The industry leader in file management, and image enhancement, is Adobe.

Lightroom is now an ecosystem spanning Desktop and Mobile computing. The Desktop/laptop version is tagged Lightroom Classic (LrC), and is the most feature-rich offering.

- It is a user friendly and non-destructive editing tool which can perform most required post-processing tasks.
- It also provides a user-friendly way to organise photos into Folders and Collections
- It is also closely integrated with Photoshop, so that an image can be edited in Photoshop at pixel level if needed, and then reimported into Lightroom

Photoshop (PS) – Adobe Camera Raw is essentially the same underlying software as LrC, though less user-friendly. The rest of PS adds the capability to edit at pixel level. Photoshop's Bridge is a similar file management offering.

Photoshop Elements – a less well specified version of PS, but contains the basic parts of the LrC and PS Raw Convertors.

How the evening is organised

This evening is a mix of looking at 2 key features of LrC:
- how to improve the appearance of our photographs
- how to organise all our photos so we can find them again when we want to

After looking at a few introductory concepts, the 1st half concentrates on the key ways in which we can change the appearance of the image, ie
- Colour balance, Exposure, Contrast, Saturation

After the break we will look at some of the editing features added to LrC in recent years:
- Local Adjustment Tools, Guided Upright Tool, Colour Grading, Enhance Detail

We will then look at how to organise all our photos in LrC:
- Using Folders to split our photos into subjects or by date
- Renaming our photos into something meaningful
- Using Collections as an alternative way to sub-divide our photos
- Creating 'Virtual Copies'

My Bible – but it runs to 747 pages
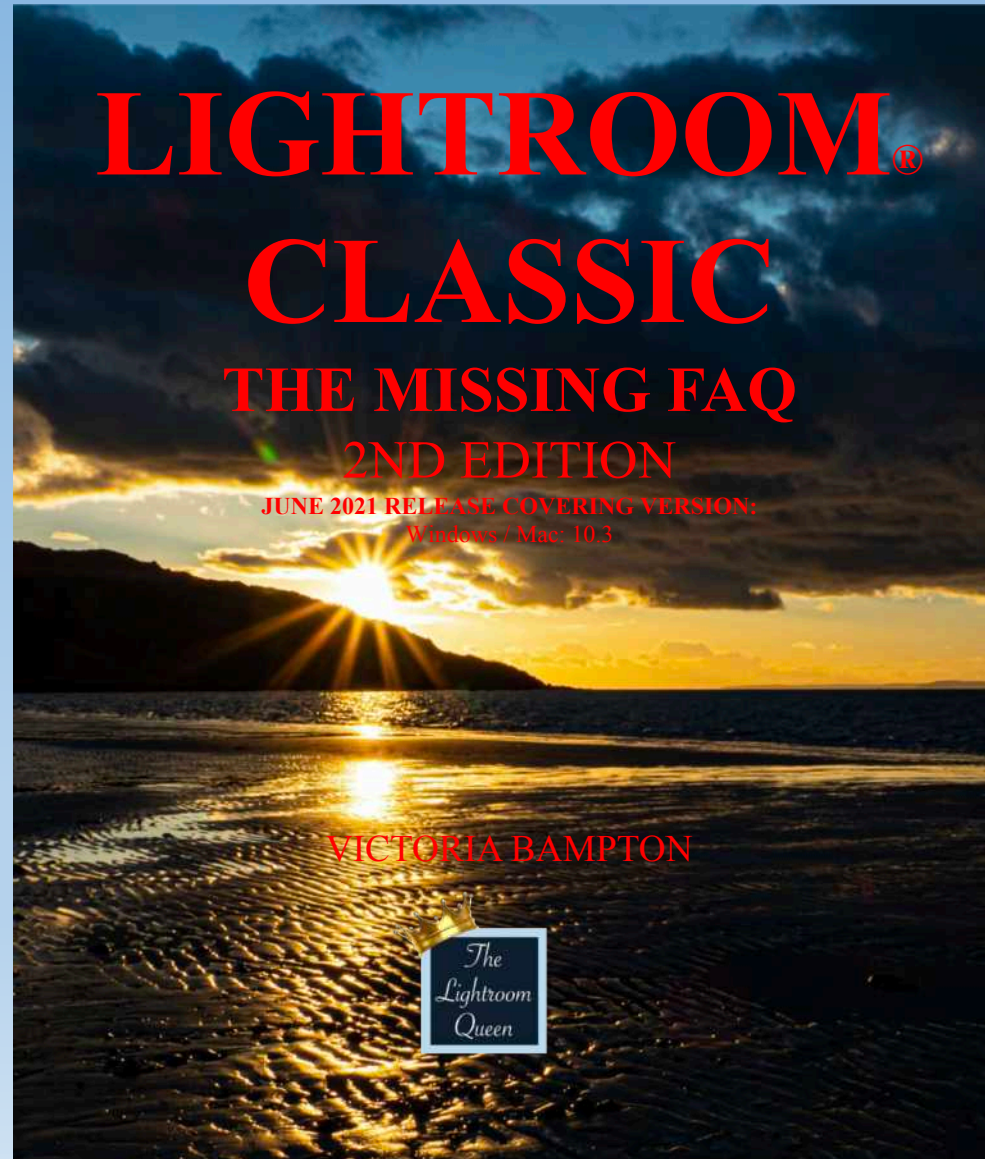
The Lightroom Catalogue

