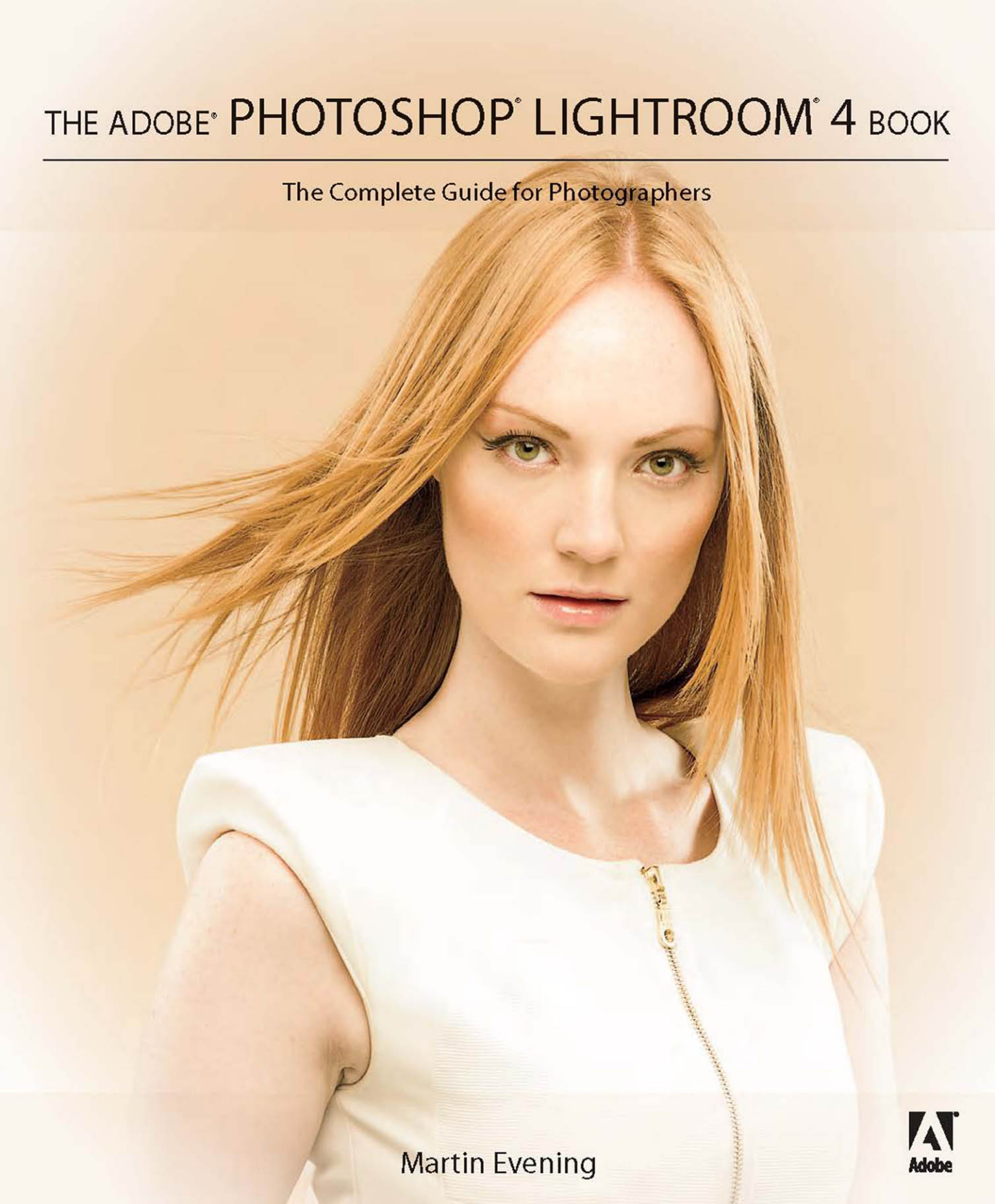
THE ADOBE® PHOTOSHOP® LIGHTROOM® 4 BOOK

The Complete Guide for Photographers



Martin Evening

Adobe

The Adobe® Photoshop® Lightroom® 4 Book

The Complete Guide for Photographers

Martin Evening

ADOBE PRESS

Adobe

The Adobe® Photoshop® Lightroom® 4 Book

The Complete Guide for Photographers

Martin Evening

This Adobe Press book is published by Peachpit.

