/20sec – not long enough to creatively blur the water's motion.

3 Try a multiple exposure I don't want to select a smaller aperture due to the risk of diffraction and don't have an ND to hand. However, using multiple exposures, I know I can still create the effect I want. I switch the facility on and take a sequence of six shots. However, Auto gain is off, resulting in overexposure.

4 Turn Auto gain on I quickly realise my mistake and switch Auto gain on – the camera now allows for the accumulation of exposures and creates a single correctly exposed result instead. I take another multiple exposure set of six images. The result looks good, but I still want a slightly greater level of motion.

5 Increase number of exposures I increase the number of shots in the multiple exposure sequence to ten. I then trigger the shutter ten times. This effectively creates an overall exposure of 1/2sec, enough to hopefully give the degree of motion I want and all without having to attach an ND filter or shoot in low light.

TOP TIP

If your camera doesn't have a multiple exposure mode, you can achieve the same effect in post-processing by stacking photos together and adjusting the opacity of each layer to suit.

Final image
Ten exposures combine automatically into one by the camera's multiple exposure facility, giving me the perfect amount of blur.

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.

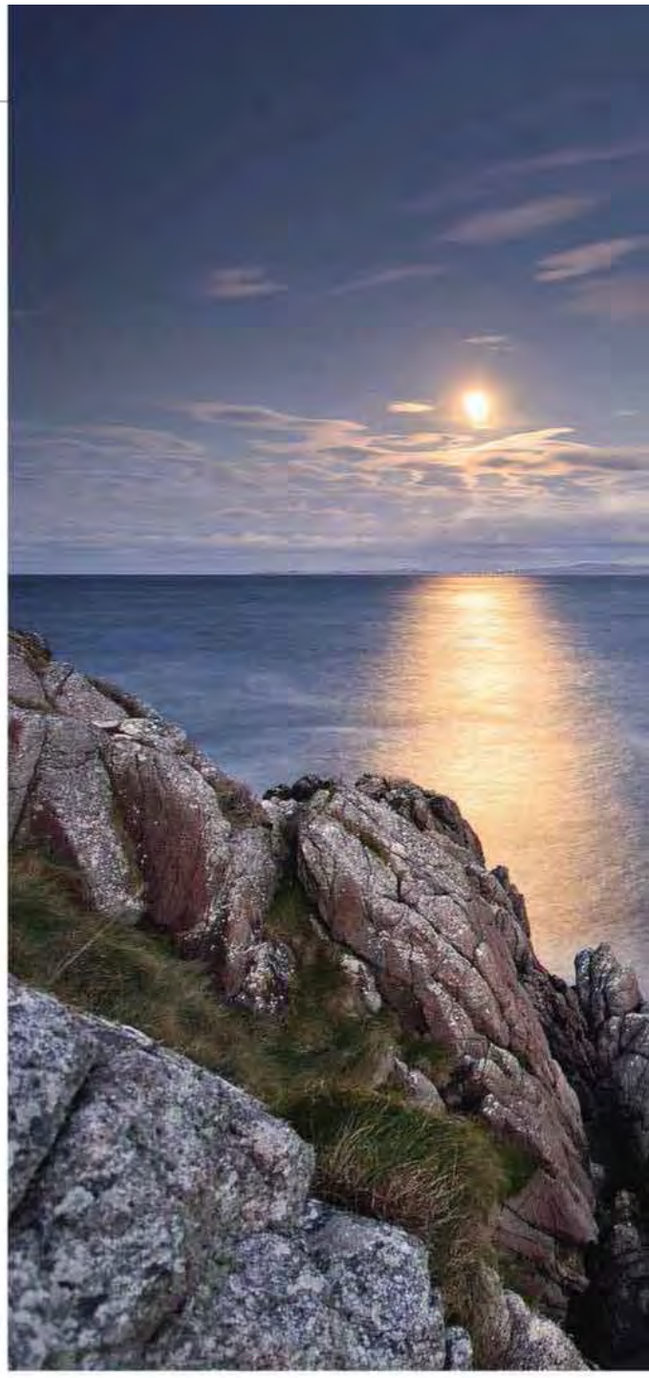
Exposure is a photographer's main challenge when it comes to moonlight, as it's several thousand times weaker than sunlight. A further complication for anyone taking pictures at night is the fact that the moon moves fairly quickly, so exposures that are more than a couple of minutes long can render it 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.

JOHN PATRICK

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.

GARY MCPARLAND

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 1.5x, so the equivalent focal length of a 200mm lens is 300mm.

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.

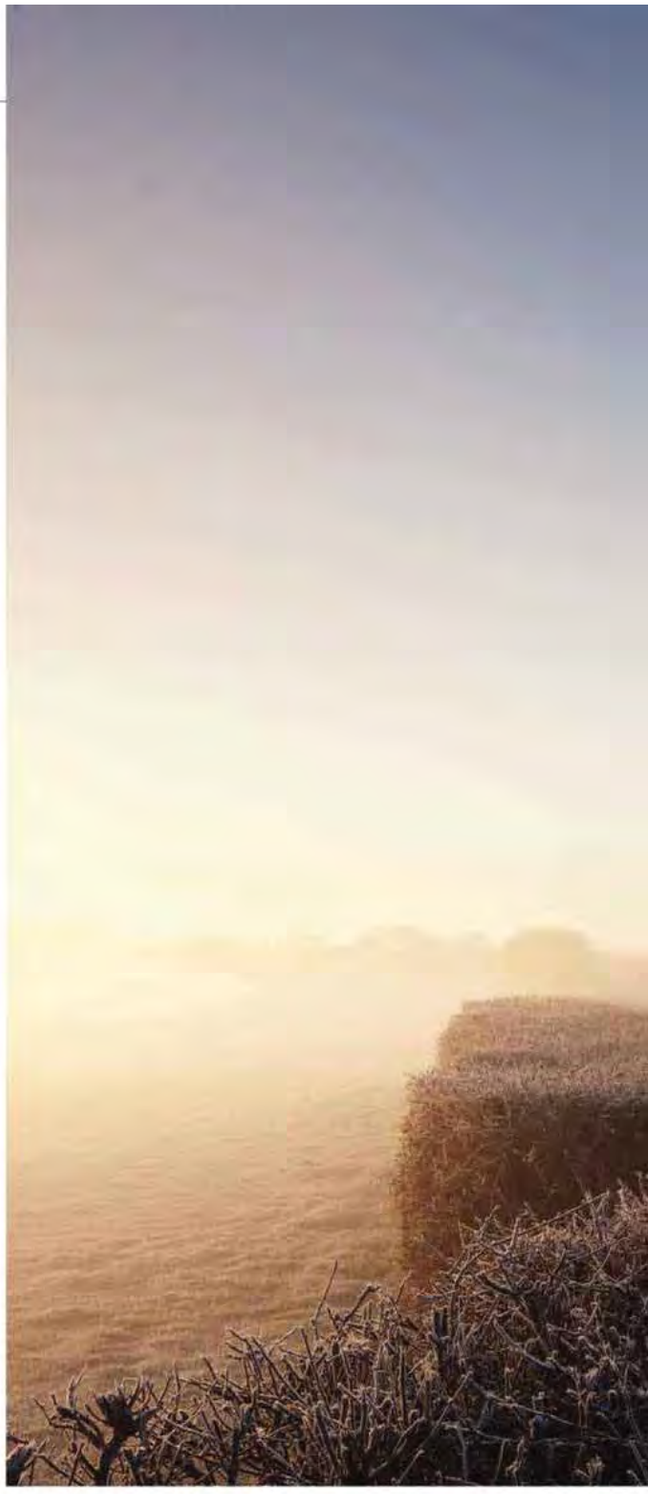
You're likely to have to crop the image in Photoshop and do a little work on the tonality by adjusting the Levels to draw out more detail on the moon's surface.

LEE FROST

PHOTOSHOP TECHNIQUES

IMPROVE YOUR SKILLS
MASTER NEW DIGITAL EDITING TECHNIQUES!





Incrcasc contrast using Adjustmcnt Laycrs

Are your images in need of a contrast boost? Find out how to add extra punch to colours using Adjustment Layers and Blend Modes

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.

Adjustmcnt Laycrs

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.

1 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***.

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.

Final image
The contrast increase has cut through the haze and boosted saturation.

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.

6 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

Jordan Butters

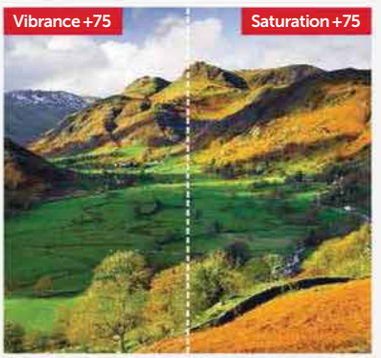
Autumn, especially, is a beautiful time of year for capturing colourful landscapes. Deep blue skies, rustic reds, lush green grass and golden oranges. When shooting to capture colour like this, it's only right to assume that we want to do these fantastic colours justice with accurate reproduction. Failure 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 in-camera, 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.