File management (or picture management) in LrC centres around the Lightroom Catalogue, which is :

- an index of all your pictures and where they are on your computer
- a low-resolution thumbnail of each picture, to help you identify it
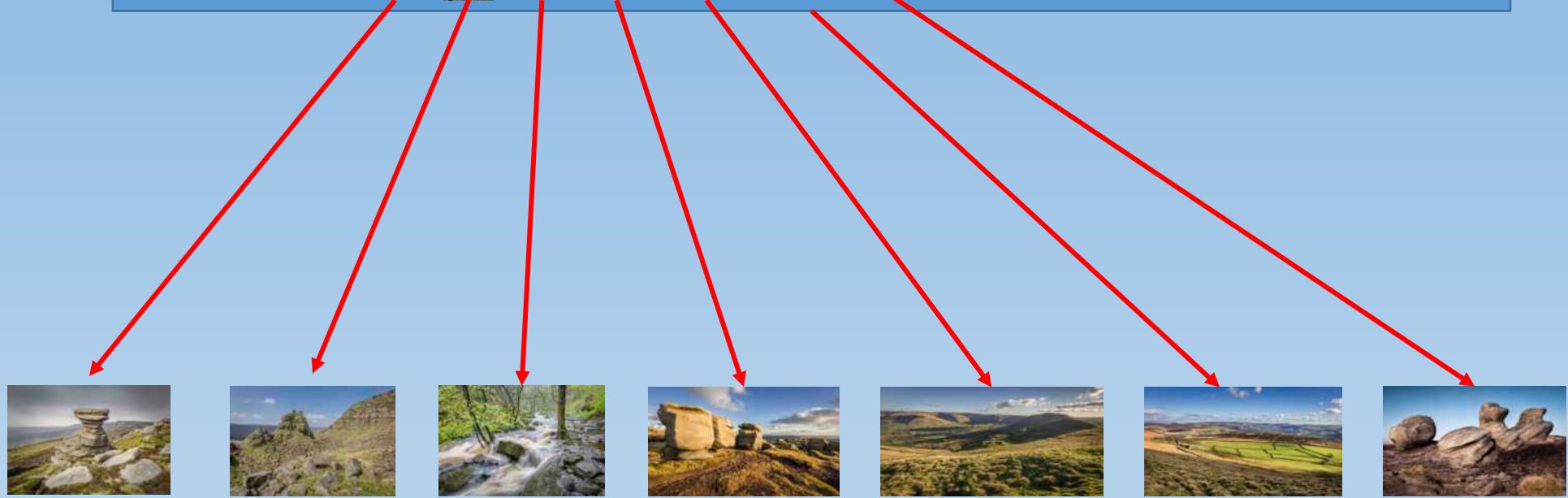- a list of all the (non-destructive) edits you have done to each picture

Note that the LrC Catalogue does not contain copies of your pictures – it is just an index.