Peachpit

1249 Eighth Street

Berkeley, CA 94710

510/524-2178

510/524-2221 (fax)

Peachpit is a division of Pearson Education.

Find us on the Web at: www.adobepress.com

To report errors, please send a note to: errata@peachpit.com

Copyright © 2012 by Martin Evening

Editor: Rebecca Gulick
Production Editor: Lisa Brazieal
Copy Editor: Elizabeth Kuball
Technical Reviewer: Ian Lyons
Cover Design: Charlene Charles-Will
Cover Photo: Martin Evening
Compositors: Martin Evening with David Van Ness
Indexer: James Minkin

Notice of Rights

All rights reserved. No part of this book may be reproduced or transmitted in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. For information on getting permission for reprints and excerpts, contact permissions@peachpit.com.

Notice of Liability

The information in this book is distributed on an "As Is" basis without warranty. While every precaution has been taken in the preparation of the book, neither the author nor Peachpit shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the instructions contained in this book or by the computer software and hardware products described in it.

Trademarks

Adobe, Lightroom, and Photoshop are registered trademarks of Adobe Systems Incorporated in the United States and/or other countries. All other trademarks are the property of their respective owners.

Many of the designations used by manufacturers and sellers to distinguish their products are claimed as trademarks. Where those designations appear in this book, and Peachpit was aware of a trademark claim, the designations appear as requested by the owner of the trademark. All other product names and services identified throughout this book are used in editorial fashion only and for the benefit of such companies with no intention of infringement of the trademark. No such use, or the use of any trade name, is intended to convey endorsement or other affiliation with this book.

ISBN-13: 978-0-321-81959-8

ISBN-10: 0-321-81959-4

9 8 7 6 5 4 3 2 1

Printed and bound in the United States of America

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 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 4 Book* represents the culmination of over eight years' work in which I have worked actively with the Lightroom team. 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. It seems that the newbies to Lightroom have found it easy to access and understand all the basics, while the advanced professional users have appreciated all the background detail that's provided. I have to confess that when I first started work on this project, I never imagined the book would end up being over 700 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 Lightroom 1.0 was released. As a result, not only has the book ended up being a lot bigger, but also I have had to rewrite almost everything that was in the original edition. Once again, a number of major new features needed to be discussed, and technological changes in hardware and operating systems had to be taken into account. As always, I suggest you approach the *Adobe Photoshop Lightroom 4 Book* by reading it in chapter order, starting with Chapter 1: Introducing Photoshop Lightroom, which shows how one 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 better through the use of keywords and metadata. An equal amount of space has been 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.

www.thelightroombook.com

This edition of the book has a companion website: www.thelightroombook.com. The site contains additional resource material in the form of Lightroom movie tutorials, templates, and PDF downloads, plus breaking news on new Lightroom features. I know a lot of readers like having access to the images that appear in the book. Because this book is mostly about working with raw images, it has not been possible to give away the raw masters. However, it is now possible to create low-resolution versions using the DNG format. This means I am now able to let readers download many of the images that are seen in the book via the book's website. To make things easy, I have created a single catalog file of everything that you need. Full instructions on how to install the catalog once you have downloaded it are all 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, February 2012

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, Lisa Brazieal; copyeditor, Elizabeth Kuball; 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, Zalman Stern, and Eric Chan (who worked on the Camera Raw engineering); Lightroom engineers Troy Gaul, Melissa Gaul, Tim Gogolin, Seetha Narayanan, Eric Scouten,

Kevin Tieskoetter, Andrew Rahn, Daniel Tull, and Phil Clevenger (who designed the Lightroom interface); and Andrei Herasimchuck (who helped guide Lightroom through the early stages). 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 Nathalie 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 each 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 George Jardine, 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!