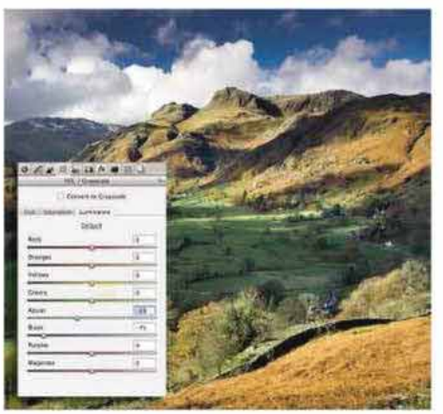
Vibrance & Saturation

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.



1 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.

2 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.

Final image
The vibrant, punchy colours that were present on the day have been restored, creating an eye-catching image.

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.

Breathe life 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...

Luke Marsh

We all have images that didn't quite 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.

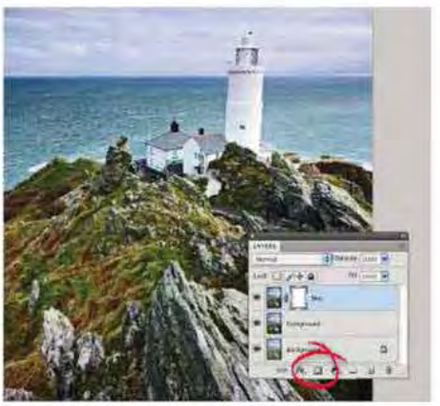
The key to success with Shadows & Highlights is subtlety. As with any process that plays with tonal range, Shadows & Highlights can produce photographic Frankensteins if used too eagerly. So why not give it a go? The controls may seem daunting at first, but after a little experimentation and a better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

Hot Key

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.

1 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.

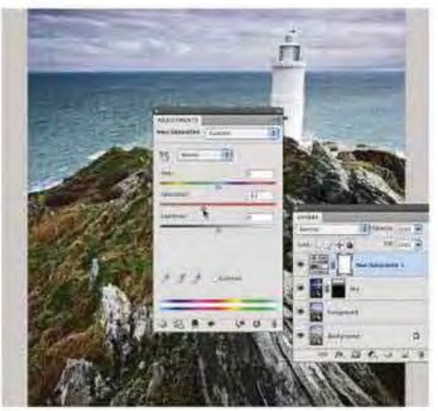
2 Shadows & Highlights On the duplicate layer go to ***Image>Adjustments>Shadows & Highlights...*** As the image is generally flat, concentrate on the ***Shadows*** and ***Midtone Contrast***, with only minor adjustments to the ***Highlight*** field. At this stage you want to be focusing more on getting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



3 Duplicate adjusted layer Now duplicate this 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.

4 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.

5 Create a stormy sky With the mask in place, any work done will only affect 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.



6 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 layers.

Final image
From flat to fantastic: Shadows & Highlights has pulled out lots of detail that laid hidden in the JPEG.

Behind the mask

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

Jordan Butters

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.

TOP TIP

To apply an adjustment to a single layer rather than the whole image, select the ***Clip to layer*** button ( ) in the Adjustments palette.

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 Layers palette. Then use the ***Brush Tool*** to brush over and mask your image. Remember – White reveals the layer, Black masks it.

1 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 ***X*** key and brush back over to remove the mask.

3 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.

4 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.

5 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.

6 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.

Final image
By selectively adjusting the foreground, the image has far more impact and visible detail.

Create 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

Luke Marsh

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

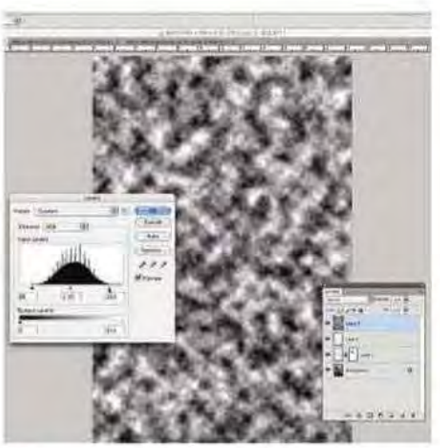
Flip between the Foreground and Background Color
When using *Layer Masks* or the *Gradient Tool*, use the *X* key to change between the Foreground and Background Color, which is set to Black and White as default.

ADAM BURTON

1 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.

2 Reveal the tree In reality, the mist would be 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.

3 Focus on the middle-distance To add fog 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).



4 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.

5 Adjust perspective To add perspective, go 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.

6 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.

Final image
A few simple steps are all it takes to add a touch of mist to your landscape images.

Add a colour graduatcd filter

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

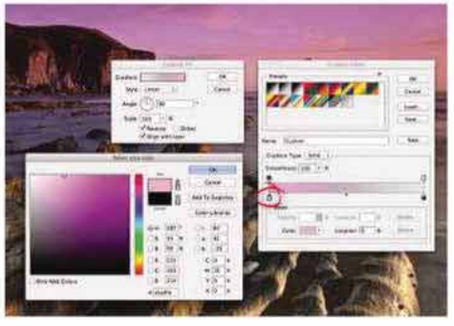
Jordan Butters

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.

1 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.

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*.

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.



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*.

5 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*.

6 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.

Final image
Caught out without your filters? No fear – when you can create stunning sunsets like this in Photoshop, you've always got a back-up plan!

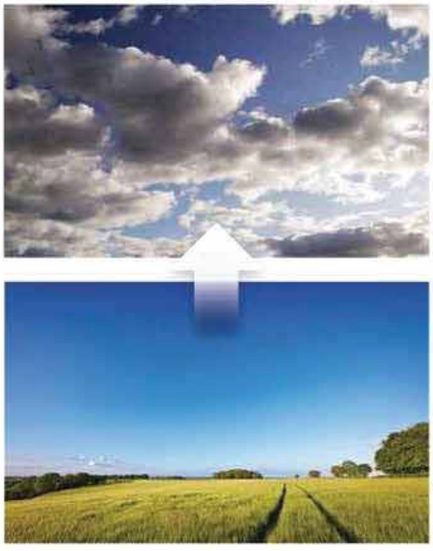
Bland to bcautiful: learn how to replace a sky

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.



ISTOCKPHOTO

1 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*.

2 Refine the selection Go to *Select>Refine 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.

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.

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.

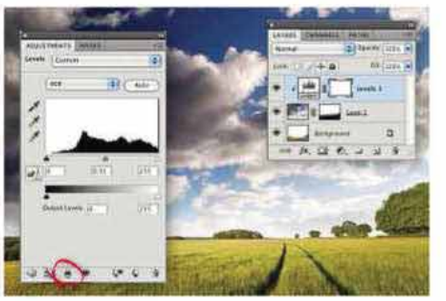
TOP TIP

The sky typically gets brighter the closer to the horizon it is. Bear this in mind when applying your gradient – if the gradient is too low or too hard, then the effect will lack realism

Final image
We think you'll agree that the new sky adds some much needed drama to the original image.

ISTOCKPHOTO

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.

Make the year a blur with a four-seasons special

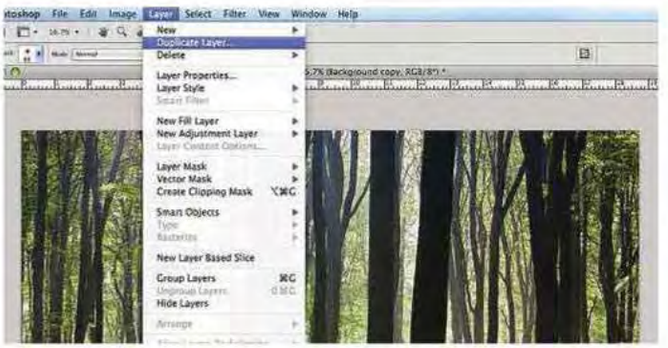
Give your seasonal landscapes a creative twist with this simple but striking motion-blur technique

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.

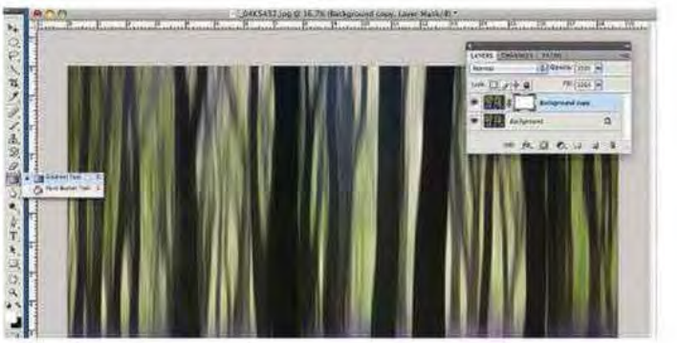
After some trial and error, it was clear that to get the best results for the seasonal quadtych (series of four images), I'd need images where there was as much interest in the top of the frame as the bottom, otherwise you wouldn't be able to tell what was blurred or in focus. I found that the best scenes 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.