It is also very efficient on space –
- my LrC catalogue contains 44,000 pictures
- the pictures themselves take over 1Tb of disk space
- the LrC catalogue is only 700Mb in size

Lightroom Catalogue

File Formats – RAW v JPEG

- Most cameras offer the options to shoot in RAW or JPEG, and sometimes both simultaneously

- RAW format files contain all the data captured by the sensor, but need to be processed in a RAW convertor

- JPEG format files are processed automatically in camera, and then compressed by 'throwing away' information which the process decides are redundant

- Thus the choice is between Maximum Quality and Convenience:
    - RAW files contain all the data, giving maximum latitude to process the image as required, but require the time and knowledge to do this
    - JPEG files come ready processed, which may or may not be what you wanted, and if the latter, you may not be able to change it. Also JPEG files are only 8-bit, which limits the degree of editing that can be done before artifacts start to show.

The editing tools in Lightroom, Photoshop and Photoshop Elements all work best with RAW format files

Non-destructive editing

Editing in Lightroom is 'non-destructive' in that the original picture is never changed

This ensures no loss of quality caused by successive pixel-level editing

Instead, LrC places 'Filters' in front of your image to change its appearance when viewed on a Monitor or when printed

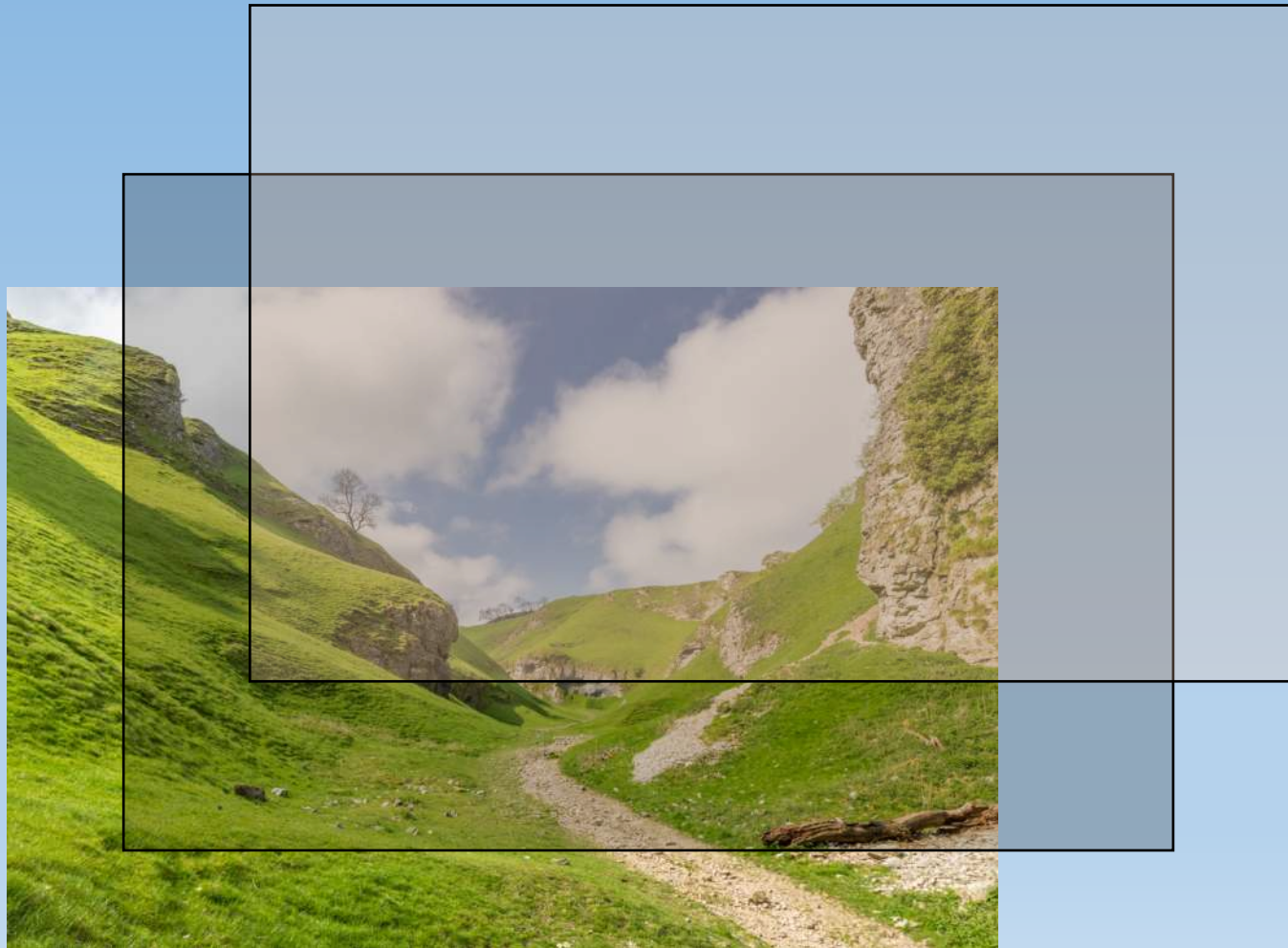The list of edit filters is recorded alongside the image on the LrC Catalogue

