THE ADOBE" PHOTOSHOP" LIGHTROOM" 5 BOOK

The Complete Guide for Photographers

Martin Evening

The Adobe[®] Photoshop[®] Lightroom[®] 5 Book

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Dedicated in memory of Bruce Fraser

Introduction

Work on the Adobe Photoshop Lightroom program began toward the end of 2003 when a small group of Adobe people, headed by Mark Hamburg, met up at photographer Jeff Schewe's studio in Chicago to discuss a new approach to raw image editing and image management. What would it take to meet the specific needs of those photographers who were now starting to shoot digitally? More specifically, what would be the best way to help photographers manage their ever-growing libraries of images? It was shortly after this that I was invited to join an early group of alpha testers and help work out what sort of program Lightroom (or Shadowland, as it was known then) should become. As we began to discuss our different digital photography workflows, it became increasingly obvious why we all needed a better way to manage and process our digital photos. Lightroom underwent some pretty major changes in those early stages as the team tried out different workflow ideas, until eventually we ended up with the Lightroom program you see now.

The Adobe Photoshop Lightroom 5 Book represents the culmination of over nine years' work in which I have been involved with Lightroom. Basically, this book is intended to be the ultimate reference guide to Lightroom and designed to help you get the maximum benefit out of the program. In writing this book, I have had in mind both amateur and professional photographers and have aimed to provide what I believe is the most detailed book ever on this subject. At the same time, I have wanted to make sure that equal space was given to explaining some of the fundamental aspects of digital imaging, such as white balance and exposure. The feedback I have had for previous editions of this book has been encouraging. Newbies to Lightroom have found it easy to access and understand all the basics, while advanced professional users appreciate the background detail that's provided. I have to confess when I first started work on this project, I never imagined the book would end up being 736 pages in length. Mark Hamburg recently joked that he must have failed in his mission to make Lightroom "unreasonably simple" if you needed a book as thick as mine in order to understand it!

So many changes have taken place since version 1.0 was released. As a result, not only has the book ended up being a lot bigger, but I have also had to rewrite almost everything that was in the original edition. As always, I suggest you approach the book by reading it in chapter order, starting with Chapter 1: Introducing Adobe Photoshop Lightroom, which shows how you might typically bring photos into Lightroom and process them from start to finish. This should provide you with a good overview of what Lightroom can do.

The Lightroom catalog is a major feature of the program, which is why I have devoted over 200 pages of the book to providing in-depth advice on how to work with the Library module, including how to import photos and manage your photos through the use of keywords and metadata. Even more space is devoted to image processing and how to make use of all the Develop module controls. Here you will find some great picture examples, which show how Lightroom can help you unleash your creativity.

This edition of the book has a companion website: www.thelightroombook.com. It contains additional resource material in the form of Lightroom movie tutorials, templates, and PDF downloads. I know a lot of readers would like to have access to the images that appear in the book. In response to this I have created a downloadable Lightroom catalog that contains nearly all the photos that appear here. Full instructions on how to install the catalog once you have downloaded it are contained on the website.

Overall, I am still as excited about Lightroom as I was at the beginning of the program's development, and I hope the book provides the inspiration and insights to help you get the most out of the program, too.

Martin Evening, May 2013

Lightroom book updates

Adobe has been known to release interim updates for the Lightroom program in which new features are added. I am proud to say that I have had a good track record in always providing readers with updated content in the form of PDFs or movies whenever this happens. So when this happens do remember to check the book website for new content. I also have a Facebook page where readers can be kept updated: www.facebook.com/MartinEveningPhotoshopAndPhotography.

Acknowledgments

I would like to thank my editor, Pamela Pfiffner, for prompting me to get started on this project and for her advice and help during the planning stage of this book. For this particular edition, Rebecca Gulick project-managed the book and has once again done an excellent job of making sure everything went smoothly. Other members of the publishing team included the production editor, David Van Ness; copyeditor, Liz Welch; proofreader, Patricia J. Pane; indexer, James Minkin; and additional compositing and corrections by David Van Ness. I would also like to thank Charlene Will for the cover design, as well as Damon Hampson, who worked on the marketing.

Lightroom is really the brainchild of Mark Hamburg, without whom none of this would have happened. Since then I have been helped a lot by the various Lightroom engineers and other members of the team. It is all thanks to them that I have managed to gather the background technical knowledge required to write this book. In particular, I would like to thank Thomas Knoll, Eric Chan (who worked on the Camera Raw engineering), Max Wendt, and newcomer Josh Bury. I would also like to thank product manager Tom Hogarty, product evangelists



Bryan O'Neil Hughes and Julieanne Kost, and previous product evangelist George Jardine for the support and help they have given me. I would especially like to thank Ian Lyons, who tech-edited the book. Thank you, Ian, for clarifying all the many technical points and providing additional insights. Thanks, too, go to Sean McCormack, who provided me with valuable feedback and assistance.

A number of photographic shoots have been carried out specifically for this book. I would like to thank the models, Lucy at Bookings, Sofia at MOT, Sylvia at Nevs, and Kelly from Zone; Camilla Pascucci for makeup; Terry Calvert, James Pearce and Nadia Foster for hair; Harriet Cotterill for the clothes styling; Stuart Weston and Neil Soni for the use of their studios; and Harry Dutton and Rob Cadman for assisting me. Also a big thank-you to Jeff Schewe and George Jardine for documenting the shoots with stills and video.

It has been an interesting experience to see a new program emerge from scratch and has been a pleasure to share the development process in the company of a great group of alpha testers and fellow authors, who were all willing to share their knowledge about the program with one another. You will notice that this book is dedicated to the memory of Bruce Fraser, who sadly passed away in December 2006. Bruce was one of the original core group of Lightroom alpha testers who helped shaped the program. The Lightroom capture and output sharpening are both based on Bruce's original work on Photoshop sharpening techniques. Bruce was a true genius and is deeply missed by all those who knew and worked with him.

A book like this would be rather boring to read through without having some decent photographs to illustrate it with. To supplement my own photography, I would, therefore, like to thank Peter Andreas, Sean McCormack, Eric Richmond, and Jeff Schewe, all of whom are individually credited throughout this book. And lastly, I would like to thank my wife Camilla and daughter Angelica for yet again being so understanding and patient while I was glued to the computer!

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Develop module image editing

A definitive guide to working with the imageprocessing controls in the Develop module

One of the most powerful features in Lightroom is the imageprocessing engine and the way the image adjustment processing is deferred until the time you choose to edit in Photoshop or export an image. This method of image processing actually originated in the early days of computer imaging, when deferred processing was adopted by programs such as Live Picture and xRes as a means to speed up the image editing. Computers were a lot slower back then, but it was possible to manipulate large image files in real time on relatively slow computers (with as little as 24 MB of RAM memory) and defer the image-rendering process to the end of a photo edit session.

Of course, these days, you can edit large images in no time at all in Photoshop. But one of the key advantages of Lightroom is that you can apply a crop, spot the image, make localized adjustments, tweak the color, do some more retouching, readjust the crop again, and so on, without ever touching the pixels in the original photograph. In a conventional pixel-editing workflow, the pixels are always modified in a consecutive sequence of steps. When you work in Lightroom, no restrictions are placed on the order in which you do things and the edit changes you make in the Develop module are only applied when you output a photo as a rendered file, such as a PSD, TIFF, or JPEG.

NOTE

A master file in Lightroom is treated as a digital negative. Any operations you carry out in Lightroom that alter the image, including the retouching, are stored as saved instructions. The other benefit of this approach is that the image pixels are eventually rendered in a single processing step.

NOTE

There have been a few speed improvements made to Lightroom 5. The Develop controls can now be accessed as soon as a low-resolution preview has had a chance to load instead of waiting for a full preview. When going to the Develop module, individual panels aren't loaded into memory unless they are already open. This, too, may help improve the initial first launch speed of the Develop module. The userinterface frame rates have also been speeded up by a factor of x1.5-x2, which should make the Develop module experience feel that bit more responsive.

Image editing in Lightroom

Smarter image processing

The Lightroom image-processing engine is notable for a number of reasons. First, the Adobe engineers have made Lightroom simple to use-there are no color management settings, color space issues, or profile warnings to worry about. But just because the image processing is simpler doesn't mean it is inferior, as these changes have been made without compromising on guality. A digital image is made up of nothing more than a series of numbers, and during the image-editing process, those numbers are changed to new numbers. The Lightroom imageprocessing engine ultimately reduces all of its pixel calculations into a single calculation by the most direct route possible to produce a mathematically purer result, in which any image degradation is minimized. Actually, there is guite a lot of juggling going on, including mode changes and image blending, but the essential point is that everything you do is eventually applied as a single calculation. Another advantage of the Lightroom image-processing engine is that you have full access to all of the image controls when working with JPEG, PNG, TIFF, and PSD images, just as you have when working with raw camera files. You can use any of the image controls available in the Lightroom Develop module, such as the White Balance, Exposure, and Tone Curve controls, to process any imported image. Lightroom does not use layers, but it does recognize and import layered images (providing you switched on the backward-compatibility option when saving your PSD files from Photoshop). If you need to do any kind of layering work, it is guite easy to choose the "Edit in External Editor" command, carry on processing the image in another program, and save the results back to Lightroom in the form of an edited copy version of the original master image.

Lightroom uses a single RGB workspace to carry out all its image calculations, which is similar to the ProPhoto RGB space that was originally specified by Kodak. It uses the same coordinates as ProPhoto RGB, but has a gamma of 1.0 instead of 1.8. By using a 1.0 gamma, the Lightroom RGB workspace is able to match the native 1.0 gamma of raw camera files, and its wide gamut can therefore contain all the colors that any of today's digital cameras are capable of capturing. For these reasons, the Lightroom RGB workspace is ideally tailored to the task of processing the color data contained in the raw camera files. Concerns about banding in wide gamut color spaces have perhaps been a little overrated, since it is really quite difficult to pull apart an image in ProPhoto RGB to the point where you see gaps appearing between the levels. Suffice it to say, the Lightroom RGB space uses a native bit depth of 16 bits per channel, which means that Lightroom is able to process up to 32,768 levels of tonal information per color channel. Since a typical digital camera will only be capable of capturing up to 4,096 levels per color channel, it is probably true to say that the Lightroom RGB workspace can safely handle all of the tone and color information captured by any digital camera.

Steps for getting accurate color Calibrating the display

The color management system in Lightroom requires no configuration, since Lightroom automatically manages the colors without your having to worry about profile mismatches, which color space the image is in, or what the default workspace is. There may be problems with missing profiles, but this only applies to imported files where a conscious decision has already been made to not colormanage an image. Apart from these rare instances, you can rely on Lightroom to manage the colors perfectly from import through to export and print. However, you do need to give special consideration to the computer display and ensure that it is properly calibrated and profiled before you can rely on it to judge the colors of your images. This is because you want the display to show as accurately as possible what you are likely to see in print. Calibrating and profiling the display is essential, and it does not have to be complicated or expensive. So if you want to get the colors right and avoid disappointments, you should regard the following pages as essential reading.

Choosing a display

The choice of display essentially boils down to which type of liquid crystal display (LCD) you should buy. As with all things in life, you get what you pay for. Since the display is what you will spend all your time looking at when making critical image adjustments it is pointless to cut corners, just as it is pointless to scrimp on buying anything but the best-quality lenses for your camera. There are different classes of LCDs, starting with the budget-priced screens (such as those used on laptop computers) to large professional LCD displays that offer a high degree of color accuracy and wide color gamut, such as the Eizo ColorEdge CG276 and the NEC MultiSync PA301W. Both these displays are easy to calibrate and profile, and the large screen size means they are comfortable to work with.

Calibrating and profiling the display

The only truly effective way to calibrate and profile a display is to use a colorimeter or spectrophotometer, and it is possible to buy a good device along with the necessary software package for under \$250. You can spend up to \$1,000 on a good-quality display plus calibration package, or spend even more on a professional calibration kit that also allows you to measure and build custom print profiles. But if all you want to do is to calibrate and profile the display, these more expensive devices don't offer any significant advantages over what a basic colorimeter device can do. Having said that, some software packages can help you build better profiles using the same basic hardware-profiling kit.

NOTE

You don't need to be concerned with RGB workspaces or profiles when working in Lightroom. Raw files don't have profiles, and the color management of these files is handled by the internal raw processing engine, which incorporates its own calibration adjustments.

In the case of pixel images that have been imported into Lightroom, the profile recognition is handled automatically. The image file you are working on in Lightroom can be in any color space and will be colormanaged accordingly (provided the image has an embedded profile). If the image you are working on has no embedded profile, the situation is the same as with any other software program and a guess has to be made as to what the colors in the file actually mean. Whenever Lightroom encounters a file with a missing profile, it assumes the image to be in an sRGB color space. There are no warning indications in Lightroom other than the appearance of the image itself. So if the colors of a particular image you see in Lightroom don't match your expectations, it could be due to an image having a missing image profile. To prevent this from occurring, I suggest you check your Photoshop Color Settings and ensure you have the color management switched on so that Photoshop always embeds a profile in the files it saves. The easiest way to do this is to choose a General Purpose color setting or, better still, one of the prepress color settings in the Photoshop Color Settings dialog.



Figure 4.1 I normally use the X-Rite Eye-One Photo to calibrate the displays I use at work.

NOTE

Since version 4.3, Lightroom has provided support for Mac OS users owning one of the latest MacBook Pro computers with a Retina display. Lightroom is now able to display the user interface, including cursors at a suitable resolution for such displays. This refinement allows these computer owners to see smoother text and icons in the Lightroom interface. More recently, in Lightroom 5, this has been extended to supported Windows devices as well. There are two stages to a profiling process. The first step is to calibrate the display to optimize the screen brightness and contrast, and set the desired white point and gamma (**Figure 4.1**). The second involves measuring various color patches on the screen, where the measurements made from these patches provide the source data to build a profile. On some of the advanced displays there may be controls that allow you to adjust the brightness and contrast of the display and possibly some color controls for setting different white points and fine-tuning the color output. These settings can be adjusted during the calibration process to optimize the performance and neutralize the display before making the profile measurements. Most LCDs have only a brightness control that adjusts the luminance of the backlight on the screen. So when running through the preliminary calibration steps, there is often nothing you can adjust other than the brightness, and you simply skip the steps where you are unable to make any adjustments to the display.

White point and gamma

Apart from asking you to adjust the hardware settings, the calibration software will ask you to choose appropriate white point and gamma settings before you proceed to build the profile. On an LCD it won't be possible to manually adjust the white point the way you could with a cathode ray tube (CRT) display. You can set a specific white point for an LCD, such as 6500K, whereas some people may prefer to select the native white point for the LCD they are calibrating.

Matching white balances

People often assume the goal should be to match the white balance between different displays and viewing light sources. For a side-by-side comparison using a light viewing box, this will be important. But the fact is human vision is adaptive and our eyes always evaluate colors relative to what is perceived to be the whitest white. In reality our eyes are constantly compensating and can accommodate changes in white balance from one light source to another. You can edit an image on a display using a white point of 6500K and check the results with a viewing box that has a white balance of 5500K, as long as the two are some distance apart.

Whether you are using a Mac or a PC, the gamma should ideally be set to 2.2, since the 1.8 gamma Macintosh option is really only there for quaint historical reasons. In fact, the Macintosh 1.8 gamma dates back to the early days of Macintosh computers, long before color displays and ICC color management. Back then, it was found that the best way to get an image viewed on a Macintosh screen to match the output of an Apple black-and-white laser printer was to adjust the gamma of the monitor to 1.8. These days, Adobe programs like Photoshop and Lightroom always compensate for whatever monitor gamma is used by the system to ensure that the images are displayed at the correct brightness regardless of the gamma that was selected when calibrating the display. Setting the gamma to 1.8

instead of 2.2 will have absolutely no impact on the lightness of the images that are displayed in Lightroom. These will be perceived as being displayed at the same brightness regardless of the monitor gamma. However, if you are mainly using your computer for image-editing work, it is best to use a gamma setting of 2.2, as the image tones will be more evenly distributed when previewed on the display. When using the basICColor software described below, you can also select the L* option. The technical reason why this is recommended is because L* uses the luminance tone axis as prescribed in the Lab color space—it's better because it more closely matches human perception and provides a more linear gray axis.

Steps to successful calibration and profiling

The performance of your display will fluctuate, so it is advisable to update the display profile from time to time. LCDs vary in performance a lot less than CRT displays used to, so you'll probably only need to re-profile once every month or so.

For accurate calibration you first need to decide whether you want to buy a basic device for calibrating the display only or a more advanced device that allows you to create your own custom print profiles. The following steps show how the basICColor software can be used to calibrate and profile a display using a display calibration device such as the X-Rite i1 Photo. Other calibrating software will look different of course, but the underlying principles of calibration and profiling will be the same. Prior to doing a calibration, you should make sure the calibrator head and white tile are clean before making any measurements. Also, ensure that the screen surface is clean and free of dust.

1	basICColor display 4.1			o a si e e e e e e e e e
ye-One Pro/Spectral Information Settings Original Color temperature Color temperature Tonal response curve Unimance / contrast ratio Profile Hardware setup Calibration and profiling	Specify the color temperature to which you w selecting one of the Daylight standards or the monitor's native while point; entering a specific color temperature or sp clicking the <measure> button and pointin source (e.g., your vewing booth or another m as the target value for your monitor calibratic CIE Daylight standard D50 D65 Other: D Other white point</measure>	ould like to calibra ecifying chromatic g the instrument to onitor), <accept> n.</accept>	te the mor ity coordina wards an will set the	iltor by: ates; external light e measured value
Review	 Monitor's native 			
	Blackbody temperature		6 35 85	к
	Chromaticity coordinates	0.5450 X	0.3585	Ŷ
		Measur	e	
		5002 K da=-3 dh=3		
		Bark	Maxt	Exercise

NOTE

The profile measurement process usually takes a few minutes to complete, so you'll need to make sure that your screensaver doesn't kick in while the calibration is underway! For example, the energy conservation settings on an LCD laptop in batterypower mode may automatically dim the display halfway through the profiling process, and this can adversely affect the results of the profile measurement.

1. To start with, I set the color temperature. Since you cannot physically adjust the white point of an LCD, it is usually best to select the Native White Point option. But with a good-quality LCD you can set this to a standard setting, such as D65.

2. Next, I went to the Tonal Response Curve section and selected the recommended L* option. Using other calibration software packages, I recommend selecting Gamma 2.2.

	basl	COIO
	basiCColor display 4.1	11
Eye-One Pro/Spectral	Specify the tonal response curve to which you would like to calibrate the monitor b	y:
► Information	 choosing either gamma 1.8 or 2.2, 	
▼ Settings	 entering a specific gamma value (from 1.0 to 2.4), selecting sRGB IEC61966-2.1 for a true sRGB tonal response curve 	
Presets Color temperature Tonal response curve Luminance / contrast ratio	(does not equal Gamma 2.2!) or • selecting CIECAM02 for a perceptually accurate response curve.	
O Profile	 L* (recommended) 	
► Hardware setup	🔘 Gamma 1.8	
► Calibration and profiling	Gamma 2.2	
▶ Review	🔘 Gamma	
	O 5RGB IEC61966-2.1	
	CIECAM02 - average	
	CIECAM02 - dim	
	🔘 CIECAM02 – dark	

3. I then set the luminance/ contrast ratio. A maximum luminance of 110–140 candelas m² is ideal when calibrating and building profiles for a desktop LCD, but this is not an absolute figure and is dependent on the brightness of the ambient light where the display is located. You can't always adjust the contrast on an LCD, but you can sometimes adjust the computer operating system brightness controls to adjust the luminance brightness of the display so that the measured brightness matches the desired target setting.

	basiCColor display 4	.1		
Pre-One Pro/Spectral	Specify the lumin by: • first selecting 2 • then selecting Black luminance	ances and contrast ratio to v ? parameters from the pull-c "Maximum" for White luminar or	which you would like lown menu ice and/or Contrast	to calibrate the monitor ratio and "Minimum" for
Presets Color temperature Tonal response curve Luminance / contrast ratio Profile	 entering the application of the second second	propriate values for white a evant <measure> button an your viewing booth or anoth et value for your monitor cal annot be met by your monitor ible values. The results will b</measure>	nd/or black luminar d pointing the instru er monitor). <accep ibration. or hardware, the mo se shown in the "Res</accep 	nce and/or contrast ratio or imment towards an external ot> will set the measured pointor will be calibrated to sults" section of "Calibration
Calibration and profiling Review	Specify White	luminance and contrast 🛟		
	White luminance	O Maximum	(i) 140	cd/m² Measure
	Contrast	 Maximum 	0	: 1 ratio
	Black luminance	⊙ Min. Neutral ⊖ Min. Min. Min. Min. Min. Min. Min. Min.	lative 🔘	cd/m² Measure
			Back	Next Express

000	Cinema HD_2	
(1)	basiCColor display 4.1	basiccolo
iye-One Pro/Spectral	Specify the settings for creating the ICC n	nonitor profile.
► Information		
Bessete	1	
Color temperature		
Tonal response curve		
O Luminance / contrast ratio		
Profile		
 Hardware setup 	Profile type:	16-bit LUT based ‡
Calibration and profiling	Chromatic Adaptation:	CAT02 (from CIECAM02) \$
▶ Review		CC v4 profile
		Back Next Express

4. I then went to the Profile section and chose to save a 16-bit LUT based profile type. Once generated, this will automatically be configured as the new display profile.

5. I was ready to place the calibrator on the screen and start the calibration process. To measure an LCD, you must use a counterweight attachment and carefully hang the calibration device over the screen. I then clicked the Start button to initiate the profiling steps. A series of color patches flashed up on the display. The calibration device measured these and built a new display profile.

	basiCColor display 4.1	191 - Contract - Contr
eye-One Pro/Spectral	Accept the default or enter a name of the profile you want to create	ate:
▶ Information	Cinema HD_2.icc	
▶ Settings		
► Hardware setup		
Calibration and profiling		
Calibration and profiling Results		
⊫ Review]	
	Please review following points before starting the process: • Switch off the screen saver and all energy savers • Allow sufficient warm-up time • Avoid ambient light - cover the monitor while measuring • The measurement instrument must be attached plane to the m	onitor
	When ready, click the <start> button to begin with the automatic process.</start>	calibration and profiling

NOTE

JPEG capture has the advantage of offering faster capture burst rates and smaller file sizes. JPEG capture does make sense for people like busy news photographers, where speed and the compactness of the file size is essential for wireless shooting. JPEG is also perfectly fine for shooting fun photos on a digital compact or smartphone camera. But for everything else I recommend that you shoot in raw mode whenever possible. Raw files are often not that much larger than high-quality JPEGs, and the raw mode burst rates on a typical digital SLR are usually adequate for all but the fastest sports shooters. Apart from that, it just doesn't make sense these days not to shoot in raw mode. Above all, Lightroom is designed to help you make the best possible photographs from the raw data captured by your camera sensor. Only by shooting in raw mode can you ever hope to achieve the highest-quality results.

NOTE

Some Canon cameras are able to shoot using an sRAW format and some also in an mRAW format. These are files with smaller pixel dimensions than the full-size raw files, where the demosaic processing is carried out completely in the camera. This means that although such files appear to respond as if they are proper raw images, they are unable to provide the full range of Lightroom raw image-processing features. For example, you will lose some of the benefits of the improved demosaic processing that is found in Lightroom 3 or later.

Raw or JPEG?

At first glance, Lightroom appears to handle the processing of raw images and non-raw images as if they were the same. The fact that you now have more controls at your disposal to edit the color and tone in a JPEG capture is in one way a good thing, but it would be unwise to conclude from this that a JPEG image can now be considered equal to the quality of a raw capture. Here is a brief summary of the differences between shooting in raw and JPEG mode.

A typical good-quality digital camera might be able to capture 12 bits of data per channel, which equates to 4096 levels of information per color channel. This does not mean that every image you capture will contain 4096 levels in every channel—an underexposed digital photograph will have far fewer levels than this. But even so, you want to preserve as many levels of data as you can. It is claimed that the medium format digital cameras and some of the more recent digital SLRs can capture as many as 14 bits of data or 16,384 levels per channel. Whether you can capture 14 bits or just 12 bits of data per channel, being able to record up to 4096 levels or more is still a lot of levels to play with.

A raw capture file contains the direct raw data as captured by the sensor, without any pre-image processing applied to it. This is the major advantage of raw: when you shoot using raw mode, apart from the exposure and ISO setting, nothing else about the image processing will have been decided yet. A raw file is like a digital negative that has yet to be processed, and as such it's a master file with the potential to be edited in many different ways. Some photographers have found their initial encounters with raw images to be off-putting because some raw images may appear dull and lifeless when they are first imported into Lightroom. But, in a way, this is a good thing because you want there to be room to expand the tones and add more contrast as you see fit. Lightroom's Develop module can be used to interpret your master files in a variety of ways, but they work best when they are used to edit raw images. Also, the Develop settings can be set up to automatically match JPEG output, which makes the "speed and simplicity" argument for shooting JPEG redundant.

The alternative option is to shoot using JPEG mode where the camera automatically applies the image processing in-camera. This can include things like setting the white balance, adjusting shadow and highlight clipping, applying a tone curve, removing noise, sharpening the image, and converting the raw data to an 8-bit RGB output space. The JPEG capture mode also compresses the color data (while trying to preserve the luminance) to produce a compact JPEG capture file, and all the image processing is managed by an onboard image processor inside the camera. The user has limited control over the JPEG processing beyond setting the white balance settings, sharpness, noise handling, and RGB output space before the pictures are shot. You can use the Develop module controls in Lightroom to enhance a JPEG photo's appearance, but there are limitations as to how much you can do before you start to see clipping and artifacts in your JPEG-edited photos.



1. If you shoot a scene such as this in JPEG mode, the clipping gamut warning shows here that nothing can be done to reveal more information highlights. The tonal range in this JPEG image has already been fixed.



2. If the same image is captured in raw mode, a negative Exposure combined with a negative Highlights and other adjustments quickly reveals the highlight detail that the JPEG capture version was unable to preserve. When you process a raw file, you potentially have more tone information to play with and therefore more flexibility when making tone and color adjustments in the Develop module.

NOTE

The Lightroom image processing has remained more or less exactly the same from version 1.0 through to 3.0. There was one shift in behavior, though, that changed things slightly. When Lightroom 1.1 was released, a certain amount of noise reduction became integral to the Camera Raw demosaic process. This displeased some users who preferred things the way they were prior to this. In Lightroom 3, the Process 2003 rendering reverted to the pre-Lightroom 1.1 behavior where the noise reduction was removed again. Consequently, Process 2003 in Lightroom 3 matched the pre-Lightroom 1.1 processing exactly, but images that had previously been processed in Lightroom 1.1–3.0 could appear slightly less sharp when using Process 2003 in Lightroom 3 or later. It is possible to compensate for this removal by adding 15% to 25% extra Luminance noise reduction in the Detail panel. But bear in mind that this only applies should you wish to preserve an image in the Process 2003 state. I assume that you will most likely want to update such images to Process 2010 or 2012 rather than keeping them in Process 2003.

Downloadable Content: www.thelightroombook.com



Process versions

The Lightroom image processing is based on Camera Raw, which was first introduced as an optional plug-in for Photoshop in late 2002. Between then and now a lot of features have been added, but essentially, the underlying raw processing had remained the same. From the point of view of Lightroom users, the first major change came about with Lightroom 3, when the Camera Raw engineers felt it necessary to draw a line to separate the existing, legacy image processing from the new method of processing available in Lightroom 3. As a result, Lightroom 3 offered two types of Process Versions: Process 2003 and the newer Process 2010. Process 2010 offered a number of improvements, in particular better demosaic processing, improved noise reduction, better sharpening, and refinements to the Recovery and Fill Light algorithms. These all affected the total appearance of the image rather than just one aspect of the raw processing and this applied to not just raw and DNG files but to TIFF, JPEG, and PSD images as well.

With Lightroom 4, an even newer Process Version came into being: Process 2012. This represented an even bigger change to the Camera Raw processing. This time, the underlying demosaic processing remained as it was for Process 2010, but the main image tone adjustments were revised so that the controls you used in the Basic panel to adjust an image (as well as the localized adjustment tools) were now completely different from all previous versions of Lightroom and Camera Raw. It was a fairly radical update, but one that I think was for the better. As a consequence of this there are now two main ways to process an image. You can, if you prefer, continue to edit your images using the traditional set of sliders found in either Process 2003 or Process 2010. Or, you can embrace the new Process 2012 configuration, which is the default option for all newly imported images. If you are new to working with the Process 2012 controls, they may take a little adjusting to. But I believe the results you will be able to achieve using Process 2012 more than justify the pain of adapting to the new system. However, you can download a PDF from the book's website, which is based on content from the Lightroom 3 book. This describes in full how to use the older Process 2003/2010 controls.

With Process 2003/2010, the Basic panel tone controls were as follows: Exposure, Recovery, Fill Light, Blacks, Brightness, and Contrast. When Process 2012 is selected, the lineup now shows: Exposure, Contrast, Highlights, Shadows, Whites, and Blacks. Although the Exposure and Contrast slider names remain unchanged, these too have been updated. Basically, the Camera Raw image processing in Lightroom has evolved over the years to the point where there was quite an overlap between the individual tone sliders. For example, adjusting the Exposure, Recovery, or Fill Light sliders would always affect the midtone values and often require an additional Brightness adjustment to compensate for the effect these three sliders might have on the overall midtone brightness. It was a confusing situation for most users and one where it was sometimes necessary to switch back and forth between two or more sliders in order to find the ideal balance. The other thing that was problematic with the Process 2003/2010 model was the lack of symmetry between the highlight and shadows adjustments. For example, a single unit adjustment to the Blacks slider would always have a more pronounced effect than a single unit adjustment to say, the Recovery slider. With Process 2012, the Exposure slider is both a midtone brightness and highlight clipping control and is essentially a hybrid of the old Exposure and Brightness sliders. The Contrast control has been placed just below Exposure and is used to adjust the tonal compression. The Highlights and Shadows sliders are more symmetrical in their behavior. They can be used to lighten or darken the highlights or shadows independently, but they don't affect the midtones quite so much—the midtones should mainly be controlled using the Exposure slider. The Blacks and Whites sliders allow you to fine-tune the blacks and whites at the extreme ends of the tonal range.

Another benefit of the new design is that all images now have the same default settings. Previously, raw files would have default settings of Blacks 5, Brightness 50, and Contrast 25, while non-raw files would have zero settings. With Process 2012, raw and non-raw files both have zero defaults. This means that it is now easier to synchronize settings between raw and non-raw files.

The redesign of the tone controls means that contrasty images of high dynamic range scenes can be processed more effectively. As camera manufacturers focus on better ways to capture high dynamic range scenes, it is important the raw image-processing tools offer the flexibility to keep up with such developments.

Upgrading to Process 2012

I'll be going into more detail about working with the new Process 2012 controls shortly, but for now, let's look at the process version update process. Whenever you are editing a photo in the Develop module that's previously been edited in an earlier Process 2003 or Process 2010 version of Camera Raw, a thunderbolt icon will appear in the bottom-right corner of the Histogram panel (see Figure 4.2). This indicates it is an older process version image, and clicking the icon updates the image to Process 2012. A warning dialog will appear asking you to confirm the update (you can Alt)-click the thunderbolt icon to bypass this dialog). Once updated, you take advantage of the latest image adjustment controls. Alternatively, you can go to the Settings menu and choose "Update to Current Process." This allows you to update single or multiple photos to the latest Process 2012. Or, you can go to the Settings \Rightarrow Process submenu and select which process version you want to work with. Finally, if you go to the Camera Calibration panel (Figure 4.3), you can select the desired process version from there. This menu therefore also allows you to revert to a previous Process 2003/2010 mode should you wish to do so. Whenever you choose to update to the latest process version, Lightroom will try to produce as close a match as possible when converting Process 2003 or 2010 legacy files to Process 2012, though not always. For example, with images where the Blacks slider has been run up the scale using



Figure 4.2 Highlighted here is the process version warning icon in the Develop module Histogram panel. This indicates that the image currently being viewed in the Develop module is using a process version older than Process 2012—in this case, Process 2010.



Figure 4.3 The Camera Calibration panel showing the process version menu options.



Figure 4.4 If you use the Quick Develop panel to edit multiple images and there is a process version conflict between Process 2003/2010 and Process 2012 images, the tone control buttons will appear dimmed.

Process 2003/2010, these will most likely appear somewhat different after a conversion. The new Process 2012 Blacks sliders tends to back off quite a bit. You will also see the dialog shown in **Figure 4.5**. This warns you about the consequences of updating and allows you to select a Before/After view if desired. I think you will be fine choosing the "Don't show again" option and clicking Update. Though, by default all new files that are imported into Lightroom 5 use the latest Process Version 2012. Also, if you go to the Library module Library menu, you can choose Find Previous Process Photos to create a temporary collection of Process 2003 and 2010 photos in the Catalog panel. Note that when synchronizing photos that use different process versions and there is a process version mismatch, the Quick Develop panel will look like the example shown in **Figure 4.4**.