1 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.

2 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***.

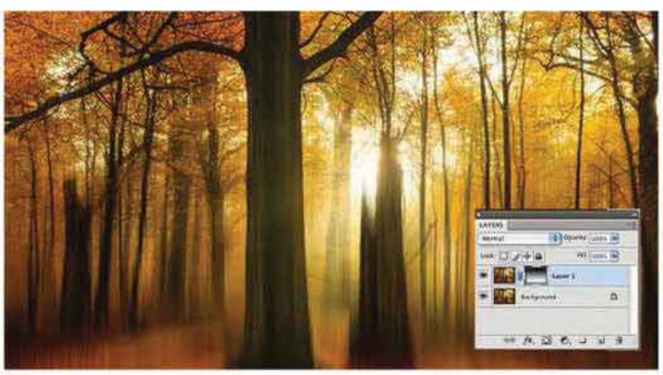


4 Apply a Layer Mask To add a Layer Mask to the blurred image, click on the ***Add Layer Mask*** icon at the bottom of the Layers palette. You'll notice this adds a white box next to your image in the Layers palette. Then select the ***Gradient Tool*** from the toolbar or press ***G***.

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.

Final image
Print the pictures out and frame them for the wall or why not try having them made into canvas prints or acrylics for a different look?

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.

Crcatc a tcn-stop ND cffcct

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

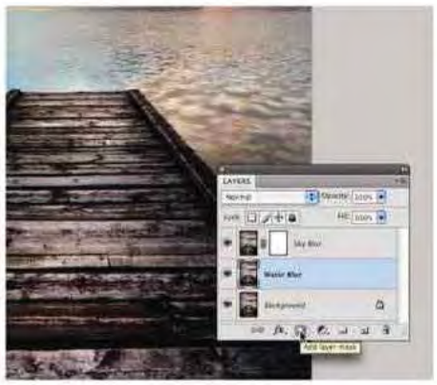
Luke Marsh

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.

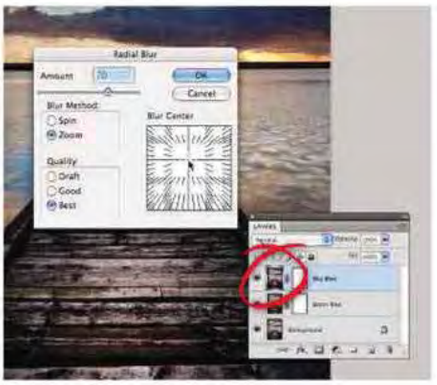
There is, however, a shortcut to getting a very similar effect using Photoshop's Blur filters, and while it may not be one for the photo-purist, it can produce a very convincing comparison when combined with the right kind of image. Feel free to experiment on any image, but it's usually coastal scenes 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.

Laycr Mask

A Layer 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.



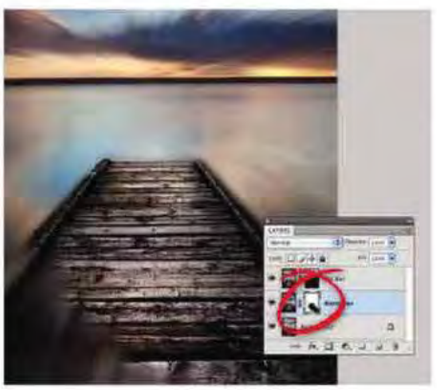
1 Create duplicate layers First, create a duplicate layer from the Background layer by going to ***Layer>Duplicate Layer...***, naming the layer accordingly – here, it's called 'Water Blur'. Then click on the ***Add layer mask*** icon at the bottom of the Layers palette to add a Layer Mask. Repeat this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

6 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.

Final image
With just a few steps, you could add this beautiful atmospheric effect to your landscape images.

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.

Enthusiast p138

Semi-pro p140

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.

- **Camera straps:** Upgrade to a neoprene strap for added comfort. Our favourites are by Op/Tech, but several brands offer a choice of colours and styles.

Contents

Arctic Butterfly
www.visibledust.com

B+W
www.bpluswfilters.com

Cokin
www.intro2020.co.uk

Depssi
www.bluepondimages.com

Gitzo
www.gitzo.co.uk

Giottos
www.giottos-tripods.com

Hama
www.hama.co.uk

Hähnel
www.hahnel.ie

Heliopan
www.teamworkphoto.com

Hitech
www.formatt.co.uk

Hoodman
www.teamworkphoto.com

Hoya
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Lowepro
www.lowepro.com

Lee Filters
www.leefilters.com

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Paramo
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Really Right Stuff
www.reallyrightstuff.com

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ThinkTank
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Tokina
www.daymen.co.uk

Vanguard
www.vanguardworld.co.uk

Velbon
www.intro2020.co.uk

1) The landseape noviee

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 (21mm on full-frame) 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). Nikon's £585 AF-S 18-200mm f/3.5-5.6G VR II 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.

Baekpaek

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 £370 Nikon D3200, £600 Nikon D3300 and the £600 Nikon D5200.

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 your first remote.

Basie outdoor elothing

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-end 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. Nikon offers a decent choice of models. The £800 Nikon D5300 is one of its newest models and boasts 24.2-megapixels. A more robust option is the excellent Nikon D7100, a 24.1-megapixel model that's more expensive at £1,110 body-only but a far tougher model.

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 rated the £440 Nikkor AF-S DX 16-85mm f/3.5-5.6G ED VR as a Best Buy. If that's a bit too pricey, then check out the Tamron 17-50mm f/2.8 Di II VC XR, which received a Highly Rated accolade.

Sereen proteetor

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.

Proteetive 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 good independents, while the Tokina AT-X 12-28mm f/4 Pro is even better. The £640 Nikkor AF-S 10-24mm f/3.5-4.5 DX ED delivers a great performance too.

2) TELEZOOM

You won't use a telezoom as much but it's worth buying one to compress (great in misty weather), reduce depth-of-field and to fill the frame with details in the landscape. A 70-200mm is effectively a 105-300mm with APS-C sensors, while a 70-300mm equates to 105-450mm – 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, £280 Nikon AF-S 55-200mm f/4-5.6 DX VR 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 Nikon, the £1,300 AF-S 14-24mm f/2.8G ED has a great reputation but unless you splash out on an expensive holder, you'll have trouble using filters. More practical is the £830 AF-S 16-35mm f/4G ED VR, which won a *Digital SLR Photography* Best Buy award when tested in the magazine. Alternatively, if you're on a budget try the £650 AF-S 18-35mm f/3.5-4.5G ED, which scored a Highly Rated in the same test. Also worth a look is the excellent 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 hcad

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-frame 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. The £1,800 24.3-megapixel Nikon D610 is a brilliant option. However, for even higher resolution, consider the 36.3-megapixel D800 (£2,600) or £2,900 D800E, which does away with the Optical Low Pass Filter.

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.

Remote release

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 £130 Nikon MC-36. 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 £1,300 Nikkor AF-S 24-70mm f/2.8G ED is one of the sharpest zooms around but it's 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.

2) Telezoom

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. Nikon boasts two fast premium telezooms – the £1,610 AF-S 70-200mm f/2.8G ED VR II or the £1,100 AF-S 70-200mm f/4G ED VR. 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. In the ideal world 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 Nikon D7100.

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) Ten-stop ND Filter

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 eight-megapixel 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 (DX-format) 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 (FX-format) and APS-C cameras. Finally, while the 16-35mm lens is popular for use with full-frame sensors, the 24-53mm range it covers when fitted to a DSLR 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 fisheye offers the most extreme field-of-view. There are two types – the circular and the full-frame fisheye, both producing very different results. Circular fisheye 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 focus-distance 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 readjusting 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 (FX)	APS-H	APS-C (DX)	APS-C (Canon)	Four-Thirds
	1x	1.3x	1.5x	1.6x	2x
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: Nikon DX (APS-C) and FX (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

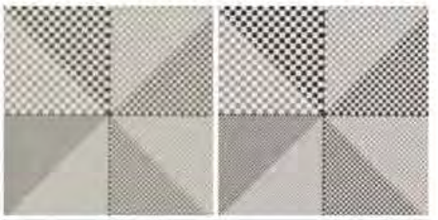
OUR TESTS LOOK at the key factors influencing image quality – sharpness, distortion, chromatic aberration and vignetting. We also test performance of the AF and image stabiliser (IS) systems. For IS, we use an oscillating platform custom-made to mimic handholding the lens. The platform's great virtue 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.