Non-destructive editing

Non-destructive editing

Non-destructive editing

The Basic Panel

In LrC, the Basic Panel is the starting point where the Major Adjustments are made. Photoshop has an identical Basic Panel, as does Photoshop Elements.

Our Major Adjustments can be grouped into:

Colour Balance

Exposure

Contrast

Saturation

The Basic Panel : Colour Balance

The aim here is to eliminate colour casts and render whites and greys as neutral colours.

RAW files can rectify any colour inaccuracies because it has available all the data captured by the sensor. In camera pre-sets can be used, or the blue-yellow and green-magenta balances can be set manually.

JPEG files will already have had the colour balance set, so any adjustments have to be done manually.

As well as trying to judge correct colours by eye, the white dropper can be used to set the balance by clicking on a tone that should be neutral.

Note – if making adjustments by eye, it is important that your monitor is correctly calibrated, because otherwise what looks right on your monitor may look different on another monitor or projector.

The Basic Panel : Exposure

Correct exposure depends heavily on what the author intends, but generally involves making the highlights bright without being burnt out, the shadows dark but still holding detail, and the mid-tones having an even spread though emphasising the main subject of the photograph.
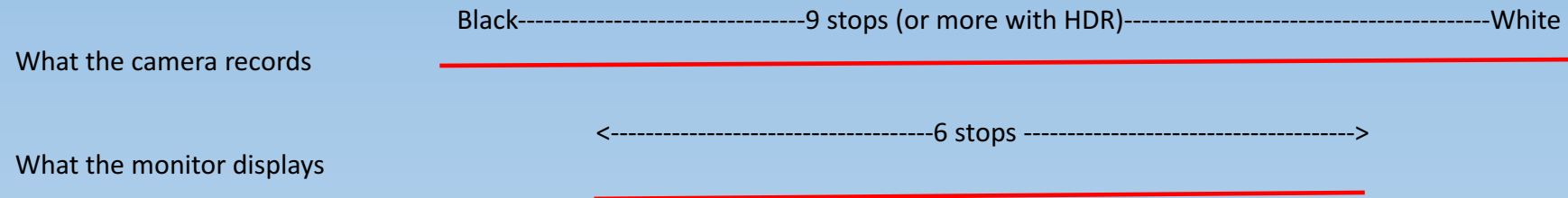
The histogram provides a visual guide to whether an image is under or overexposed or correctly exposed, and whether any part of the image is pure white (burnt out) or pure black (blocked shadows). The clipping triangles help highlight the latter.

The obvious way to adjust exposure is by using the Exposure slider, but this is heavy handed, because it affects all tones equally. Hence:
- you can lighten an underexposed image to improve the shadows and midtones, but this might blow out the highlights
- you can darken an overexposed image to improve highlights and midtones, but this might produce blocked (ie pure black) shadows.

Exposure – Highlights and Shadows

There is another problem which makes it more likely that your image may appear on the monitor to have both burnt-out highlights and blocked shadows, namely the difference in dynamic range between the camera and the monitor.