There is a trade-off to bear in mind when updating to the latest process version and that is a potential slowdown in performance. With Lightroom 3, the Process 2010 rendering was more sophisticated than Process 2003 and, as a result, increased the amount of processing time that was required to render the individual images. In some circumstances this resulted in longer output processing times such as during an Export, but it didn't affect the overall Lightroom 3 catalog performance. With Process 2012 for Lightroom 4 or later, this too has implications that will affect the image processing. At the same time, improvements have been made to the way the data is cached and read, which can make the Lightroom processing overall faster.

I don't advise you to upgrade all your images to Process 2012 in one go. I only upgrade my older, legacy images to Process 2012 on an image-by-image basis. The way I see it, I was probably happy with the results I achieved previously using Process 2003 or 2010, so why be in a hurry to update? If I am to upgrade to Process 2012, I would rather do so gradually. And of course, all newly imported images use Process 2012 by default.

Lr	New processing technology is available for update, please note that moderate to sign it is recommended that you update only or familiar with the new processing technolog original settings by selecting Cancel.	this image. If you ficant visual chan ne image at a time gy. You may elect	u choose to iges may occur e until you are to preserve the
	Review Changes via Before/After		
	Don't show again		
	Update All Filmstrip Photos	Cancel	Update

Figure 4.5 The Process Version update warning dialog.

Camera Raw compatibility

The Lightroom Develop module works with the same Camera Raw engine that's used in Photoshop and Bridge to apply all the image adjustments. However, it is only possible to maintain absolute compatibility between the Lightroom

Develop module and the Camera Raw engine used by Photoshop and Bridge if you are using the latest versions of both programs. This is because Adobe only provides updates to Camera Raw and Lightroom within the lifetime of each full product version. As new cameras are released, Adobe will provide further, free Lightroom updates, and these will mainly include a Camera Raw update that allows you to read raw files from the latest digital cameras. You can usually count on an update being released roughly every three or four months. So, for example, if you purchased Lightroom 4.0, you would have had free access to all the incremental updates (i.e., Lightroom 4.1 through to 4.4). And if you purchased Photoshop CS6, you would have had access to all the Camera Raw updates from version 7.1 through 7.4. Once a product is replaced by a new full version, such as Lightroom 5.0, the upgrade path for the previous Lightroom version comes to an end. If you want to continue receiving updates, your best option will be to upgrade to the next full version. After all, Lightroom 5 does contain things like the new Upright perspective correction feature, and you can hardly expect Adobe to allow you to keep upgrading for free—there does have to be a cut-off point. However, there will be no problem in supplying Lightroom 4 (or earlier) edited files to a Lightroom 5 user, because Lightroom 5 can recognize files that have been processed using any previous version of Lightroom or Camera Raw.

A bigger problem is how to maintain compatibility between Lightroom and older versions of Photoshop (and therefore older versions of Camera Raw). Customers who choose not to upgrade Photoshop at the same time as they upgrade Lightroom should only be slightly disadvantaged. Basically, Photoshop CS6 users can access a free Camera Raw 8.1 update that will allow them to read all the adjustments made in Lightroom 5 edited files, via Camera Raw. This means Photoshop CS6 users will be able to open raw images that have been edited in Lightroom 5 via Camera Raw and see their images appear the same as in Lightroom 5. But, and this is a big but, they won't be able to actually edit everything that's been applied to an image in Lightroom 5. For example, they won't be able to edit radial gradients or upright adjustments.

When you choose the "Edit in Photoshop" command (ﷺE) [Mac] or Ctrl (E) [PC]), having Camera Raw 8.1 installed for Photoshop CS6 means that Photoshop will be able to render a pixel version file without having to rely on Lightroom. This means that when using the above command, a copy image will appear opened in Photoshop CS6 without automatically having to create a rendered duplicate that will be added to the Lightroom catalog.

Earlier versions of Camera Raw (prior to 8.1) won't be able to recognize Lightroom settings that are new to Lightroom 5. However, when choosing the "Edit in External Editor" command (**EARTE**) [Mac] or (**Ctrl Alt E**) [PC]), Lightroom always uses its own internal Camera Raw processing engine to render a TIFF, PSD, or JPEG image, so in this respect there won't be any limitations when working with Lightroom 5 and older versions of Photoshop and Camera Raw.

NOTE

Lightroom does allow you to import CMYK images and edit them in the Develop module, although understand that these edit adjustments are taking place in RGB, and any export you make from Lightroom (except for export original) will result in an RGB output. It's not really ideal to use a program like Lightroom to edit your CMYK files in this way. The best route would be to go back to the raw or RGB original, make your adjustments there, and create a new CMYK output from that. You can do this in Lightroom by using the Export dialog to create, say, a TIFF output and incorporate a CMYK conversion Photoshop droplet action as part of the Export process routine (see page 448).
NOTE

The panels in the right section of the Develop module can be expanded by clicking the panel headers. If you (Att)-click an individual panel header, you put the panels into "solo" mode, which means that as you click to select and expand a panel, this action simultaneously closes all the other panels.

TH

You can reset the individual Develop settings at any time by doubleclicking the slider names.

NOTE

You can learn about Lightroom shortcuts by going to the Help menu and choosing the module help option at the bottom of the menu (or using ﷺ?). The following shortcuts enable you to switch between individual modules. (These are Mac shortcuts. PC users should use <u>Ctrl Alt</u> plus the number).

 Image: All 1 to select Library

 Image: All 2 to select Develop

 Image: All 3 to select Map

 Image: All 4 to select Book

 Image: All 5 to select Slideshow

 Image: All 6 to select Print

 Image: All 7 to select Web

≋Alt **↑** to go back to the previous module

Also, G selects the Library module in Grid mode, E selects the Library module in Loupe mode, R selects the Crop Overlay mode, Q selects the Spot Removal tool, M selects the Graduated Filter, Shift M selects the Radial filter, K selects the Adjustment Brush, and D selects the main Develop module again.

The Develop module interface

The Develop module has everything photographers need to make adjustments and corrections to their images (**Figure 4.6**). The main controls are located in the right panel section. At the top are the Histogram panel and Develop tools panel, and below that the Basic panel, which is where you make all the main tone and color adjustments.

This is followed by a Tone Curve panel, which provides you with a more advanced degree of control over the image tones, allowing you to further fine-tune the tone settings that have been set in the Basic panel. The Tone Curve features a target adjustment tool, which when you click to activate, allows you to move the cursor over the image, click on an area of interest, and drag with the mouse to lighten or darken rather than dragging the sliders. Similar target mode controls are available when making HSL and B&W panel adjustments. Note the Tone Curve panel also features a point curve editing mode and the ability to edit individual RGB channels.

Below that is the HSL / Color / B&W panel. The HSL tab section provides similar controls to the Hue/Saturation adjustment in Photoshop, where you can separately adjust the hue, saturation, and luminance components of an image. The Color tab section is similar to HSL but with simpler controls (and no Target mode option). Clicking the B&W tab section (or using the ♥) shortcut) converts an image to black and white and lets you make custom monochrome conversions, creatively blending the RGB color channels to produce different types of black-and-white outputs.

The Split Toning controls can be used to colorize the shadows and highlights separately (the Split Toning controls work quite nicely on color images as well as on black-and-white photos). The Detail panel lets you add sharpness to imported images and also has controls for suppressing the color and luminance noise.

The Lens Corrections panel allows you to correct for global lens vignetting, as well as the chromatic aberrations responsible for color fringing. It also offers auto lens corrections, plus automatic perspective and manual transforms. The Effects panel includes Post-crop vignette sliders for applying vignette effects to cropped images plus Grain sliders for adding a film grain effect.

The Camera Calibration panel lets you apply custom camera profile or camera calibration settings that can compensate for variations in the color response of individual camera sensors. Develop settings can be saved as custom presets. The left panel contains a selection of default presets to get you started, but it is easy to create your own presets using all, or partial combinations, of the Develop module settings. Notice that as you roll over the list in the Presets panel you'll see an instant preview in the Navigator panel, without having to click to apply the effect to an image.



Figure 4.6 The Develop module interface.

Loupe Info 1				
	File Name and Copy Name	0	Use Defaults	
	Capture Date/Time	٥		
	Cropped Dimensions	0		
	Show briefly when photo changes	E.		
Loupe Info 2				
Loupe Info 2	File Name and Copy Name		("Use Defaults")	
Loupe Info 2	File Name and Copy Name	0	(Uie Defailts)	
Loupe Info 2	File Name and Copy Name Exposure and ISO Lens Setting	•	(Use Defaults)	
Loupe Info 2	File Name and Copy Name Exposure and ISO Lens String Show briefly when photo change	•	(Use Defaults)	
Loupe Info 2	File Name and Copy Name Exposure and SO Lens Setting Show briefly when photo changes	•	(Use Defaults)	
Loupe Info 2	File Name and Copy Name Exposure and 50 Loss Setting Show briefly when photo change		(Use Defaults)	

Figure 4.7 This shows the Develop View Options dialog. The options here are the same as in the Library View options (for a larger view showing the Library view options, go to page 121). Note that the appearance of status messages in the Develop module won't actually delay or prevent you from applying Develop module adjustments; they are simply informational.

NOTE

Now that Lightroom can apply lens profile corrections (see page 257), this means profile corrected images can end up being distorted to some degree. The same is also true for images that have been edited using Upright perspective corrections or Manual transforms. Normally, when you apply a lens profile correction the crop is constrained to the warp bounds anyway. However, checking the Constrain To Warp option ensures that the crop bounds do not exceed those of the warped image content and therefore prevents the undefined padded gray areas from showing. For example, it is possible to adjust the Scale slider in the Lens **Corrections Manual section to reveal** the padded gray area. Checking the Constrain To Warp option here and in the Crop Overlay options snaps the crop overlay to the constraints of the warped image bounds.

Develop view options

If you go to the view menu and choose View Options (**B**(J) [Mac] or (**C**trl J) [PC]), you can access the dialog shown in **Figure 4.7**. This includes a "Show message when loading or rendering photos" option at the bottom, which will appear whenever the Develop module is processing a photo.

Develop module cropping

From any of the modules in Lightroom, you can press R to switch directly to the Crop Overlay mode in the Develop module. Or, if you are already in the Develop module, you can also click the Crop Overlay mode button in the Tools panel to activate cropping. **Figure 4.8** shows a close-up view of the Crop tool panel controls. Once you are in the Crop Overlay mode, a crop bounding box appears, initially selecting all of the image. As you drag the crop handles, the image and crop edges will move relative to the center of the crop (**Figure 4.9**) and the areas outside the crop bounding box will appear shaded.

Dragging a handle moves the crop bounding box relative to its center. Dragging the cursor inside the crop bounding box lets you reposition the image relative to the crop, allowing you to easily reposition the photograph relative to the crop bounding box. If you hold down the Alt key, the crop bounding box can be made to resize relative to the crop box center. You can also click the Crop Frame tool in the Tools panel (Figure 4.8) to activate it: place the Crop Frame cursor over the photograph, and then click and drag to make a free-form crop (as you would using the Crop tool in Photoshop). When you have finished defining the crop, the Crop Frame tool returns to its docked position in the Tools panel. Click the Close button to apply a crop and exit the Tools panel (or just press R). To reset the Crop Overlay, click the Reset button or press #Alt R (Mac) or Ctrl Alt R (PC). This resets all the Develop module settings for that image. Whenever you drag one of the crop handles to make a non-rotational crop, you'll see a "dividing thirds" grid overlay the image (as can be seen in Figure 4.9). These thin grid lines can be useful as an aid to composition, though you can choose from other custom overlay options, which are shown on pages 188 to 189. In the Toolbar you can set the Tool overlay to always be on, off, or in Auto mode where it will only be visible when you drag one of the crop handles.

Rotating a crop

To rotate and crop an image at the same time, move the cursor outside the crop bounding box and click and drag. Alternatively, you can use the Angle slider in the Tools panel, or the Straighten tool, to straighten a photograph. In either case the image rotates relative to the crop bounding box (which will always remain level).



Figure 4.8 This shows a close-up view of the Crop Overlay tool panel controls.



Figure 4.9 In Lightroom, the cropped area is always centered in the content area, and the image moves relative to the crop area. In the above example, as I dragged the top-left handle inward, the image shifted out of the way to accommodate the change made to the crop area and the center crop handles (aligned to the green line) always remained in the center of the content area. You can select crop presets from the list shown here, or click Enter Custom and create your own custom aspect ratio presets. Note that since Lightroom 3 the Crop presets list has been rationalized.





1. If you click to select the Crop Frame tool, you can simply drag to apply a freeform crop to a photograph. Release the mouse and the Crop Frame tool returns to its usual location in the Tools panel.



TIP

You can use A to toggle the Constrain Aspect Ratio lock. **2.** In this next step, I clicked the Constrain Aspect Ratio Lock button to unlock. This allowed me to then click a corner or side handle of the crop bounding box and drag to reposition the crop without restriction.



3. I then clicked to select the Straighten tool and dragged it across the image to define a straighten angle (you can also adjust the straighten angle by using the Angle slider in the Tools panel).



4. You can also straighten a photograph by clicking anywhere outside the crop bounding box and drag. As you do so, a fine grid appears and you can use the grid lines to help align the rotation to elements within the photograph.

NOTE

Whenever you enter large numbers for a custom crop aspect ratio (anything greater than 20), you will notice that as these are entered, the decimal place will shift over to the left. So, for example, if you type in a screen display ratio of, say, 1675 x 1150, this will actually set a ratio of 16.75 x 11.5. When entering crop ratio units, Lightroom will always try to reduce these to the simplest ratio expression possible.

Crop aspect ratios

When the Constrain Aspect Ratio button is checked, the current crop aspect ratio is preserved as you apply a crop. If no crop setting has been applied yet, the locked aspect ratio is locked to the current image proportions. So if you check this box and drag any of the handles, such as a corner handle, the crop area will match the exact proportions of the current image. If you go to the Crop Presets list, you can select one of the aspect ratio presets in the list or choose Enter Custom, which opens the dialog shown in the bottom right of Figure 4.9. Here, you can enter settings for a new custom aspect ratio setting and click OK to add this setting to the Crop presets list.

In Crop Overlay mode you can use the X key to rotate the aspect ratio (i.e., you can change a current landscape aspect ratio crop to a portrait crop). Also, when the aspect ratio is locked, you can quite easily flip the aspect ratio from landscape to portrait (or vice versa) by dragging the corner handle in such a way as to force the aspect ratio to switch.

Applying a new aspect ratio to a scaled crop now preserves the existing scale, rather than resetting the Crop Overlay to the visible image bounds, which was the previous behavior. However, you can preserve the previous behavior by pressing the <u>Alt</u> key when changing the aspect ratio. This change does not apply to Quick Develop.



Figure 4.10 When the Crop Lock button is checked again, the crop bounding box is locked to the current aspect ratio. When you drag any of the bounding box handles, the current aspect ratio is preserved. As you click on the photograph inside the crop bounding box area, you can reposition the image relative to the crop.

Crop to same aspect ratio

There is also contextual menu command and Develop module A keyboard shortcut known as "Crop to same aspect ratio." Basically, you can use this to take the current aspect ratio crop (such as in **Figure 4.10**) and expand the crop boundaries to fit the frame and preserve the same aspect ratio.

Repositioning a crop

The Crop tool in Lightroom always restricts the cropping to within the boundary of the document. Unlike Photoshop, you cannot drag the Crop tool outside the image document area to increase the canvas area. You can only crop an image within the confines of the photograph. So however you drag or rotate the crop, you will always be applying the crop to the inside of the picture. When you click inside the crop bounding box, the cursor changes to show the Hand tool, which allows you to scroll the image relative to the crop. As you drag with the mouse, the crop box remains static and the image moves behind the crop (see Figure 4.10).

Crop guide overlays

In the Tools \Rightarrow Crop Guide Overlay menu (**Figure 4.11**) there are seven different crop guide overlays to choose from. These range from the simple Grid crop guide overlay shown in **Figure 4.14**, to other more exotic overlay designs. For example, on the following pages I have included the Diagonal crop guide overlay (**Figure 4.15**) and the new Aspect Ratios crop guide overlay (**Figure 4.17**). The Thirds overlay provides a standard reference that you may already be used to seeing in certain camera viewfinder screens, while the Golden Ratio and Golden Spiral crop overlays offer new ways to preview a photo as you compose a crop. So why should you want to use these different crop overlays? Cropping is partly about trimming away parts of the picture that are distracting and aligning straight edges, but it is also about creating a nice-looking, well-balanced visual composition of the picture content. The crop overlays can help you compose better.

Note that regardless of which crop guide you choose, the Grid overlay design shown in Figure 4.14 always appears whenever you rotate the crop by dragging with the cursor outside the crop bounding box. The Grid overlay is useful in these instances since it can help you align the horizontal or vertical lines when straightening an image.

Crop guide orientation

It is perhaps worth pointing out that the () keyboard shortcut can be used to cycle quickly through the crop guide overlays and you can use the Shift() shortcut to cycle through the crop guide orientation for the individual crop overlay modes Triangle (two modes) and Golden Spiral crop overlay modes (eight in all). **Figure 4.13** shows the Cycled Overlays options dialog.



Figure 4.11 The Crop Guide Overlay menu options, including the new Aspect Ratios (**Figure 4.12**) overlay and Choose Overlays to Cycle options (Figure 4.13).

Choose A	spect Ratios
☑ 1 × 1	
🗹 8.5 x 11	
🗹 4 x 5	8 × 10
🗹 5 x 7	
🗹 2 x 3	4 x 6
🗹 4 x 3	1024 x 768
🗹 16 x 9	1920 x 1024
🗹 16 x 10	1280 x 800
Cancel	ОК

Figure 4.12 Go to the Tools ⇒ Crop Guide Overlay menu and select Choose Aspect Ratios to open the dialog shown here. This allows you to select which aspect ratio options you wish to be visible.



Figure 4.13 The Cycled Overlays options.



Figure 4.14 The Grid crop guide overlay.



Figure 4.15 The Diagonal crop guide overlay.



Figure 4.16 You can use the Shift shortcut to switch the orientation of the Triangle and Golden Spiral crop guide overlays.



Figure 4.17 The Aspect Ratios overlay (Figure 4.12 shows the Aspect Ratios options).

TIP

Don't forget that in addition to the Photo ⇔ Rotate left and Rotate right commands, you can also transform individual photos by choosing Photo ⇔ Flip Horizontal or Flip Vertical.



Figure 4.18 The Tool Overlay menu options.

Canceling a crop

You can also use the Esc key to revert to a previously applied setting made during a crop session. Let's say that the picture shown on the previous pages had been cropped and rotated slightly. If you were to alter the crop by adjusting the crop ratio or crop angle and then hit the Esc key, you would always be taken back to the original crop setting. If, on the other hand, you adjusted the crop, exited the crop mode for this photo, started editing photos in another folder, and returned later to this picture, the new crop setting becomes the one Lightroom reverts back to if you readjust the crop and hit the Esc key. Essentially, canceling a crop is not the same as resetting the develop settings (**XAIT** (Mac] or **CITI AIT** (**R** [PC]). Canceling takes you back to how the image was before you edited it, which might include a previously applied crop adjustment.

Tool Overlay menu

The Tool Overlay menu can be used to control the behavior of the crop guide overlays. Different options appear when the Spot Removal, Red Eye, Graduated Filter, Radial Filter, or Adjustment Brush are made active. I'll be covering these in more detail toward the end of the chapter. But for now let's just look at the Tool Overlay menu options for the Crop Overlay tool.

The Tool Overlay options

The Tool Overlay options can be accessed via the Toolbar at the bottom (T) or the Tools menu (**Figure 4.18**). The Tool Overlay options refer to the crop guides that appear inside a cropped area when using the Crop tool (and also to the visibility of the Red Eye Correction ellipses, Spot Removal circles, Adjustment Brush pin, and Graduated Filter pin markers). If you select the Always or Always Show menu option, the tool overlays remain visible at all times. If you want to hide the tool overlays, select Never or Never Show from the menu. When this menu option is selected the overlays will remain hidden. The Auto or Auto Show mode only makes the tool overlays visible when you hover over the content area. In other words, the Crop overlay guides will disappear from view whenever you roll the mouse cursor outside the image area such as to the top panel menu.

Another way to work with the tool overlay show/hide feature is to use the **(#)** Shift(H) (Mac) or (Ctrl)Shift(H) (PC) keyboard shortcut, which acts as a toggle for switching between the Always Show and Never Show options. An easier-toremember (and more flexible) shortcut is to simply use the (H) key. This toggles between the Auto Show and Never Show modes. Or, it toggles between the Always Show and Never Show modes (depending on whether you had Auto Show or Always Show selected first).

Quick Develop cropping

The Crop Ratio menu options in the Library module Quick Develop panel (**Figure 4.19**) can be used to apply a preset crop ratio that trims photos evenly on either side. Cropping is something that you usually want to apply manually to each photo individually, but having a quick way to change the aspect ratio for a bunch of photos at once might be quite useful for someone like a school portrait photographer who wants to quickly prepare a set of portraits using a fixed aspect ratio setting. As with the Develop module Crop Overlay options, you can click on the Enter Custom item in the Crop Ratio pop-up menu to create your own Custom Aspect Ratio crop settings for use in the Quick Develop panel (see Figure 4.9 on page 183). Note that the custom crop settings are shared between the Develop module and the Quick Develop panel in the Library module. In the **Figure 4.20** example below, I selected an 8.5 x 11 proportional crop and applied this to the selected photograph.



Figure 4.19 The Quick Develop Crop Ratio menu contains a list of presets.



Figure 4.20 Shown here is a photograph to which I applied a 8.5 x 11 proportional crop to a landscape image that originally had a 2:3 aspect ratio.

NOTE

The Basic panel settings will appear grayed out when set to their default settings.

TIP

When setting the white balance, as you zoom out, the magnified pixel view shows more and more of the image (this is good for averaging large areas for high ISO images). As you zoom in, the magnified pixel view shows less and less of the image (which is good for picking out small, specific areas). You can also use the #Shift[U] (Mac) or Ctrl Shift[U] (PC) keyboard shortcut to apply an Auto White Balance.



Figure 4.22 To activate the White Balance tool, click the tool to undock it from the panel.

The Basic panel

If you click on the inside panel edge and drag, you can adjust the width of the side panels. **Figure 4.21** shows the Develop panel in normal and expanded form. In this instance, a wider panel offers you more precise control when dragging the sliders. We'll begin here with the white balance controls.



Figure 4.21 The Lightroom panels can be expanded by dragging on the side edge. An expanded Develop panel offers greater precision when making image adjustments.

White Balance tool

The Temp and Tint sliders in the White Balance tools (WB) section can be used to precisely adjust the white balance of a photograph. With these you can colorcorrect most images or, if you prefer, apply alternative white balances to your photos. The White Balance tool is located near the top of the Basic panel. You can activate the tool by clicking on it or by using the (W) shortcut. This unlocks the tool from its docked location and allows you to click anywhere in the image to set a new white balance (Figure 4.22). The floating loupe magnifier provides an extreme close-up of the pixels you are measuring, which can really help you select the correct pixel reading. As you hover over an image, you will also see the RGB readout values for the point immediately beneath the cursor (see Figure 4.23), as well as at the bottom of the Histogram panel. These RGB readings are shown as percentage values and can help you locate and check the color readings (if the RGB values are all close enough to the same value, the color can be regarded as neutral). If the Auto Dismiss option is disabled in the Toolbar (see Step 1 below), all you have to do is click [W] to activate the White Balance tool and continue clicking with the tool until you find the right setting. You can then use the Esc key or the W key again to cancel working with the White Balance tool and return it to its normal docked position in the Basic panel.



1. To make a white balance adjustment, select an area of the picture that should be neutral in color (but not a bright white area). If the Auto Dismiss box (circled) in the Toolbar is checked, the White Balance tool automatically returns to its docked position in the Basic panel after a single click. If the Auto Dismiss box is unchecked, you can click and keep clicking with the White Balance tool until you are completely satisfied with the white balance adjustment that you have made.



Figure 4.23 Instead of using the traditional 0 to 255 scale, the RGB readouts are given as percentages. You can determine the neutrality of a color by how close the readout numbers are to each other. While it is now possible to set the Histogram readouts to show Lab values (see page 207), the white balance loupe always displays RGB values.

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	-				1	1		6.		6					
-	+			-	-	L		-	-		-		-		-
+	÷		-	-	H	H	-	-	-	-	-	-	H		-
+	+			-	-	-	-	-	-	-	-		H		-
-	+	-		-	-	-	-	-	-	-	_	-	-		-
+	+		-	-	H	H	H	-	-	-	-		H		-
+	+	-	-	-	-	-		-	-	-	-	-	-		-
+	+	H	H	-	H	H	F	-	-		-	-	H	H	-
-	+	H	-	-	-	-		-	-	-	-		H		-
-	+	H	H	-	-	H	Н	-	-	-	-	H	H		-
+	+	H		-	H	H		-		-	-		H		-
+	+	H	н	-	H	H	H	-	-	-	-	-	H	H	-
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WB : Auto Dismiss 🗹 Show Loupe

2. The Show Loupe check box allows you to toggle displaying the loupe that appears below the White Balance tool cursor. You can adjust the loupe scale setting by dragging the slider next to the Show Loupe item in the Toolbar. This slider adjusts the sample grid pixel size, and dragging the slider to the right increases the number of pixels used when sampling a white balance point measurement. Increasing the pixel sample size can be beneficial if you want to aggregate the pixel readings more, such as when you're sampling a really noisy image and you don't want the white balance measurement to be unduly affected by the pixels that contain color noise or other artifacts. But note that the White Balance tool sample size area samples an area that is dependent on the zoom setting. In other words, the white balance sample area is zoom-level dependent.

NOTE

Do we still need the 0 to 255 scale in the readout section? I know some people say that they would like to see this as an option, but there are no real valid reasons for doing so. The 0 to 255 scale has only come into existence because of the way the number of levels are calculated for pixel-rendered 8-bit images. The percentage scale (in my view) makes it easier to interpret what the eyedropper readout numbers mean. Having said that, when you view a photo with Soft Proofing turned on, the RGB numbers in the Histogram display using the 0 to 255 scale (see pages 501 to 507).



Figure 4.24 Among other things, the X-Rite/Gretag Macbeth ColorChecker chart is useful for taking white balance readings under the same lighting conditions as those you are about to shoot with. To take a white balance reading in Lightroom, click on the light gray patch next to the white patch.

NOTE

It is tempting to assume that the grayscale patches in the X-Rite Gretag Macbeth ColorChecker chart shown in Figure 4.24 correspond to the full tonal range that you are trying to optimize using the Basic and Tone Curve panel controls. This is a dangerous assumption to make because in a properly optimized image, the white-and-black patches rarely ever equate to the respective highlight and shadow points in the image. For example, the black patch in the ColorChecker is really a dark gray, and if you were to clip the shadows using this patch as your guide, you could end up clipping a lot of important shadow information.

White Balance corrections

In most shooting environments, once you have found the right white balance, all the other colors will tend to fit into place. You can help get the white balance right in-camera by choosing a fixed or auto setting. Or, you can use a white balance or color checker chart like the one shown in Figure 4.24 as a preparatory step that will help you make a more accurate, measured reading later in Lightroom. A camera auto white balance setting may do a good job, but it really depends on the camera you are using, because even the best cameras won't know how to handle every lighting situation. In Figure 4.25 we see a scene where there were mixed lighting conditions. This photograph could be processed for either the exterior daylight or the tungsten lighting indoors, and each could be said to be correct. In situations like this you can't always rely on the camera's Auto White Balance setting and you'll have to decide for yourself which setting works best. This is where the White Balance tool can come in handy. The trick is to analyze the picture and look for an area in the scene that should be a neutral, nonspecular, textural highlight. You should aim to select something that should be a neutral light gray, because if you click on an area that's too bright, there may be some clipping in one or more of the color channels, which can result in a false white balance measurement and consequently make an inaccurate adjustment.



Figure 4.25 The white balance can be measured manually by selecting the White Balance tool (/) and clicking on an area in the image that should be near white in color. This image shows two possible white balances: one measured for the indoor lighting (left) and one measured for the outside daylight (right).

Understanding White Point

The adjustments made using the White Balance slider controls in the Basic panel will have the greatest impact on the overall color appearance of an image (**Figure 4.26**).

The numbers used in the Temp slider refer to the temperature scale measured in degrees Kelvin, which in photography is commonly used when describing the color temperature of a light source. Artificial lighting, such as a tungsten lamp light source, is said to have a color temperature of around 2800 to 3200 K, whereas average daylight is notionally rated as being 5000 K and overcast daylight is somewhere around 10000 K. As a result, photographers often tend to describe higher color temperature lighting conditions as being "cooler" and the lower color temperature lighting conditions as being "warmer," because most people equate blue colors with coldness and reddish colors with warmth (although technically speaking, a bluer color temperature is actually hotter). The Temperature slider scale allows you to set what "should be" the white point of the image based on the Kelvin scale. Some people get confused on this point because they assume that if 3200 K equates to tungsten-balanced film and 5500 K equates to daylight-balanced film, dragging the Temperature slider to the right makes the image cooler and dragging it to the left makes it warmer. In fact, the opposite is true. The key point to emphasize here is that the White Balance controls are used to "assign" the white point as opposed to "creating" a white balance. Dragging the slider to the right makes the image warmer and dragging it to the left makes it cooler. Try thinking of it this way: if you have a photograph shot under average daylight conditions and assign a lower color temperature to the photo, like one more suited for tungsten lighting conditions, such as 3200 K, then naturally enough, the colors in the image will appear blue. The result of this experiment is exactly the same as using a tungsten-balanced film emulsion to record a daylight scene.

Tint adjustments

You don't always need to make Tint slider adjustments when color correcting an image and when you do, these can usually be quite minor, except for those situations where the light source emits uneven spectral wavelengths of light, such as when shooting under fluorescent lighting. It is always hard to set an accurate white point for these types of lighting conditions, but fluorescent lighting conditions usually require a heavy magenta tint bias to the white point in order to remove the strong green cast.



Figure 4.26 The White Balance slider controls in the Basic panel allow you to manually adjust the white point in an image. The Temperature slider adjusts the white point from warm artificial lighting conditions to cool daylight and beyond. The Lightroom slider represents this as a progression going from blue to yellow. The Tint slider allows you to fine-tune the white point for any green/magenta bias in the white point.

TIP

Warning! If you shoot using a studio flash system (not with the built-in flash) and have the camera set to auto white balance, there is a high probability that the white balance reading will be influenced by the tungsten modeling lights instead of the strobe flash.

Figure 4.27 Here is an image that's been processed using two different white balance settings. It is often largely a matter of personal judgment when deciding which version you prefer, since neither example uses what could be described as a "correct" white balance.

Creative white balance adjustments

Who is to say if a correct white balance is any better than an incorrect one? Before digital capture and the ability to set accurate white balances, photographers could only choose between shooting with daylight-balanced or tungsten-balanced film emulsions. Most photographers would simply accept whatever colors the film produced, although some professionals had the know-how to measure the color temperature and place filters over the camera lens to correct for color shifts in the lighting. With a digital camera it is easy to set the white balance precisely. There may be times, such as when shooting catalog work, when it is critical to get the color exactly right from camera to screen. But you don't always have to obsess over the freedom to interpret a master raw file any way you like, and you can change the mood in a photograph completely by setting the white balance to an alternative, incorrect setting (see **Figure 4.27**).



The Tone editing controls

The tone adjustment controls are meant to be applied in the order they appear listed in the Basic panel (**Figure 4.28**). When using Process 2012, the adjustment outcome with each slider is to some extent linked to the image content. Here, then, is a summary of what the Process 2012 sliders do.

Exposure

The Exposure slider is both a midtone brightness and highlight clipping adjustment. This means that when evaluating an image you use the Exposure slider to adjust the image to get it to look the right brightness. If you set the Exposure too dark you won't be exploiting the full tonal range into the highlight areas. As you lighten with the Exposure slider, the image will become progressively lighter, and as you approach the point where the highlights might potentially become clipped, the brightening adjustment smoothly ramps off toward the highlight end, which helps preserve detail in the highlight areas. As you push the Exposure slider further, you will then start to clip the brightest highlights. Mainly, you want to use the Exposure to get the image brightness looking right. From there on, no matter what you do with the other tone sliders, the midpoint brightness value won't shift too much until you make a further Exposure slider edit.

The Exposure slider's response correlates quite well with the way film behaves, but is also dependent on the image content. Previously, with Process 2003/2010, as you increased Exposure, the highlights would at some point "hard clip." Also, as you increased the Exposure slider further, there was a tendency for color shifts to occur in the highlights as one or more color channels began to clip. With Process 2012, as you increase Exposure there is more of a "soft clipping" of the highlights as the highlight clipping threshold point is reached. Additional increases in Exposure behave more like a Process 2010 Brightness adjustment in that the highlights roll off smoothly instead of being clipped. As you further increase Exposure, you will of course see more and more pixels mapping to pure white, but overall, such Exposure adjustments should result in smoother highlights and reduced color shifts. You should also find that it provides you with about an extra stop of exposure latitude compared to editing with the Process 2003/2010 Exposure slider.