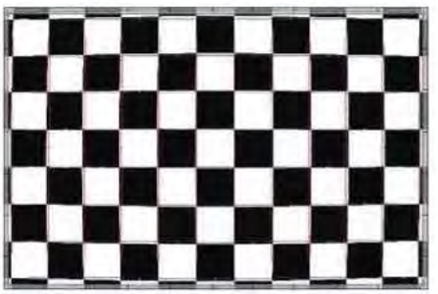
Unlike most lens test procedures that use a relatively small test target that often has to be shot at very close range, eg wide-angles, we use multiple individual targets of different sizes to keep distances realistic. A focusing wedge ensures absolute accuracy and automatically adjusts for field curvature and focus shifts that can skew other methods. A Nikon V1 cutomised for Nikon 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.

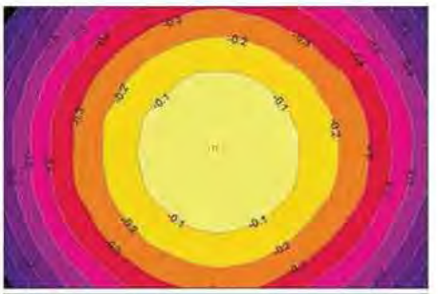
Vignetting: Vignetting is darkening towards the corners. It changes with focal length and is also less prominent on APS-C. Vignetting reduces quickly as the aperture is closed down. It's easily removed in post-processing, but when it's strong this results in greater noise. Vignetting is measured in Exposure 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: Nikon's Silent Wave Motor (SWM) used in its AF-S series of lenses, Sigma's Hypersonic (HSM) Motor and Tamron 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.

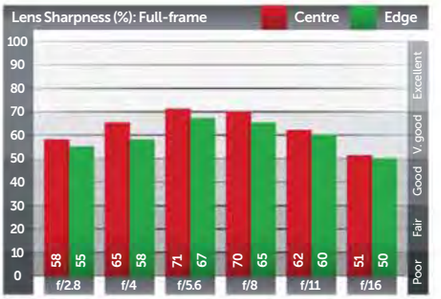
Image stabilisation
Many lenses have a 'floating' element linked to sensors that move it to counteract movements when handholding. Most brands offer lenses with lens-based stabilisers. They include: Nikon's Vibration Reduction (VR), Sigma's Optical Stabiliser (OS) and Tamron's Vibration Compensation (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 AF. Most ultra-wide 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: Nikon ED (Extra-low Dispersion), 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.



Nikon AF-S 18-35mm f/3.5-4.5G ED £520

HANDLING: This Nikon proves to be very light, especially when compared to the Nikon 16-35mm f/4G. Manufactured in China, it weighs very little, thanks to an extensive use of plastics. Those are interesting rather than significant points though, and don't reflect on quality. There is a tiny bit of play in the manual focusing ring, but not as much as the more costly Nikon 16-35mm, made in Japan.

FEATURES: 12 elements in eight groups, with ED glass and aspherical elements as usual. The maximum aperture varies with focal length, and f/3.5 at the 18mm end is one-third of a stop faster than f/4, and f/4.5 at 35mm is one-third of a stop slower. AF uses the Silent Wave Motor with full-time manual override, filter size is 77mm, lens hood supplied.

AUTOFOCUS: Silent Wave Motor focusing works quietly and efficiently. It's not quite the fastest mover in town, though we're talking fractions of a second here and you'd never miss a shot because of it.

PERFORMANCE: At the important business of sharp imaging, this lens excels. On full-frame, the centre starts well into the excellent zone and never goes below that standard at any time, while the edges only dip just under it at the highest f/numbers due to diffraction. The parity between centre and edge is exceptionally good. On APS-C, the higher resolution demands of the smaller format naturally depress the MTF figures, though no more than expected and very much in line with other similar lenses. For pixel-peepers seeking ultimate resolution, the Nikon 18-35mm peaked at 103 lines-per-mm in the MTF 20% test. That's slightly lower than rivals, though to put things in context, even the mighty Nikon D800 with 36-megapixels can 'only' resolve a theoretical maximum of 102 lines-per-mm so the lens is unlikely to be a limiting factor.

On the aberrations front, distortion, vignetting and CA are plentiful, but no more so than is typical for this type of lens. Fortunately, all these things can be cleared up in post-processing, usually with a mere mouse-click in software like Lightroom that provides automatic customised corrections. Indeed many lenses are produced with software correction in mind, giving lens designers more scope to improve optics in other areas.

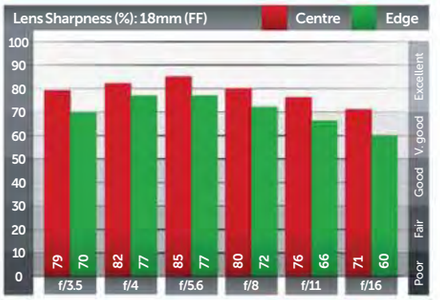
VERDICT: Introduced just a few months ago, this Nikon G-series lens is a complete overhaul of the older 18-35mm D-version, with all-new optics and integral SWM autofocus. Its build quality is high-end consumer grade rather than pro-spec, though optically this lens is certainly top drawer. Thankfully this lens has now dropped more than £100 in price since its launch, which means it offers much better value to match its performance.

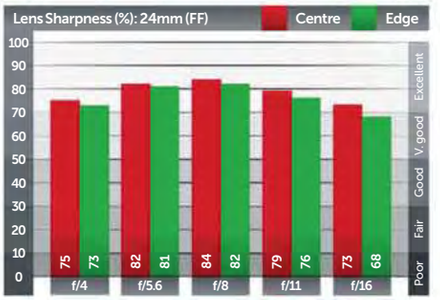
HANDLING	19/20
FEATURES	16/20
PERFORMANCE	36/40
VALUE FOR MONEY	16/20
OVERALL	87/100

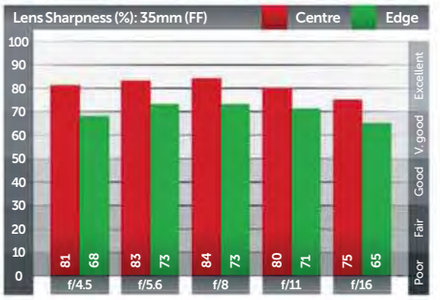
DISTORTION (Full-frame) Poor
VIGNETTING (Full-frame) Good
CHROMATIC AB (Full-frame) Very good

DISTORTION (APS-C) Poor
VIGNETTING (APS-C) Excellent
CHROMATIC AB (APS-C) Good

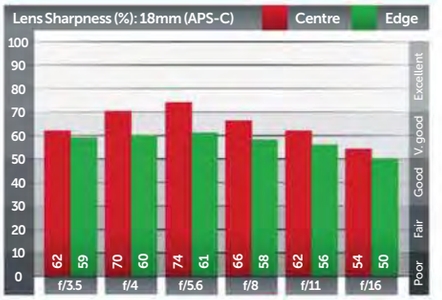
Nikon AF-S 18-35mm f/3.5-4.5 (full-frame)

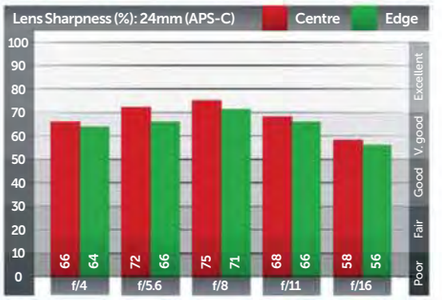


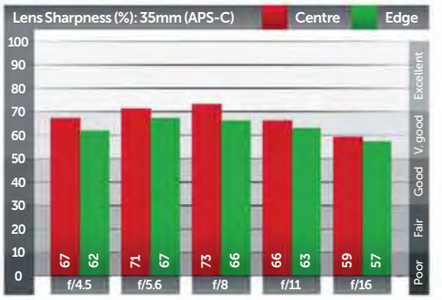




Nikon AF-S 18-35mm f/3.5-4.5 (APS-C)







Nikon AF-S 16-35mm f/4G ED VR £830

HANDLING: This lens is considerably larger than its 18-35mm sibling and getting on for double the weight too. It handles beautifully and is extremely well made, exuding class. Zoom and focus rings are one-finger light, though there was a bit of play in the manual focusing ring of our review sample.

FEATURES: The headline here is VR image stabilisation – a first for a lens of this type. This is at least partly responsible for the extra weight of 17 elements in 12 groups, with a generous sprinkling of premium glass and aspherical surfaces. Aperture is a constant f/4 and compared to the Nikon 18-35mm, that little bit wider focal length at 16mm adds a useful 7° more coverage. It's also weatherproofed.

AUTOFOCUS AND VR: Nikon's SWM AF is particularly impressive here, so fast and quiet you hardly know it's working. Top marks for that. The VR has a claimed four-stops effectiveness and that was borne out at longer focal length settings. The difficulty at the wider end is four stops below the normal handholding threshold means very long shutter speeds around one full second when there are not only shaky hands to combat, but also some body sway that's beyond the scope of any stabilisation system. Either way, it's certainly possible to handhold this lens at some crazy-long shutter speeds.