Black---------------------------------9 stops (or more with HDR)--White

What the camera records

<-------------------------------------6 stops ------------------------------------->

What the monitor displays

Exposure – Highlights and Shadows

The LrC solution is to use exposure sliders which target specific ranges of tones, leaving others unchanged:
- The Highlights slider has its greatest effect on the brightest tones, gradually tapering down to virtually nothing at the mid-point
- The Shadows slider has its greatest effect on the darkest tones, again gradually tapering to virtually nothing at the mid-point

Black-------------------------------9 stops (or more with HDR)---------------------------------------White

What the camera records

<----------------------------------6 stops ----------------------------------->

What the monitor displays

Effect of the Highlights Mask

Effect of the Shadows Mask
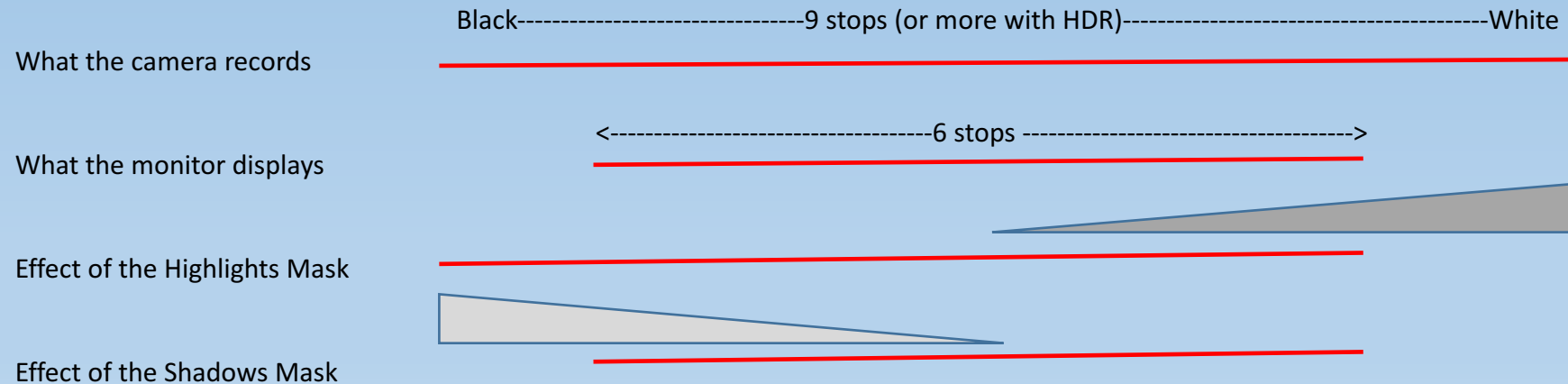
Exposure – Whites and Blacks

The opposite problem is a low contrast image, where all the tones are bunched together in the Histogram, and with empty space either side.
- The exposure slider will simply move the bunched tones to one side of the Histogram or the other
- There are no Highlights and Shadows to remove

The solution is to use a pair of sliders to set the White point (Whites) and Black point (Blacks), which can be done automatically (as a starting point) or manually judged by eye

Note the increase in contrast resulting from setting the White and Black points automatically.

Exposure – Summary

The **Exposure** slider adjusts all tones equally, so is useful only for setting the mid-tone point

Highlights and **Shadows** sliders are used on contrasty images, targeting just the brightest and darkest tones and especially reducing what the camera captured into a range which the monitor can display

Whites and **Blacks** sliders are especially useful on low contrast images to stretch the tonal range

Basic Panel - Contrast

The correct level of contrast depends entirely on the author's intent – low contrast can create an impression of tranquility, high contrast can be forceful but also be attention grabbing.

The obvious contrast control within the Basic Panel is the slider labelled 'Contrast'. Note that this can be very heavy handed and needs to be used sparingly.

There used to be just one other contrast control in the Basic Panel, labelled 'Clarity'. However, this is now complemented by 2 more controls into the Basic Panel – 'Texture' and 'De-Haze', which are intended to complement Clarity, at the expense of complicating the process (though improving the quality of the photo edit).