If you hold down the (Att) key as you drag the Exposure slider, you'll see a threshold mode view, which highlights any highlight clipping. This may be seen as a useful guide to where clipping may be taking place, but I don't recommend being hung up about highlight clipping when using the Process 2012 Exposure slider compared to when making Process 2003/2010 adjustments. When using Process 2012 you need to judge the image brightness visually and reserve using the (Att key threshold view analysis for when adjusting the Highlights and/or Whites sliders.



Figure 4.28 The Basic panel controls using Process 2012.





Figure 4.29 If you don't optimize the camera exposure, you may be missing the opportunity to record a greater number of levels via the sensor. The top diagram shows how a correctly optimized exposure makes maximum use of the sensor's ability to record the fullest amount of levels information possible. In the lower diagram, you can see how recording the exposure just one stop darker than the ideal exposure results in only half as many levels being recorded by the sensor.

Understanding camera exposures

A typical CCD or CMOS sensor in a digital camera is capable of recording over 4,000 levels of information. If you are shooting in raw mode, the ability to record all these levels very much depends on a careful choice of exposure. The ideal camera exposure should be bright enough to record all the tonal information without clipping important highlight detail. This is because half the levels information is recorded in the brightest stop range. As shown in **Figure 4.29**, for each stop decrease in exposure, the number of levels that can be recorded are potentially halved. The upshot of this is that you do not want to deliberately underexpose an image, unless, that is, to do otherwise would result in the loss of important highlight detail. Deliberate underexposure can have a dramatic impact on the deep shadow detail, since relatively fewer levels are left to record the shadow information. **Figure 4.30** shows how you can easily lose detail in the shadow areas due to an underexposure at the capture stage.

As I mentioned earlier, if you are shooting raw, it is unwise to place too much emphasis on the camera histogram, since what you see here is based on a JPEG capture view. It is best to either trust the exposure system in the camera to get it right or rely on the histogram in Lightroom. In practice, I do sometimes check the histogram as I am shooting, just to make sure that at the very least I am not underexposing, according to what the camera shows me. But I won't be particularly worried If the camera histogram shows a few signs of highlight clipping.



Figure 4.30 The top-left section shows the enhanced shadow detail using an optimum camera exposure setting, and the bottom-right section shows the same scene captured at minus two stops camera exposure and then processed to match the luminance of the normal exposure. Notice how there is more noise and less tonal information in the underexposed version.

Contrast

The Contrast slider in Process 2012 operates almost the same way as the Process 2003/2010 one. Basically, when applying a contrast adjustment, as one side of the midpoint value is made darker, the other side is made lighter. So, an increased contrast adjustment will make the shadows darker and the highlights lighter. A reduced contrast adjustment will make the shadows lighter and the highlights darker. The Contrast slider behavior in Process 2012 does adapt slightly according to each image and should allow you to better differentiate the tone information in the tone areas that predominate. For low-key images the midpoint is offset slightly toward the shadows, and with high-key images the midpoint is offset toward the highlights (see **Figure 4.31**). Note that increasing the contrast in Lightroom does not produce the same kind of unusual color shifts that you sometimes see in Photoshop when you use Curves. This is because the Lightroom/Camera Raw processing manages to prevent such hue shifts as you increase the contrast.

Essentially, you'll want to use the Exposure slider first to set the Exposure brightness, and then adjust the Contrast slider according to how much the tones in the image you are adjusting need compressing or expanding. The remaining sliders can then be used to make further tweaks after these two initial image adjustments have been made.

One of the things that tends to confuse some people is the fact that as well as the Contrast adjustment in the Basic panel, there is a separate Tone Curve panel that can be used to adjust the contrast. Basically, the two are interlinked. The adjustments you make using the Contrast slider in the Basic panel are another type of Tone Curve adjustment. The thing to appreciate here is that when you go to the Tone Curve panel (where the default curve is now a linear curve shape), the adjustments you apply here are applied relative to the contrast adjustment that's already been applied in the Basic panel.

Highlights and Shadows

The Highlights and Shadows sliders work identically on either side of the tonal range and offer far more scope as to what can be done at the image-processing stage. With Process 2003/2010, the Recovery slider could only be used to darken the highlights and Fill Light could only lighten the shadows. With these new sliders you can both lighten or darken. For example, you can use a negative Highlights adjustment to restore more highlight detail, or a positive adjustment to deliberately blow out the highlights. As I mentioned earlier, these sliders work symmetrically so that unit adjustments have equal effect and only affect the tone regions either side of the midtone point. To be clear, the range of these sliders does extend beyond the midtone point, but the greatest effect is concentrated in the highlight tones for the Highlights slider and the shadow tones for the Shadows slider. Adjustments in the +/- 50% range will have a normal type effect when lightening or darkening. As you apply adjustments greater than this, the



Figure 4.31 Here, you can see the effective Contrast curve range for the Contrast slider. The top view shows the range for Process 2003/2010, where the midpoint was always locked. Below are representations of a Contrast adjustment in Process 2012, where the midpoint adapts according to the tone range bias of the image being adjusted.



Figure 4.32 The Auto Tone button (circled) can be used to apply an instant auto correction.

NOTE

The Blacks behavior in Process 2003/2010 is sensitive to the autometering of your camera. If you shoot in Av mode and the meter exposes bright (e.g., when using the Leica M9 or Nikon D70), the blacks will be less sensitive. If you shoot with a camera that meters dark (e.g., the Canon 5D II and Sony NEX-5), the blacks are very sensitive. In Process 2012, this property of blacks has been eliminated. Regardless of the metering tendencies of your camera, or how you set your in-camera exposure, blacks in 2012 should now feel the same. You should "normalize" your exposures in Process 2012 by using just the Exposure slider (leaving Blacks at its default value of 0) and the results should be the same.

lightening or darkening adjustments are applied via a halo mask. This is a special technique that is used in HDR tone mapping to help compress the tonal range of an HDR image. The problem when using this type of technique is that as you apply a strong effect, the halos become more noticeable (though some people seem to quite like this kind of effect). With Process 2012, the goal has been to make the halo mask as unobtrusive as possible. When pushed to extremes it can be possible to detect a halo, but for the most part it's quite well disguised.

Typically, after setting the Exposure and Contrast you would then use the Highlights and Shadows sliders to enhance the highlight and shadow areas as necessary. Here again, it is possible to hold down the (Alt) key to reveal a threshold analysis view as you adjust the Highlights and Shadows sliders. There may be some potential value in doing so at this stage, but I would urge you to mainly judge the appearance of the preview image for the nuances that can be achieved in the shadow and highlight regions rather than what a threshold analysis is telling you. The Highlights and Shadows controls also inform the whites and blacks how much tonal compression or expansion has been applied and the Whites and Blacks controls will adjust their ranges automatically, taking this into account.

Whites and Blacks

In many cases the Exposure, Contrast, Highlights, and Shadows adjustments may be all that's needed to make a good tone correction. Meanwhile, the Whites and Blacks sliders should be regarded as fine-tuning adjustments that are always adjusted last. Here, it can definitely be useful to hold down the Att key to reveal a threshold analysis view, as this will allow you to set the white and black clipping points more precisely.

It should be noted that Blacks slider adjustments in Process 2012 are reversed from Process 2003/2010. With Process 2012 you drag the slider to the left when you want to crush the blacks and you drag it to the right when you wish to lighten. The default Blacks setting is now zero and the old Process 2003/2010 zero setting is now equivalent to a +25 adjustment. The other thing to note is that Blacks adjustments are also auto-calculated based on the contrast range of each individual image. Previously, with Process 2003/2010 if you attempted to crush the blacks in a bright, low-contrast image by raising the Blacks slider, you couldn't always successfully clip the blacks. This was because with Process 2010, the Blacks slider had a fixed range and when dealing with foggy or distant hazy images it wasn't always possible to clip the blacks successfully. With Process 2012, the Blacks range is adaptive and auto-calculated based on the image content. Where you have a low-contrast image, the Blacks adjustment will become increasingly aggressive as you drag the Blacks slider toward a –100 value. This does mean that you'll end up with more range at the expense of some precision as you attempt to crush the darkest tones.

Auto Tone setting

more neutral balance.

The Auto Tone setting (**(H)** [Mac] or (**Ctrl**) [PC]) can work well on a great many images as a quick-fix tone adjustment (see **Figure 4.32**). It automatically sets the Exposure, Contrast, Highlights, Shadows, Whites, and Blacks. Note that you can also use (**Shift**) plus a double-click to auto set these sliders independently. From there you can adjust any of the Basic panel sliders to manually fine-tune an auto adjustment. An Auto Tone adjustment can be undone by double-clicking the Tone button next to Auto, or you can use the **(H)** [Mac] or (**Ctrl**) Shift **(PC**] shortcut to reset everything.

An Auto Tone adjustment can sometimes make an instant improvement. Or it may not do much at all because the tone adjustments were close to being correct anyway (see sidebar). It is ridiculous to expect an automatic function such as this to perform flawlessly every time, but for the most part, I find Auto Tone works well the majority of the time, especially since the Auto Tone logic has been improved with each subsequent version of Lightroom. Even if Auto Tone does not produce perfect results, what it does produce can often be a useful starting point for applying further edits. Auto Tone can also be included as part of a Develop preset, allowing you to import images with Auto Tone applied right from the start.

NOTE

Auto Tone can often produce guite decent automatic adjustments and provide an okay starting point for newly imported photos. However, you may sometimes see less than perfect results. Photographs shot of general subjects—such as landscapes, portraits, and most photos shot using the camera auto-exposure settings—will often be improved by using Auto Tone. Subjects shot under controlled lighting conditions, such as studio shots, can often look worse, though. It depends on the type of photography that you do as to whether an Auto Tone adjustment can help or not.





2. I dragged the Exposure slider to the right to lighten the image and simply adjusted the Exposure until the image appeared to have the right brightness. I didn't need to worry too much about overdoing the Exposure as there was little risk of the highlight detail clipping.



3. I then dragged the Contrast slider to the right to increase the tone contrast.



4. Once the Exposure and Contrast had been set, I dragged the Highlights slider to the left in order to bring out more detail in the midtone to highlight regions of the photo.



5. Here, I dragged the Shadows slider to the right in order to lighten the shadow tones.



6. I now needed to fine-tune the highlight and shadow clipping points. To do this I adjusted the Whites and Blacks sliders as shown here. At this stage, it can be useful to hold down the <u>Alt</u> key to see a threshold clipping preview for the whites and blacks. It is usually best to allow the shadows to just start to clip. In this example you can see the threshold preview as I adjusted the Blacks slider.



7. Here is the final version where you can see the result of the Whites and Blacks adjustment. Note I also added +40 Clarity to boost the midtone contrast.

Histogram panel

When you are in the Develop module, the Histogram panel is displayed in the top-right corner (there is also a Histogram panel in the Library module, but the histogram in the Develop module has more direct relevance when making Develop adjustments). Basically, the Histogram panel provides you with information about the distribution of the levels in an image and also offers you the means to turn the clipping previews for the shadows and highlights on or off—these can indicate where there might be any shadow or highlight clipping in the image. You can either roll over or click on the buttons circled in **Figure 4.33** or press to toggle displaying the clipping preview shown below. Blue in the preview image indicates where there is shadow clipping and red indicates any highlight clipping. The clipping warning triangles themselves also indicate which colors in the red, green, or blue channels (or combination of channels) are initially being clipped most—the triangle colors will eventually change to white as all three channels become clipped. If you want to hide the Histogram panel, you can use the **第**0 (Mac) or **Ctri** (PC) shortcut to toggle collapsing and expanding this panel.

If you are editing an imported JPEG, PNG, PSD, or TIFF image, the Lightroom histogram represents the tone range based on the file's native color space. If however you are editing a raw capture, there are no gamut constraints until you export the image as a JPEG, TIFF, or PSD file, at which point the gamut space limit is determined by the choice of RGB output space. sRGB has a small gamut and many of the colors will be clipped when you export. Adobe RGB is a popular, commonly used color space, and ProPhoto RGB has the widest gamut of all. Incidentally, Lightroom uses a wide gamut RGB space similar to ProPhoto RGB to do all the image calculations, and the histogram and RGB percentage readouts are based on this native Lightroom RGB space. To find out more about the Lightroom RGB space, please refer to the book's website.

NOTE

Histogram information is only useful if you know how to interpret it correctly. For example, if you shoot using raw mode, the histogram display on a digital camera is misleading because it is based on what a JPEG capture would record, and the dynamic range of a JPEG capture will always be less than that available from a raw file. If you are shooting raw, the only way to tell if there is any clipping is to inspect the raw image in Lightroom, or via Camera Raw in Photoshop. In other words, don't let the camera histogram unduly sway your judgment if you have good reason to believe the camera exposure you are shooting with is correct.





Figure 4.33 This shows the Histogram panel with the clipping warning triangles highlighted. With this particular image, the clipping preview shows blue channel clipping in the shadows and yellow (red and green color channel) clipping in the highlight regions.



Figure 4.34 This shows a Histogram panel view as the cursor is rolled over the image and showing the RGB values immediately below the cursor.

Figure 4.35 In the Histogram panel view on the left, the highlights needed to be expanded to fill the width of the histogram. It was also evident in the image itself that the Exposure needed to be increased. In the example on the right, I adjusted the Exposure slider to make the image brighter.

The Histogram panel and image adjustments

As you adjust an image you can observe how this will affect the image levels in the Histogram panel. In **Figure 4.35** you'll notice how as the Exposure was increased the levels expanded to the right. As the Exposure amount was increased the highlights didn't clip any further and the midtones became brightened. But if you push the Exposure adjustment to extremes the highlights will eventually be forced to clip. And, as you roll the cursor over an image the Histogram display will change from displaying the camera data information to showing the RGB values (see **Figure 4.34**). You may also find it useful to reference the Histogram panel when adjusting images like the one shown over the page where an image initially appears to be overexposed. In examples such as this, as you decrease the Exposure slider setting more information should appear in the highlights and this will be reflected in the histogram display (see **Figure 4.36**). But note that the ability to recover highlight detail in this way only really applies when processing raw images.





Figure 4.36 In this example, the Histogram panel view on the left shows the histogram of an overexposed image with shadow and highlight clipping. The example on the right shows how the histogram looked after applying negative Exposure and Highlights adjustments to recover detail in the highlights that would otherwise have remained clipped.

Histogram V Local Control Control Contrast Histogram V/5.0 1/200 sec Original Photo Basic V Treatment: Color Black & White WB: As Shot = Temp 4700 Tint -2 Tone Auto Exposure 0 Highlights 0 0



Lightroom 5 now also provides optional Lab color readouts. To enable this, rightclick in the Histogram panel to access the contextual menu shown in **Figure 4.37** and select the Show Lab Color Values option. As you hover the cursor over the image, you'll now see Lab values in place of an RGB readout. But note that when soft proofing is switched on, the readout display will always default to RGB values, even if Lab Color Values has been enabled.

What is interesting to note, though, is that the histogram is more than just an information display. You can also use it to actively adjust the following Basic panel tone slider controls: Exposure, Highlights, Shadows, Whites, and Blacks. As you roll the mouse over the histogram, you'll see each of these sections highlighted (**Figure 4.39**). And if you click and drag left or right with the mouse inside the Histogram panel, you can use this as an alternative way to adjust the Basic panel sliders.

Navigating the Basic panel via the keyboard

You can use the \triangleleft and \supseteq keys (or you could refer to these as the , and . keys) to cycle backward or forward through the Basic panel settings, making each in turn active. When a setting is selected, you can use the + and - keys to increase or decrease the unit settings. Holding down the Shift key when tapping the $\frac{1}{2}$ / - keys uses larger increments, while holding down the Alt key uses smaller increments. As you do this you'll also see an overlay appear in the content area indicating the adjustments being made (see **Figure 4.38**).



Figure 4.39 The Basic panel adjustments shown here were all achieved by clicking on different sections of the histogram and dragging right or left to increase or decrease the setting represented by that particular section of the histogram. You can also double-click on these areas of the histogram to reset the values.



Figure 4.37 This shows the Histogram contextual menu with the Show Lab Color Values menu option. With this enabled, you might, for example, want to aim for even a* and b* values when evaluating skintones.





Figure 4.40 This shows a comparison between an extreme highlight recovery in Process 2010 (top) and Process 2012 (bottom).

NOTE

The ability to recover overexposed highlight detail is also dependent on the capture abilities of the sensor. Not all sensors are the same, and with some cameras you do have to be very careful not to overexpose.

Correcting an overexposed image

Lightroom has the ability to reveal highlight detail that might otherwise be hidden. You can often recover seemingly lost highlight information by combining a negative Exposure adjustment with the use of the Highlights slider. Although Lightroom can recover the highlight detail on most images, it will have a limited effect on pixel-based images such as JPEGs, PNGs, or TIFFs. For best results, you can only use this technique when processing raw images. This is because Lightroom is able to use all of the luminosity information that's contained in a raw file that is simply waiting for you to access it. In the accompanying example, I was able to recover one-and-a-half stops of overexposure, but in some cases it may be possible to recover as much as two stops.

It is often better to optimize the camera exposure to capture as much of the shadow detail as possible, but without overexposing to the point where you are unable to process important highlight information. I will often ignore the camera or light meter readings and deliberately overexpose at the time of capture in order to record the maximum amount of levels information and use the combination of negative Exposure and Highlights adjustments when processing the image in Lightroom.

How this works is that Lightroom features an internal technology called "highlight recovery," which is designed to help recover luminance and color data in the highlight regions whenever the highlight pixels are partially clipped—in other words, when one or more of the red, green, and blue channels are partially clipped, but not all three channels are affected. The highlight recovery process initially looks for luminance detail in the non-missing channel or channels and uses this to build luminance detail in the clipped channel or channels. After that Lightroom also applies a darkening curve to the highlight region only, and in doing so brings out more detail in the highlight areas. But as I have just mentioned, this technology is designed to work with raw files, although JPEG images can sometimes benefit too (but not so much). Process 2012 has taken this further to provide improved highlight color rendering, which preserves the partial color relationships, as well as the luminance texture in the highlights. You should now find that highlight detail is rendered better (try reprocessing your sunset photos using Process 2012). There is also less tendency for color detail to quickly fade to neutral gray and there is better preservation of the highlight detail. In Figure 4.40 you can see a direct comparison between working in Process 2010 and Process 2012 on an image where the highlights were burned out (and you can't get much more burned out than shooting directly into the sun). If the highlights are completely blown out in the original image, you will never be able to recover all the detail completely, but using the latest Process 2012 I think you'll be pleasantly surprised at the difference when reprocessing some of your older Process 2003/2010 shots, especially photographs like the one shown in Figure 4.40.



1. This overexposed photograph was initially processed using just the default Basic panel settings in the Develop module. The histogram shows severe clipping in the highlights, and you can see how there is not much detail in the sky. A histogram like this can appear disconcerting until you realize that there is more information contained in the image than appears at first sight.



2. The main treatment for an overexposed photo is to apply a combination of negative Exposure, Highlights, and Whites adjustments, though I mainly used the Exposure slider to achieve the desired darkening.

Correcting an underexposed image

Underexposed images represent a bigger problem because there will be fewer levels available to manipulate, particularly in the shadows. However, the Basic panel controls in Lightroom can be used to brighten an image and lift out the shadow detail. The way you need to approach this is to mainly drag the Exposure slider to the right until the image begins to have about the right brightness. As you do so, don't worry too much about the shadows just yet, because the next step will be to adjust the Shadows slider by dragging this to the right to bring out more detail in the shadow regions of the image. Beyond that, it's all about fine-tuning the image. In the example shown here, I needed to reduce the Highlights to preserve tonal detail in the highlight areas and I also needed to reduce the Blacks in order to compensate for a strong Shadows adjustment and maintain a decent amount of contrast in the darker areas. You will also want to watch out for deteriorating shadow detail. As I mentioned above, brightening up a dark photo can reveal problems in the shadows such as tone banding and noise. See Chapter 6 for advice on how best to handle such situations.



1. As with the highlight recovery method earlier, underexposure corrections should mainly be done by adjusting the Exposure slider first in order to achieve the right level of brightness.



2. In this example, I dragged the Exposure slider to the right, which lightened the image considerably. But because I was lightening for the midpoint, this adjustment also over-brightened the highlight areas in the clouds. To compensate for this, I applied a negative Highlights adjustment. I also added a positive Shadows adjustment to lighten the dark areas of the photo. Finally, I applied a negative Blacks adjustment to ensure the shadows were clipped correctly and also to add more contrast in the shadow region. The end result is a photo that is quite usable, considering how dark it was before. However, lightening such a dark original will have also amplified the noise—this may be especially noticeable in the shadow areas.





Processing HDR files in Lightroom

Shortly after the release of Lightroom 4 came the 4.1 update, in which Lightroom was given the ability to edit 32-bit files, providing they had been saved using the TIFF format and were flattened (it may be a good idea to set up a Smart Collection like the one shown in **Figure 4.41** to filter these out). This is a useful addition to the program because it means that you can tone edit high dynamic range images via Lightroom instead of using a dedicated HDR editor. You still need to have the ability to capture or create 32-bit HDR files and for that you will require Photomatix Pro or Merge to HDR Pro. But essentially, you are now able to import 32-bit TIFF files into Lightroom and edit them just as you would a regular image, except the Exposure slider range adapts to extend the exposure range from +/- 4 stops to +/- 10 stops.

In practice, editing a 32-bit HDR file is not that much different from processing a regular raw or TIFF image except you potentially have a much greater dynamic range to play with. This will all depend on the quality of the 32-bit master image you are working with. But I have found that the results I can achieve in Lightroom, using it as an HDR editor, are pleasing. Using the Basic panel tone controls it is generally a lot easier to achieve the desired tonal balance compared to working with the HDR toning controls in Photoshop. While Photomatix Pro's controls are quite intuitive to work with, I find the Lightroom approach helps steer you away from creating the rather obvious "HDR look." If you push the Shadows and Highlights sliders to their extremes, the results do tend to look a bit artificial.

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1 To begin with, I needed to create an HDR file. For this example, I selected three photos that were shot two stops apart, where the camera was set to aperture priority mode and the shutter speed only was adjusted with each bracket. This ensured that the aperture and depth of field was consistent for each exposure. I also set the sharpening Amount slider to zero (see sidebar).



2 I then went to the Photo menu and chose Edit in \Rightarrow Merge to HDR Pro in Photoshop. This opened all three images, blended them together, and presented the Photoshop Merge to HDR Pro dialog. You can use this dialog to tone map and render an 8-bit or 16-bit image from the 32-bit HDR data, but here I selected the 32-bit option and clicked OK to render an image in 32-bit mode.

NOTE

When generating an HDR master file in the way shown here, it is usually best to disable the sharpening beforehand since the Merge to HDR process will tend to generate artifacts if the images used have been pre-sharpened.

NOTE

If using the latest Photoshop CC, the Merge to HDR Pro dialog shown in Step 2 now has a "Complete Toning in Adobe Camera Raw" option that reveals a "Tone in ACR" button at the bottom. Clicking this will open Camera Raw as a filter in Photoshop CC and allows you to continue the tone editing in Photoshop. In this example, I wanted to take the photo back into Lightroom, so it was important to deselect this option.



3 Here is how the 32-bit file appeared when viewed in Photoshop. It didn't look that great at this point. This was because it was a high dynamic range master and the Photoshop preview could only show one segment of the overall image file exposure range (you can, if you like, select the 32-bit Exposure slider option from the document window status bar to adjust the preview exposure). At this point I chose File ⇒ Save to save the image as a TIFF and add it to the Lightroom catalog.



4 Here is how the saved image looked when previewed in Lightroom where, by default, zero settings were applied in the Basic panel.



5 I then used the Basic panel controls to edit the tones. I adjusted the Exposure, Highlights, and Shadows sliders to balance the tones better. I also adjusted the Whites and Blacks to fine-tune the end clipping points and applied a large amount of Clarity (which is usually necessary when editing 32-bit images like this).



6 In this final version I went to the Detail panel and applied the required amount of capture sharpening, which is usually best applied after you have generated the HDR master file.
NOTE

The Match Total Exposures command is also available as an option in the Library module Photo ⇔ Develop Settings menu.

Match Total Exposures

You can use the Match Total Exposures command to match the exposure brightness across a series of images that have been selected via the Filmstrip. Match Total Exposures calculates a match value by analyzing and combining the shutter speed, the lens aperture, the ISO speed the photos were captured at, and any camera-set exposure compensation. It then factors in all these camera-set values, combines them with the desired exposure value (as set in the most selected image), and calculates new Lightroom exposure values for all the other selected images. I find that this technique can often be used to help average out the exposure brightness in a series of photos where the light levels have gone up and down during a shoot, or where there is a variance in the strobe flash output. The former chief Lightroom architect Mark Hamburg also liked to describe this as a "de-bracketing" command. So to sum up, if you highlight an individual image in the series and select Match Total Exposures, the other images in that selection will automatically be balanced to match the exposure of the target image.



1. In this example, I made a selection of photographs in the Library module Grid view, where, as you can see, the light levels varied quite a bit when I shot this photo sequence.



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3. In the Library Grid view you can see the exposure appearance of the selected photos was now more evenly balanced compared to the Library Grid view in Step 1.



Figure 4.42 The top image mostly has reflective highlights that don't contain any detail. You would normally want to clip these highlights to achieve the optimum image contrast. In the lower image, the lightest areas are the clouds and you would want to make sure that these nonreflective highlights did not get clipped.

Highlight clipping and Exposure settings

The main objective when optimizing an image is to ensure that the fullest tonal range can be reproduced in print. With this in mind, it is vitally important that you set the highlights correctly. If the highlights become clipped, you will risk losing important highlight detail in the finished print. And if you don't clip them enough, you'll end up with flat-looking prints that lack sparkle.

When setting the Exposure slider, you need to be aware of the difference between reflective and nonreflective highlights and how the highlight clipping you apply affects the way the image will eventually print. The two examples shown in Figure 4.42 help explain what these differences are. A reflective highlight (also referred to as a specular highlight) is a shiny highlight, such as the light reflecting off a glass or metal surface, and contains no highlight detail. It is therefore advisable to clip these highlights so that they are the brightest part of the picture and are printed using the maximum, paper white value. In Figure 4.42, the metal sculpture has plenty of reflective highlights and we would want to make sure these are clipped when making an Exposure adjustment. Nonreflective highlights (also known as nonspecular highlights) need to be treated more carefully. These will mostly contain important detail that needs to be preserved. Each print process varies, but in general, whether you are printing to a CMYK press or printing via a desktop inkjet printer, if the nonreflective highlights are set too close to the point where the highlights start to clip, there is a risk that any important detail in these highlights may print as paper white.

It is not too difficult learning how to set the Exposure slider correctly. Basically, you just need to be aware of the difference between a reflective and nonreflective highlight, and the clipping issues involved. Most photos will contain at least a few reflective highlights. In practice I use the highlight clipping preview when adjusting the Whites slider (discussed on page 204) to analyze where the highlight clipping is taking place and toggle between the clipping preview and the Normal image preview to determine if these highlights contain important detail. Alternatively, you can use the clipping gamut warning in the Histogram panel as a guide to when the highlights are about to become clipped. I usually always adjust the Whites slider so that the reflective highlights to make sure these are protected. To do this, I'll either reduce the Highlights slider to protect the highlights, or (more likely) adjust the Whites slider so that the reflective highlights are a little less bright than the brightest white.

Clipping the blacks

Setting the blacks is not nearly as critical as adjusting the highlight clipping. It all boils down to a simple question of how much you want to clip the shadows. Do you want to clip them a little, or do you want to clip them a lot?

I know some Photoshop books and tutorials instruct you to set the shadow point to a specific black value that is lighter than a zero black, but this advice is only useful if you are working toward a specific, known print output. Even then this should not really be necessary, since both Lightroom and Photoshop are able to automatically compensate the shadow point every time you send a file to a desktop printer, or each time you convert an image to CMYK. Just remember this: Lightroom's internal color management system always ensures that the blackest blacks you set in the Basic panel faithfully print as black and preserve all the shadow detail. When you convert an image to CMYK in Photoshop, the color management system in Photoshop similarly makes sure the blackest blacks are translated to a black value that will print successfully on the press.

On page 204, I showed an example of how to use a clipping preview to analyze the shadows and determine where to set the clipping point with the Blacks slider. In this example, the objective was to clip the blacks just a little so as to maximize the tonal range between the shadows and the highlights. It is rarely a good idea to clip the highlights unnecessarily, but clipping the shadows can be done to enhance the contrast. **Figure 4.43** shows a classic example of where the shadows in the image have been deliberately clipped. A great many photographers have built their style of photography around the use of deep blacks in their photographs. For example, photographer Greg Gorman regularly processes his black-and-white portraits so that the photographs he shoots against black are printed with a solid black backdrop. Some images, such as the photograph shown in **Figure 4.44**, may contain important information in the shadows. In this example, a lot of information in the shadow region needs to be preserved. The last thing I would want to do here is to clip the blacks too aggressively, since I might lose important shadow detail.



Figure 4.44 Here is an example of a photograph with predominantly dark tones. When adjusting this photo, it would be important to make sure the blacks weren't clipped any more than necessary to produce good, strong blacks in the picture.



Figure 4.43 With this photo, I set the Blacks slider to 17 because I deliberately wanted to clip some of the shadows to black.

NOTE

Clarity is a hybrid of two separate contrast enhancing techniques. One is a local contrast enhancement technique, devised by Thomas Knoll, using a low amount and high radius setting in the Photoshop Unsharp Mask filter. The other is a midtone contrast enhancement Photoshop technique that was originally devised by Mac Holbert, which he used to bring out crisper detail in his landscape prints.

Clarity slider

The Presence section in the Basic panel includes the Clarity slider, which is essentially a local area contrast adjustment. Clarity cleverly applies an adaptive contrast adjustment that is similar to the low Amount/high Radius unsharp mask technique referred to in the accompanying sidebar note. The Clarity effect is achieved by adding variable amounts of contrast through adding a halo to the edges in the photograph. Adding this halo builds up the contrast in the midtone areas based on the edge detail in the photograph. The net effect is that a positive Clarity adjustment boosts the apparent contrast in the midtones but does so without affecting the overall global contrast. Normally, you would want to start with a Clarity setting of around 10 so as not to overdo the effect too much. But as you increase the Amount, this strengthens the midtone contrast effect which in turn makes the midtone areas appear more crisp. In Process 2012, the halos are generated with the same underlying tone mask algorithm that's utilized for the Highlights and Shadows sliders. As a consequence of this, the Clarity halos are now less noticeable. At the same time, a positive Clarity adjustment in Process 2012 is roughly double the strength of earlier process versions. Also, in Lightroom 5, Clarity adjustments have been speeded up slightly.



1. This screenshot shows a close-up 1:1 view of a photo. You don't necessarily have to view your images at 1:1 in order to evaluate Clarity adjustments, but a 1:1 view will allow you to see the effect more clearly.



2. In this next screenshot, you can see how the image looked after I had set the Clarity slider to +100%. The reason I took the slider all the way to the maximum setting was to create the most dramatic difference between this and the previous screenshot. You can see much more midtone contrast in the fungus and tree bark.

Using Clarity to decompress the levels

All image adjustments are destructive. So one way or another, you will end up either expanding the tones in an image, which stretches the levels further apart, or you'll compress the tones by squeezing the levels closer together. For example, some Tone Curve adjustments flatten portions of the curve, and as you compress the detail in these areas, you will consequently lose some of the tonal separation that was in the original image.

When you edit a raw image, there should be plenty of levels information waiting to be used. A positive Clarity adjustment can therefore be used to expand these areas of flat tone and enhance the detail that's still lurking in the original capture image.



TIP

You can also add Clarity to an image using the localized adjustment tools. Later you'll see a few examples of how you can apply Clarity adjustments with the Adjustment Brush.

Negative Clarity adjustments

A Negative Clarity adjustment does the exact opposite of a positive Clarity adjustment, because it softens the midtones and does so in a way that produces an effect not too dissimilar to a traditional darkroom diffusion printing technique (see **Figures 4.45** and **4.46**). The net result is that you can create some quite beautiful diffuse soft-focus image effects, and negative clarity is particularly suited to black-and-white photography. Note that while positive clarity has undergone some refinement in Process 2012, negative clarity adjustments remain unchanged.



Figure 4.45 This shows how the photograph I was about to work with looked before I had applied a negative Clarity adjustment. It's a nice picture with lots of sharp detail, but is also a good example to show this "pseudo" diffusion printing technique.



Figure 4.46 This screenshot shows the photograph in Figure 4.45 where I had applied a –66% Clarity adjustment. As you can see, the negative Clarity adjustment created a kind of diffuse printing effect.



Figure 4.47 The Vibrance and Saturation sliders are located at the bottom of the Basic panel in the Presence section.

Vibrance and Saturation

The Vibrance and Saturation sliders are located at the bottom of the Basic panel in the Presence section (**Figure 4.47**) and both can be used to adjust the saturation in an image. The main difference between the two is that the Saturation slider applies a linear adjustment to the color saturation, whereas a Vibrance adjustment uses a nonlinear approach. In plain English, this means that when you increase the Vibrance, the less saturated colors get more of a Saturation boost than those colors that are already saturated. This can be of a real practical benefit when you're applying a Saturation adjustment to a picture and you want to make the softer colors look richer, but you don't want to boost the color saturation at the expense of losing important detail in the already bright colors. The other benefit of working with Vibrance is that it has a built-in Caucasian skin color protector that should filter out colors that fall within the skin color range. This can be useful if you are editing a portrait and you want to boost the color of someone's clothing but at the same time you don't want to oversaturate the skin tones.