PERFORMANCE: Very sharp indeed, recording the highest peaks here. On full-frame at 16mm and 24mm, the centre is nudging 90% at f/4 with edges also well into the excellent zone. Sharpness drops a little at 35mm, particularly at the edges, though it's still very high. Resolution peaked at an impressive 120 lines-per-mm at MTF 20%.

Distortion is the weak point with this lens, particularly at 17mm with heavy barrelling of over 4%. For critical subjects like architecture, correction in software is essential. On the other hand, figures for both vignetting and CA were the best, even if a more accurate description would be the least poor. No super-wide zoom is at all good on these aspects of performance, especially at the wide end. To be fair, though, distortion is much reduced at longer focal lengths, and vignetting almost goes away at mid-range apertures.

VERDICT: Without any doubt, Nikon has done a fine job with this ultra-wide zoom lens, incorporating Vibration Reduction into a very high-grade optical package, even if it has to be said that the benefits of VR diminish as focal length is reduced, and this is one very wide lens. The weatherproofing is always welcome, though, and is a sure sign of pro-standard build quality, inside and out. If all these aspects of performance are important to you, and the extra weight isn't too much of a problem, the price is well worth paying.

HANDLING	18/20
FEATURES	20/20
PERFORMANCE	38/40
VALUE FOR MONEY	18/20
OVERALL	94/100

DISTORTION (Full-frame) Poor

VIGNETTING (Full-frame) Good

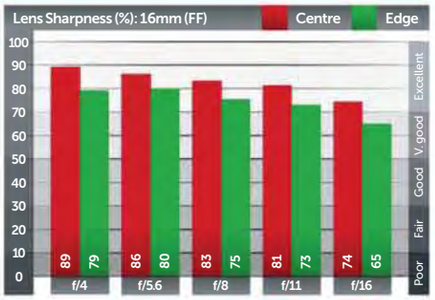
CHROMATIC AB (Full-frame) Very good

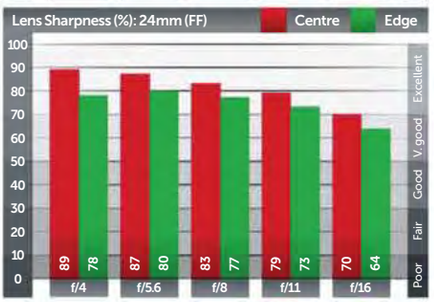
DISTORTION (APS-C) Poor

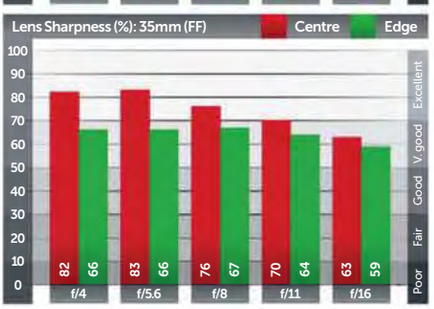
VIGNETTING (APS-C) Excellent

CHROMATIC AB (APS-C) Good

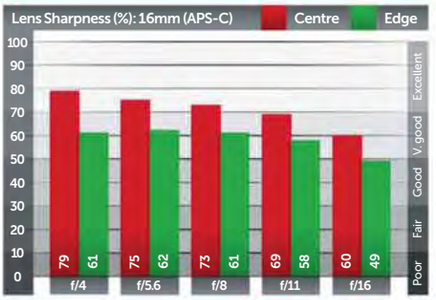
Nikon AF-S 16-35mm f/4 (full-frame)

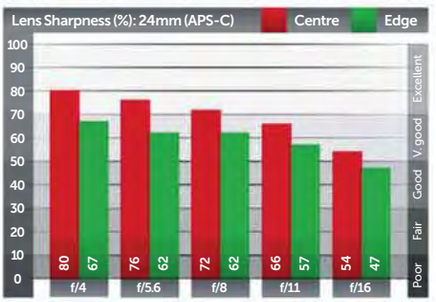


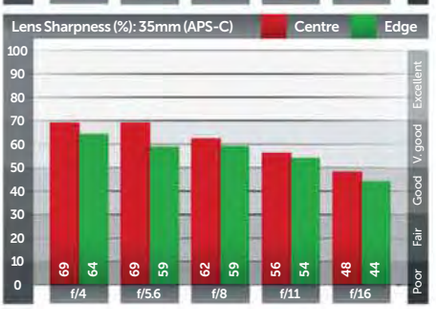




Nikon AF-S 16-35mm f/4 (APS-C)







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 a whopping 15° more than the second widest lens here, the Nikon 16-35mm. 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.

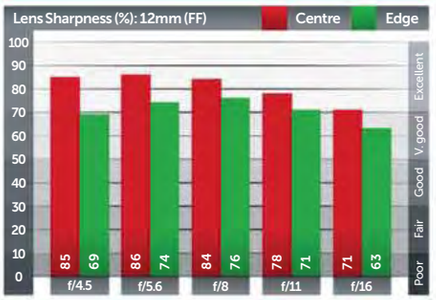
VERDICT: This is an amazing lens. In short, it is sharp, built to a very high quality, has a smooth operation and, all things considered, reasonably priced. And at 12mm, the field-of-view is incredibly wide, producing a unique style of image unmatched by any other lens, zoom or prime. Well worth consideration.

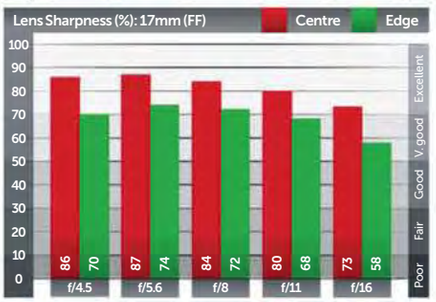
HANDLING	20/20
FEATURES	16/20
PERFORMANCE	36/40
VALUE FOR MONEY	18/20
OVERALL	90/100

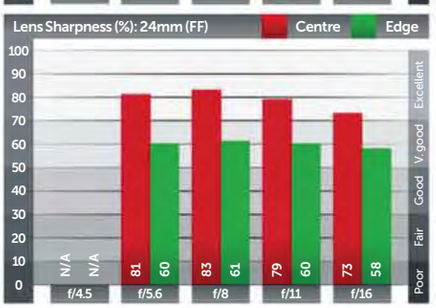
DISTORTION (Full-frame) Poor
VIGNETTING (Full-frame) Fair
CHROMATIC AB (Full-frame) Good

DISTORTION (APS-C) Fair
VIGNETTING (APS-C) Excellent
CHROMATIC AB (APS-C) Fair

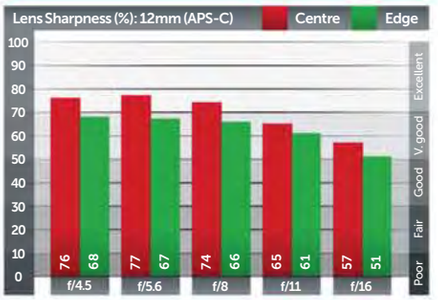
Sigma DG 12-24mm f/4.5-5.6 (full-frame)

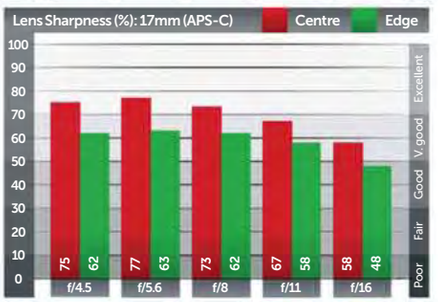


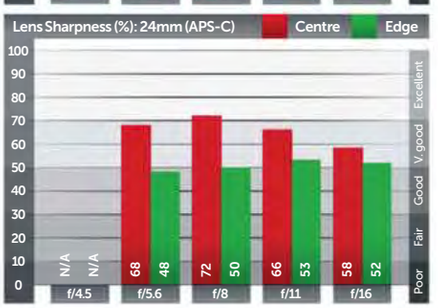




Sigma DG 12-24mm f/4.5-5.6 (APS-C)







Nikon AF-S 10-24mm f/3.5-4.5G DX ED £640

HANDLING: Compact, light with smooth and well-weighted controls. Good quality build – made in Nikon's China plant.

FEATURES: Best zoom range in the super-wide class for greatest versatility, though maximum apertures are average. Has a rain-seal mount gasket, and comes with a lens hood.

AUTOFOCUS: Silent Wave Motor is excellent as usual, with full-time manual override.