Basic Panel - Contrast

Clarity & Texture

Clarity increases the contrast in the mid-tones, lightening the mid-lights and darkening the mid-darks to change mid-range contrast. Very dark and very light areas are untouched.

Texture, on the other hand, increases contrast in 'middle frequency areas', targeting fine details.

Which one works best depends on the picture, and they are often best used together. Texture is good if there is a lot of fine detail in the image, but may be too subtle for larger shapes, for which Clarity should be used.

Clarity can be prone to creating artifacts eg halos around the edges which already have high contrast (eg the horizon between bright sky and dark land). Texture is much better in this respect.

Negative Texture is a good way of smoothing skin on portraits, and probably better than Clarity for this.

Basic Panel - Contrast

'De-Haze' has been around for some years, though it has been 'improved' to tone down some of the more extreme effects such as unwanted colour shifts and excessive grain. Adobe say that it is an intelligent combination of Contrast, Clarity, Vibrance and Blacks.

It can now be found in the Basic Panel, alongside Texture and Clarity, and can really be thought of as a tool targeting very large objects within the image. Because of this, it's effects can be quite extreme, and a little goes a long way.

It is however useful for images which are very lacking in detail and contrast, including (as the name suggests) hazy landscapes.

Basic Panel - Saturation

Saturation makes the image more or less colourful, according to the intent of the author.

The Saturation slider is another heavy handed tool as it affects all colours equally and may lead to some colours becoming over-saturated

A better alternative is the Vibrance slider, which adjusts the saturation of lower-saturated colours more than higher-saturated ones.

Saving Work and Disaster Backup

A frequent source of confusion on LrC is the absence of a 'Save' command. Note that LrC editing is non-destructive, and never changes the original photo, so there is nothing to save. However, changes have been made to the LrC Catalogue, whether re-organising photos or editing them, and these need to be saved.

There are two parts to the process of saving:
* LrC auto-saves everything you do, as you do it, so every new folder, name change, key word etc, as well as every editing change is already saved.
* Since everything is saved to the Catalogue, it is quickly apparent that this is an extremely important file on your computer, because it contains all the work that you ever did on your pictures. Hence it is important to do frequent back-ups – eg once a day, so that if your Catalogue ever became corrupted by hardware or software failure, you could go back to a recent version to limit the amount of work lost.

The usual considerations for disaster backup also apply. It is recommended that you have a mirror copy of all your pictures and of the LrC Catalogue held on a second disk drive, and possibly another mirror copy held off-site or in the 'Cloud'.

Time for Tea

Time to give your brain a rest

What's New in LrC Develop Module

We have already looked at the new Texture Control.

Other significant new features brought in over the last 2 years are:

- Local Adjustment Tools
- Guided Upright Tool
- Colour Grading
- Enhance Detail

What's New in LrC Develop Module

Local Adjustment Tools

Local adjustment tools allow you to change the colour, exposure, contrast and saturation to just a part of the image.

These used to consist of a brush tool, a graduated filter tool and a radial gradient tool, which allowed selection of the part of the image to be adjusted

Range tools (Colour and Luminance) were then added to select by either brightness or colour

Artificial Intelligence (AI) has now been added to automatically select the sky, the main subject of the image, the background, people etc. You can also add or subtract areas where the AI has failed to select exactly what you want.

What's New in LrC Develop Module

Guided Upright Tool

LrC has always had the ability to correct sloping horizons or strong verticals in the image.

There has also been the ability to correct converging verticals and similar image problems.

The Guided Upright Tool allows you to specify up to 2 verticals and 2 horizontals in the image, to properly square up the image composition.

Note this may lead to a loss of part of the image around the edges.

It can also, when used to extremes, cause objects to be stretched or compressed so they look unnatural

What's New in LrC Develop Module

Colour Grading

Colour Grading is an extension of the previous 'Split Tone' function, where perhaps a monochrome image is given a blue cast for the shadows and a yellow cast for the highlights.

The new Colour Grading tool gives Hue and Saturation controls for Highlights, Mid-Tones and Shadows.

Thus for instance, the highlights can have a new colour cast added (eg to make a sunset more colourful).