When it comes to adjusting most photographs, Vibrance is the only saturation control you'll ever want to use. However, the Saturation slider still remains useful, since a Saturation adjustment can be used to make big shifts to the saturation, such as when you want to dramatically boost the colors in a photograph or remove colors completely. Some examples of Saturation and Vibrance adjustments are shown in Figure 4.48. A positive Saturation adjustment will boost all colors equally. In the example shown here, it made all the colors equally more saturated and as a consequence there was some color clipping on the red nose of the Mandrill monkey. In the version next to it, I increased the Vibrance to +100%. This resulted in an image where the reds in the nose did not receive such a big color boost, but the other colors, which were less saturated to begin with, received a major boost in saturation. The key thing to note here is that they were not oversaturated to the point where there was clipping off any of the color channels. This shows how the Vibrance adjustment can be effective in preserving more tonal detail as you boost the color saturation. A full negative Saturation adjustment will desaturate all the colors completely, whereas a negative Vibrance can be used to gently desaturate a photo. As you can see, a negative Vibrance of -100% produced a subtle, desaturated look. Ultimately, many images can benefit from a small Vibrance boost, though in this example, because I really wanted to emphasize the colors in the Mandrill's face, I felt the optimum Vibrance adjustment would be +50. This is much more Vibrance than I would apply generally, but it seemed an appropriate setting to use for this particular photograph.



Figure 4.48 In this example, the top-left photograph shows a normally corrected image. Next to this are two versions of the same image: one with a +100% Saturation and the other a +100% Vibrance adjustment. Below are a -100% saturation and a -100% Vibrance. The last image shows what I would consider to be an optimum +50% Vibrance setting for this image.

	Quick Develop 🔻
Saved Preset	Custom 9 V
Crop Ratio	Custom 🗘
Treatment	Color 🗘
White Balance	As Shot 🗘 🛡
Temperature	40 () 00
Tint	(0) (1) (2)
Tone Control	Auto Tone 🖤
Exposure	00 0 D DD
Contrast	QQ Q D DD
Highlights	44 A D DD
Shadows	QQ Q D DD
Whites	00 0 D DD
Blacks	44 4 D DD
Clarity	QQ Q D DD
Vibrance	44 4 D DD
	Reset All

Figure 4.49 This shows the Quick Develop panel. Note that in order to see all the controls shown here, you will need to click the expansion arrows on the right. To restore an adjustment to its default setting, click on the name of the adjustment. The Auto Tone button will apply an automatic adjustment to the Exposure, Contrast, Highlights, Shadows, Whites, and Blacks settings, whereas the Reset button resets everything back to the Lightroom default settings.

NOTE

Unlike the Histogram panel in the Develop module, the Histogram panel in the Library module features an animated transition when adjusting the values in the Quick Develop panel.

Quick Develop panel tone adjustments

All the Develop controls I have discussed so far are also accessible via the Quick Develop panel in the Library module (**Figure 4.49**). With the Quick Develop panel you can apply all the Basic panel tone and color adjustments without having to leave the Library module. Quick Develop adjustments can be applied to multiple selected images in a Grid view or in the Filmstrip. But the main difference with Quick Develop is that Quick Develop adjustments are always applied *relative* to the current Develop settings. For example, if I select a number of images that have already had different Exposure settings applied to them, I can use the Exposure buttons in Quick Develop to make those photos relatively lighter or darker (as opposed to synchronizing all of the photos with the same Exposure value).

Using Quick Develop is the same as working in the Develop module, except you don't have guite the same degree of control. It is therefore ideal for making firstpass edits, where you still want to do most of your work in the Library module without having to switch back and forth between the Library and Develop module to apply an image adjustment. However, it is important to bear in mind that the Library module previews will not be as accurate as those displayed in the Develop module. This is due to the fact that Lightroom calculates the Library module previews slightly differently. When you edit a photo in the Develop module, the image preview you see is generated on the fly via the Lightroom Camera Raw engine, and the previews you see here in Develop are always going to be the most accurate. When you edit a photo using the Quick Develop controls in the Library module, the quality of the Loupe view preview will be dependent on whatever settings you have selected in the Catalog Settings File Handling section. You also have to bear in mind that the Library preview mechanism is primarily designed to generate decent-guality previews that enable fast Library module browsing; it is not so ideal for assessing Develop settings adjustments.

To use Quick Develop, go to the Library module and select a photo, or make a selection of several photos. You are now ready to use the Quick Develop panel controls. One way you can do this is to click on the Saved Preset list shown in **Figure 4.50** and choose a default setting or a previously saved preset as your starting point (note how the develop settings are now arranged in hierarchical folders). By clicking on the arrow buttons in the Quick Develop panel, you can increase or decrease any of the Quick Develop adjustments. The single-arrow icons will increase or decrease a setting by small amounts and the double-arrow icons by larger amounts. Any adjustments you make here simultaneously update the settings in the Basic panel of the Develop module.

The Treatment menu section lets you decide whether to process an image in Color or Black & White. To be honest, I think it is better to memorize the \boxed{V} shortcut as a means for toggling between the Color and Black & White modes and rely on the Treatment menu as more an indicator of which mode a photo is in.

Next, we come to the White Balance options, which include the Temperature and Tint button controls. If you are shooting with a camera set to Auto White Balance mode, or you were using a white balance that was correct for the lighting conditions at the time of shooting, you will probably want to leave this set to As Shot. Otherwise, you can click on the White Balance menu (also shown in Figure 4.50) and choose one of the preset settings listed there, or select the Auto setting and Lightroom will try to calculate an optimized White Balance setting for you (or use the **(#(Shift)U)** [Mac] or **(Ctri) (Shift)U)** [PC] shortcut). With the Temperature buttons, if you click on the left-arrow buttons, the image will become incrementally cooler, and if you click the right-arrow buttons, the image will become warmer. The Tint buttons can be used to apply a green/magenta bias. Clicking on the left-arrow buttons will make a photo more green and clicking on the right-arrow buttons will make it more magenta. Note the single-arrow buttons produce small shifts in color, and the double-arrow buttons produce more pronounced color shifts.

The other tone controls

With the following tone and color controls I advise you to start by adjusting the Exposure amount first, because the Exposure is critical for determining the clipping point for the highlights and overall brightness. Each click of an Exposure single-arrow button is equivalent to a 0.33-unit shift in the Develop module, whereas each click of a double-arrow button is equivalent to a 1.0-unit shift. Once you have set the Exposure you may want to adjust the Contrast. A single-arrow click is equivalent to a 5-unit shift in the Develop module, and a double-arrow click is equivalent to a 20-unit shift.

Highlights is a highlight adjustment control that allows you to brighten or darken the midtone to highlight regions of an image. A single-arrow click is equivalent to a 5-unit shift in the Develop module, and a double-arrow click is equivalent to a 20-unit shift. Shadows is a shadow adjustment control that allows you to brighten or darken the shadow to midtone regions of an image. A single-arrow click is equivalent to a 5-unit shift in the Develop module, and a double-arrow click is equivalent to a 20-unit shift.

The Whites controls the Highlights clipping, and the Blacks controls the shadow clipping. Here, a single-arrow click will make 1-unit shifts and double-arrow clicks 5 units.

At the bottom of the Quick Develop panel are the Clarity and Vibrance buttons. Here, a single-arrow click is equivalent to a 5-unit shift in the Develop module, and a double-arrow click is equivalent to a 20-unit shift.

NOTE

If there is a process version conflict when two or more photos are selected, the Quick Develop buttons will appear dimmed (see page 178).



Figure 4.50 The Quick Develop panel showing the Preset and White Balance menu lists. The preset list displays all default and all saved develop settings. See "Saving Develop Settings as Presets" on page 348.

	Quick De	velop 🔻
Saved Preset	Custom	0
White Balance	Custom	8 4
Temperature	00 (D	00
Tint	(4) 8	00
Tone Control	Auto Tone	
Exposure	60 (D	00
Contrast	00 0 D	DD
Highlights	4 V V	00
Shadows	(d) (d) (b)	00
Whites	00 0 0	DD
Blacks	4 0 DD	90
Sharpening	40 4 D	DD
Saturation	00 0 D	00
	Reset	All

Figure 4.51 The Quick Develop panel view with the Alt key held down, to make the Saturation and Slider controls visible.

If you hold down the Att key, the Clarity buttons in the Quick Develop panel will switch to become Sharpening buttons (see **Figure 4.51**). In this Att key mode, the Sharpening controls in Quick Develop are equivalent to making Sharpening Amount slider adjustments in the Develop module Detail panel. Although you don't have access to the other three sharpening sliders, you can still make an initial sharpening adjustment before you get around to fine-tuning the other settings later. If you hold down the Att key, the Vibrance buttons will switch to become Saturation buttons. With both the Sharpening and Saturation controls, a single-arrowhead click is equivalent to a 5-unit shift in the Develop module, and a double-arrowhead click is equivalent to a 20-unit shift.

As with the Basic panel, you can click the Auto Tone button to apply an auto-tone adjustment (I [Mac] or Ctrl [[PC]]). The Reset All button at the bottom resets all the Develop settings that have been applied to a photo (and not just those that have been applied via Quick Develop) to their default import settings. You can also use the I (Mac) or Ctrl (Shift) (PC) shortcut. However, this action resets the Develop settings to a zeroed or default state, so use this button with caution.

A typical Quick Develop workflow

The following steps provide a brief overview of how you can use the Quick Develop controls to edit multiple photographs in the Library module.



1. These daylight photographs were shot with a digital camera in raw mode and were imported using the Default develop settings and As Shot White Balance. In this first step, I made a selection of all the photos that I wanted to adjust.



2. First, I wanted to warm the colors in the selected photos, so I clicked the double-arrow button (circled above) to make the selected photos appear warmer.

000	1.R4-2011-2-2.lrcat - Adobe	Photoshop Lightroom – Library		Quick Develop
	1000			Saved Preset Custom 🗘 🖲
STAR CHARMEN	A CONTRACT	A Clark	Saved Preset	Crop Ratio Original 🗘
	- Andrew Proversite	又是我们的人们	Grop Ratio	Treatment Color 0
AL ANDER	Y A STOR	The second second	White Balance	White Balance Custom 🗢 🔻
			Temperature	Temperature 🐼 🕴 😥
			Tone Control	Tint 00 0 00 00
52 IMG.5055	5 53 IMG_5057	54 IMG_5060	Exposure	Tone Control
			Contrast P Highlights	Exposure 🐟 🔬 🗤
			Shadows	Contrast 00 (1) 00
			Blacks [Highlights CO
HOR THE REAL PROPERTY OF	Here was a second		Clarity 🗌 Vibrance 🗐	Whites A A A A
	the second	and the second second		Blacks 👀 🚺 😥 😥
			Sync Metadata	Clarity 🐨 🕐 😥
1 2 III + + Folders/El Telde/S	6 of 79 photos / 15 selected / IMG_5060.dng -	Filter: O C C		Vibrance 🕔 ())>
Same Anne Aines anne				Reset All
	· · · · · · · · · · · · · · · · · · ·			- ¹ / /

3. I then wanted to apply some tonal edits. I clicked the Auto Tone button followed by the Exposure, Contrast, Highlights, and Shadows buttons (circled above). This combination of adjustments improved the appearance of all the photos.



4. Alternatively, you can work on images one image at a time in Quick Develop. Here, I double-clicked one of the photos to work in the Loupe view and added more Exposure, darker Highlights, and lighter Shadows.



5. I then selected this recently edited image and the photo next to it and clicked the Sync Settings button at the bottom (circled above).

Vhite Balance	Treatment (Color)	Lens Corrections	Spot Removal
Basic Tone Exposure Kiphilph Recovery Hiphilph Recovery Hiphilph Recovery Hiphilph Recovery Black Clipping Bisck Clipping Fightness Contrast Tone Curve Clarity Sharpening	 Color Saturation Vibrance Color Adjustments Split Toning Local Adjustments Brush Graduated Filters Radial Filters Noire Reduction 	Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Frecs Fost-Crop Vignetting Grain Process Version Calibration	⊘ Crop ⊘ Straighten Angle ⊘ Aspect Ratio
eck All	Color		Cancel

6. This opened the Synchronize Settings dialog, where I clicked the Check All button to select all settings. I then clicked the Synchronize button to synchronize the settings across the two photos that were selected in Step 5.

Editing video files in Quick Develop

While we are on the topic of working in Quick Develop, this is probably a good point to mention support for native video editing in Lightroom. In Lightroom 3, you could import video files, such as those shot using a digital SLR or dedicated video camera, but you couldn't do anything more than import them. In Lightroom 4 or later you can play video files directly in the Library module Loupe view as well as edit them. Lightroom doesn't offer full video-editing features yet—for that you will want to use special dedicated software. But it is nonetheless an achievement to at least be able to view and edit such video clips in Lightroom.

So let me run through some of the key features. **Figure 4.52** shows how video files are displayed in the Library module Grid view and over the page you can see some steps showing how they are displayed in the Library Loupe view. You can navigate a clip to play it and edit the start and end times; you'll also have access to some of the Quick Develop image-adjustment options that will let you adjust the White Balance, Exposure, Contrast, Whites, Blacks, and Vibrance.

There are a few selectable items in the options menu. Capture Frame can be used to extract a frame and automatically add this to the folder and to the catalog as a separate JPEG image. The Set Poster Frame option allows you to select a frame other than the start frame, and then use it as the thumbnail preview in Lightroom (Slideshow will then also use the poster frame). Lastly, there is the "Display Trim Time as SMTPE" option. This is an absolute time code that is used when you want to synchronize different devices (providing they are compatible). It's something that is really of more interest to those who are carrying out professional video editing.

NOTE

The Sync Settings button can be used to synchronize all Develop module settings, not just those applied via the Quick Develop panel.



Figure 4.52 An example of a video thumbnail in the Library module Grid view. Note that the video badge now just shows the track length time.

NOTE

Note that the Loupe View options include an option for playing back HD videos at draft quality (see page 121).



1. When you inspect a video file in the Lightroom Library module Grid view, you can quickly track all the frames in a sequence by hovering the mouse over the thumbnail and moving the cursor from left to right.



2. I double-clicked the thumbnail in the Grid to go to the Loupe view. Here, I was able to click the Play arrow button or tap the spacebar to play the selected movie clip (click again to pause). I could quickly navigate a video clip by dragging the frame selection button and could also reveal the key frames (shown above) by clicking the gear button (circled). Note that when "Show frame number when displaying video time" is selected in the Loupe View Options (see page 121), the frame number is displayed after the minute/seconds timeline display.



3. I dragged the start and end points to trim the movie sequence. I then selected a midway point in the video clip and selected Set Poster Frame from the settings menu. This allowed me to update the thumbnail preview in the Grid view with a more relevant frame from the movie sequence.

TIP

You can also use Shift 1 to set the input point and use Shift 0 to set the output point for a clip.



4. The Quick Develop controls also allow you to apply some basic Develop edits to the appearance of a clip. In this example, I made the sequence a few clicks warmer to remove the slight bluish cast and also clicked the Auto Tone button to optimize the tone balance.



5. Although you can't edit videos extensively in the Quick Develop panel or Develop module, you can make use of saved presets to apply some types of Develop adjustments. To do this, I clicked on the Settings menu and selected Capture Frame. This created a JPEG photo from the selected frame.



6. I was then able to edit the capture frame JPEG using the Develop module controls. Here, I applied a Tone Curve plus a Split Toning adjustment (which you can't do using Quick Develop). I was therefore able to create an adjustment that lightened the shadow tones and applied a cross-process color effect.

reset Name: Cine cro	oss process		Not all of the develop settings are supported for video. Or
Folder: Video	ao effects +		be applied to video files:
Auto Settings			White Balance Basic Tone: Exposure, Contrast, White Clipping, Black Clipping Saturation, Vibrance Tone Curve Treatment (Color)
White Balance Basic Tone Exposure Contrast Highlights Shadows White Clipping Black Clipping	Treatment (Color) Color Saturation Vibrance Color Adjustments Split Toning Graduated Filters Radial Filters	Lens Corrections Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Effects Post-Crop Vignetting Grain	Split Toning Process Version Calibration
Clarity	Noise Reduction Luminance Color	✓ Process Version □ Calibration	

7. I then clicked the plus button in the Develop module Presets panel and saved the edited setting as a new preset. Note that although you can save any Develop setting as a preset, there is still a limited range of options when saving a preset that is to be applied to a video clip. Not all your current Develop presets can be expected to work. If there is a problem, you'll see the warning shown here.

NOTE

There is also a Video mode for the Metadata panel, though most cameras record very little metadata.



8. I then returned to the video-clip file in the Library module and selected the preset I had just created from the Saved Preset menu in the Quick Develop panel.



Figure 4.53 The Tone Curve panel controls are shown here with an adjustment in progress being made to the Darks. Notice how the histogram in the Histogram panel is mirrored in the curve graph and both are updated as you edit the Tone Curve controls.

The Tone Curve panel

The Tone Curve controls offer a new approach to tone curve mapping, where the tone curve is modified through slider control (parametric) adjustments. The Tone Curve controls are presented in this way to encourage people to make tone curve adjustments based on descriptive criteria. If you are used to working with the point-edit Curves dialog in Photoshop, the Lightroom method may appear restrictive at first, but the Tone Curve slider controls in Lightroom can often inspire you to create tone curve shapes that are quite unlike any of the curve shapes you might have applied when using the traditional point curve method. The slider controls also recognize the fact that many photographers just don't get how to work the point curves adjustment in Photoshop. The parametric Tone Curve sliders will hopefully make curves adjustments accessible to everyone, but the good news is that you can still manipulate the curve graph directly by clicking on a point on the curve and dragging up or down to modify that particular section of the curve. Best of all, you can edit the curve by targeting an area of interest in the image directly. You can also use the keyboard arrow keys: The up and down arrows can be used to increase or decrease the tone values (note that the left and right arrow keys are reserved for navigating images in the Filmstrip). Holding down the **Ashift** key as you adjust the values applies larger incremental adjustments. If you enable the Target Adjustment tool button (#(Alt (Shift) T) (Mac) or (Ctrl (Alt (Shift) T) (PC), you can then click on any part of the image and drag the mouse up or down to make the tones there lighter or darker. When you start using the Target Adjustment tool editing method to refine the tones in an image, you won't necessarily even need to look at the Tone Curve panel. You can turn off the Target Adjustment tool by clicking the Target Adjustment tool button again, pressing Esc), or use the (#Alt Shift N (Mac) or Ctrl Alt Shift N (PC) shortcut.

The four main slider controls for controlling the Tone Curve are Highlights, Lights, Darks, and Shadows. The slider controls also provide a shaded preview of the range of the shapes an individual Tone Curve slider adjustment can make. In **Figure 4.53**, I was in the process of adjusting the Shadows slider. The gray shaded area represents the limits of all possible tone curve shapes I could create with this particular slider in conjunction with the other current slider settings. For those who understand curves, this provides a useful visual reference of how the curve can look. Plus, you can edit it by clicking anywhere on the curve and moving the mouse up or down to make that section of the tone curve lighter or darker.

As mentioned earlier, the Basic panel is used to apply the main tone adjustments. It is important to understand that these are all applied upstream of any tone curve adjustments, so the Tone Curve is an image-adjustment control that you always want to apply *after* you have made the initial Basic panel adjustments. The layout of the tools in both the Basic and Tone Curve panels are also influenced to some degree by the legacy constraints of the Adobe Camera Raw plug-in, and it has been necessary to ensure that the settings applied to an image via Camera Raw

in Photoshop are also recognized (and made accessible) when the same image is opened via the Develop module in Lightroom. I mention all this as an explanation for the presence of the Point Curve menu at the bottom of the Tone Curve panel (Figure 4.54). In the early days of Camera Raw, some purists argued that the tone curve for processing raw files should always default to a linear mode, and if you wanted to add contrast, it was up to the user to edit the curve how they wanted. Meanwhile, almost every other raw converter program was applying a moderate amount of contrast to the curve by default. The reason for this was because most photographers tend to like their pictures having a more contrasty and film-like look as a standard setting. Consequently, the Adobe Camera Raw plug-in has evolved to offer three choices of curve contrast: Linear. Medium Contrast, and Strong Contrast. So, the Point Curve menu in the Tone Curve panel (not to be confused with the point curve editing mode discussed on pages 228 to 229) is mainly there to allow you to match up raw files that have been imported with legacy Camera Raw settings. With Process 2003/2010, the default setting for raw files was Medium Contrast. With Process 2012, the default point curve now says "Linear" and, as you would expect, presents a straight line curve. But this is in fact applying the same underlying curve setting as the previous default Process 2003/2010 Medium Contrast tone curve. Basically, the new Process 2012 Linear curve does exactly the same thing as the older Process 2003/2010 curve: it applies more of a kick to the shadows to make them slightly darker and lightens the highlights slightly. This also brings the benefit of compatibility of tone curve settings. Non-raw images have always defaulted to a linear tone curve shape. This remains the case in Process 2012. Consequently, the starting point for both raw and nonraw images is now the same: a linear tone curve representation. The Point Curve options are therefore nothing more than a curve shape setting and these can be used as a starting point when making further edits to the tone curve.

Note that when you convert a 2003/2010 tone curve to Process 2012, the tone curve shape will appear adjusted (even though the parameter values will actually remain the same). Therefore, tone curve settings are now process version-specific. This means that whenever you save a develop preset that includes a Tone Curve setting, you will be obliged to include saving the Process Version setting along with the Tone Curve. In fact, now whenever you choose to save a new preset, the Process Version box is checked by default and remains checked even after you click the Check None button.

The tone range split points at the bottom of the tone curve allow you to restrict or broaden the range of tones that are affected by the four Tone Curve sliders (**Figure 4.55**). Adjusting each of the three Tone Range Split Points enables you to further fine-tune the shape of the curve. For example, moving the dark tone range split point to the right offsets the midpoint between the Shadows and Darks adjustments. These adjustment sliders are particularly useful for those instances where you are unable to achieve the exact tone localized contrast adjustment you are after when using the Tone Curve sliders on their own (see also page 248).



Figure 4.54 The Point Curve menu offers a choice of three curve settings.



Figure 4.55 *The tone range split point controls.*





NOTE

You can save the entire Tone Curve as a preset, including the point curve adjustments, but you can't save out the point curve settings separately from the parametric curve settings.

Point Curve editing mode

Lightroom allows you to edit the Tone Curve the same way as you can using the point curve editor in Camera Raw (or the Curves adjustment in Photoshop). To switch to the point curve editing mode (**Figure 4.56**), click the button circled in Step 1 below. In this mode, you can click on the curve to add a new point and drag up or down to modify the curve shape. The before/after value of the point that's being moved is shown in the top-left corner of the editor view as a percentage value. Note that when selecting an existing curve point to click on and move you have to be within a few pixels of a point on the curve, left or right (or you can be anywhere above or below it). It can also help here to hold down the Alt key, as you make point curve mode Tone Curve adjustments. This reduces the sensitivity of mouse tracking movements, and you have to move the mouse ten times as far for the same amount of change to be applied to the Tone Curve. You can also click to select the target adjustment tool (**X**Alt Shift) (Mac) or (Ctrl Alt Shift) (PC). As with the parametric editing mode, you can use up or down movements to make the selected region of the curve lighter or darker.

Unlike the Adjustment panel in Photoshop or the point curve mode for the Tone Curve panel in Camera Raw, Lightroom does not provide modal, keyboard focus when editing the tone curve points. This means that you can't use the Delete key to delete a selected point. To remove a point, you either need to use a right-click to open the contextual menu to delete a control point, double-click a point, or drag a point off the edge of the Tone Curve graph to delete it.



1. Here, I started with a photo to which I had applied a Linear curve. I clicked on the point curve button (circled above) to switch to the Point Curve editing mode.



2. I then selected the target adjustment tool from the top-left corner (circled above), clicked to add new control points to the Tone Curve, and dragged up or down to modify the shape of the curve. I was also able to use the contextual menu to delete selected control points or flatten the curve.



3. This shows the image in black-and-white mode and how it is possible to use the Point Curve editor mode to either invert the tones in an image or apply a solarized-type look to a photo. Using the Point Curve menu at the bottom you can choose Save to save such custom curve settings.



Figure 4.57 This shows the Tone Curve in Point Curve editing mode in the default RGB curve mode.



Figure 4.58 This shows the Tone Curve in Point Curve editing mode with the Green channel selected.

RGB curves

You also have the option to separately edit the red, green, and blue channel curves, just as you can in Photoshop. This is only possible if you have updated a photo to Process 2012. Do this and in the Tone Curve panel (**Figure 4.57**), you will see a Channel menu, which defaults to the RGB curve editing mode. If you click to open the pop-up menu, you will see the channel curve options shown in **Figure 4.58**.

You could argue that in the case of Lightroom such controls are less necessary, especially since the White Balance tool and camera profiles should provide you with all the color correction tools you need. But having RGB curves in Lightroom does give you extra tools to work with when adjusting color, and you can achieve some unique color effects using curve channel adjustments. They can be used to correct photos shot under mixed lighting conditions, produce split-toning effects that are distinctly different from those achieved using the regular Split Toning panel. Or, as shown here, you can apply strong color overlays. Just be aware there is a fair amount of overlap with the functionality of the white balance controls (which I would still advise you to use first when correcting color), as well as other controls such as the Split Toning panel (see page 372).



1. In this example, I prepared an image where the colors were neutralized and I had only applied a few Basic panel adjustments.



2. I then went to the Tone curve panel in point curve editor mode and adjusted the individual red, green, and blue channels to achieve the color effect shown here.



3. I then edited the channels to produce an entirely different coloring effect.





TIP

The Target Adjustment tool can also be activated by going to the View ⇒ Target Adjustment submenu, or by using the following shortcuts: press ﷺAit Shift T (Mac) or Ctri Ait Shift T (PC) to enable and use Esc, or ﷺAit Shift N (Mac) or Ctri Ait Shift N (PC) to deactivate.

The Tone Curve regions

The Tone Curve zones are evenly divided between the four quadrants of the tone curve. In the following step-by-step example, I wanted to show a series of tone curve adjustments in which each of these regions is adjusted. To emphasize how the Tone Curve Zone sliders operate, I have highlighted the active quadrants with a green color to accentuate these zone regions and show which areas of the curve are being altered. If you want to reset the Tone Curve settings, you can do so by double-clicking the slider names in the Tone Curve panel; you can also reset the Tone Curve adjustments by double-clicking the adjusted region within the Tone Curve itself.



1. I began by adjusting the Highlights slider to make the brightest portion of the image lighter and set the Highlights to +31. This could be done in a number of ways: I could drag the Highlights slider in the Tone Curve panel to the right, or make the Highlights field active and use the up-arrow key to increase the value. If I wanted, I could click anywhere in the green-shaded section of the Tone Curve and drag the curve upward, or click on this portion of the curve and use the up-arrow key on the keyboard to lighten the highlights. But in this instance, I clicked the Target Adjustment tool button (circled above) to make it active, moved the cursor over the image, and hovered over a highlight area in the clouds. I then clicked and dragged upward to lighten the tones in the selected portion of the curve. Note that you need to drag the mouse up to lighten and down to darken.



2. Next, I wanted to concentrate on darkening the tones within the Lights zone of the curve. I placed the cursor over the monument in the foreground and this time dragged downward with the mouse.



3. I then moved the cursor over one of the shaded area of the trees and dragged the mouse downward to darken the Darks zone.



4. Lastly, I adjusted the Shadows, which I did by placing the cursor over the shadow area circled above and dragged the mouse downward to darken. If you compare the finished step here with where I started, you can see that the combined Tone Curve adjustments have managed to increase the image contrast, but in a more controlled way compared to using the Basic panel Contrast slider on its own.

Combining Basic and Tone Curve adjustments

So far, I have shown how Tone Curve adjustments can be applied in isolation. But you would more typically work using a combination of both Basic and Tone Curve adjustments. Over the next few pages, I have provided a step-by-step example in which the Basic panel adjustments were applied first in order to correct the white balance, darken the highlights, and improve the overall contrast in the photograph. This was then followed by a Tone Curve adjustment to fine-tune the tonal balance and bring out more detail in the highlights and shadows. You can do a lot to improve the appearance of a photograph by making just a few Basic and Tone Curve adjustments. Through careful use of these adjustment controls, it is possible to edit the tones in a picture so that you won't always have to apply localized adjustments to achieve a good-looking image.



1. Here is a raw image in which the default Lightroom Develop settings had been applied. I first corrected the As Shot white balance by selecting the White Balance tool and rolled the cursor over an area that I wanted to make neutral.

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NU NU	Temp Tint Exposure	Exposure Contrast	0.00 29 29 29 0 0 0
	Highlights Shudoms Whites Blacks	Whites Blacks Presence Clarity	
and the second sec	Clarity Vibrance Securation Previot	Vibrance Saturation	

2. I clicked with the White Balance tool to achieve a warmer color in the image, and then proceeded to add more contrast.



3. Next, I adjusted the Highlights slider to bring out more detail in the clouds. Here, I applied a –100 adjustment.



4. I then adjusted the Shadows slider to lighten the shadow detail, applying a +51 adjustment.



5. This next step was all about fine-tuning the Basic panel settings. I used the Whites slider to adjust the white clipping and the Blacks slider to adjust the blacks clipping. I also adjusted the Clarity and Vibrance.



6. Finally, I expanded the Tone Curve panel and adjusted the parametric sliders to improve the tone contrast.

TIP

You can double-click the tone range split points if you need to reset them to their default settings.



Tone range split point adjustments

The tone range split points are located at the bottom of the Tone Curve panel. Note that in **Figures 4.59**, **4.60**, and **4.61**, I have shaded green the areas of the tone curve that are being targeted and added guide lines to indicate how the split points have been set.





Figure 4.59 The screenshot on the left shows an S-shaped tone curve with the tone range split points in their normal positions with equal spacing for the Shadows, Darks, Lights, and Highlights zones. The middle example shows the Shadows zone set to its widest extent, compressing the other three zones. The example on the right shows the Highlights zone set to the widest point, compressing the other three zones.







Figure 4.61 These two screenshots show a photograph where the Tone Curve zone settings had been adjusted to fine-tune the Tone Curve contrast. In the top version, the tone range split points were in their default positions and the Tone Curve zones evenly divided. In the lower screenshot, I moved the middle and outer right sliders to the right, which compressed the width of the Lights zone and thereby increased the contrast in the Lights zone area. This revealed more tone detail in the face.



Figure 4.62 The HSL / Color / B&W panel with the HSL mode selected.

1	HSL / Color / B&W	/ 🛒
		l
Hue Saturation Luminance	Red	0 0 0

Figure 4.63 The HSL/Color/B&W panel with the Color mode selected.

NOTE

Mark Hamburg and Thomas Knoll decided to break with the traditional additive and subtractive primary color slider controls. The colors chosen here provide a more practical range of color hues to work with. They are the ones that more usefully match the colors that people most often want to adjust.

HSL / Color / B&W panel

The HSL / Color / B&W panel is an all-in-one panel for making fine-tuned color adjustments and black-and-white conversions. The HSL component (see **Figure 4.62**) is kind of equivalent to the Hue/Saturation dialog found in Photoshop, except in Lightroom you can apply these types of adjustments to raw photos as well as rendered images. It is a color adjustment tool that can be used in those situations where you need to target specific colors in order to fine-tune the color adjustments. Essentially, you have three color adjustment sections (with a Target Adjustment tool mode for each) that allow you to control the Hue, Saturation, and Luminance over eight color-band ranges. The Color section of this panel (see **Figure 4.63**) provides a more simplified version of the HSL controls with button selectors at the top for choosing the desired color band to edit, with Hue, Saturation, and Luminance sliders below. The B&W section is for carrying out monochrome conversions, which I'll discuss separately in the following chapter.

The sliders in the Hue section control the hue color balance, and these allow you to make subtle (or not so subtle) hue color shifts in each of the eight color-band ranges. For example, if you adjust the Green Hue slider, dragging to the right makes the greens more cyan, while dragging to the left makes them more yellow. The sliders in the Saturation section control the color saturation. Dragging a slider to the right increases the saturation, while dragging to the left decreases the saturation to the point where, if all the Saturation sliders were dragged to the left, you could convert the whole of the image to black and white. The Saturation slider controls apply a nonlinear saturation-type adjustment (similar to what the Vibrance slider does). This means that as you increase the saturation, lower saturated pixel values are increased relative to the already higher saturated pixel values in an image. The sliders in the Luminance section can be used to darken or lighten colors in the selected color ranges, and do so in a way that manages to preserve the hue and saturation. If you click the All button, the panel expands to give you access to all the sliders at once. Also, clicking on the Hue, Saturation, or Luminance buttons after you have clicked to select one of these modes, toggles showing the controls for those parameters or showing All sliders.