PERFORMANCE: 'Excellent' levels of sharpness in the centre at all focal lengths, from f/3.5-4.5 and dipping down to 'very good' around f/8 as diffraction begins to bite. Edge sharpness is lower, though comfortably within the 'very good' band at all times, apart from at the longer 24mm end that doesn't really get going until f/8. Peak resolution is a little lower than other comparative lenses we've tested, at 111 lines-per-mm. Distortion is high at 10mm with a hefty +3.9%, though it improves dramatically at longer focal lengths and is close to zero through most of the mid range. Vignetting is low, rating 'excellent' overall, and chromatic aberration control is typical of most ultra wide-angles, in other words always present and rating 'fair'.

VERDICT: Sharp, compact and light, great AF, same maximum apertures and even more useful focal length range. Edge sharpness at 24mm is the only weak spot, and the peak resolution figure is slightly lower. It's quite expensive at £640 though.

DISTORTION: Severe barrel +3.9% at 10mm. Overall rating: Good

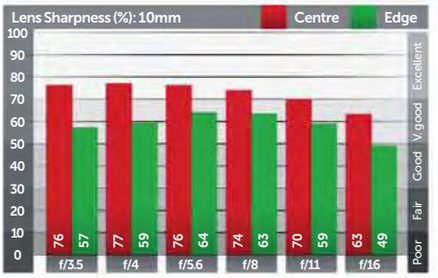
VIGNETTING: Mild 0.9EV at 10mm f/3.5. Overall rating: Excellent

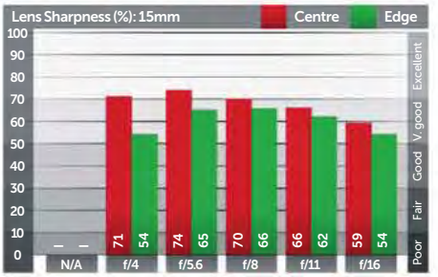
CHROMATIC ABERRATION: Reduces at 24mm. Overall rating: Fair

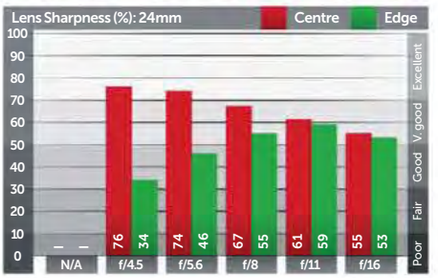
PEAK RESOLUTION: 111 lines-per-mm at MTF 20%, 10mm f/5.6 centre

HANDLING	18/20
FEATURES	18/20
PERFORMANCE	36/40
VALUE FOR MONEY	17/20
OVERALL	89/100

Nikon AF-S 10-24mm f3.5-4.5G DX ED







Nikon AF-S 12-24mm f/4G DX ED £840

HANDLING: Effectively identical to the Nikon 10-24mm. Compact, smooth, high-quality build – very nice.

FEATURES: Similar to the Nikon 10-24mm, but at 12mm it's not quite so wide. Maximum aperture is a constant f/4. Hood supplied.

AUTOFOCUS: The Silent Wave Motor is as good as ever – swift, quiet and accurate, plus full-time manual override.

PERFORMANCE: This is a ten-year-old optical design, Nikon's first DX ultra-wide. Based on our review sample, it displays 'classic' characteristics of high sharpness at the wide end, steadily reducing as focal length is increased, with edge sharpness always lagging. At 12mm, sharpness in the centre is 'excellent' at f/4, the edges 'very good', and a high standard of image quality is maintained throughout the aperture range. As focal length is raised though, both centre and edge sharpness falls – to disappointing levels at lower f/numbers, especially at 24mm. Stopping down improves sharpness quite dramatically and at f/8, it's 'excellent' to 'very good' across the frame at all focal lengths. Peak resolution measured 113 lines-per-mm and aberrations control is par for the course.

VERDICT: Maybe we got a rogue test copy, but based on these results it's hard to see why this lens should cost a very substantial £840 – £200 more than the Nikon 10-24mm that is sharper and has an extra 2mm at the wide end.

DISTORTION: Strong barrel +2.8% at 10mm. Overall rating: Good

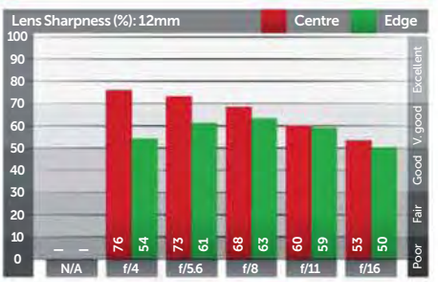
VIGNETTING: Mild 0.7EV at 12mm f/4. Overall rating: Excellent

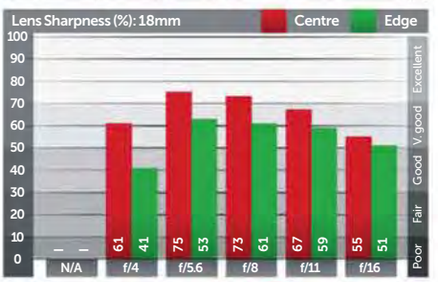
CHROMATIC ABERRATION: High throughout. Overall rating: Poor

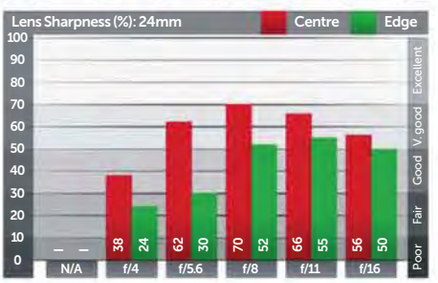
PEAK RESOLUTION: 113 lines-per-mm at MTF 20%, 12mm f/4 centre

HANDLING	18/20
FEATURES	17/20
PERFORMANCE	33/40
VALUE FOR MONEY	15/20
OVERALL	83/100

Nikon AF-S 12-24mm f/4G DX ED SWM







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.

AUTOFOCUS: 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

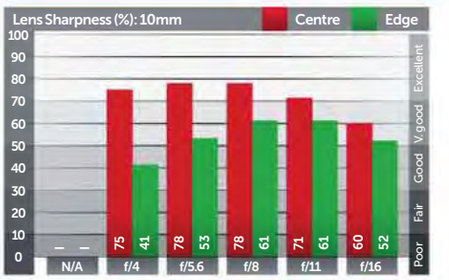
VIGNETTING: Moderate 1.3EV at 10mm f/4. Overall rating: Very Good

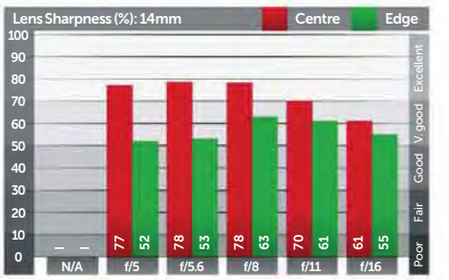
CHROMATIC ABERRATION: Highest at 10mm. Overall rating: Good

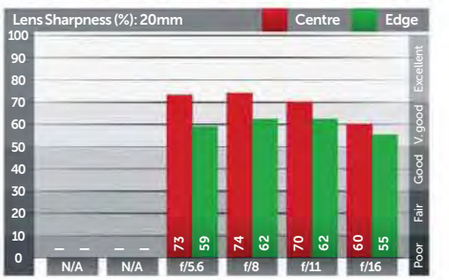
PEAK RESOLUTION: 121 lines-per-mm at MTF 20%, 10mm f/5.6 centre

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







Sigma 10-20mm f/3.5 EX DC HSM £460

HANDLING: Fractionally larger and heavier than the Sigma f/4-5.6 variant, otherwise like two peas in a pod. The test sample's zoom control was heavier and slightly less smooth.

FEATURES: Main feature is the constant f/3.5 maximum aperture, one third of a stop brighter than f/4, two-thirds more than f/4.5. Hood and case included.

AUTOFOCUS: Sigma's Hypersonic focus works quickly, but a little less quietly here. Manual focus is full-time override.

PERFORMANCE: Sharpness is unusually high in the centre, always 'excellent' at all focal lengths up to f/11. Edge sharpness is lower, though mostly never out of the 'very good' zone. At 10mm, the edges are noticeably less sharp and don't respond much to stopping down. At 15mm, the edges perk up and throughout the mid-range focal lengths, sharpness is high at all apertures. At 20mm though, edge sharpness drops away again. Peak resolution measured 122 lines-per-mm. Barrel distortion is a decidedly 'poor' +3.5% at 10mm, but quickly drops to zero through the mid-range before turning to mild -0.7% pincushion at 20mm. Vignetting control is never less than 'excellent', CA 'fair' overall.

VERDICT: Always sharp in the centre, and the edges too at mid-range focal lengths, less so at either end of the zoom. Main appeal is the constant f/3.5 maximum aperture, though the cheaper Sigma f/4-5.6 version looks favourite.