What's New in LrC Develop Module

Enhance Detail

Ever had a great image that was too deep a crop to be usable, or printable

Enhance Detail is another AI driven feature that scales up the cropped image without loss of sharpness, to produce something that can be entered in competitions or printed.

Using LrC to Organise Your Photos

The fundamentals for organising your photos are:

- You want to be able to find the one you are looking for

- You often want to group similar photos together, either to help you find the one you are looking for, or so you can compare them, pick out the best, maybe delete the not so good ones etc.

- You might want to create a temporary group to show to a particular audience – eg recent photos on a variety of subjects to show a friend or family

Using LrC to Organise Your Photos

Folder-Based Organisation

- An obvious way to organise is to use Folders (and sub-Folders), just like organising your non-photo files

- Your folders can be subject based (family, nature, landscapes etc) or time based (year and month)

- In the Library module, create new folders and sub-folders as required

- Drag and Drop your photo thumbnails to move them from one folder to another

Using LrC to Organise Your Photos

Renaming Photos

- Your camera assigns meaningless names to your pictures (eg _ESA6972)

- You can rename this in LrC at any time into something more meaningful

- Or you can organise your photos into folders, and then rename them all in the same operation

A WORD OF WARNING

The LrC Catalogue is the index of your photos, and you can sort them into folders, move them between folders, rename them, delete them

But your computer has another index which also allows you to do these things – File Explorer (PC) or Finder (Mac)

If you move photo files around etc using Explorer/Finder, the two indexes will be out of step, and LrC will not be able to find the photo you have moved

Hence use LrC Catalogue, and only LrC Catalogue, for organising your original photos

NB this does not apply to any copies you might make if these are not on the LrC Catalogue (eg copies for sharing with other people or for entry into competitions)

Collections

Collections allow you to create alternative groupings of your photos

You might for instance want to compile photos for a presentation or to share with someone, but find that the photos are all in different folders

The same photo can be included in several Collections, so a picture of your family on holiday can go in the 'Family' Collection as well as the 'Holiday' Collection

Collections are held within the LrC Catalogue, as an alternative index

Collections do not produce multiple copies of the original photo – just additional pointers

Each photo in a Collection keeps its original name, and you cannot assign a temporary name to it

Collection

Lightroom
Catalogue

Virtual Copies

Non-destructive editing by filters means you can have multiple versions of the same image without having to hold multiple copies of the full image file

You could therefore have a colour and a monochrome version, or a landscape and portrait version, etc.

LrC terms these 'Virtual Copies'. They have their own thumbnail on the LrC Catalogue, and own set of edit filters, but point to same source image as the other copies.
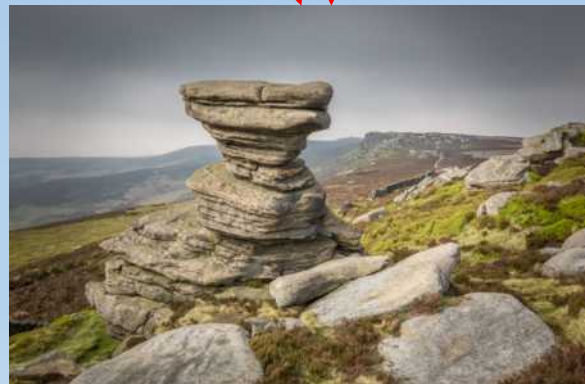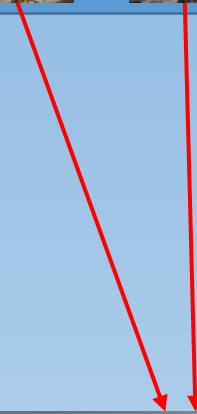
Exporting – Creating jpg copies for projection or printing

If LrC does not change the original picture, and only applies edits when you view it on a monitor, how do you create an edited version of the picture to share with someone else?

Answer – you 'Export' it, equivalent to doing a 'Save As' in other applications

The Exported version has all your edits 'Baked In' – ie it is how you see it on the monitor

Export allows you to :
- specify what folder you want the copy to go into
- specify a file name
- specify the file type and colour space
- specify the image size

The copy is no longer part of the LrC Catalogue index, so you can move it and rename it using File Explorer (PC) or Finder (Mac)