As with the Tone Curve panel, the HSL controls can be applied using a Target Adjustment mode. Select Hue, Saturation, or Luminance and click the Target Adjustment tool button to activate it. You can then click on an image and drag up or down with the mouse to adjust the colors targeted by the cursor. You can also use the following shortcuts to enable the different HSL Target Adjustment modes: Hue: *****Alt Shift (Mac) or **Ctrl Alt** Shift (PC); Saturation: *****Alt Shift **S** (Mac) or **Ctrl Alt** Shift (S) (PC); and Luminance: *****Alt Shift **L** (Mac) or **Ctrl Alt** Shift (L) (PC). You can turn off the Target Adjustment tool by clicking the Target Adjustment button again, pressing **Esc**), or use the *****Alt Shift **N** (Mac) or **Ctrl Alt** Shift **N** (PC) shortcut. Also bear in mind the new Target Adjustment tool behavior since Lightroom 3 means that the Target Adjustment tool is deactivated whenever you switch to working in a new panel.



1. If you shoot a lot of skin tones, you might consider creating a custom camera calibration for such work (see "Camera profiles" on page 284). But if you shoot a mixture of subjects with the same camera profile, you can also use the HSL panel Hue section to compensate for reddish skin tone colors.



2. In this example, I went to the Hue section and activated the Target Adjustment tool. I then clicked on a skin tone area in the picture and dragged the mouse upward to make the skin tones less red and more yellow.
Selective color darkening

At first glance, the HSL controls in Lightroom appear to work the same as those used in Photoshop's Hue/Saturation dialog, but if you experiment a little further you will notice some distinct differences. For example, the Lightroom Hue slider adjustments are somewhat tamer than their Photoshop cousins. The Saturation sliders respond more or less the same as they do in Photoshop, but the most marked differences are revealed when working with the Luminance controls. You may have noticed that when you adjust the Lightness slider in the Photoshop Hue/Saturation dialog, the adjusted colors tend to lose their saturation. To selectively darken a color in Photoshop, you generally have to search for a magic combination of Saturation and Lightness to achieve the desired result. But the Lightroom sliders really do respond the way you would expect them to and provide you with complete control over the luminance of any color range, as shown in the accompanying steps.



1. The challenge here was to simulate the effect of a polarizing lens filter and darken the blue sky without affecting the tonal balance of the other colors. If I'd been working in Photoshop, it would have been tricky to find the exact Saturation and Lightness values that would have made the blue sky go darker.



2. To darken the blue sky colors in Lightroom, I enabled the Target Adjustment mode in the Luminance section of the HSL panel, clicked on an area of blue sky, and dragged downward. As you can see, this mainly reduced the Blue slider luminance and successfully added more contrast between the sky and the clouds. I also adjusted the Yellow slider here to lighten the trees.

False color hue adjustments

There is still some room to go crazy and do things like turn blue skies purple, but the hue adjustments in Lightroom are definitely more constrained. To create more extreme hue shifts, you will want to shift more than one Hue slider at a time. For example, you could create a series of develop settings in which all the Hue sliders are shifted by equal amounts. To give you an example, I have created a series of hue shifted develop settings. In one setting all the Hue sliders are shifted +30, in another they are shifted to +60, and so on. I suggest this as one way to create creative hue shift coloring effects (see **Figure 4.64** on the next page).

	HSL / Color / B&W ♥
Hue Sa	turation Luminance All
0	Hue
Red	- 90
Orange	- 90
Yellow	- 90
Green	- 90
Aqua	- 90
Blue	- 90
Purple	- 90
Magenta	- 90



Figure 4.64 This shows a before and after example of an even –90 Hue color shift applied across all the hue values.

Using the HSL controls to reduce gamut clipping

The camera you are shooting with is almost certainly capable of capturing a greater range of colors than can be shown on the display or in print. So just because you can't see these colors doesn't mean they're not there!

In **Figure 4.65**, you can see a photograph taken of a rock formation in Arches National park, Utah. This was shot at sunset when the rocks appeared at their reddest. At first sight there doesn't appear to be much detail in the rocks, but this is only because the computer display is unable to show all the information that is actually contained in the image. By using the HSL panel Luminance controls to darken the red and orange colors, I was able to bring these colors more into the gamut of the computer display so that they no longer appear clipped. Of course, the real test is how these colors would print. If you are working with a standard LCD, it will probably have a color gamut similar to an sRGB space. In fact, many photographers are viewing their photos on displays with a color gamut that's smaller than most modern inkjet printers. The display I work with has a gamut that matches 98% of the Adobe RGB color space and is therefore capable of displaying more colors than a typical LCD display. In this respect, a good-guality professional display can allow you to see more color detail, and this can certainly help when making evaluative adjustments such as in the example shown here. The downside is that having more colors to view on your display means that you can end up seeing more colors than some inkjet printers can print. This is where soft proofing can help you accurately pre-visualize what the final print should look like (see Chapter 8).



Figure 4.65 This shows an example of where a Luminance HSL adjustment was used to selectively darken the red and orange colors that initially appeared clipped.



Figure 4.66 This shows the Lens Corrections panel with the Basic section selected. You would normally want to start with this panel, check the Enable Profile Corrections and Remove Chromatic Aberration boxes, and in the case of architectural images, explore the new Upright controls.



Figure 4.67 The Lens Corrections panel showing the Profile tab options, with the Enable Profile Corrections box checked.

Lens Corrections panel

The Lens Corrections panel now has the ability to solve different kinds of lens problems as well as a new Upright feature that can be used to automatically correct architectural shots. The panel itself now has four sections: Basic, Profile Color, and Manual (**Figure 4.66**). We'll start by looking at the Basic controls first.

Lens profile corrections

At the top of the lens Corrections panel in Basic tab mode is the Enable Profile Corrections box. Checking this applies an auto lens profile correction adjustment. This can be done to any image, providing it contains lens information in the EXIF data and there is a matching lens profile in the Lightroom lens profile database. This action is also mirrored in the Profile tab section, so if you check this box you will also see it appear checked when you switch to the Profile tab mode shown in **Figure 4.67**. This also reveals more information, as well as additional options when applying a lens profile correction.

If the lens you are using is not included in the camera lens profile database, you will need to use a custom lens profile. I'll cover custom lens profiles shortly, but assuming there are lens profiles available in Lightroom for the lenses you are shooting with, it should be a simple matter of clicking the Enable Profile Corrections box to apply an auto lens correction to any selected photo. When you do this, you should see the Make of the lens manufacturer, the specific lens Model, and lens Profile (which will most likely be the installed Adobe profile) appear in the boxes below. If these don't respond, then you may need to first select the lens manufacturer brand from the Make menu, then the lens Model and lastly, the preferred lens profile from the Profile menu. It is important to appreciate that some camera systems capture a full-frame image (therefore making full use of the usable lens coverage area for many lenses), whereas compact SLR range cameras mostly have smaller-sized sensors that capture the image using a smaller portion of the lens's total coverage area. The Adobe lens profiles have mostly been built using cameras that have a full-frame sensor, meaning that from a single lens profile it is possible to automatically calculate the appropriate lens correction adjustments to make for all other types of cameras where the sensor size is smaller. Also note that Lightroom and Camera Raw should use lens profiles that have been generated from raw capture files. This is because the vignette estimation and removal has to be measured directly from the raw linear sensor data rather than from a gamma-corrected JPEG or TIFF image.

Auto lens corrections consist of two components: a Distortion correction to correct for the barrel or pincushion geometric distortion, along with a Vignetting correction. The Amount sliders you see here allow you to fine-tune an auto lens correction. So, for example, if you wanted to allow an automatic lens correction to automatically correct for the lens vignetting, but not correct for say, a fisheye lens

distortion, you could set the Distortion slider to zero (dragging it all the way to the left). On the other hand, if you believe an auto lens correction to be too strong or not strong enough, you can easily apply a compensation to the correction amount by dragging either of these sliders left or right.

The default option for the Setup menu is Default. This instructs Lightroom to automatically work out what is the correct lens profile to use based on the available EXIF metadata contained in the image file, or use whatever might have been assigned as a "default" Lens Corrections to use with this particular lens (see below). The Custom option only appears if you choose to override the auto-selected default setting, or you have to manually apply the appropriate lens profile. As you work with the automatic lens corrections feature on specific images you will also have the option to customize the Lens Corrections settings and use the Setup menu to select the "Save new Defaults" option. This allows you to set new Lens Corrections settings as the default to use when an image with identical camera EXIF lens data settings is selected. As I mentioned above, the Setup menu will in these instances show Default as the selected option in the Setup menu.

Accessing and creating custom camera lens profiles

If you don't see any lens profiles listed for a particular lens, you will have two choices. You can either locate a custom profile that someone else has made, or make one yourself using the Adobe Lens Profile Creator program, which is available free from the labs.adobe.com website, along with full documentation that explains how you should go about photographing one of the supplied Adobe Lens Calibration charts and generate custom lens profiles for your own lenses. This isn't too difficult to do yourself once you have mastered the basic principles. If you are familiar with Photoshop CS5 or later, you will be aware that Photoshop also has the auto lens correction feature included within the Lens Corrections filter and how it is easy to access shared custom lens profiles that have been created by other Photoshop customers (using the Adobe Lens Profile Creator program). Unfortunately, the Lens Corrections panel in Lightroom doesn't provide a shared user lens profile option, so whether you are creating lens profiles for yourself or wish to install a custom lens profiles, you will need to reference the directory path lists shown in the sidebar opposite. Once you have added a new lens profile to the Lens Corrections or Lens Profiles folder, you will need to guit Lightroom and restart before any newly added lens profiles appear listed in the Automatic Lens Corrections panel profile list.

Profile lens corrections in use

The following steps show I was able to use a lens profile correction to correct the geometric distortion present in a fisheye lens photograph. Note that these steps have changed subtly since the last version of the book.

NOTE

Custom lens profiles created via Adobe Lens Profile Creator 1.0 should be saved to the following shared locations. Mac OS X: Library/Application Support/Adobe/CameraRaw/Lens Profiles/1.0 Windows 7 or 8: Program Data\ Adobe\Camera Raw\Lens Profiles\1.0



1. In this initial step you can see an example of a photograph shot using a 15mm fisheye lens, and where there was a noticeable curvature in the image.

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12		Histogram 🔻
		Lens Corrections
		Basic Profile Color Manual
		Enable Profile Corrections Setup Default +
		Lens Profile Make Canon \Rightarrow Model Canon EF 15mm f/2.8 \Rightarrow Profile Adobe (Canon EF 1 \Rightarrow Amount Distortion 100
		Vignetting 100
	A	

2. In the Lens Corrections panel, I checked the Enable Profile Corrections box to apply an auto lens correction to the photograph. In this instance I left the two Amount sliders at their default 100% settings. If I wanted to, I could have adjusted these sliders to apply more, less, or no adjustment. For example, I could have chosen to apply a 50% amount Distortion correction with a 0% vignetting correction.



3. Next, I clicked on the Basic tab and applied a Full Upright correction. I then clicked the Manual tab and adjusted the Vertical slider to partially restore some of the keystone distortion. I adjusted the Aspect Ratio slider to stretch the image horizontally and adjusted the Scale slider to zoom out slightly and reveal more of the image content. Note that if you click the Constrain Crop option, the image automatically crops to fit the frame.



4. Finally, I opened the photo in Photoshop and used the Content-Aware Fill feature to fill in the white space at the bottom (you'll find a movie on the book website, recorded for version 4, that shows how this was done).







Figure 4.68 You can enable Remove Chromatic Aberration via the Basic tab or via the Color tab as shown opposite.

NOTE

It should also be mentioned here that several of the independent lens manufacturers have willingly shared their lens data in order to help Adobe produce better lens correction profiles for their lenses.

Removing chromatic aberration

Chromatic aberration is caused by an inability to focus the red, green, and blue light wavelengths at the same position toward the edges of the frame, which is correctly known as lateral or latitudinal chromatic aberration. The sensors in the latest digital SLRs and medium-format camera backs are able to resolve a much finer level of detail than was possible with film. As a consequence, any deficiencies in the lens optics can be made even more apparent. Therefore, where some color wavelengths are focused at different points, you may see color fringes around the high-contrast edges of a picture. This can be particularly noticeable when shooting with wide-angle lenses (especially when they are being used at wider apertures), and here you may well see signs of color fringing toward the edges of the frame. Most of the color-fringing problems we see are due to lateral chromatic aberration, and this is easy enough to fix. Where lens aberrations are a problem, the Remove Chromatic Aberration option in the Profile tab section of the Lens Corrections panel is able to address and correct for such optical lens deficiencies.

To apply, check the Remove Chromatic Aberration box in the Basic panel (**Figure 4.68**). This action is also mirrored in the Color tab section, where you will see the same option checked and you will also have access to the Defringe sliders, which are discussed over the page.

Basically, the chromatic aberration sliders that were once in the Manual tab and the Chromatic Aberration slider for lens profile corrections have now been removed. In place we have a single Remove Chromatic Aberration box. When checked, Lightroom is able to carry out an automatic chromatic aberration correction regardless of whether you have a lens profile correction enabled. This means you can now correct for chromatic aberrations even where there is no suitable lens profile available. It also means you can correct for chromatic aberrations when using decentered lenses, such as tilt/shift lenses.

Note that some of the latest digital cameras such as the Panasonic DMC-LX3 are capable of storing lens corrected linear raw data that can be read and used to optically correct for things like geometric distortion. Ever since version 2.5, Lightroom has been able to read this data and use what are referred to in the latest DNG specification as "opcodes." These allow the lens correction processing to be applied at the raw processing stage rather than in-camera. In fact, the camera manufacturers were not willing to allow Adobe to provide Camera Raw Support for their cameras unless Adobe could respect this data and apply the lens corrections in Camera Raw.



1. Here is a typical example of color fringing caused by lateral chromatic aberration toward the edges of the frame of a wide-angle zoom lens. Here, you see the uncorrected version with the Remove Chromatic Aberration box unchecked.



2. This was resolved by checking the Remove Chromatic Aberration option in the Lens Corrections panel Profile tab section.



Figure 4.69 The Lens Corrections panel showing the Defringe sliders in the Color tab section.

Defringe adjustments

The Defringe controls are designed to fix axial (longitudinal) chromatic aberration. This can be caused due to ghosting, lens flare, charge leakage (which affects some CCD sensors) as well as color aberrations.

Unlike lateral chromatic aberration, which occurs toward the edges of the frame, this type of aberration can appear anywhere in an image. It particularly affects fast, wide aperture lenses and is typically most noticeable when shooting at the widest lens apertures, where fringes will usually be at their most visible just in front of and just behind the plane of focus. These will typically appear purple/ magenta when they're in front of the plane of focus, and appear green when they're behind the plane of focus. But even at the exact point of focus you may sometimes see purple fringes (especially along high-contrast or backlit edges), which can be caused by flare. As you stop down a lens these types of aberrations are usually less noticeable.

The Defringe section consists of four sliders (**Figure 4.69**). The Purple Amount and Green Amount sliders control the degree of correction and below each of these are the Purple Hue and Green Hue sliders, which have split slider controls.

Looking at the two Purple sliders, the Purple Amount slider has a range of 0–20 and is used to determine the strength of the purple fringing removal. The Purple Hue slider can then be used to fine-tune the range of purple colors that are to be affected. What you need to be aware of here is that a higher Purple Amount setting will apply a stronger correction, but the downside is that at higher settings this may cause purple colors in the image that are not the result of fringing to also become affected by the Purple Amount adjustment. To moderate this undesired effect, you can tweak the Purple Hue slider split points to narrow or realign the purple range of colors to be targeted. You can drag on either of the knobs one at a time, or you can click and drag on the central bar to align the Hue selection to a different portion of the purple color spectrum. If you need to reset these sliders, then just double-click on each individual knob. Likewise, double-click the central bar to reset this to its default position. The minimum distance that may be set between the two sliders is 10 units.

The Green Amount and Green Hue sliders work in exactly the same fashion as the Purple sliders, except these allow you to control the green fringes. However, the default range for the Green Hue slider has a narrower range of 40 to 60 (instead of 30 to 70). The reason for this is to help protect common green and yellow colors such as foliage colors.

The defringe controls in use

The recommended approach is to carry out all your major tone and color edits first. Then make sure that you have turned on the profile-based lens corrections to correct for geometric distortion and vignetting. Once these steps have been taken, go to the Color tab of the Lens Corrections panel and check the Remove Chromatic Aberration check box. You can then start using the Defringe sliders to remove any remaining signs of fringing. Where these global controls are having an adverse effect on the rest of the image, you can always turn down the Purple/ Green Amount sliders and use a localized adjustment with the Defringe slider set to a positive value to apply a stronger, localized adjustment. If carrying out a localized adjustment, it is important to apply the geometric and any manual distortion controls first. As with the Detail panel controls, the Lens Correction defringe controls are best used when viewing an image at 100% or higher.

You can also use the Att key as a visualization aid. This can greatly help the user see an emphasized overlay that gives a clearer indication of what effect the sliders are having and making the most suitable slider adjustments. Use the Att key to drag on the Purple Amount slider to visualize purple fringe removal. This will cause the preview to reveal only the affected areas of the image. All other areas will be shown as white. This lets you concentrate on the affected areas and help verify that the purple fringe color is being removed. Use the Att key to drag on either of the Purple Hue slider knobs to visualize the range of hues that are to be defringed. As you do this, the preview will show the affected hue range as being blacked out. As you drag on a slider, you need to pay close attention to the borders of the blacked-out area to check if there are any residual purple colors showing. Obviously, the same principles apply when adjusting the Green Amount and Green Hue sliders with the Att key held down.

Eyedropper tool

When working with the Defringe sliders you can activate the eyedropper tool and use this to select a target fringe color, analyze the pixels in the local area around where you clicked, and auto-calculate the required fringe amount and hue adjustment for the purple and green color fringes. To use this tool it helps to be zoomed in extra close, such as at 200%, or even 400%, as this will make the color picking more accurate. As you move the eyedropper tool cursor over the image, if the area below the cursor is too neutral, or the color falls outside the supported color range, the eyedropper tool will appear filled gray. If you click with the mouse, an error message will appear saying "Cannot set the purple or green fringe color. Please sample a representative fringe color, the eyedropper appears filled with a purple color, indicating this is an okay area to click to sample a representative purple fringe color. Likewise, if the eyedropper tool detects a green fringe color, you will see a green eyedropper (see **Figure 4.70**).

Cannot set the purple or green fringe color. Please sample a representative fringe color again.

Figure 4.71 This shows the eyedropper tool warning if the sampled color is not representative of a purple or green fringe color.



Figure 4.70 As you roll the eyedropper over the image, the tool cursor indicates whether the selected area is too neutral (left), contains purple fringe colors (center), or contains green fringe colors (right).

Applying a global Defringe adjustment



1. The first step was to apply all the main color and tone adjustments and enable the lens profile corrections in the Lens Corrections Profile tab section.



2. I then clicked the Color tab to view the color controls. To start with, it's always a good idea to check the Remove Chromatic Aberration option and autocorrect the image. I then held down the <u>Alt</u> key and moused down on the Purple Amount slide to get a visualization of the extent of the purple fringed area, with everything else displayed with a white overlay.



3. With the Alt key held down I dragged the Purple Amount slider until all of the purple fringing appeared to have been removed. It may help to use a 100% close-up view or higher when judging the effectiveness of such an adjustment.



4. I reset the Purple Amount slider and decided instead to carry out an autocalculated adjustment. I selected the eyedropper and rolled the cursor over the image to locate a magnified view of the purple fringe pixels.



5. Here, you can see what the image looked like after I had clicked on the purple fringe area that I had located using the eyedropper. This auto-calculated the required adjustment and set the Purple Amount and Purple Hue sliders accordingly.



6. Lastly, I used the Alt key to locate the green areas and used the eyedropper to select a green fringe area to auto-calculate the settings for the Green Amount and Green Hue sliders.

Applying a localized Defringe adjustment

The global Defringe controls should be all that you need in order to remove troublesome fringing. However, there may be instances where it won't be possible to remove all visible fringing using the global Defringe sliders on their own. Or, it may be the case that when applying a strong global correction that the adjustment you apply has an adverse effect on other areas. In situations like this, it can be useful to apply a global adjustment combined with a localized defringe correction using either the Adjustment Brush or Graduated Filter. With some images a localized defringe adjustment might be all you need to apply. Note that localized Defringe adjustments will remove fringes for all colors (not just purple and green), and therefore works independently from the global Purple Hue and Green Hue settings set in the Lens Corrections panel.

Global lens corrections are available for all process versions, but in order to apply a localized adjustment, the image you are processing must be updated to the latest Process 2012. The Defringe slider range goes from –100 to +100. A positive Defringe adjustment can be used to apply extra defringing where required, such as when working on specific problem areas in a picture. A negative Defringe adjustment can be used to say "don't apply a defringe and protect this area." An example of how you might want to use this is to imagine a picture where, say, a strong purple defringe has been applied globally, which results in the edges of the purple areas becoming desaturated. In a situation like this, you can paint over the affected areas with the Defringe slider set to –100, and this will allow you to restore the original color to these areas.

It should be noted that the localized defringe control is not as powerful as the global defringe controls and cannot therefore be as effective as processing an image using the Lens Corrections panel. This is why it is often best to use the global controls first and then use a localized adjustment to fine-tune as necessary. A negative, –100 defringe adjustment will of course completely remove any global defringing. But just be aware here that, unlike other localized adjustments, there is no benefit to be gained in applying multiple localized defringe adjustments to improve upon what a single application can achieve.



1. This shows a close-up view of an image where there are some obvious signs of color fringing.



2. With the image set to use Process 2012, I selected the Adjustment Brush, set the Defringe slider to +100, and painted over the affected areas to reduce the colored fringing. I was able to get rid of nearly all the visible fringing and target the Defringe adjustment precisely where it was needed most. In this example, I found setting the Moire slider to +50 also helped remove more of the fringing.

Upright adjustments

The Lens Corrections panel (**Figure 4.72**) now allows you to select various Upright (automated perspective) corrections. How this works is Lightroom first analyzes the image for straight-line edges and from this is able to estimate a perspective transform adjustment. Several Upright options are offered here, because no single type of adjustment will work perfectly for every image. These were arrived at after testing a large number of images, so it is always worth checking out each option to see which adjustment works best for an individual photo. They are as follows.

The Auto correction applies a balanced correction to the image, which rather than auto-selecting an Upright setting, applies a balanced combination of the options listed below. Essentially, it aims to level the image and, at the same time, fix converging vertical and horizontal lines in an image. The ultimate goal is to apply a suitable transform adjustment that avoids applying too strong a perspective correction. When selecting an Auto setting it mostly crops the image to hide the outside areas. However, if the auto adjustment ends up being quite strong, some outside areas may remain visible when applying an Auto setting. The Level correction applies a leveling adjustment only—this is like an auto-straighten tool. The Level + Vertical perspective correction applies a level and a converging vertical lines adjustment. And lastly, the Full correction applies a full level and a converging vertical and horizontal perspective adjustment, and does allow strong perspective corrections to occur.

The Off setting can be used to turn off an Upright correction, while preserving the initial, precomputed analysis of the image. If you click the Reanalyze button, it switches off the adjustment and clears the memory so to speak, and when available, forces Upright to calculate a new transformation. It allows you to enable or disable a Lens Profile correction, which would otherwise affect how an Upright precalculation is made (note that Alt)-clicking the Reanalyze button also resets). As you click on any of the above options (except Off), this automatically resets the Horizontal, Vertical, Rotate, Scale, and Aspect Transform sliders, as well as resetting any crop that's active. It is important to realize that where an image has already been cropped or manually transformed, an Upright correction won't work properly. Therefore, these settings need to be auto-removed when selecting an Upright setting. The only time a manual transform won't be reset is if an Upright correction can't be found. Also, when Upright is unable to do anything, informative text to that effect appears at the bottom of the panel.

How Upright adjustments work

It is important to understand that the underlying math behind Upright adjustments is doing more than just auto-setting the Vertical, Horizontal, and Rotate sliders found in the Manual tab section (**Figure 4.73**). The vertical and horizontal adjustments involved in the Upright process are actually quite sophisticated. Behind the scenes there are angle of view and center of projection adjustments



Figure 4.72 The Lens Corrections Basic tab, with the Auto Upright option applied to an image. Each button has a mouse rollover tool tip that explains its function.



Figure 4.73 The Lens Corrections Manual tab controls.

NOTE

Lightroom 5 now supports and preserves image transparency when reading TIFF, PNG, and DNG files. In Lightroom you will notice how transparent areas (that may appear when applying an Upright correction or Manual transform) are represented in Lightroom as matte white instead of gray. When exporting images as TIFF or PSD to Photoshop the transparency will be preserved and appear represented with the usual checkerboard pattern. When exporting as JPEG, the transparent areas are now represented as white (instead of gray).

taking place. It's all to do with the fact that the interaction of one rotation movement can have an impact on another, and such interactions can be quite complex. Think about what happens when you adjust the tilt and yaw on a camera tripod head, and you may get some idea of the problem.

The Upright adjustments aim to correct the perspective in such a way that having the choice of four different methods should mean at least one of these will work best. What tends to happen, though, is the perspective can often end up looking too perfect. When correcting the perspective for a building, where you are correcting for a keystone effect, it is generally a good idea to go to the Manual tab afterward and adjust the Vertical slide, adding something like a +10 adjustment so the corrected verticals converge slightly. You might even consider creating a preset that combines an auto-perspective correction with a Vertical slider tweak.

It is inevitable that extreme adjustments may cause the image to distort so much that you'll end up seeing white padded areas (like in the following example). Where this happens you can check the "Constrain to crop" box to apply an auto crop adjustment that trims the image accordingly. Or, you can always apply a manual crop to the image afterward to determine the crop boundary. In the Manual tab section the Scale slider can be used to reduce or enlarge the image after making an Upright adjustment. There is now also an Aspect Ratio slider, which is useful for tweaking the results from an Upright adjustment. With perspective corrections, although you may end up being corrected for perspective, the resulting image may look vertically or horizontally stretched. Using the Aspect Ration slider you can adjust the amount the image is stretched vertically and horizontally so the perspective looks more natural.

Suggested order for Upright adjustments

You really want to apply an Upright adjustment early on in the image processing, because unlike most other image edits carried out in the Develop module, the order really does matter. In particular, you'll want to ensure you apply the Upright adjustment before you apply a rotate crop or manual transform adjustment. If you happen to apply an Upright adjustment after you have applied a localized adjustment, you may end up seeing some shift in the positioning of these adjustment depending on how extreme the Upright adjustment is. As for lens profile corrections, the impact of a geometric correction is not always as major, but it is best to apply these before an Upright adjustment, as a geometrically corrected image can make the line detection work better. With Upright adjustments there can be guite a shift in the way the image is remapped and this can have guite an upsetting effect on some types of localized adjustment. What you may notice is this. If you carry out a test by applying lots of clicks with the Adjustment Brush to add small spots that dramatically lighten or darken, you will find these adjustments map guite well if a subsequent Upright adjustment ends up distorting the image. If, on the other hand, you apply much larger spots, using a large cursor size, you will see

some noticeable displacement when applying an Upright adjustment afterward. If you apply a Graduated Filter tool to an image and apply an extreme Upright adjustment afterward, the chances are you will see a big displacement. This all goes to reinforce the point that it's best to apply the Upright and lens profile corrections early on before you apply the crop, manual transform, or localized adjustments.

Synchronizing Upright settings

When synchronizing Upright settings, you have to think carefully about what you wish to achieve. This will have a bearing on the options you select in the Copy/ Synchronize Settings dialog (see page 341). If an Upright adjustment is applied to an image and you attempt to synchronize the Upright setting with other images, you can choose to synchronize Upright Mode (the Upright method), or Upright Transforms. If selecting the latter, this checks the Upright Mode automatically. If Upright Mode only is checked, instead of replicating the adjustment you had just applied, just the Upright method is synchronized. You will notice how a synchronized Upright Mode adjustment (and especially an Auto adjustment) will produce a different outcome on other images. If you want to synchronize an Upright adjustment precisely, make sure the Upright Transforms box is checked. For example, if you were to prepare a group of bracketed exposure images to create an HDR master, you would want to use this method to synchronize the Upright settings.

NOTE

You can now access a grid overlay as well as movable guides via the View Loupe Overlay menu. This is a new feature introduced to Lightroom 5 and discussed earlier on page 126.



1 With this image, I began by checking the Enabling Profile Corrections and Remove Chromatic Aberrations boxes via the Basic tab section in the Lens Corrections panel.



2. In the Upright section, I clicked the Auto button to apply an auto-correction. This applied an auto-perspective adjustment that combined a leveling and a horizontal and vertical perspective correction and, as you can see, transformed the image in such a way that the bottom edge of the image was shortened and revealed white padded areas on either side.



3. I then selected the Full option. This applied a strong perspective correction, similar to the Auto adjustment, and also revealed white padded areas.



4. I then selected the Level correction. This correction simply applied an auto-level adjustment and did not attempt to fix the keystone perspective.



5. Lastly, I selected the Vertical correction. This leveled the image and corrected the keystone effect. Now, with every image you are always going to see different kinds of outcomes when running through these options. Although the Auto, Full, and Level + Vertical corrections may look fairly similar, they were in fact subtly different. Of the four corrections I tried out, I liked Auto best.



NOTE

A grid overlay appears as you roll the mouse over the Manual tab section sliders.

6. I then switched to the Manual tab and adjusted the Vertical slider, setting this to +12, which as you can see caused the vertical lines to converge slightly. This gave the image a more natural-looking perspective. I also adjusted the Aspect slider and set this to -30 to widen the aspect ratio, because the image otherwise was looking a little squashed horizontally.



7. Finally, I checked the Constrain Crop box to apply an auto crop that removed the white padded areas and trimmed the image accordingly (there is also a Constrain Crop box in the Basic tab section).

Perspective transform corrections

The Manual tab section contains the Transform controls (Figure 4.74). The Distortion slider can be used to apply geometric distortions independent of the Distortion slider in the Profile tab section. The Vertical slider can be used to apply a keystone correction to the converging verticals in a photograph, such as when the camera has been pointed upward to photograph a tall building. The Horizontal slider can similarly be used to correct for horizontal shifts in perspective, such as when a photo has been captured from a viewpoint that is not completely "front on" to a subject. The Rotate slider allows you to adjust the rotation of the transform adjustment (which is not quite the same as rotating the image). While it is possible to use the Rotate slider here to straighten a photo, you should mainly use the straighten tool in the Crop Overlav mode (R) to do this. However, in the step-by-step example shown on pages 258 to 259, I did end up using a combination of a normal Crop Overlay rotate and Lens Corrections panel Rotate adjustment to achieve the ideal combined rotation. The Scale slider allows you to adjust the image scale so that you can zoom in or out. As you reduce the Scale amount, the outer image area will appear as an undefined white padded area (see Step 3 on page 259). Although Lightroom does not offer any options for filling in this border (as you have with the Lens Corrections filter in Photoshop), there are still ways you can do this in Photoshop itself when retouching a rendered pixel image that's been exported from Lightroom. Lastly, the Aspect slider that lets you tweak the image aspect ratio. This can be useful whenever you apply Vertical or Horizontal adjustments or one of the new Upright adjustments.

Lens vignetting

The Lens Vignetting section contains the Amount and Midpoint sliders. By adjusting these two controls, you can usually find an optimum setting that can correct for the light falloff in a photograph, such as in the snow scene photograph example shown on the next page. Lens vignetting is a problem that's commonly encountered with wide-angle lenses and is particularly noticeable if the subject you are photographing contains what should be an even shade of tone or color. For example, you'll become more aware of such lens vignetting problems when you are photographing a landscape with a large expanse of clear blue sky or you are photographing a subject against a plain, light-colored backdrop. It is in these types of situations that you are more likely to notice a darkening of the image toward the corners. Most of the correction can be done by adjusting the Amount slider, followed by a fine-tuning adjustment using the Midpoint slider to balance the vignette adjustment from the center to the edges. With these two slider controls, you should be able to precisely correct for unwanted lens vignetting in almost any photograph.



Figure 4.74 The Lens Corrections panel showing the Manual tab options and with Transform adjustments applied to an image. Note that if you click the Constrain Crop check box, the image is automatically cropped to fit the frame.



1. Vignetting is always more noticeable in photographs where there is a large area of flat continuous color or tone. The increase in darkness toward the corner edges is quite noticeable here.



2. In the Lens Corrections panel, I didn't use a lens profile correction. Instead, I applied a positive Manual lens Vignetting Amount setting combined with a Midpoint adjustment to lighten the corners and make the edges a little brighter than would be achieved using just a lens profile correction alone.

The Lens Vignetting Amount and Midpoint sliders can also be used to compensate for the light falloff in studio lighting setups. In **Figure 4.75** you can see an example of a studio shot in which the model was photographed against a white background using an extreme wide-angle lens. Although I tried to light the background as evenly as I could, there was inevitably some light falloff toward the edges of the frame. Here, it can be useful to adjust the Lens Vignetting sliders so that the darker corner edges of the frame are lightened slightly. In a situation like this, I would adjust the first photo in a series to get the Lens vignetting balance right and then copy this Lens Corrections setting across all the remaining photos that were shot using this particular lighting setup.

Just as you can use the Lens Vignetting sliders to remove a vignette, you can use them to apply a vignette as well. This is also something that you can also achieve using the Post-Crop vignettes in the Effects panel, which are discussed on the following pages.