DISTORTION: Severe barrel +3.5% at 10mm Overall rating: Good

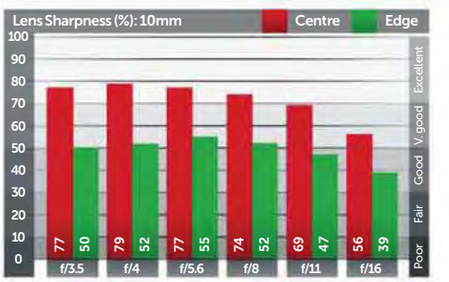
VIGNETTING: Mild 0.8EV at 10mm f/3.5. Overall rating: Excellent

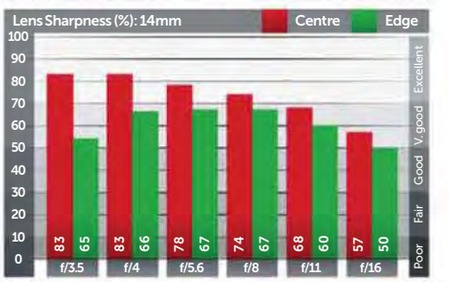
CHROMATIC ABERRATION: Moderate to high. Overall rating: Fair

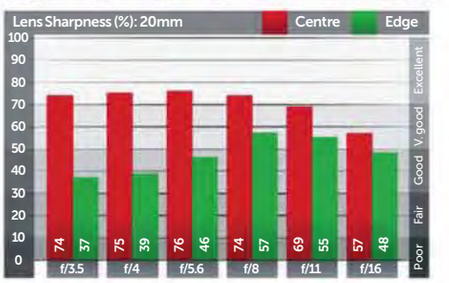
PEAK RESOLUTION: 122 lines-per-mm at MTF 20%, 14mm f/4 centre

HANDLING	18/20
FEATURES	17/20
PERFORMANCE	35/40
VALUE FOR MONEY	17/20
OVERALL	87/100

Sigma 10-20mm f/3.5 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 most others we've tested. 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 the lowest of this group, reaching 107 lines-per-mm, 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 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 disappoints here, and there are better buys, even at £370.

DISTORTION: Severe barrel +3.2% at 10mm. Overall rating: Fair

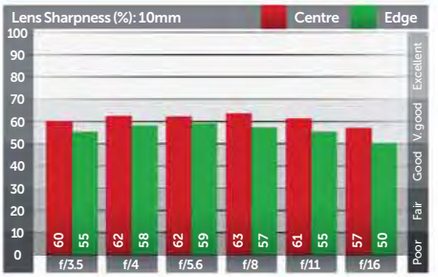
VIGNETTING: Mild 0.9EV at 10mm f/3.5. Overall rating: Excellent

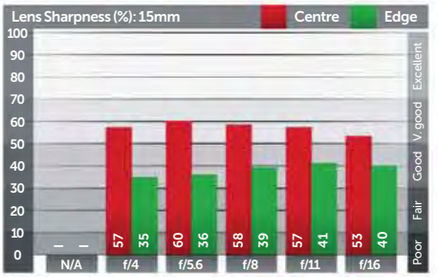
CHROMATIC ABERRATION: Highest at 10mm. Overall rating: Poor

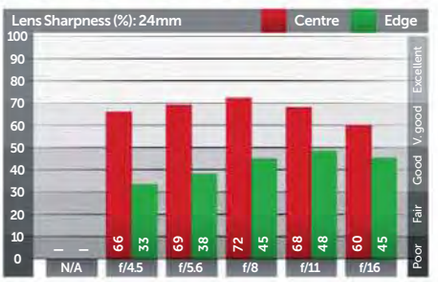
PEAK RESOLUTION: 107 lines-per-mm at MTF 20%, 24mm f/8 centre

HANDLING	17/20
FEATURES	17/20
PERFORMANCE	32/40
VALUE FOR MONEY	15/20
OVERALL	81/100

Tamron SP 10-24mm f/3.5-4.5 Di II LD







Tokina AT-X 12-28mm f/4 Pro DX £535

HANDLING: Slightly larger and heavier than most, the build quality is obvious. Styling is very Nikon-esque. 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

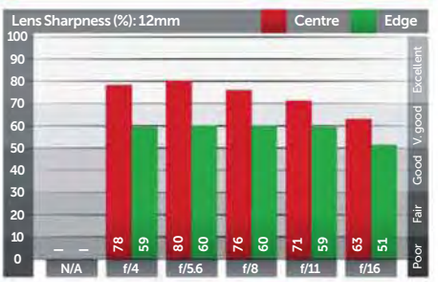
VIGNETTING: Mild 0.8EV at 12mm f/4. Overall rating: Excellent

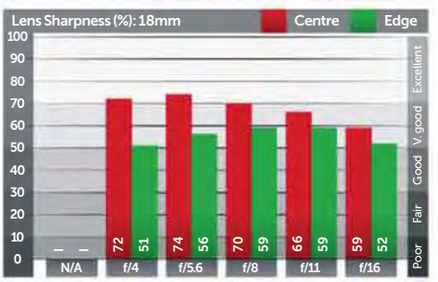
CHROMATIC ABERRATION: Reduces at 28mm. Overall rating: Fair

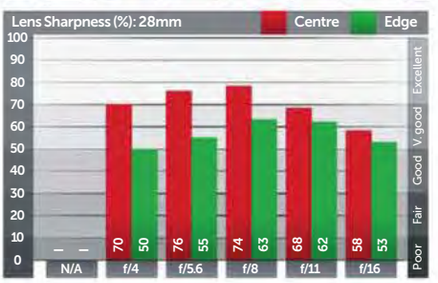
PEAK RESOLUTION: 123 lines-per-mm at MTF 20%, 12mm f/5.6 centre

HANDLING	18/20
FEATURES	18/20
PERFORMANCE	37/40
VALUE FOR MONEY	18/20
OVERALL	91/100

Tokina AT-X 12-28mm f/4 Pro DX







Makc thc 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.

Format

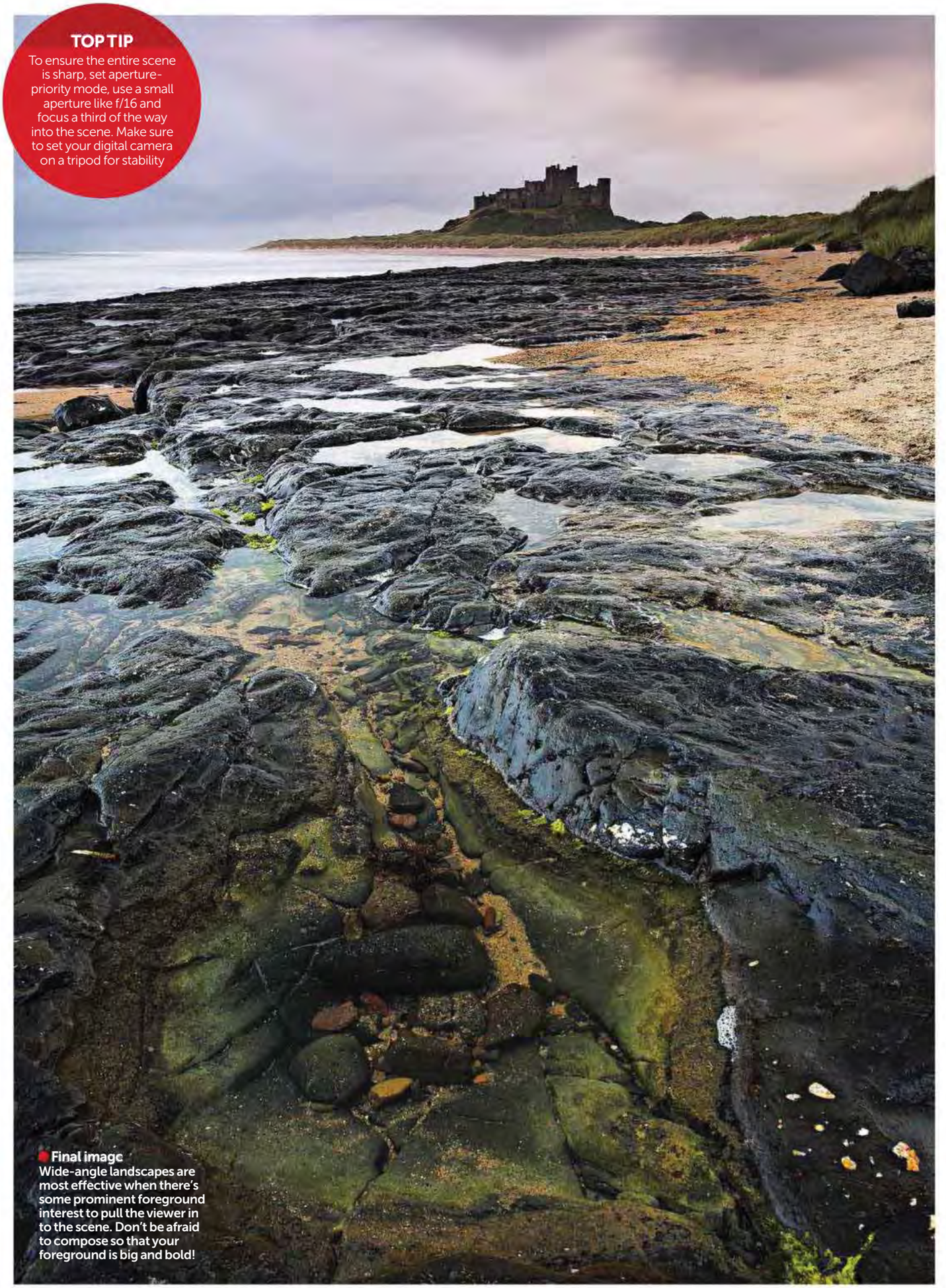
Vignetting

Low viewpoint

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 (eg 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.