TIP

Images that are missing their EXIF metadata cannot be processed using the Enable Profile Corrections feature. However, by saving Lens Profile Corrections settings as Develop presets, it is possible to apply such adjustments that are missing the EXIF metadata.



Figure 4.75 The vignette controls can also be used to compensate for light falloff on a studio set.





Figure 4.76 This shows the Effects panel controls. At zero Roundness, the vignette shape matches the proportions of the cropped image. At +100, the Roundness slider makes the post-crop vignette more circular. With the Feather slider set to zero, this applies a harsh edge to the vignette edge.

Effects panel

Post-Crop vignettes

The Post-Crop vignette controls in the Effects panel (see **Figure 4.76**) can do more or less the same thing as the Lens Corrections vignetting sliders, except these adjustments are applied relative to the proportions of the cropped photograph. But note that whenever you use the Crop Overlay mode to edit a crop setting, the vignette effect is temporarily disabled. The Amount and Midpoint sliders work the same as those found in the Lens Corrections panel Manual tab Lens Vignetting section, while the Roundness slider allows you to adjust the shape of the vignette relative to the proportions of the image (see Figure 4.76). Meanwhile, the Feather slider allows you to soften or harden the vignette edge. For example, in Figure 4.76 I applied a zero Feather amount to the vignette and this applied a hard edge to the vignette.

Since version 3 of Lightroom you now have access to the new Post-Crop Vignetting Style options plus a Highlights slider, which I'll cover shortly. To inspire you I have applied four different Post-Crop Vignetting settings to the photograph shown here (**Figure 4.77**). The main thing to point out here is that the Post-Crop Vignetting sliders work just as well on uncropped images, and the ability to apply both a lens correction and a post-crop vignette means that you can also experiment using different combinations of these two settings when editing a cropped photograph. For example, in the bottom-right image in Figure 4.77, I combined a maximum +100 global Lens Vignetting Amount correction with a maximum +100 Post-Crop Vignetting Amount correction in Paint Overlay mode.

Post-Crop vignette options

I have so far shown just the Paint Overlay setting in use, which is the name now given to the standard post-crop vignette that was incorporated into early versions of Lightroom. When first introduced, some people were quick to point out that this post-crop vignetting wasn't exactly the same as a Lens Correction vignette effect. You can see for yourself in the Figure 4.77 examples how the Paint Overlay vignette applies a soft-contrast, hazy kind of effect. This wasn't to everyone's taste (although sometimes I quite liked the look it created). Consequently, Lightroom offers additional post-crop editing modes that do closely match the normal Lens Correction edit mode yet offer extra scope for adjustment. Where people were once inclined to use the Lens Correction sliders as a creative tool (because the post-crop effects were a bit wishy-washy), they should now think of the Lens Correction sliders as being for lens corrections only and the Post-Crop Vignetting sliders as being designed for adding different types of vignette effects.





Figure 4.77 *Examples of different post-crop settings applied to an image.*





Figure 4.78 Here you can see two examples of a maximum lightening post-crop vignette adjustment in which the Color Priority mode was used (top) and the Highlight Priority mode was used (bottom).

In the Paint Overlay example below (see **Figure 4.79**), the post-crop effect blends either a black or white color into the edges of the frame depending on which direction you drag the Amount slider. With the two additional vignette styles the effect produced is much more similar to a Lens Correction effect since the darkening or lightening is created by varying the exposure at the edges. **Figure 4.78** shows an example of the two new vignettes in use where a positive Amount setting was used to lighten the corners of a photo. Of the two, the Color Priority is usually the more gentle as this applies the post-crop vignette after the Basic panel Exposure adjustments, but before the Tone Curve stage. This minimizes color shifts in the darkened areas, but it can't perform any highlight recovery. The Highlight Priority mode tends to produce more dramatic results. It applies the post-crop vignette prior to the Exposure adjustment and has the benefit of allowing better highlight recovery, but can lead to color shifts in the darkened



Figure 4.79 In this example, I took an image that had been shot with a 12mm wideangle lens and initially applied a profile Lens Correction adjustment to correct for the lens vignetting and cropped the bottom of the photograph (left). I then applied a darkening Paint Overlay Post-Crop vignette using the settings shown here (right).

areas. **Figure 4.80** shows examples of these two new vignette effects being used to apply darkening vignettes. You will notice there is also a new Highlights slider that can further modify the effect. But note that the Highlights slider is only active when applying a negative Amount setting—as soon as you increase the Amount to apply a lightening vignette, the Highlights slider is disabled. As you can see in the right-hand example in Figure 4.80, increasing the Highlights allows you to boost the contrast in the vignetted areas and the effect is only really noticeable in subjects that feature bright highlights. Here it had the effect of lightening the clouds in the corners of the image, taking them more back to their original exposure value. In these examples the difference is quite subtle, but I find that the Highlights slider usually has the greatest impact when editing a Color Priority post-crop vignette.



Figure 4.80 Here I have shown further examples of the same image processed using the two new Post-Crop vignette settings. On the left is an example of a Highlight Priority vignette, in the middle, a Color Priority vignette, and on the right, a Color Priority vignette with the Highlights slider set to +100%.

TIP

It can be useful to add small amounts of grain when treating heavily noise reduced images. An example is shown on page 408 in Chapter 6.

Adding Grain

The Effects panel also contains Grain effects sliders, which can be used to give your photos a traditional film-like look. However, you may need to apply quite strong settings if you want the grain effect to be noticeable in print. The thing is, if you apply the grain effect to a typical digital camera capture image to look good at a 1:1 view and then make a 8" x 10" print, the effect will mostly be lost due to the downsizing of the image data. Similarly, if such images are downsized to appear on the web, I doubt you'll notice the grain effect at all. **Figure 4.81** shows a photograph where I added a heavy grain effect, and **Figure 4.82** shows a 1:1 close-up of the same image where you can compare the before and after versions. As you can see, the grain sliders can be effective at simulating film grain, but doing so will also soften the image detail. I therefore can't help wondering what is the point of adding a grain effect to a digital photo? Isn't the lack of grain the main reason why most of us prefer to shoot digitally?

However, if you have a photo that suffers from noticeable image artifacts, you use the Grain effects sliders to add small amounts of grain to help hide these so that a final print can withstand close scrutiny. As my late friend and colleague Bruce Fraser used to say, "In the case of photographers, the optimum viewing distance is limited only by the length of the photographer's nose." Having said that, it is worth pointing out that photographers often have false expectations when it comes to what they see on the screen being an accurate representation of what they'll see in print. It is certainly possible to fret needlessly about what you see on screen at a 1:1 or a 200% view when the micro detail you are analyzing is about to become lost during the print process. Therefore, any tiny artifacts you see at a 100% view or higher aren't really worth stressing over. Yet it still troubles people when they see this. So having the ability to dial in some added grain does allow you to add a fine amount of micro detail noise to a photo and blend the problem artifacts with the rest of the image. But in all honesty, while adding a subtle grain effect can indeed make your photos look better at 1:1 and help hide any residual luminance noise, you are still only creating the illusion that the image has been improved. This won't actually have much bearing on the sharpness of the final print, unless, of course, the problem is so severe that it is an absolute necessity.

The same can be said about the quest for perfect noise reduction. Although some camera reviewers talk about the noise they've seen in the high ISO captures, it's not always possible to see this noise reproduced in print, except where the photos have been printed blown up. So much has been done to improve the quality of high ISO capture, especially with the latest Nikon and Canon digital SLR cameras. Plus, the work of third-party software products (and now Adobe) have also allowed us to keep digital capture noise to a minimum. The main point I am trying to make here is not to obsess about trying to remove every single trace of noise when analyzing your images in close-up. The Grain sliders may appear as if they can do some good, but they won't always be strictly necessary.



Figure 4.81 This shows a full-frame view of a photo where I applied a Grain effect.



Figure 4.82 This shows a before and after close-up view of the photo shown in Figure 4.81.





Figure 4.83 The Camera Calibration panel controls showing the Process options (top) and Camera Profile options (bottom).

NOTE

The ACR Profile version numbers indicate which version of the ACR plug-in was used to create the profile associated with the camera that shot the image and is there mainly for informational purposes only. There were a few cases in which Adobe had decided that the profiles created for some specific cameras in earlier versions of the Adobe Camera Raw plug-in could have been improved upon, and this is why you may see extra ACR profile options listed. As I mentioned in the main text, Adobe Standard is now the best one to select, but for legacy reasons, the older versions are still made available.

Camera Calibration panel

The Camera Calibration panel (**Figure 4.83**) allows you to select the most appropriate camera profile to use as a starting point for subsequent Develop module adjustments. To start with, you'll notice there is a menu that allows you to choose which Process Version to apply to the images (you can also do this via the Settings \Rightarrow Process menu). Below this is a Profile menu from which you can choose a suitable camera profile to use as a starting point for your subsequent Develop module adjustments.

Camera profiles

Since the release of Lightroom 2, the camera profiles have been updated for most makes of camera, and Lightroom ships with a collection of custom Camera Profiles for most of the cameras that are supported by the Camera Raw database. These are mainly for Canon, Nikon, and a few Pentax and Leica models. The Adobe Standard profile (shown selected in Figure 4.83) is now the recommended default, because it is more color accurate than previous camera profiles such as the ACR 4.4 profile or older. You can still access these other profiles, of course, since they need to be kept for legacy compatibility reasons (see sidebar note).

One of the things that bugged Lightroom users in the early days of the program was the way the initial previews for raw files would change appearance as soon as the previews were updated in the program. This was due to the fact that the embedded preview for a raw file would be based on a standard camera JPEGprocessed image. In other words, the JPEG previews that appeared when you first imported raw photos from a card showed a color rendering that was identical to a JPEG captured with the same camera. A lot of photographers were inclined to think, "Hey, I guite like the way those photos look," only to find that Lightroom would proceed to redraw the previews using its own interpretation of the images. If you happen to like the JPEG look and would prefer that Lightroom keep the colors the same on import, you can do so by selecting the Camera Standard profile from the Profile list shown in Figure 4.83. This will allow you to match the default camera JPEG look. The alternative profiles you see listed here are designed to match the color response for the other specific camera JPEG looks that may be associated with a particular camera. If you were editing a photo shot with a Nikon camera, the alternative profile options would probably show: Mode 1, Mode 2, and Mode 3. The thing to stress here is that there is no right or wrong way to process an image at this stage, since any color interpretation is really just a starting point, but if you want your raw photos to match the "look" of one of the camera JPEG settings, you can now do so (see Figure 4.84).

The Camera Raw conversions in Lightroom are the result of many years of painstaking work. For each camera that is supported by Camera Raw, two sets of profile measurements are used to record the camera sensor's color response under controlled daylight-balanced and tungsten-balanced lighting conditions. Using this data, it is possible to extrapolate what the color response should be

for all white balance lighting conditions that fall between these two setups and beyond. Over 430 different cameras are supported by Adobe Camera Raw (ACR) and Lightroom, and in some instances several camera samples were tested to obtain a representative average set of measurements. Other times only one camera model was actually used. But in all cases it is clear that the measurements made by the Camera Raw team can only ever be as good as the camera or cameras from which the measurements were made (and how representative these were of other cameras of the same make). At the same time, the sensors in some cameras can vary a lot in color response from camera to camera, and this variance means that although a raw file from your camera may be supported by Lightroom, there is no guarantee it will be exactly similar in color response to the raw files from the cameras that the Adobe team evaluated.

TIP

Try using the Develop Presets panel to save "Calibration only" presets for each of the available camera profiles. You can then either roll the mouse over the presets to preview the outcome in the Navigator or click through the list to quickly compare the different camera profile renderings.



Figure 4.84 Here you can see examples of different camera profiles applied to the same image. The top-left image shows the Adobe Standard profile being used, whereas the bottom-right version uses the Camera Standard profile. This would be the one to choose if you wanted to match exactly the appearance of the camera JPEG. Note: Adobe Standard is available for all supported cameras. The others are only available for Canon, Nikon, and a couple of Pentax and Leica models.



DNG Profile Editor.app

Figure 4.85 The DNG Profile Editor 1.0 program can be downloaded for free from the labs.adobe.com website.

NOTE

The X-Rite Gretag Macbeth ColorChecker chart is available as the full-size version or as a slightly cheaper mini version. Both are well suited for creating custom camera profiles.

TIP

If you want to produce a superaccurate camera profile to match those created by Adobe, you can do so by photographing the target ColorChecker target twice: once using 6500 K balanced lighting and again using 2850 K balanced lighting. DNG Profile Editor allows you to read both captures independently (see Step 3) and thereby build a camera profile that can adapt to subjects shot between these two measured white points and extrapolate beyond to calculate the profile response under different white balance lighting conditions.

Creating a custom calibration with DNG Profile Editor

In the quest to produce improved Adobe Standard profiles, Lightroom engineer Eric Chan used a special utility program called DNG Profile Editor 1.0 to help reevaluate the camera profiles supplied with Camera Raw and with this produced the revised Adobe Standard profiles. You can get hold of a copy of this program by going to the labs.adobe.com website and doing a search for *DNG Profiles*. As of this writing it is currently at version 1.04 and can be downloaded for free (see **Figure 4.85**). There are a number of things you can do with this utility, but I think its main strength is that you can use it to create custom calibration profiles for the sensor in your camera. As I just mentioned, while the default camera profiles may be quite accurate for different individual cameras, there may still be a slight difference in color response between your particular camera and the one Adobe evaluated. For this reason you may like to run through the following steps to create a custom calibration for your camera sensor.



1. The first thing you need to do is to take a photograph of an X-Rite/Gretag Macbeth ColorChecker chart. I suggest you shoot this against a plain dark backdrop and make sure that the chart is evenly lit from both sides. It is also a good idea to take several photos and bracket the exposures by two-thirds of a stop either side. This is because if the raw original isn't correctly exposed you'll see an error message when trying to run the DNG Profile Editor. The other thing you'll need to do is to convert the raw capture image to the DNG format, then go to the Develop module, select the Adobe Standard profile as your starting point (don't apply any other Develop adjustments), and use **ES** (Mac) or **Ctrl S** (PC) to save the Lightroom-edited metadata to the DNG file.



2. The next step is to launch DNG Profile Editor. Once launched, go to the File menu and choose File ⇒ Open DNG Image. Now browse to locate the DNG image you just edited and click Open. The selected image appears in a separate window and you can see the base profile is using the Adobe Standard profile for whichever camera was used to capture the ColorChecker chart.



3. Now click the Chart tab and drag the four colored circles to the four corner swatches of the chart. If you are measuring just the one chart, select the Both color tables option before clicking the Create Color Table button.
Base Profile:	ColorChecker	Color Table: 6	500 K	
		R: L: B: a: G: b:	- H:	Export DNG Camera Profile Save As: Hasselblad 50-Coated Calibration,dcp v Where: CameraProfiles
Hue	~ [Cancel Save
Saturation		4	-	
Lightnerr	[<u> </u>	

4. The camera profiling process will take less than a second to complete. Once this has happened you can then go to the Edit menu and choose File ⇒ Export *name of camera* Profile, or use the ﷺ E (Mac) or Ctrl E (PC) shortcut. Next, rename the profile as desired.

	Camera Calibration	W
Process Profile	2012 (Current) Hasselblad 50-Coated Calibration Camera Standard Shadows	0
Hue Saturation	Red Primary	0 0
Hue Saturation	Green Primary	0 0
Hue Saturation	Blue Primary	0 0

5. Custom camera profiles are saved to a default user folder but won't appear in the Camera Calibration Profiles list until after you have quit and restarted Lightroom. Once you have done this you'll be able to select the newly created camera profile and apply it to any photographs that have been shot with this particular camera.



6. If you want, you can go to the Develop module and make sure that all the Develop controls are set to the default neutral settings, the White Balance is set to As Shot, and in the Camera Calibration panel the relevant Camera Profile is selected. You can then go to the Develop menu and choose Set Default Settings. This ensures that the custom camera profile is now applied by default to all newly imported raw photos from this particular camera (see also page 356 for details on how to save the Camera Calibration profile setting as part of a Camera default setting and linking default settings to ISO values).

Creative uses of the Camera Calibration panel

There isn't much need now for the Camera Calibration sliders, since all you have to do is select an existing camera profile or create one specifically for your camera. However, I do still find these additional color adjustment controls useful, especially if you want to produce false color effects. I have shown some examples of this in **Figures 4.86** through **4.89**. I have also discovered that the Camera Calibration controls can be useful for fine-tuning black-and-white conversions (to read more about this, check out page 377).

NOTE

If you create a custom camera profile for your camera and apply it to any of the images you process through Lightroom, you need to be aware that the custom profile component can only be read if that camera profile exists on the computer that's reading it. If you transfer a raw file that's been processed in Lightroom to another computer, it will look to see if the same camera profile is in the Camera Profiles folder. If it isn't, it will default to using the Adobe Standard profile. This leads me to point out an important solution to this problem, which is to convert your raw files to DNG. The current DNG spec allows for camera profiles to be embedded within the file, thereby removing the dependency on the host computer having a copy of the custom camera profile used. But you must remember to explicitly save the metadata to the DNG file for the camera profile data to be embedded.



Figure 4.86 This shows a standard version of an image, using the Adobe Standard Camera Profile, but with zeroed Camera Calibration panel sliders.



Figure 4.87 This shows a muted color setting, created using the Camera Calibration sliders.



Figure 4.88 To create this color infrared effect, I used the settings shown here (you may also want to reduce the Vibrance slightly).



Figure 4.89 To create this magenta sky effect, I used the Camera Calibration settings shown here.

Assessing your images Comparing before and after versions

While you are working in the Develop module, you can simultaneously compare the before and after versions of any photograph you are working on. This allows you to compare the effect of the develop settings adjustments, as they are applied to the image. To view the before and after adjustments, click the Before/After view mode button in the Toolbar and then click on the disclosure triangle (circled in **Figure 4.90**) to select one of the four Before/After viewing modes from the flyout menu. These viewing modes let you display two identical views of the currently selected image. You can choose a Left/Right view to see a horizontal sideby-side before and after preview, or you can choose a Top/Bottom view to see a vertical side-by-side before and after preview. Meanwhile, the Split views divide



the preview in half, displaying a Before view on the left and an After view on the right (or a Before view on top and an After view below [see **Figure 4.91**]). Alternatively, you can repeat click the Before/After button to cycle through all the available views. You can also use the Y key to toggle the standard Left/Right view mode on or off, press Alt Y to toggle the standard Top/Bottom view mode on or off, and use Shift Y to toggle between a Split screen preview or side-by-side previews. Press D to return to the default full-screen preview in the Develop module. While you are in any of the Before/After view modes, you can zoom and scroll the image to compare the adjusted version with the before image.

TIP

You can switch between the before and after versions in the Develop module by going to the View menu and choosing Before/After ⇒ Before Only. Or, use the backslash key (①) shortcut to quickly toggle between these two viewing modes.





Figure 4.91 These two screenshots show you the two main viewing modes for comparing before and after versions of an image. The top screenshot shows a photograph in the Before/After Left/Right, side-by-side preview mode and the bottom screenshot shows the Before/After Top/Bottom Split preview mode.

TIP

The Copy After's Settings to Before keyboard shortcut is Alt Shift (Mac) or Ctrl Alt Shift (CPC). The Copy Before's Settings to After keyboard shortcut is Alt Shift (Mac) or Ctrl Alt Shift (CPC).



Figure 4.92 The Copy settings buttons only appear at the bottom of the Develop module when either the Left/Right or Top/Bottom view modes have been selected. The buttons shown here are those for when the Left/Right view mode is selected.

Managing the Before and After previews

When you edit an image in one of the Before/After viewing modes, you can make umpteen adjustments via the Develop module and at all times be able to compare the revised, After version with the Before version. Just to clarify here, the Before version view uses either the develop settings that were applied when the photo was first imported into Lightroom or the last assigned Before state. When you click the "Copy settings from the After photo to the Before photo" button, you are assigning a new Before state to the Before version view.

Let's suppose that you want to make the current After version view the new Before. You can do this by clicking the "Copy settings from the After photo to the Before photo" button. This updates the Before image view with the After image settings. What you are effectively doing is making a snapshot of the settings at a certain point in the Develop adjustment process, which lets you make further new adjustments and compare these with a new Before version. Let's say at this point that you continue making more tweaks to the Develop panel settings, but you decide that these corrections have not actually improved the image and the interim Before version view was actually better. You can reverse the process by clicking the "Copy settings from the Before photo to the After photo" button. Basically, the Before and After compare mode controls (**Figure 4.92**) let you take a snapshot of an image mid-correction and compare it with whatever settings you apply subsequently. The following steps illustrate one such workflow.



1. This screenshot shows a photo in the Develop module Loupe view with the image settings that were applied at the import stage.



2. I clicked the Before/After view YY button (you can also use the Y keyboard shortcut) and began to adjust the image by altering the white balance so that the modified After version was warmer in color.



3. I went to the Before/After viewing mode menu and switched view modes, selecting the Before/After Left/Right Split view. I magnified the image to display the photo at a 1:2 zoom view.



4. I clicked the Develop module full-view button to switch out of the Before/ After view mode so I could work on the photo in a normal full-screen view.



5. While working in the Develop module, you can easily compare the current Develop settings with the before version, using the (keyboard shortcut. This switches to show the Before view. Press (again to revert to the After view.



6. I then clicked the Before/After view button again (or use the Y shortcut) and clicked the "Copy After's settings to Before photo" button ((ℜAlt Shift) [Mac] or [Ctrl] Alt [Shift] [PC]), making the current (After) version the new Before setting.



I could then make further edits, such as convert the photo to Black & White and compare this with the new saved Before version.



Figure 4.93 The retouching tools are all located just below the Histogram panel in the Develop module. From left to right: Spot Removal, Red Eye Correction, Graduated Filter, Radial Filter, and Adjustment Brush. This screenshot shows the Spot Removal options.



Figure 4.94 This shows the contextual menu for the Spot Removal tool.

NOTE

Unlike Photoshop, which has the ability to apply the clone beyond the original canvas area (white area), Lightroom is limited to the original. This is particularly relevant when trying to clone after an image has been corrected using, say, the Upright tool.

Image retouching

The retouching tools in the Develop module (**Figure 4.93**) can be used to retouch a photograph in Lightroom without actually editing the pixel data. When you work with the Spot Removal, Red Eye Correction, Graduated Filter, Radial Filter, or Adjustment Brush, these actions are recorded as sets of instructions and the pixel image data in the original master file remains untouched. It is only when you choose to export a file as a TIFF, JPEG, or PSD, or carry out an "Edit in external editor" command that the retouching work is physically applied to the exported image.

Spot Removal tool

The Spot Removal tool (Q) has a Clone mode and a Heal mode (use **A**Shift)Q to toggle between these two modes). In Clone mode, the Spot Removal tool copies and repairs from a sample area but doesn't blend the result with the surrounding pixels. It does so using a soft-edged selection, and this is the most appropriate mode to work with when removing spots that are close to an edge. For all other retouching work, I suggest you use the Heal mode, which blends the results of the retouching with the image information that is just outside the area you are trying to repair. The Heal mode is nearly always successful at hiding blemishes because of the way it invisibly blends the healed area with the surrounding pixels.

To work with the Spot Removal tool, you can start by adjusting the Size slider in the Spot Removal tool options (**Figure 4.95**) so that the Spot Removal cursor matches the size of the areas you intend to repair. You can use the square bracket keys on the keyboard—click or hold down the ① key to make the Spot Removal circle spot size bigger, or use the ① key to make the size smaller. Or, use the scroll button on your mouse. If you then simply click on the spot or blemish you wish to remove, this adds a new circle spot and auto-finds a source sample area to clone from. If the cursor size is large enough, you'll see a small crosshair in the middle of the circle spot cursor, and you can use this to target the blemish you want to remove and center the cursor more precisely. A linking arrow also appears to indicate the relationship between the target circle and sample circle areas (Figure 4.95). Lightroom 5 now happens to use an improved method to automatically find a suitable source area to clone from, and you can use [?] (the backslash key) to auto-select a new source area and recompute. This is also available as a contextual menu item (see **Figure 4.94**).

Alternatively, you can hold down the 🕃 key (Mac) or Ctrl key (PC) and drag outward to select an image area to sample from. As you do this, you'll notice that the original (target) circle cursor disappears so that you can preview the effect of the spot removal action without being distracted by the circle spot. When you have finished applying a spot removal, the target circle spot remains as a thin, white circle on the screen for as long as the Spot Removal tool is active in the Develop module. You can quit working with the tool by clicking the Close button (circled in Figure 4.93) or by pressing the Q key.

Because Lightroom is recording all these actions as edit instructions, you have the freedom to fine-tune any clone and heal step. For example, you can click inside a circle spot to reactivate it and reposition either the target or the sample circles. If you click on the edge of the target cursor circle, a bar with a bidirectional arrow appears and you can click and drag to adjust the size of both the target and sample circles. If you click and drag with the) (公 Shift) keys (Mac) or [Ctrl] (公 Shift) keys (PC) held down, this allows you to create a user-defined sized circle spot scaled from the initial anchor point. And, if you click and drag with the **E**Alt keys (Mac) or [Ctrl][Alt] keys (PC) held down, the circle spot scales from the center. Basically, you can define a different spot size each time you drag and the sample circle auto-picks anywhere that surrounds the target circle area. It may seem that the auto-find selection is guite random, but Lightroom is intelligently seeking an ideal area to sample from (it's similar to the logic used by Photoshop's Spot Healing Brush tool). You can use the On/Off button at the bottom of the Spot Removal tool options (circled in Figure 4.95) to toggle disabling/enabling the spot removal retouching and click the Reset button to cancel and clear all the current Spot Removal tool edits. Use the \mathbb{H} key to toggle showing/hiding all the spot removal spots.

NOTE

Lightroom 5 uses a new healing algorithm, which provides speedier healing performance. However, adding multiple spots may soon slow down the overall Lightroom Develop module performance.



Figure 4.95 This screenshot shows a combined series of snapshots taken of the Spot Removal tool in action to illustrate some of the different ways you can work with this tool.

Visualizing spots

The Visualize Spots feature can be used to detect dust spots and other anomalies. If you go to the Toolbar you'll notice a Visualize Spots check box (\bigcirc) and a slider. When enabled, the image will switch to a threshold mode preview, where as you drag the slider, you can determine the ideal threshold point to highlight the spots in an image that need to be removed. After adjusting this, the slider setting you used remains sticky until you treat turn on Visualize Spots to treat another image.



1. This shows an image that was shot with a dirty camera sensor marks and wasn't helped much by shooting a high key subject.



2 I checked the Visualize Spots box at the bottom of the Spot Removal panel options and adjusted the slider to obtain a suitable preview, one that picked out the spots clearly.



3 I then clicked with the Spot Removal tool to remove the spots that had been identified using this method.

Creating brush spots

So far I have shown you how to create basic circle spots using the Spot Removal tool. In Lightroom 5, you can now click and drag to define noncircular areas, known as brush spots. You basically click and drag you to paint over the area you wish to remove. As you do so, you will see the area you are removing covered in a white overlay. When you release the mouse, you will see a brush spot represented as shown in **Figure 4.96**. As with circle spots, Lightroom auto-selects the most suitable area to clone from and you can use the (7) key to auto-select a new source area and recompute. To override the auto-select choice, you can click inside a target or source brush spot and click and drag to reposition, but note that you can't scale brush spots the way you can when editing circle spots. If you click and drag with the (SBM) key held down, this constrains the line to a horizontal or vertical direction. But, if you click and click again with the (SBM) key held down, this allows you to create a "connect the dots" selection. **Figure 4.97** shows an illustrated summary of the new brush spots behavior.

Brush spots add really useful functionality to Lightroom, but all this comes at a cost. Heavy use of the Spot Removal tool, especially in brush spot mode, will certainly add to the Develop module processing and slow things down.



Figure 4.96 This shows the appearance of a brush spot adjustment, with the target brush spot on the left and the source on the right.



Figure 4.97 This shows some of the different ways you can apply brush spots.



1. In this photograph you can see a fence and wires in the foreground. I wanted to show how you can use the new brush spot feature in Lightroom to retouch these out of the shot.



2. I selected the Spot Removal tool and clicked at the top of the fence post seen here. This added a regular circle spot and auto-find a source area to sample from. Note, I used the Heal mode here.



3. I then held down the ☆Shift key and clicked near to the bottom of the fence post and released the mouse. The circle spot had now become a brush spot, constrained to a straight line.



4. I repeated the process in order to remove the strut supporting the fence post. You can rely on Lightroom to auto-find the most suitable area to clone from. You can use the ⁽⁷⁾ key to recompute a new source, or you can mouse down inside the brush spot source outline and drag to select a new area to clone from.



5. After much editing with the Spot Removal tool, it was possible to remove nearly all traces of the fence and wires. However, as I mentioned earlier, this kind of extensive retouching can easily slow Lightroom down to a crawl.

Clone or Heal

In Clone mode, the Spot Removal tool copies the pixels using a feathered circle edge. In Heal mode, the Spot Removal tool copies from the sample area and blends the copied pixels with those around the edge of the target area. You can also use the Clone/Heal buttons in the Tool Options panel to change the Spot Removal mode for any circle spot.

Editing circle and brush spots

The circle spots always remain editable. You can select an individual circle and use the Spot Removal Size slider to readjust the size. Or, click on the edge of a target circle spot and drag to resize. Note that as you click and drag, the thin circle cursor conveniently disappears, which allows you to see more clearly the effect the circle resizing is having on the photo. If you click inside a target circle or brush spot, the thin circle/outline disappears and changes to show a hand icon. This allows you to drag and reposition the spot so that you can readjust the target position. You can also click on or inside a sample circle/brush spot and drag to reposition the sample area relative to the target so that you can select a new area to sample from.

Tool Overlay options

The Tool Overlay options can be accessed via the Develop module Toolbar (**Figure 4.98**), as well as via the Tools menu. If you select the Auto option, the circle/brush spots only become visible when you roll the cursor over the preview area. If you select the Always option, the circle/brush spots remain visible at all times. When the Selected option is chosen, only the active circle/brush spot is shown and all others are hidden. When the Never menu option is selected, all the Spot Removal overlays remain hidden (even when you roll the mouse cursor over the image). But as soon as you start working with the Spot Removal tool, the tool overlay behavior automatically switches to Auto Show mode. I think the most convenient way to work here is to operate in Auto mode and use the H keyboard shortcut to toggle between the Auto and Never overlay modes. This toggle action allows you to work on an image without always being distracted by all the circle/brush spot overlays.

Undoing/deleting spots

Use **B**(Z) (Mac) or Ctrl(Z) (PC) to undo the last circle/brush spot. To delete, (Att)-click inside a circle/brush spot. To delete multiple circle/brush spots, (Att)-marquee drag to select those you wish to remove. To delete all circle/brush spots, click the Reset button in the Tool Options panel.



Figure 4.98 The Tool Overlay options in the Develop module Toolbar.

TIP

The H keyboard shortcut toggles the Tools overlay view between Auto and Never and the chiff(H)keyboard shortcut toggles the Tools overlay view between Selected and Never.

NOTE

If you simply click with the Spot Removal tool, Lightroom automatically chooses the best area of the photo to sample from. As long as you don't try to edit the sample point (by manually dragging the sample circle to reposition it), the circle spot will remain in "auto-select sample point" mode. If you therefore carry out a series of spot removals using, say, the Heal mode, and always click with the tool rather than drag, you will then be in a position where you can synchronize the spot removal adjustments more efficiently. If you synchronize a series of photos in this way, Lightroom auto-selects the best sample points in each of the individual synchronized photos. This does not guarantee 100% successful spot removal for every image that's synchronized this way, but you may still find this saves you time compared to retouching every photo individually one by one (see the Synchronized spotting and Auto Sync spotting examples shown here).

Synchronized spotting

With the Spot Removal tool you can continue to edit the tones and colors in a photograph and the spotting adjustments will update accordingly. You can also synchronize the settings in one image with others from the same sequence; this includes synchronizing spot removals. So, if you get the spotting work right for one image, you can synchronize the spot removal work across all the other selected photos. There are two ways you can do this. One way is to work with the Spot Removal tool on one photo and synchronize the spotting with the other photos later. Or, you can Auto Sync a selection of photos and update all the selected images at once as you retouch the most selected photo.



1. I first made sure that the photo that had all the spotting work done to it was the most selected in the Filmstrip (the one with the lighter gray border). I then clicked the Sync button.

 witte saance Basic Tone bxposure bighlight Recovery ilijhlight Recovery ilijhlight Recovery ilijht Black Clipping Brightness Contrast Tone Curve Clarity Sharpening 	Treatment (Color) Color Saturation Vibrance Color Adjustments Split Toning Local Adjustments Brush Graduated Filters Radial Filters Noise Reduction Luminance Color	Lens Corrections Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Effects Post-Crop Vignetting Grain Process Version Calibration	Spot Removal Crop Straighten Angle Aspect Ratio
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2. This opened the Synchronize Settings dialog, where I made sure the Spot Removal box was checked (as well as Process Version). When I clicked the Synchronize button, Lightroom synchronized the Spot Removal settings across all the selected photos. Note, you can also use the <u>Cmd Shift</u>(S) (Mac) or <u>Ctrl Shift</u>(S) (PC) shortcut to open the Synchronize Settings dialog shown here.

Auto Sync spotting



1. An alternative method is to make a selection of photos and hold down the key (Mac) or Ctrl key (PC). This changes the Sync button to Auto Sync. Click the button to set the photo selection to Auto Sync mode.



2. You can then edit any of the selected photos and *all* the Develop settings will be automatically synchronized to the target photo. Here, I used the Spot Removal tool in Heal mode to remove dust marks from the photo. As I did so, the Spot Removal settings were automatically applied to all the photos in the selection. When finished, I clicked the Auto Sync button to revert to the standard Sync mode behavior.

NOTE

Copying the Spot Removal settings or working with the Auto Sync feature can work well on some image series better than others. In the example shown here, I was careful to use the Spot Removal tool in Heal mode by clicking only to remove the dust spots (rather than 🕱 key [Mac] or Ctrl key [PC] clicking plus dragging). This is because when you synchronize in Heal mode with a click-only action, the click "heal" instruction automatically selects the best area to clone from. The net result is that for each heal clone spot, Lightroom will clone from wherever it thinks is the best portion of the picture to sample from and do so differently for each individual image. It won't work perfectly in every instance, and it may be necessary to review each image afterward to fine-tune the clone source points (with Auto Sync disabled). But on the whole, Auto Sync cloning can still save you time when repetitively removing spots from areas such as skies or plain studio backdrops.



Figure 4.99 The Red Eye Correction tool cursor design.



Figure 4.100 The Red Eye Correction tool panel options.

TIP

You can use the On/Off button at the bottom of the Tool Options (circled in Figure 4.100) to toggle showing and hiding all Red Eye Correction tool edits. Plus, you can click the Reset button to cancel and clear all the current Red Eye tool edits.

Red Eye Correction tool

There are many ways you can prevent red eye from happening. Most compact cameras allow you to set the flash to an anti-red-eye mode, or you can use a flash gun where the flash source is not so close to the lens axis. But for those times when you can't do this, the Red Eye Correction tool can correct photographs in which the direct camera flash has caused the pupils in someone's eyes to appear bright red.

To use the Red Eye Correction tool, place the cursor crosshair in the middle of the pupil and drag outward to draw an ellipse that defines the area you wish to correct (the Red Eye Correction tool cursor is shown in Figure 4.99). Lightroom automatically detects the red-eye area that needs to be repaired and fixes it. You don't have to be particularly accurate, and it is interesting to watch how this tool behaves even if you lazily drag to include an area that's a lot bigger than that you need to correct. Lightroom always seems to know precisely which area to correct, because the cursor shrinks to create an ellipse overlay representing the area that has been targeted for the red-eye correction. After you have applied the tool to a photo, Red Eye Correction tool options will appear below (Figure 4.100). These allow you to adjust the sliders to fine-tune the Pupil Size area you want to correct and decide how much you want to darken the pupil. You can revise the Red Eye removal settings by clicking on a circle to reactivate it, or use the Delete key to remove individual red-eye corrections. If you don't like the results, you can always click the Reset button in the Tool Options panel to delete all the Red Eye Correction retouching and start over again.

This feature raises an interesting question: if you know Lightroom can repair red eye so neatly, do you really need to use the anti-red-eye flash mode? What I propose here may sound like a lazy approach to photography, but in my experience, the anti-red-eye flash mode often kills the opportunity to grab the most spontaneous snapshots. There is nothing worse than seeing a great expression or something special going on between a group of people in the frame, and then having to wait a few seconds for the camera to get up to speed, firing a few preflashes before taking the full flash exposure. These days I prefer to shoot using the normal flash mode and let Lightroom fix any red-eye problems that might occur.

Adjusting the cursor size

Before applying the Red Eye Correction tool you can adjust the size of the cursor by using the square bracket keys. Use the left bracket ([]) to make the cursor size smaller and the right bracket ([]) to make the cursor size bigger. To be honest, the cursor size doesn't always make much difference because big or small, once you click with the tool you can drag the cursor to define the area you wish to affect. The cursor size is probably more relevant if you are going to be clicking with the Red Eye Correction tool rather than dragging.



1. Here is a close-up view of a photograph where the subject had red eyes.



2. I selected the Red Eye Correction tool and clicked on both eyes. This automatically got rid of the red-eye effect. I then adjusted the Darken slider so that the pupils didn't appear too dark.



Figure 4.101 The full Adjustment Brush options.



Figure 4.102 The Adjustment Brush options in compact mode.



Figure 4.103 The Adjustment Brush cursor.

Localized adjustments

Let's now take a look at the Adjustment Brush, Graduated Filter, and Radial Filter tools. These are more than just tools for dodging and burning, because you have (in the case of the Adjustment Brush) a total of 12 effects to choose from, not to mention dual brush settings and the Auto Mask option. Just like the Spot Removal and Red Eye Correction tools, these tools are completely nondestructive. There is no need for Lightroom to create an edit copy of the master image first (if that is what you want to achieve, then you can always use the Edit in Photoshop command discussed in Chapter 7). The unique thing about these tools is that when localized adjustments are applied to an image, the adjustments are saved as instruction edits that are automatically updated as you make further Develop module adjustments. You can even synchronize localized adjustment work across multiple images using the Sync Settings command.

Initial Adjustment Brush options

When you first start working with the Adjustment Brush (K), the panel options will look like those shown in **Figure 4.101** or **Figure 4.102**. To begin with, you will be in the New mode, ready to create a fresh set of brush strokes, but first you need to choose an adjustment effect: Temp, Tint, Exposure, Contrast, Highlights, Shadows, Clarity, Saturation, Sharpness, Noise, Moire, Defringe, or Color (I'll be discussing noise and moiré in Chapter 6). These effects are not all exactly 100% comparable with the similarly named sliders in the Basic panel. There are some minor differences, but otherwise they are more or less the same. For example, the Saturation slider is actually a hybrid of the Saturation and Vibrance adjustments found in the Basic panel.

In Figure 4.101, the Exposure effect was selected, where a positive value can be used to lighten, or a negative value to darken—these are your basic dodge and burn tool settings. But you can use any combination of sliders here to establish different types of localized adjustment effects and save these as custom settings, which can be accessed via the Effect menu (circled in Figure 4.101). If you want a simpler interface to work with, click on the disclosure triangle next to the Effect drop-down menu (circled in Figure 4.102) to collapse the slider options. In Figure 4.102, all you have is an Amount slider, and whatever effect settings you have selected in the Effect menu are now controlled by this single slider. You can expand the Adjustment Brush options by clicking on the disclosure triangle again.

Below this are the Brush settings, where you have three sliders. The Size slider controls the overall size of the brush cursor (**Figure 4.103**). You can use the ① and ① to make the cursor bigger or smaller. Or, if your mouse has a scroll wheel, you can also use this as a means to vary the brush size. The reason the cursor has two circles is to show the hardness of the brush. The inner circle represents the core brush size, while the outer circle represents the outer feather radius. As

you adjust the Feather slider, the outer circle expands or contracts to indicate the hardness or softness of the brush. Or, you can use $(\Delta Shift)$ to make the brush edge harder or (Shift]) to make it softer. The Flow slider is kind of like an airbrush control: by selecting a low Flow setting you can apply a series of brush strokes that successively build to create a stronger effect. You will notice that as you brush back and forth with the Adjustment Brush, the paint effect gains opacity (if you are using a pressure-sensitive tablet such as a Wacom[™], the flow of the brush strokes is automatically linked to the pen pressure). It can often be useful to set the Flow to a low amount to begin with and use multiple brush strokes to gradually build up a particular effect. The Density slider at the bottom limits what the maximum brush opacity can be. At 100% Density, the flow of the brush strokes builds to maximum opacity, but if you reduce the Density, this limits the maximum opacity for the brush. In fact, if you reduce the Density and paint, this allows you to erase the paint strokes back to a desired Density setting, and when the Density is set to zero, the brush acts like an eraser. The A and B buttons allow you to create two separate brush settings so that you can easily switch between two different brushes as you work. If you hold down the (Alt) key, "Effect" will change to "Reset" (Figure 4.104). Click this to reset all the sliders to zero and clear any currently selected color. Or, you can hold down the Alt key and click on an Effect slider name to reset everything except that slider setting. If you need to reset everything (as in resetting the image without any Adjustment Brush adjustments), you can select individual brush pins to make them active and hit the Delete key. Or, if you click the Reset button at the bottom, this deletes all the pin markers that have been added to an image. To exit the Adjustment Brush tool mode of operation, you can click the Close button, click the Adjustment Brush button at the top, or press (K). You can use the On/Off button at the bottom (circled in Figure 4.105) to toggle showing/hiding all Adjustment Brush edits.

Now let's look at how to work with the Adjustment Brush. Where you first click adds a pin marker to the image. This is just like any other overlay, and you can hide it using the \boxdot key (or use the View \Rightarrow Tool Overlay options discussed earlier to govern the show/hide behavior for these overlays). The pin is therefore a marker for the brush strokes you are about to add and can later be used as a reference marker point whenever you need to locate and edit a particular group of brush strokes. The important thing to understand here is that you click once and can keep clicking and dragging to create a single collection of brush strokes. When you edit the brush strokes, you can adjust the effect slider settings for the group as a whole. So you can come back later and say "Let's make this series of brush strokes a little stronger," or "Let's add more saturation too." Consequently, you should only create new brush stroke groups when you need to shift the focus of your retouching from one part of the photograph to another. Therefore, always click the New button in the Adjustment Brush's panel when you need to create a new (separate) group of brush strokes.



Figure 4.104 When you hold down the All key, "Effect" will change to show "Reset." Click this to reset all the Effect sliders.



Figure 4.105 This shows the Adjustment Brush panel Edit options. The Reset button at the bottom can be used to remove all the pin markers (note that as you scroll the other panels these slide beneath the tool options).





NOTE

Using Alt (Mac) or Ctri Alt (PC) plus a click or drag duplicates a Graduated Filter, Radial Filter, or Adjustment Brush. However, in the case of the Adjustment Brush, the pin remains in place, which does limit the usefulness of this new behavior. Localized adjustments have the same full strength as the global adjustments. But note that all the effects have linear incremental behavior except for the Temp, Tint Highlights, Shadows, and Clarity adjustments. These have nonlinear incremental behavior, which means that they only increase in strength by 50% relative to the previous localized adjustment each time you add a new pin group.

Editing the Adjustment Brush strokes

To edit a series of brush strokes, click on an existing pin marker to select it (a black dot appears in the center of the pin). This takes you into Edit mode, where you can start adding more brush strokes or edit the current brush settings (see Figure 4.105). If you didn't get the slider settings right when first painting, you now have complete control to edit them. Also, as you edit a localized adjustment, you can click on a pin marker, hold down the Alt key, and drag the cursor left or right to decrease or increase the strength of an effect. When you are done editing, hit \leftarrow Enter or click the New button to return to the New adjustment mode, where you can click on the image to add a new set of brush strokes. As you work with the Adjustment Brush, you can undo a brush stroke or series of strokes using the Undo command (\Re [Z] [Mac] or Ctri]Z] [PC]), and you can erase brush strokes by clicking the Erase button to enter Eraser mode, or simply hold down the Alt key to erase as you paint.

Saving effect settings

As you discover combinations of effect sliders that you would like to use again, you can save these via the Effect menu (**Figure 4.106**). For example, you'll find here a preset setting called Soften Skin that uses a combination of negative Clarity and positive Sharpness to produce a skin smoothing effect (see page 317). Also, if you wish to use a combination of the Adjustment Brush and Graduated Filter tool to apply a particular type of effect, it might be useful to save a setting of the settings used for the Adjustment Brush so these can easily be shared when later using the Graduated Filter.

Adjustment Brush and gradient performance

The Adjustment Brush should work fairly smoothly even on large images. If you find the brush performance is diminished, it might be because you have applied too many separate brush effects to the image. Remember, each time you create a new adjustment effect you greatly add to the computational processing that's required to render a preview in the Develop module. For that reason it is best to restrict yourself to adding as few adjustment groups as necessary rather than too many new adjustment groups.



1. This shows a photograph where some Basic adjustments had been applied to optimize the brightness and contrast in the image.



the foreground as well as some of those in the distance.



Figure 4.107 Often, all you need to do is to click on an area of a picture with the color you wish to target and drag the Adjustment Brush in Auto Mask mode to quickly adjust areas of the picture that share the same tone and color.

Automasking

The Auto Mask option cleverly masks the image as you paint with the Adjustment Brush. It works by analyzing the area where you click with the Adjustment Brush and only applies the effect to those areas that match the same tone and color. For the automasking to work, the paint strokes in a pin group don't have to all be based on the same color. This is because the Auto Mask resamples continuously as you paint to calculate the mask. Figure 4.107 shows an example of the Auto Mask feature in action, and the next series of steps show in detail how I was able to use successive strokes to adjust only those areas that matched the backdrop color. The Auto Mask feature does appear to work remarkably well at auto-selecting areas of a picture based on color, but to fine-tune the edges, you may need to do what I did here, and switch back and forth with the Alt key to erase those areas where the Adjustment Brush effect spilled over the edges (remember the Auto Mask option can also be used in Erase mode). Here I was able to carefully select the blue sky and darken it. Note that while the Auto Mask can do a great job at auto-selecting the areas you want to paint, extreme adjustments can lead to ugly artifacts appearing in some parts of the image. It is always a good idea to check such adjustments close-up at a 1:1 view to make sure the automasking hasn't created any speckled edges.



1. This shows the original photograph of a statue, where I began by clicking on the Adjustment Brush to reveal the tool options.



TIP

Double-clicking the slider names resets them to zero, or to their default values.

TIP

Note that you can also hold down the ﷺ key (Mac) or Ctrl key (PC) to temporarily switch the Adjustment Brush into Auto Mask mode (or revert back to Normal mode if Auto Mask is already selected).



Figure 4.109 This shows the Soften Skin Adjustment Brush setting that was used to work on the photograph shown in Figure 4.110.

Previewing the brush stroke areas

As you roll the cursor over a pin marker, you'll see a temporary overlay view of the painted region (**Figure 4.108**). The colored overlay represents the areas that have been painted. You can also press (a) to switch the mask on or off and use Shift(a) to cycle the mask display through the red, green, white, or black overlay colors. Lightroom also has a Show Selected Mask Overlay option in the Toolbar.



Figure 4.108 This shows an overlay view of the Adjustment Brush strokes and the Show Selected Mask Overlay option in the Toolbar (circled).

Beauty retouching with negative clarity

On page 223, I showed an example of how you could use a negative Clarity adjustment on a black-and-white image to create a diffuse printing type effect. Meanwhile, a couple of Lightroom beta testers, Clicio Barroso and Ettore Causa, came up with the suggestion that you could use a negative Clarity effect as an Adjustment Brush effect for softening skin tones. Personally, I have an aversion to the over-retouched look of some fashion beauty portraits, but the Soften Skin setting, which uses Clarity set to –100% and Sharpness to +25, works really well as a skin-smoothing Adjustment Brush. To illustrate how well this works, I used the Adjustment Brush with the settings shown in **Figure 4.109** to create the after close-up view of the beauty photograph shown in **Figure 4.110**. I didn't need to use the Auto Mask mode; I just painted over the areas of the face that I felt needed softening. After applying the Soften Skin effect, I used the Spot Removal tool to clean up the photograph further, but most of the difference you see here was a result of using the Soften Skin effect with the Adjustment Brush.



Figure 4.110 The top photograph shows the unretouched before image, and the lower one shows the retouched version that was mainly edited with the Adjustment Brush using the Soften Skin effect setting.

TIP

When dealing with images that require extreme highlight recovery, it can be useful to use the Adjustment Brush in Color mode to help the burned-out highlights blend better with the surrounding areas.

NOTE

Where you see an X in the color swatch, this means no color is selected.

Hand-coloring in Color mode

The Color effect allows you to brush with color on your photographs and can be likened to working with the Brush tool in Photoshop using the Color blend mode. There are lots of potential uses for this tool: you can use it to make someone's hair a different shade of color or change their eye color. In the example shown here, I started with an image that had been converted to black and white. The main thing to point out here is that I used the Adjustment Brush in Color mode with Auto Mask selected. Although the image was in black and white, Lightroom was actually referencing the underlying color data when calculating the Auto Mask. The Auto Mask feature was therefore able to do a good job of detecting the mask edges based on the underlying colors of the flower heads, stems, and leaves. Note that you can use the color picker to sample not just from the ramp or preview image, but from anywhere on the Desktop. The trick is to click in the color ramp, hold down the mouse button, and drag the cursor to anywhere you would like to sample a new color from.



1. This photograph was converted to monochrome by desaturating all the Saturation sliders in the HSL panel (you could also drag the Basic panel Saturation slider to zero, or convert to black and white in the B&W panel). I selected the Color effect from the Adjustment Brush tool options Effect menu and clicked on the main color swatch to open the color picker shown here and selected a green color to paint with.



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Localized Temperature slider adjustments

Let's now have a look at what can be done using the Temp and Tint slider adjustments. These allow you to adjust the white balance locally by dragging to the left to make the white point cooler, or dragging to the right to go warmer. The Tint slider, as you would expect, allows you to modify the Tint value. Essentially, you have complete control to modify an image's white balance. Now, you may be thinking it has always been possible to use the Color swatch in the Adjustments panel to locally apply cool or warm colors to an image. This is true, and it is possible to match a Temp slider adjustment by selecting the correct color in the color swatch picker. However, it's actually not so easy to pick an exact color that adjusts the white balance, compared to using these two sliders. The Temp and Tint sliders should therefore be seen as constrained color adjustment controls that allow you to adjust the white point in localized areas. Remember that localized color adjustments, including the use of the Temp and Tint sliders, apply adjustments that are relative to everything else in the image. Therefore, as you continue working in the Develop module, the color adjustments you make using the localized correction tools will adjust relative to any global color adjustments you might make.



1. Here you can see a photograph in which I had already carried out most of the desired image corrections, and the white balance had been set in the Basic panel to produce an overall slightly warm cast. This seemed to suit this portrait.



2. Still staying in the Basic panel, I adjusted the Temp and Tint sliders to apply a cooler "baseline" white balance to the image.



3. I then selected the Adjustment Brush, adjusted the Temp slider to apply a warmer white balance, and carefully painted over the face and body to apply a warm color balance that contrasted nicely with the blue.

A localized Shadows adjustment

The Adjustments panel also contains Highlights and Shadows sliders. As you might expect, these allow you to lighten or darken the Highlights and Shadows areas, respectively.

In the example shown here, the photograph was shot against a black velvet curtain, but there was still some detail left showing in the backdrop. By applying a negative Shadows adjustment I was able to darken the background, but without this darkening adjustment affecting the subjects. Of course, one could already use a combination of negative Exposure and negative Brightness to darken a backdrop, but by using the negative Shadows method you don't have to be quite so accurate when painting with the brush. In this example, some of the brush strokes overlapped the people in this portrait, but the Shadows adjustment only affected the background, which was exactly the effect I wanted to achieve here.



1. In this photograph I optimized the image as usual, setting the blacks so they just started to clip the shadow areas. However, in doing so I couldn't get the backdrop to go completely black.

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with the brush set to -100 Shadows. I then applied a second pass using the same setting. This allowed me to darken the backdrop completely to black.
TIP

If you pump up the settings you are working with to produce a stronger effect than what is needed, you can see the results of your retouching more clearly. You can then use the Edit mode to reduce the Amount to reach the desired strength for the brush strokes.

Clarity and Sharpness adjustments

A positive Clarity Adjustment Brush setting can be used to selectively paint in more midtone contrast. In the example shown here, I used a Positive Clarity and a positive Sharpness effect setting to bring out more detail in the surface of the rock. I definitely did not want to add more sharpening or clarity in the sky area, as this would have made the image noise more noticeable. With the Auto Mask option checked, I painted the rock area only, avoiding the sky area.

Whenever you adjust the Sharpness slider in the adjustment tools to add more sharpness, you are essentially adding a greater Amount value of sharpness based on the settings that have already been established in the Detail panel Sharpening section. A negative Sharpness setting in the 0 to -50 range can be used to fade out existing sharpening. Therefore, if you apply -50 sharpness you can paint to disable any capture sharpening. As you apply a negative Sharpness in the range of -50 to -100, you start to apply anti-sharpening. This can produce a gentle lens blur effect, but you can always strengthen this by applying successive, separate Adjustment Brush groups. I'll be showing a further example of localized sharpening in Chapter 6.



1. Here, you can see I selected the Adjustment Brush tool and adjusted the Effect settings to add +100% Clarity combined with +30% Sharpness. I then clicked on the rocks and started painting to apply the combined Clarity and Sharpness adjustment effect (with Auto Mask checked).



2. I applied this adjustment to the rock areas only, and you can see here an overlay view of the painted area (top) and close-up views below that show the Before and After versions.



Figure 4.111 This shows the Graduated Filter tool options in the expanded mode.



Figure 4.112 This shows the Graduated Filter tool options in the compact mode.

TIF

As you edit a localized adjustment, click on the pin marker, hold down the [Aft] key, and drag the cursor to the left to decrease the strength or drag to the right to increase. Use the M key to go directly from the Library module to the Graduated Filter tool in the Develop module. M toggles entering/exiting the Graduated Filter mode. So, press M twice to exit a current Graduated Filter adjustment to add a new one.

Graduated Filter tool

Everything I have described so far about working with the Adjustment Brush more or less applies to working with the Graduated Filter tool (\mathbb{M}) (see **Figures 4.111** and **4.112**). This tool allows you to add linear Graduated Filter fade adjustments. To use the tool, you click in a photo to set the start point for the Graduated Filter (the point with the maximum effect strength), drag the mouse to define the spread of the Graduated Filter, and release at the point where you want it to finish (the point of minimum effect strength). This allows you to apply linear graduated adjustments between these two points. There is no midtone control with which you can offset a Graduated Filter effect, and there are no further graduation options other than a linear effect. If you hold down the Alt key, "Effect" will change to "Reset." Click on this to reset all the sliders to zero and clear any currently selected color. Or, you can hold down the Alt key and click on an Effect slider name to reset everything *except* that slider setting. You can also double-click slider names to reset them to a zero setting.

Graduated Filter effects are indicated by a pin marker, and you can move a Graduated Filter once it has been applied by clicking and dragging the pin. The parallel lines indicate the spread of the Graduated Filter, and you can change the width of the filter by dragging these outer lines. If you want to edit the angle of a Graduated Filter effect, you can do so by clicking and dragging the middle line.



1. This shows a photograph where I had applied just the main Basic panel adjustments to optimize the highlights, shadows, and contrast.



2. Here, I clicked the Graduated Filter tool to reveal the Graduated Filter options, selected a -0.23 Exposure setting, and dragged diagonally downward to darken the top-left section of the photo.



3. I decided to strengthen the burn effect by boosting the Contrast and setting the Highlights slider to –78.



4. Next, I went to the Temp slider and set this to –5 and increased the Saturation. This made the top section appear bluer in color.



5. Lastly, I added a new Graduated Filter to the bottom half of the picture. Here, I added a lightening Exposure adjustment with negative Highlights.

Radial Filter tool

The Radial Filter ([Shift][M]) is new to Lightroom 5. It allows you to create off-center vignettes and has the same range of options as the Graduated Filter, except you will notice at the bottom of the tool options (Figure 4.113), there is a Feather slider for softening the boundary edge. To apply a Radial Filter adjustment you simply click and drag in the preview image to define a new Radial Filter adjustment. This adds an ellipse shape within a rectangular boundary, and you can drag any of the corner handles to redefine the shape and click and drag on the central pin to reposition it. If you initially hold down the Alt key and drag, this adds a Radial Filter that scales from the anchor point. If you hold down the (Shift) key and drag, this adds a Radial Filter scaled around the center point and constrained to a circle. If you hold down the 🕱 (Mac) or Ctrl (PC) key and double-click anywhere in the preview area, this adds a new adjustment auto-centered within the current (cropped) image frame area. Also, if you (#) (Mac) or [Ctrl] (PC) + double-click an existing radial filter, this will expand it to fill the current cropped image area. Use the (H) shortcut to hide the bounding box. To exit working with the Radial Filter, you can click on the Radial Filter button, use the [Shift][M] shortcut, or double-click on an existing Radial Filter adjustment to apply and dismiss.

By default, a new adjustment is strongest at the center and tapers off smoothly towards the boundary edge, where the adjustment has zero effect. You can switch this around by checking the Invert Mask box just below the Radial Filter adjustments, or use the apostrophe key (⁻). This check box is sticky, so you can configure the tool to your own particular preference. As with all localized adjustments, if you hold down the Att key and click on the pin and drag left and right, you can dynamically modify the current active slider settings to make them increase or decrease in strength. Lastly, you can use **RATE** (Mac) or **CTE** (Att (PC) plus a click or drag to duplicate an existing Radial Filter adjustment.

There are lots of potential uses for this tool. The most obvious example is you can use it to apply more controllable vignette adjustments to darken or lighten the corners. For example, instead of simply lightening or darkening using the Exposure slider, you can use instead, the Highlights or Shadows sliders to achieve more subtle types of adjustments. Or, you might want to adjust the Saturation setting so that either the corners or center of the image appear desaturated, or more saturated.

As with the Graduated Filter, you can add multiple radial filter adjustments to an image. Once added, a Radial Filter adjustment is represented by a pin marker. If you click on a pin this makes it active. You will see the elliptical outline of a Radial Filter adjustment and you can re-edit the adjustment settings.



Figure 4.113 *The Radial Filter tool options.*



1. I opened an image in Lightroom and selected the Radial Filter tool. I pressed $\textcircledtimes (Mac)$, or $\textcircledtimes (PC)$, and double-clicked inside the preview area to add a new adjustment that filled the current frame area from the center pin outward. I set the Exposure slider to -0.45, Clarity to +0.45 and Vibrance -70.



2. I unchecked the Invert Mask box to invert the effect and set the Temp slider to -40. I then adjusted the side handles so that the effect was now centered over the door.

Correcting edge sharpness with the Radial Filter

Another thing the Radial Filter can be useful for is sharpening the edges of a photo. If you are fortunate enough to own decent lenses, edge sharpness shouldn't be a problem, but with lesser optics it does help if you can selectively give the edges an extra sharpen. For example, I recently bought a Sony RX-100 camera, which is a great little compact and shoots raw images, but the edge sharpness isn't as sharp as what I am used to with my regular digital SLR lenses. To address this I have found it helps if I use the Radial Filter to apply a Sharpness adjustment that gains strength from the center outward.

Now, it has to be said that the falloff in sharpness toward the edges is more tangential in nature and a standard/radial sharpening boost isn't the optimum way to sharpen the corner edges. For example, DxO Optics Pro features a special edge-sharpness correction that is built in to its auto-lens corrections. Even so, the following example shows how you can make some improvements using this new feature in Lightroom.

TIP

If you think this technique might be useful, you might want to consider creating a "corner sharpening" preset that can be used to quickly apply to other photos that have been shot with the same lens. In Lightroom it is also possible to save such a setting as a camera default. It wouldn't make sense to do this for a digital SLR because you couldn't make it lens-specific, but it is something that could be applied to, say, a compact camera that had a fixed lens.



1. Here is a photograph that I shot using a Sony RX-100 compact camera. The image quality is very good, though there is a noticeable falloff in sharpness towards the edges of the frame. In this first step, I went to the Detail panel and applied the sharpening settings shown here.



2. Having applied a global sharpening adjustment, I then selected the Radial Filter tool and double-clicked inside the preview area to auto-center the ellipse shape, so that the adjustment effect I was about to apply would taper from the center to the outer edges. I also needed to deselect the Invert Mask box so that the effect was strongest at the outer edges. I then adjusted the Sharpness slider, to apply a +66 adjustment.



3. Here, you can see a comparison of one of the corners of the image where the version on the left shows how the image looked before with the global sharpening only, and on the right, how it looked with additional edge sharpening using the Radial Filter adjustment.

History panel

Every step you apply in the Develop module is recorded as a separate history state in the History panel, which is located just below Presets and Snapshots (Figure 4.115). The History feature in Lightroom has the unique advantage over Photoshop in that the history steps are always saved after you guit Lightroom. You can return a year later to a photo and find that all the history steps are still preserved from the first time you imported the photo to the last thing you ever did to it in Develop. The History panel is therefore useful because it allows you to revert to any previous Develop module setting and access an unlimited number of history states without incurring the efficiency overhead that is normally associated with Photoshop image editing and History. There are several ways you can navigate through a file's history. You can go to the History panel and click to select a history step. This will allow you to jump quickly to a specific state. Or, you can roll the cursor over the list of history states in the History panel to preview them in the Navigator panel and use this to help select the one you are after. Figure 4.114 shows how the History panel looked after I had made a series of Develop adjustments to the image. You'll also notice that the numbers in the middle column show the number of units up or down that the settings were shifted, and the right column lists the new settings values.

V	History		×
	Temperature	-18	-18
	Post-Crop Vignette A	-38	-38
	Black Clipping	-3	-22
	Shadows	-16	-16
	Highlights		-11
	Crop Rectangle		
	Tint	-24	-24
	Contrast		24
	Import (17/11/2011 17:40:01)		

Figure 4.114 In this close-up view of the History panel in Figure 4.115, you can see the original history state that was date stamped at the time of import. The subsequent history states are listed in ascending order. Note that clicking on a history state and editing the image erases all history states subsequent to this.



Figure 4.115 In this example you can see that the steps applied to the image are recorded to the History panel in the order in which they were applied.



Figure 4.116 The Snapshots panel can be used to store saved history steps as variations.

Snapshot Name:	18/04/2013 15:26:01
	Cancel Create
	And a second sec

Figure 4.117 Click on the + button to create a new Snapshot and name it. When you create a new snapshot you're given the option of using a date/time stamp to name the new snapshot.



Figure 4.118 You can use the contextual menu to choose Update with Current Settings.



Figure 4.119 You can use the contextual menu in the History panel to create a snapshot from a selected history state.

You can also select Edit \Rightarrow Undo or use $\Re[\mathbb{Z}]$ (Mac) or $Ctrl[\mathbb{Z}]$ (PC) to undo the last step. As you repeatedly apply an undo, the history steps are removed from the top of the list one by one, but you can restore these steps by choosing Edit \Rightarrow Redo or use the $\Re(2Shift)\mathbb{Z}]$ (Mac) or ($Ctrl(2Shift)\mathbb{Z}]$ (PC) shortcut. However, be warned if you carry out a series of undos in this way and then quit Lightroom, you will not be able to recover these history steps later. Also, if you click to select a specific history step and then adjust any of the Lightroom Develop settings, this too will erase all the previously recorded history steps from that point onward in history. Lastly, if you click the Clear button in the History panel, you can delete all the history steps currently associated with that photo. Clearing the history can be useful if the number of history steps is getting out of control and you need to manage the history list better.

Snapshots panel

Another way to manage your history states is to use the Snapshots feature. Snapshots can be used to store specific history states as a saved image setting (**Figure 4.116**). It is often more convenient to use the Snapshots panel to save specific history states, as this can make it easier for you to retrieve history states that are of particular importance or usefulness, instead of having to wade through a long list of previously recorded history states from the History panel. Note you can use the contextual menu shown in **Figure 4.119** to create a snapshot from a selected history state.

To use the Snapshots feature, select a history state that you want to record as a snapshot and click the plus button in the Snapshots panel. This creates a new snapshot, which gives you the option of using a date/time stamp as the name for the new snapshot. If you like, you can rename the snapshot using a descriptive term instead and click Create to confirm (see **Figure 4.117**). Snapshots are always arranged alphabetically in the Snapshots panel, and the preview in the Navigator panel will update as you roll the mouse over the snapshots in the list. To load a snapshot, simply click on the snapshot to select it. If you want to update the settings for a particular snapshot, you can do so via the contextual menu: right-click on a snapshot and select "Update with Current Settings" (**Figure 4.118**). This updates a snapshot with the current history state. You can therefore use the Snapshots panel to save multiple variations of a master photo, such as a color-enhanced or a different process version edited version of the original (**Figure 4.120**). To delete a snapshot, just click the minus button.

The Sync Snapshots command in the Develop module Settings menu (see page 337) is particularly useful for updating previously created snapshots with new settings. For example, if you have just spent some time removing blemishes or cropped an image, it can be handy to use the Sync Snapshots command to update the Spot Removal and Crop settings across all the previously created snapshots (see the following section).



Figure 4.120 In the top screenshot, I saved a snapshot of the image using the Process 2010 settings. I then updated the image to Process 2012. Once I had fine-tuned the settings for the new process version, I saved this as another new snapshot.

How to synchronize snapshots



1. In this example the current Develop settings were saved as a new snapshot.



2. I continued editing the photo and saved a new color-enhanced snapshot. However, this snapshot now included a lot of spotting work that had been carried out since saving the earlier snapshot.



3. Having made changes to the Develop settings, I now wished to update the remaining snapshots. I went to the Settings menu and chose Sync Snapshots.

White Balance Basic Tone Contrast Highlights Shadows White Clipping Black Clipping Clarity Sharpening		 Lens Corrections Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Effects Post-Crop Vignetting Grain ✓ Process Version Calibration 	Spot Removal
eck All Check No	one	(Cancel Synchroniz

4. This opens the Synchronize Settings dialog. Here, I made sure that only the Spot Removal option was checked and clicked Synchronize to update all the other snapshots in the Snapshots panel with the most recent Spot Removal settings.