TOP TIP

To ensure the entire scene is sharp, set aperture-priority mode, use a small aperture like f/16 and focus a third of the way into the scene. Make sure to set your digital camera on a tripod for stability

Final image
Wide-angle landscapes are most effective when there's some prominent foreground interest to pull the viewer in to the scene. Don't be afraid to compose so that your foreground is big and bold!

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 two-dimensional 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 f/4-5.6 DG zoom. Both of these will be perfect for filling the frame with any wildlife you may encounter as you roam the countryside.

28mm

50mm

75mm

DID YOU KNOW?

While telephotos appear to compress perspective, the truth is that they don't. Magnify an area of a shot taken with a wide-angle lens and you'll see that it gives a virtually identical effect!

28-35mm
The apparent distance between the foreground and castle creates a sense of depth, with the hills and village behind the castle stretching away into the distance.

50-85mm
Even at moderate telephoto settings, the perspective seems much flatter, and the castle seems to loom over the distant hills and the village.

105-200mm
As the focal length increases, perspective seems to flatten out, so that the castle and the hills behind seem to be almost on the same plane.


120mm


200mm

Landscapc filtcrs: 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.

Screw-in filters

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 filters

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

ALL IMAGES ROSS HODDINOTT

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 worth the investment.

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. Close-up 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.

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.

Density	Filter factor	Light loss
0.3	2x	1
0.6	4x	2
0.9	8x	3
1.2	16x	4

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	£23	£76	£34
55mm	£23	£87	£34
58mm	£23	£89	£34
62mm	£26	£94	£36
67mm	£32	£111	£37
72mm	£40	£128	£43
77mm	£45	£144	£47
Hoya			
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			
52mm	£10	£24	£12
55mm	£10	£24	£13
58mm	£10	£24	£15
62mm	£10	£30	£15
67mm	£11	£30	£19
72mm	£11	£36	£28
77mm	£13	£38	£29
Tiffen			
52mm	£10	£31	£22
55mm	£10	£31	£22
58mm	£13	£35	£22
62mm	£15	£39	£39
67mm	£16	£46	£39
72mm	£23	£57	£50
77mm	£24	£57	£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.

Filtcr 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.

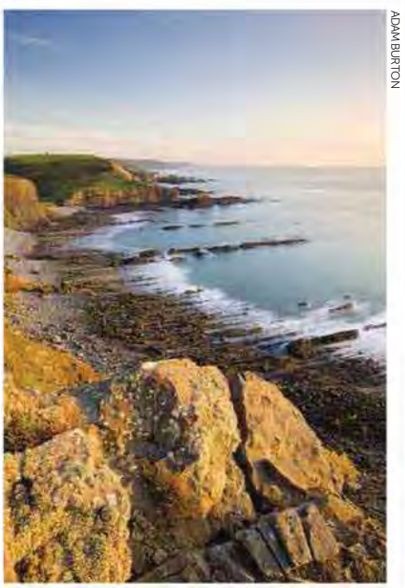
Cokin

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.


ADAM BURTON

Lcc Filtcrs

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.

Filter aid
Do not underestimate how filters can be used to improve your images, especially if you're keen on shooting landscapes.

ROSS HODDINOTT

Formatt (Hitcch)

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.

Tiffcn

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 and are secure.

4) Leg sections Tripods with three leg 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 built-in spirit levels to make sure your images are straight. If not, your local photo store should sell one that slots straight on to your hotshoe.

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 conditions.

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:

- **Ball-and-socket:** These range from simple heads with one control to complex units with panoramic locks and gauges, grip-locks and hydraulic ball-locking systems. Usually stronger and quicker to adjust than pan & tilt heads, they allow free movement in all directions.
- **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.

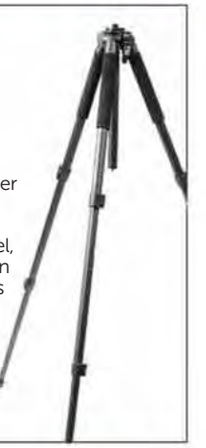

Ball-and-socket


Three-way

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 £55

- **Weight:** 712g
- **Height:** 110cm
- **Base diameter:** 60mm
- **Maximum load:** 4kg
- **QR system:** Manfrotto RC2
- **Website:** www.manfrotto.co.uk

This is a simple three-way head that does 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 £190

- **Length (closed):** 66cm
- **Height (legs extended):** 169cm
- **Number of leg sections:** 3 Weight: 1.6kg
- **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. It'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 £220

- **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 180º 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 £55

- **Weight:** 848g
- **Height:** 109cm
- **Base diameter:** 59mm
- **Maximum load:** 6kg
- **QR system:** Giottos
- **Website:** www.giottos-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 £90

- **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 shift on locking down – in fact, we found it to be one of the best tested. It's nice to use, too. The main knob has a finely machined grippy 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 backpacks

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.

Features

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.

Gadget bag

Backpack

Lowepro CompuDay Photo 250 £50

- **Dimensions:** 40x32x18cm
- **Weight:** 900g
- **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.

Lowepro Flipside 400 AW £90

- **Dimensions:** 45x30x24cm
- **Weight:** 1,540g
- **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-Risc 45 £90

- **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 Hcraldcr 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:** 1,510g
- **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.

Lowcpro Pro Runncr 450 AW £125

- **Dimensions:** 34x29x50.5cm
- **Weight:** 2,700g
- **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.

Tamrac Advcnturc 9 £125

- **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:** 2,584g
- **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 Windowpane-mesh. 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.

Metered to perfection! Scenes with bright skies can lead to exposure error. Use a grey card and you should have no problems.

TOP TIP

Be sure to bracket! Whether you use the grey card or not, in tricky lighting conditions, bracket your exposure by +/-1 stops using your camera's exposure compensation or AEB functions to ensure you get the shot

ADAM BURTON

How to use your metering & White Balance cards

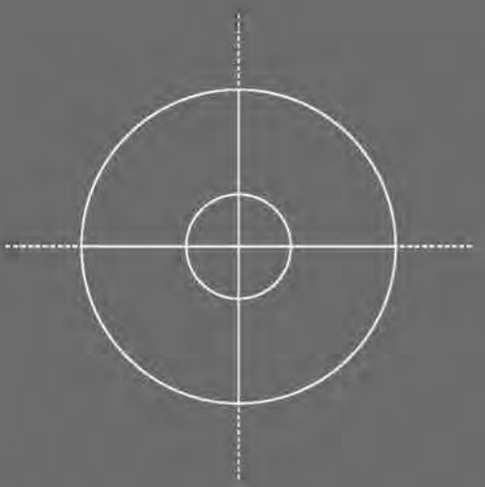
The 18% grey card can be used to ensure perfect exposures when shooting in tricky lighting conditions. Both reference cards can also be used to set a custom White Balance. Depending on the camera you use, you need to take a White Balance reading off the grey or the white card (your camera's instructions will show you how)

NIKON 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 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.

1 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.

2 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.

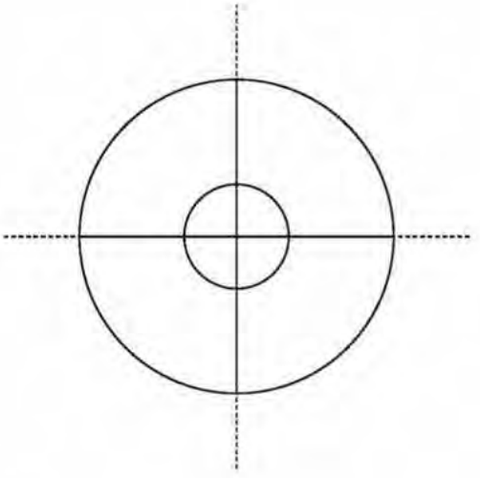
3 Compose & shoot With this exposure locked, you can compose your scene and take your shots. When you check it on your LCD monitor, the exposure should be perfect.



GREY CARD

Digital SLR photography

CUT ALONG LINE



WB REFERENCE CARD

Digital SLR photography

CUT ALONG LINE

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ISBN 1-78106-344-3
9 781781 063446
£9.99
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