Figure 4.121 Virtual copy images are automatically stacked with the master file. When viewing the Library Grid view or Filmstrip, you can tell which images are virtual copies by the turned-page badge in the bottom-left corner.

Easing the workflow Making virtual copies

In addition to making snapshot versions, you can create virtual copies of your master photos by going to the Library module and choosing Photo \Rightarrow Create Virtual Copy (\mathbb{B}^{+} [Mac]) or (\mathbb{Ctrl}^{+} [PC]). This creates a virtual copy version of the master image that is automatically grouped in a stack with the master photo (see **Figures 4.121** and **4.122**). As the name suggests, you are making a proxy version of the master. It may look and behave like a separate photo, but it is in fact a virtual representation of the original master and you can continue to edit it in Lightroom as if it were a normal image.

So what is the difference between a virtual copy and a snapshot? Well, a snapshot is a saved history state that's a variation of the master. You have the advantage of being able to synchronize specific edit adjustments across all the snapshot versions but lack the potential to create multiple versions as distinct entities that behave as if they were actual copies of the original. A virtual copy is therefore like an independent snapshot image, because when you create a virtual copy, you have more freedom to apply different types of edits and preview these edits as separate image versions. You could, for example, create various black-and-white renderings and experiment with alternative crops on each virtual copy version. Figure 4.123 shows how you might use the Compare view mode to compare virtual copy versions of a photo alongside the master version (or you could use the Survey view to compare multiple versions at once). Virtual copies also make it possible for you to create collections that have different settings. For example, you can use the Create Virtual Copy command to create black-and-white versions as well as colorized versions from a master image, and then segregate these virtual copies into separate collections.

You also have the freedom to modify the metadata in individual virtual copy images. For example, you may want to modify and remove certain metadata from a virtual copy version so that when you create an export from the virtual copy, you can control which metadata items are visible in the exported file. Let's say you are running a location scouting service and send out images to clients that show the properties you recommend as photographic locations. You would normally store all the relevant metadata about the location such as the address and zip code, but you would want to remove such commercially sensitive information when distributing these photos to prospective clients.

Making a virtual copy the new master

Once you have created one or more virtual copies, you can then choose the Photo \Rightarrow Set Copy as Master command to make any virtual copy version of an image become the new master version (and make the old master version become a virtual copy).



Figure 4.122 As you make new virtual copies of a master file, these are automatically stacked with the original master image.



Figure 4.123 One of the advantages of having virtual copy versions of a master file is that you can explore applying different Develop settings and compare these against the original master.



Figure 4.124 When more than one photo is selected via the Filmstrip, clicking the Sync button (top) lets you synchronize images in that selection via the Synchronize Settings dialog. When you hold down the Alt key, the ellipsis disappears (middle), and clicking this button bypasses the Synchronize Settings dialog and uses the last used Synchronize settings to synchronize the selected photos. Finally, you can hold down the Ext key (Mac) or Cttl key (PC) to switch to the Auto Sync mode (bottom).

NOTE

Whenever you choose to synchronize the develop settings, Lightroom checks the process version status of the most selected image when deciding what to do. If the Process Version box is checked, it applies the process version of the most selected photo to all the other photos (if the selected photos already share the same process version as the most selected photo, no conversion needs to take place). If the Process Version box isn't checked, things can become more unpredictable. In this situation the process version will not be referenced when making a synchronization. Therefore, if you attempt to synchronize Process 2003 settings to Process 2012 images, settings like Recovery or Fill Light won't be translated. Similarly, if you try to synchronize a Process 2012 image to Process 2003/2010 photos, adjustments such as Highlights and Shadows won't be recognized either.

Synchronizing Develop settings

Now that we have covered all the main Develop controls, let's now look at ways the Develop settings can be applied to multiple images. Whenever you have a selection of images active, the Previous button changes to show Sync (Figure 4.124). Clicking this button allows you to synchronize the develop settings across two or more photos, based on the settings in the target (most selected) photo. In Figure 4.125, a number of photos had been selected in the Filmstrip and if I were to click the Sync button, this would open the Synchronize Settings dialog shown in Figure 4.126, where I can decide which settings are to be synchronized. Or, you can use the 黑合shift(S) (Mac) or [Ctrl 公Shift(S) (PC) keyboard shortcut to open this dialog. If you click Check All, everything will be checked. If you click Check None, you can then choose any subset of synchronization settings. Whether you choose to save everything or just a subset of settings, this will have important consequences for how the photos are synchronized. If you choose Check All, everything in the selected image will be synchronized. In some cases this might well be the easiest and most practical option. But you won't necessarily always want to synchronize everything across all the selected photos. Sometimes you need to think carefully about which specific settings you should synchronize. If not, you may end up overwriting settings that should have been left as they were (although you can always recover a previous image version via the History panel on an image-by-image basis). For example, if your imported photos have the Camera Default settings applied for Sharpening, Noise Reduction, and Calibration, you will want to be careful not to overwrite these settings. The sync behavior can also be critically affected by the process version of the most selected and other photos (see sidebar). Note that if you hold down the Alt key, the Sync button loses the ellipsis, and clicking the button now bypasses the Synchronize Settings dialog and applies a synchronization based on the last used Synchronize settings. Also in this mode you'll see a Set Default button. This allows you to set the current Develop settings as the new default settings for files shot with this particular camera plus this specific serial number and ISO setting. Note that what gets set here all depends on how the preferences have been configured (see page 357).

Auto Sync mode

If you 🗷 -click (Mac) or Ctrl -click (PC) the Sync button, it switches to Auto Sync mode and stays as such until you click the Auto Sync button to revert back to Sync mode again. You will notice there is a switch next to the left of these buttons. Clicking this has the same effect as switching you to Auto Sync mode, or you can use the 🕱 Shift (Alt (A) (Mac) or (Ctrl (Shift (Alt (A) (PC) keyboard shortcut. In Auto Sync mode you first make a selection of photos, and as you adjust the Develop settings for the most selected image, you'll see these adjustments propagated across all the images in the selection. Auto Sync therefore behaves a bit like a Quick Develop panel mode for the Develop module. Lastly, there is the Reset button, which can be used to reset photos back to their Lightroom default settings.



Figure 4.125 The Develop settings in the most selected photo can be synchronized with all the other photos in a selection by clicking the Sync button. The selected photos in the Filmstrip are indicated with a light gray surround, and the most selected photo is the one with the lightest gray color (and also the one displayed in the preview).

White Balance	Treatment (Color)	Lens Corrections	Spot Removal
Basic Tone Exposure Exposure Contrast Highlights Highlights White Clipping Flack Clipping Contract Clarity Sharpening Sharpening	 ✓ Color ✓ Saturation ✓ Vibrance ✓ Color Adjustments ✓ Split Toning ✓ Local Adjustments ✓ Brush ✓ Graduated Filters ✓ Radial Filters ✓ Noise Reduction ✓ Color 	Lens Profile Corrections Chromatic Aberration Upright Mode Upright Mode Transform Lens Vignetting Fracts Post-Crop Vignetting Post-Crop Vignetting Process Version Calibration	Crop Straighten Angle Aspect Ratio

Figure 4.126 In the Synchronize Settings dialog, use the Check All settings option with caution, since synchronizing everything may overwrite important Develop settings in the selected photos.

TIP

When clicking the Check All button you may want to think carefully about synchronizing things like the local adjustments and Spot Removal settings. For example, synchronizing the Spot Removal settings could be beneficial if you are syncing a selection of matching shots in which you want to remove sensor dust marks that always appear in the same spot and the individual pictures don't vary too much. But if all the pictures are shots of different subjects, sharing the Spot Removal settings would just create a big mess (in addition to overwriting any spotting work you had done already).

TIP

Instead of opening your images in Photoshop, you can always consider purchasing Adobe Photoshop Elements as a companion application to Lightroom. Elements contains nearly all the features found in Photoshop and uses the same underlying image-processing engine. The main limitation is that you can't edit or convert files to CMYK. As regards the raw processing, the latest version of Elements will include the latest version of Camera Raw. So if a Photoshop purchase or upgrade seems out of reach, you might want to consider Elements as an alternative.

Lightroom and Camera Raw

As you are probably aware, Adobe Photoshop Lightroom and Adobe Camera Raw (as part of the Adobe Photoshop program) both share the same Camera Raw processing engine. This means any development adjustments that are applied in one program can be recognized and read by the other. However, there are a few things you need to bear in mind here. Camera Raw development is linked to specific versions of Photoshop. As of this writing, I anticipate that the launch of Lightroom 5.0 will coincide with a Camera Raw 8.1 update for Photoshop CS6 and CC. This version will work in both programs. In Photoshop CC, it offers full compatibility with Lightroom 5. When installed in Photoshop CS6, it allows CS6 users to open images that have been processed in Lightroom 5 which contain new style edits, such as Upright adjustments. But you won't be able to edit these particular settings; Photoshop CS6 and Camera Raw 8.1 will just open them. To access the latest version of Camera Raw for Photoshop and Bridge, go to the Adobe website: www.adobe.com/products/photoshop/extend.html.

Meanwhile, Photoshop CS5 users will have been provided with a Camera Raw 6.7 update. Now, although this version of Camera Raw has the ability to read Process 2012 edits, no further functionality has been added. Camera Raw 6.7 will be able to read Process 2012 files edited in Lightroom 4, but you won't be able to edit the Basic panel settings or other settings that were new to Lightroom 4. It will also be able to read Lightroom 5 edited files, but with even more restrictions, such as the inability to read Upright adjustments.

If we return now to the current Lightroom/Photoshop status, if you want Camera Raw to allow the same full editing as you have in Lightroom 5, you will at some point need to upgrade to Photoshop CC. However, the Camera Raw 8.1 update does offer some limited compatibility between the two programs.

Viewing Lightroom edits in Camera Raw

The main point to remember is to always save the metadata edits out to the files' XMP space if you need Camera Raw to read the develop adjustments that have been applied in Lightroom. If you don't do this, the edit changes you make in Lightroom cannot be read by Camera Raw (but do take note of the above points regarding Camera Raw and Lightroom compatibility).

Viewing Camera Raw edits in Lightroom

If you want your Camera Raw edits to be visible in Lightroom, you need to make sure that the image adjustments applied in Camera Raw are also saved to the file's XMP space. To do this, launch Photoshop and choose Photoshop \Rightarrow Preferences \Rightarrow Camera Raw. This opens the dialog shown in **Figure 4.127**, where you need to select "Sidecar '.xmp' files" from the "Save image settings in" menu.

General	Camera Raw database	OK
Save image settings in	/ Sidecar ".xmp" files	Cancel
Apply sharpening to:	All images ‡	
Default Image Settings		
Apply auto tone adju	stments	
Apply auto grayscale	mix when converting to grayscale	

Figure 4.127 To keep the Camera Raw edits in sync with Lightroom, you need to make sure that the Camera Raw settings are always saved to the sidecar .xmp files.

Keeping Lightroom edits in sync

If Lightroom detects that a file's metadata has been edited externally, it should display a metadata status conflict warning badge in the thumbnail cell (**Figure 4.128**). Clicking this badge opens the dialog shown in **Figure 4.129**. If you see no warning but have good reason to believe that the metadata has been updated, then choose Metadata \Rightarrow Read Metadata from files (in the Library module), or Photo \Rightarrow Read Metadata from file (in the Develop module). Alternatively, choose Library \Rightarrow Synchronize Folder (**Figure 4.130**). The Synchronize Folder command also runs a quick check to make sure that everything is in sync between Lightroom and any edit changes that may have been applied externally.



Figure 4.129 The metadata status change warning dialog.



Figure 4.130 The Synchronize Folder command can run a quick scan for updates.



Figure 4.128 When there is a metadata status conflict due to a photo's metadata having been edited externally, you'll see an exclamation point or upward-arrow badge warning. This is assuming that you have the Unsaved Metadata option checked in the Library View options: Grid View Cell icons section (see page 116).

NOTE

If the Unsaved Metadata option is checked in the Library module Library View Options: Grid View Cell icons section and you have unsaved metadata changes in Lightroom, you will see a downward arrow in the top-right corner. If you have unsaved metadata changes in Lightroom and you also make external metadata changes, you will see an exclamation point. If the metadata is up-to-date in Lightroom and you make external changes, you will see an upward arrow.

Synchronizing Lightroom with Camera Raw



1. This shows a simple illustration of how to keep a set of photos in sync when switching between Lightroom and Camera Raw. Here is a selection of photos in Lightroom that, so far, have only had the default settings applied.



2. I opened the same photo selection in Camera Raw, optimized the settings, and synchronized them across all the selected photos.



3. When I returned to Lightroom, the "out-of-sync" photos displayed a metadata status change warning icon with an exclamation mark. This indicated a metadata conflict. I clicked the warning icon and then clicked the Import Settings from Disk button to import the Camera Raw adjusted settings into Lightroom.

TIP

If you don't see a metadata status warning where there should be (this can happen), then choose Metadata ⇔ Read metadata from file.



4. The externally adjusted settings now appeared updated in Lightroom.



Figure 4.131 The Copy and Paste buttons are located in the bottom-left section of the Develop module.

NOTE

Whenever you copy the develop settings, Lightroom utilizes the Basic panel settings associated with the process version of the selected image, and Lightroom will automatically want to include the process version of the image in the copy settings. You can override this by disabling the Process Version box, but see the sidebar on page 340 for information about how Lightroom handles process version conflicts that might arise when the process version of the image you are pasting to doesn't match that of the image you copied the settings from.

NOTE

Applying any of the default, shipping Lightroom presets will automatically update a photo to Process 2012.

Copying and pasting develop settings

Another way to synchronize images is to copy and paste the develop settings from one photo to another using the Copy and Paste buttons in the Develop module (**Figure 4.131**). Alternatively, select a photo from the Library Grid or Filmstrip and use 😹 (Shift) (Mac) or (Ctrl (Shift) (PC) to copy the settings. This opens the Copy Settings dialog shown in **Figure 4.132**, which allows you to specify the settings that you want to copy. Note that if you (Alt)-click the Copy button, you can bypass this Copy Settings dialog completely. So if you had previously clicked the Check All button to check all the settings in the Copy Settings dialog, (Alt)-clicking the Copy button copies all settings without showing the dialog. Once you have copied the develop settings, you can select a photo or a selection of photos via the Library module Grid view or Filmstrip and click the Paste button to apply the current copied settings (or use the ﷺ (Shift) (Mac] or (Ctrl (Shift) (V) [PC] shortcut).





Applying a previous develop setting

As you navigate the Filmstrip, Lightroom temporarily stores the develop settings for each photo you click on and thereby allows you to apply a previous develop setting to any photo. Note that when applying a previous develop setting there is no Copy Settings dialog. This is because a Previous setting simply applies all the develop settings from the previously selected photo. You can also use the \Re Alt V (Mac) or Ctrl Alt V (PC) shortcut to apply a previous setting.

If more than one photo is selected in the Filmstrip, the Previous button will change to Sync. If you wish to override this behavior you can do so by holding down the Shift key, which reverts the button to the previous mode of operation. Lightroom then applies a copy of all the settings from the previously selected photo to the selected photos.



1. Whenever you select a photo in the Filmstrip, Lightroom automatically stores the Develop settings as a Copy All setting.



2. If you then select another photo in the Filmstrip and click the Previous button, this pastes *all* the Develop settings from the previously selected photo.



Figure 4.133 As you roll the cursor over the Presets list, the Navigator updates to show a quick preview of how the Preset settings will affect the image. You can update existing settings by holding down the Ctrl key (Mac) or right-clicking (PC) to reveal a contextual menu for the presets (which also allows you to select a preset to apply in the Import dialog for the next time you do an import). Choose Delete or click the minus button to remove a selected preset from the list.

Saving Develop settings as presets

Copying and applying settings is useful in the short term, but if you create a setting that you are likely to reuse again, it is a good idea to save it as a preset. Figure 4.133 shows an expanded view of the Develop module Presets panel in which you can see a list of custom preset settings. The Lightroom Presets folder is installed with Lightroom and has enough presets to help get you started, but you can add your own presets by clicking the plus button at the top of the Presets panel. This opens the New Develop Preset dialog shown in Figure 4.134, where you can choose which settings you want to include in the preset. When you have decided which settings to check, give the preset a name, choose a folder location to save the preset to, and click the Create button to add it as a new preset to the list. This can be useful for all sorts of reasons. For example, it is a tedious process accessing the different camera profiles listed in the Camera Calibration panel Profile drop-down menu. Rather than click through each one to see what effect it has, why not create a Develop preset in which only the calibration setting is saved for each profile option? Do this and as you roll the mouse over the list of presets you get to see an instant preview in the Navigator panel, as shown in Figure 4.133.

Auto Settings Split Toning Auto Settings Tone Adjustments Video effects Dw User Presets Enes Frofile Corrections Basic Tone Color Coloration Dyright Mode Coloration Dyright Mode Staturation Dyright Mode Basic Tone Color Adjustments Coloration Dyright Mode Staturation Dyright Mode White Clipping Solit Toning Basic Clipping Color Adjusterets Tone Curve Radial Filters Color Color Clarity Noise Reduction Sharpening Color Presets that do not specify a process version may produce different visual results in future versions of Lightroom.	Preset Name	Camera C Camera p Default si HSL Black HSL Hue S Imported LRSbook Lightroon Process V Reset fold	alibration resets ettings & White Shifts Presets n BW Presets n General Presets ersions Jer	
White Balance Treatment (Color) Lens Corrections Basic Tone Color Chromatic Aberration Contrast Vibrance Upright Mode Highlights Color Adjustments Upright Transforms Shadows Split Toning Effects Black Clipping Graduated Filters Grain Clarity Noise Reduction Process Version Sharpening Color Calibration	Auto Settings	Split Toni Tone Adji Video effe bw User Pres	ng ustments eets ets	
	White Balk Basic Ton Expoi Contr Highl Shade Black Tone Cur Clarity Sharpenir Presets th versions of	ance e uure ast ghts wws Clipping Clipping Ve ve ng hat do not spi of Lightroom.	Treatment (Color) Color Saturation Vibrance Color Adjustments Split Toning Graduated Filters Roise Reduction Color Color Split Toning Color Col	Lens Corrections Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Grain Process Version Calibration calibration califferent visual results in future

Figure 4.134 In the New Develop Preset dialog, check the items you want to include in a preset, give the preset a name, and decide which folder to save the preset to. The process version of the current selected photo determines which Basic panel adjustments are displayed here. Note also the process version warning. It is important to appreciate how process versions affect the available settings and subsequent preset behavior.

Lightroom provides you with several preset folders containing some presets to get you started. By default, new presets are automatically placed in a folder called *User Presets*. But if you prefer, you can organize your presets into different folder groupings. For example, in **Figure 4.135** I added a number of preset folders that always appear listed in alphabetical order in the Presets panel. To add a new folder to the Presets list, right-click anywhere inside the Presets folder to open a contextual menu like the one shown in Figure 4.135, and choose New Folder, which opens a New Folder dialog. Give the folder a name and it will appear added to the Presets list. You can now organize your presets by dragging them into the folders that you have just created.

Auto Tone preset adjustments

The Auto Tone option is potentially useful for those times when you want to include an Auto Tone adjustment as part of a preset. In some instances this might be considered useful, because you can get Lightroom to combine an auto correction in combination with other types of Develop adjustments. On the other hand, because it can lead to different tone settings being applied to each image, this might not always produce the results you were after (even though the Auto Tone logic has continually been improved in Lightroom). So just be aware of this when you include Auto Tone in a saved Develop preset setting; the results you get may sometimes be unpredictable.

The art of creating Develop presets

Lightroom Develop presets have proved incredibly popular. Lots of Lightroom users have gotten into sharing their preset creations. While it is possible to encapsulate a complete Develop module look in a single preset, it seems to me that the best way to use Develop presets is to break them down into smaller chunks. In my experience the trick is to save as few settings as possible when you create a new one. What we often see are Develop presets where the creator checks too many boxes and ends up with a preset that adjusts not just the settings it needs to adjust, but other settings, too. In many cases it is not always obvious which settings a Develop setting is meant to be altering, and applying the preset may overwrite settings that it shouldn't. Or, the creator includes White Balance or Exposure settings that may have been relevant for the pictures the creator used to test the develop setting with, but are not necessarily suited for other people's photographs (in the following section I have provided a guick guide on how to create neatly trimmed develop presets). More important, the new Process 2012 has had a significant impact on Develop preset compatibility. However, if you apply a legacy preset to a Process 2012 image, the absence of a process version tag should mean such settings still translate okay to a Process 2012 image (except for those settings that are specific to Process 2003/2010, such as Fill Light). In Figure 4.134, where the Process Version box has been deliberately unchecked there is a reminder that you should include the process version when saving new settings.



Figure 4.135 You can use the contextual menu to import new presets. If you have been sent a Develop preset or have just downloaded one, use the contextual menu shown here to select Import and then locate the preset (or presets) you wish to add. You can also use the above contextual menu to add a new folder to the Presets list.

NOTE

If the Process Version box is checked when you save a preset, the process version is included when applying the preset to other images. If the photos you apply a preset to share the same process version, no conversion will take place, but if they don't share the same process version they will have to be converted.

If the Process Version box isn't checked when you create a preset things become more unpredictable. In this situation the process version will not be referenced when applying the preset. Therefore, if you apply a Process 2003 preset to a Process 2012 image, settings such as Recovery or Fill Light won't be translated. Similarly, if you apply a Process 2012 preset to a Process 2003/2010 photo, settings like Highlights and Shadows won't be recognized either.

Creating a new Develop preset



1. Here is a photograph that I had adjusted in the Develop module, where I wanted to save the current Develop settings as a new preset.

TIP

If you are looking for inspiration, visit Richard Earney's Inside Lightroom site where there are many different presets that you can download and import into the Develop Presets panel: http://inside-lightroom.com/.

reset name.	Muteu coi	or contrast	
Folder:	Special et	ffects	:
Auto Settings			
🗌 Auto To	ne		
Settings			
 White Bal Basic Tor Expo Contin Highl Shad White Black Tone Cur Clarity Sharpeni 	lance sure rast ights ows clipping Clipping rve	Treatment (Color) Saturation Saturation Vibrance Color Adjustments Split Toning Graduated Filters Radial Filters Luminance Color	Lens Corrections Lens Profile Corrections Chromatic Aberration Upright Mode Upright Transforms Transform Lens Vignetting Effects S Post-Crop Vignetting Grain Process Version Calibration
Check All	Check No	one	Cancel Create

2. I clicked the Presets panel's plus icon to open the New Develop Preset dialog and checked only those settings that were relevant for this effect. I named this preset setting Muted Color Contrast and saved it to the *Special effects* folder.

Understanding how presets work

Even with a Develop setting like the one described opposite and discussed in **Figure 4.136**, it can get confusing. A Develop preset like this is doing several things at once. It is boosting the contrast, reducing the color vibrance, and applying a splittone color effect. Incorporating all these Develop adjustments into one preset has its disadvantages and can lead to messy situations like that described in **Figure 4.137**.

TIP

A safe way to work with Develop presets is to apply a preset and then use (#)Z (Mac) or Ctrl Z (PC) to undo it before trying out another one.



Figure 4.136 This chart summarizes the outcome of the "Muted color contrast" Develop preset adjustment. In the Final settings row, the green tick marks represent the settings that were adjusted in the original image version and that remained unaltered afterward. The black tick marks represent those settings that are new and have been changed. This illustrates what can be regarded as a "clean" preset—it only adjusts the settings that need to be adjusted. Note that the process version didn't change, as the preset process version matched that of the image.

	Auto Tone	White Balance	Exposure	Contrast	Highlights	Shadows	White Clipping	Black clipping	Tone Curve	Clarity	Saturation	Vibrance	Color adjustments	Split Toning	Sharpening	Noise reduction	Black & White	Lens corrections	Effects	Process version	Calibration
Start settings		~	~	~	~	~	~	~	~			v								v	~
Muted color contrast									~			V		V					~	v	
Split tone effect														V						v	
Infrared color effect		r					~		~	~				r			r			v	
Final settings		r	~	~	~	~	r	~	r	r		•		r			r		~	v	•

Figure 4.137 This chart shows you what can happen when you apply a series of Develop presets. In the Final settings row, the green tick marks represent the settings that were adjusted in the original image and remained unaltered at the end. The black tick marks again represent the settings that are new or have been changed. However, the red tick marks represent the settings that have changed cumulatively during the process of trying out different Develop presets (but which were not meant to part of the last applied preset). This highlights the fact that when the "Infrared color effect" was applied as a develop setting, some of the other develop settings (that were not part of the "Infrared color effect") had already been altered by the previously applied Develop presets.

NOTE

The preset names must be unique. You can't have two separate presets called "Cool tone," stored in separate folders.

Preventing preset contamination

As I mentioned earlier, one way I like to work with presets is to trim them down so that each preset performs a discrete task, such as a black-and-white conversion or a split-tone coloring effect. That way I find I have more options to combine different settings and prevent getting into a situation like the one shown in Figure 4.137 where the end result was a contaminated mess. For example, I may apply one preset to modify the contrast and another preset to apply a coloring effect. I then keep these stored in separate preset folders so that it is easy for me to locate all the presets that can be used for applying different black-and-white conversions or cross-processing effects. The **Figure 4.138** chart summarizes the steps that are described over the next few pages. You will notice how I added a series of presets to build a combined effect. Therefore, when applying different split-tone effects I can click on each of the presets in turn to see a full-screen view of what the end result will look like, without fear of messing up any of the settings that have been applied already.

	Auto Tone	White Balance	Exposure	Contrast	Highlights	Shadows	White Clipping	Black clipping	Tone Curve	Clarity	Saturation	Vibrance	Color adjustments	Split Toning	Sharpening	Noise reduction	Black & White	Lens corrections	Effects	Process version	Calibration
Start settings		~	~	v	~	×	~		×	×	~	~	~							v	v
Light contrast									r											v	
SFX-Cool tone													~	~						v	
*RESET Special Effects										x	×	x	x	×				x	x	v	x
Black & White infrared		~					r		r	r							V			V	
Sepia split tone														~						v	
Cool tone														~						v	
Burn Corners																			r	v	
Final settings			~	v	~	V	~				v	~	×	4			v		V	×	V

Figure 4.138 The alternative approach is to break the Develop presets down into smaller chunks so that you apply a sequence of Develop presets to build an effect. This chart summarizes the series of Develop preset steps that are applied in the step-by-step example that begins on the opposite page. The final setting does include lots of red tick marks where the settings have changed cumulatively, but this does not matter as much as in the Figure 4.137 example because the whole point is to build the settings up one step at a time. You will notice that I included here a *RESET Special Effects step. This preset is designed to cancel out previous preset settings and therefore acts like a "clear settings" button. To illustrate this I have used crosses to indicate that these items are returned to their default settings (the Process Version box must always be checked, though).



1. To begin I tried some tone adjustment presets and selected a Light Contrast tone curve preset to apply a moderate contrast boost to the original color version of this image.



2. I also wanted to try some special effect coloring presets, so I selected an "SFX-Cold tone" preset from my *Effects* preset folder. Should I wish to reset the preset settings used here and move on to try something different, I have included a RESET setting in each folder that I can use to reset the relevant sliders to zero.



3. After resetting the "Cold tone" preset, I applied a B&W Infrared preset to see what this preset setting would do to the image.



4. Next, I went to the *Split Toning* folder to try different split-tone presets. Here, I selected the ST-Sepia split-tone effect.



5. In the end, I opted for the "ST-cool tone" Split Tone preset and finished off by adding a Burn Corners preset from the Tone Adjustments folder.

Resetting the Develop preset settings

I will end this section by elaborating a little more on the use of the reset preset settings such as the one referred to in Step 2. With the Develop preset folder structure I use here, I have added a preset to each folder that is named "*RESET." This is a preset setting that undoes any of the presets that have been applied in that particular folder. In the case of the *Black & White* folder, I have a preset called "*RESET black & white" that switches from B&W to Color mode. I created it by selecting a photo in color mode and created a new preset in which I checked only the Treatment (Color) check box (as shown in **Figure 4.139**). For all the other preset folders I similarly created presets such as a **RESET Split Tone* setting that uses zero Split Tone Saturation settings. The naming of these presets isn't critical; I prefer to use all caps so that the reset preset stand out more and I place an asterisk at the beginning of the name so that the reset preset always appears listed first in each of the preset folders.

Don't forget you can also use the **B C** Shift **R** (Mac) or **C**trl **C** Shift **R** (PC) shortcut to reset all the develop settings.

Folder:	Lightroor	n BW Presets
Auto Settings		
🗌 Auto Ton	e	
Settings		
🗌 White Bala	nce	Treatment (Color)
Basic Tone Exposit Contra Highlig Shado White Black (t ure ist ghts ws Clipping Clipping	Color Saturation Vibrance Color Adjustment Split Toning Graduated Filters
Tone Curv	e	Radial Filters
Clarity	g	 Noise Reduction Luminance Color

Figure 4.139 Here is an example of a preset that I created for converting a B&W setting back to Color mode again. To do this, select any image that is in Color mode and save a preset with the Treatment (Color) box checked.

TIP

I generally prefer to save the camera default settings as shown here because it tends to work well for the cameras and lenses I shoot with. However, be warned that including Enable Profile Corrections in the Lens Corrections panel may cause incorrect profiles to be applied to some lenses. Also bear in mind the performance hit incurred when lens profile corrections are included.

Creating default camera develop settings

If while you are working in the Develop module, you create a develop setting that you feel is suited to the processing requirements of a particular camera, you can go to the Develop module Develop menu and choose Set Default Settings. This opens the New Develop Preset dialog shown in Step 3, where you can click the "Update to Current Settings" button to update the default settings for the camera model listed in the same dialog. But if at the same time you have "Make defaults specific to camera serial number" and "Make defaults specific to camera ISO setting" checked in the Lightroom Presets preferences, clicking "Update to Current Settings" will make the default setting specific to the camera serial number and ISO setting. The combination of the Set Default Settings and Default Develop Settings preferences allows you to establish the default settings that are applied to all newly imported photos.



1. To create a default camera preset setting, first select a photo shot with a particular camera that is representative of how the camera performs at specific ISO setting. Then work on the photo in the Develop module to achieve the optimum sharpness and noise reduction to use as a suitable starting point for future image editing. In the Lens Corrections panel I recommend checking Enable Profile Corrections and Remove Chromatic Aberrations. In the Camera Calibration panel I suggest checking to make sure that the Process Version is set to 2012 and the Adobe Standard profile is selected (which is the default setting anyway for newly imported photos—just make sure you don't override this). In all the other panels it is essential that the sliders are at their default settings. This is especially important in the Basic panel, where the White Balance setting should be left set to As Shot.

	General Prosess External Ed	iting File Handling Interface
Default Develop	Settings	
Apply au	to tone adjustments	
Apply au	to mix when first converting to black and	white
🗹 Make de	faults specific to camera serial number	
🗹 Make de	faults specific to camera ISO setting	
	Reset all default	Develop settings
Location		
Store pre	esets with this catalog	Show Lightroom Presets Folder
Lightroom Defau	lts	
	Restore Export Presets	Restore Keyword Set Presets
	Restore Filename Templates	Restore Text Templates
	Restore Library Filter Presets	Restore Color Label Presets
	Restore Auto Layout Presets	Restore Text Style Presets
	Restore Local Ad	justment Presets

2. Go to the Lightroom Presets preferences (ﷺ, [Mac] or Ctrl,, [PC]) and make sure that "Make defaults specific to camera ISO setting" is checked. It is important that you do this before proceeding to the next step. You can also check "Make defaults specific to camera serial number" if you want the settings to be camera body specific.

	Change the default settings used by Lightroom and Camera Raw for
Г	negative files with the following properties?
	Model: Hasselblad 31-Coated
_	ISO Speed Rating: ISO 100
	Please note that these changes are not undoable.

3. Now go back to the photo you worked on in Step 1 and choose Develop \Rightarrow Set Default Settings. This opens the dialog shown here, where you need to click the "Update to Current Settings" button. Do this and Lightroom will automatically make this the default setting for all newly imported photos that match the same criteria of matching camera model, serial number, and ISO setting. But remember that you have only created what amounts to a default setting. If you were to choose a specific setting in the Import Photo dialog, or later apply a develop preset that included Detail, Lens Corrections, or Calibration panel subsettings, these would override the camera default settings.

TIP

Very often you will find that as you import pictures from a particular camera shot at a certain ISO speed, you end up needing to apply the same develop settings. For example, if you shoot with more than one digital camera you may want to create a custom camera calibration setting for each separate camera body. In addition to this, you may want to set different levels of noise reduction for specific ISO settings. You can do all this by creating camera default settings.

NOTE

When Camera Default settings are applied to a photo there will be no badge on thumbnail to indicate it contains edits. This is because Lightroom now treats the edits as default values. While the above may seem obvious, many users are confused by the lack of a badge, and others even more confused when an image looks totally different to what they had expected. Typically, people forget that they changed the default or didn't realize that they had done so.

Photograph: Altnafeadh, Ballachulish, Scotland © Martin Evening 2011 Hasselblad H4D | 28 mm | 50 ISQ | f22.0 @ 1/8th

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