Contents

1 Introducing Adobe Photoshop Lightroom ... 1

What is Adobe Photoshop Lightroom? ... 2
- Keeping things simple ... 2
- Modular design ... 2
- Lightroom performance ... 4
  - Adobe Camera Raw processing ... 4
  - Color controls ... 5
  - Managing the image library ... 5
  - Where does Photoshop fit in? ... 6
  - Integrating Lightroom with Photoshop ... 7

What you need ... 8

Installing Lightroom ... 9
- 64-bit processing ... 10
- Upgrading from an older Lightroom catalog ... 10
- Using Lightroom for the first time ... 12
- Lightroom preferences essentials ... 13
- Customizing the Identity Plate and interface ... 16
- Help menu ... 19

Introducing the Lightroom interface ... 20

A quickstart guide to Lightroom ... 24
- Importing photos into Lightroom ... 24
- Viewing photos in the Library module ... 25
- Simplifying the interface ... 27
- Zooming in ... 29
- Adding basic informational metadata ... 30
- Using the Map module to geotag photos ... 31
- Reviewing and rating the photos ... 32
- Reviewing the final shortlist in Survey mode ... 33
- Dimming the lights ... 34
- Saving the shortlisted photos as a Collection ... 35
- Working in the Develop module ... 36
- Synchronizing Develop settings ... 37
- Retouching a photograph in Lightroom ... 38

Editing a copy in Photoshop 39
Creating a Web photo gallery 40
Making a final print 41
Exporting the edited photos 42
Working through the book 43

2 Importing photos 45

The main Import dialog 46
Copy as DNG, Copy, Move, or Add? 48
Converting to DNG after import 48
Updating DNG previews for third-party viewing 49
Importing files from a card 50
Source panel 54
Content area 55
Content area segmenting options 56
File Handling panel 58
Making backup copies of imported files 59
Photos shot as raw + JPEG 60
File handling limitations 60
File Renaming panel 61
Renaming catalog images later 62
Apply During Import panel 63
Destination panel 64
Planning where to store your imported photos 64
Importing to a selected destination folder 66
Import Presets menu 66
Importing video files 67
Adding photos from a folder to the catalog 68
Importing photos via drag and drop 70
Auto Imports 74
Importing photos directly from the camera 75
Connecting the camera to the computer 75
Lightroom tethered shooting 76
Layout Overlay view 80
The Layout Overlay feature in use 80

3 The Library module 83

About Lightroom catalogs 84

Backing up the catalog file 85

Backup strategies 87

Backup software 87

Catalog corruption 88

Creating and opening catalogs 89

Creating a new catalog 89

Opening an existing catalog 90

Exporting catalogs 91

Exporting with negatives 91

Exporting without negatives 92

Including available previews 92

Opening and importing catalogs 93

Limitations when excluding negatives 95

Changed Existing Photos section 95

Export and import summary 95

Copying a catalog to another computer 96

The Library Module panels 100

Navigator panel 102

The Catalog panel 102

The Library module Toolbar 102

Folders panel 103

The Folders panel/system folders relationship 104

How to locate a folder at the system level 105

Maintaining links between Lightroom and folders 107

Synchronizing folders 108

How to add new folders via the Folders panel 110

Finding the link from the catalog to a folder 111

How to organize your folders 113

Filter bar 115

Exploring the Library module 116

Grid view options 116

Library Grid navigation 118

Working in Loupe view 120

Loupe view options 121

Working with photos in both Grid and Loupe views 122

Loupe view navigation 124

Loupe zoom views 125

Loupe view shortcuts 125

Previews and preview appearance 126
Initial Import Photos dialog preview building options ... 126
How Lightroom previews are generated 127
Camera embedded previews vs. Lightroom previews 128
Missing previews 129
Preview size and quality 129
Working in Survey view 130
Working in Compare view 132
Compare view mode in action 134
Navigating photos via the filmstrip 136
Working with a dual-display setup 138
How to get the most out of working with two displays . 140
Rating images using flags 142
Refine Photos command 143
Rating images using numbered star ratings 144
Rating images using color labels 146
Color label sets 146
Lightroom and Bridge color labels 147
Other ways you can use color labels 147
Grouping photos into stacks 148
Automatic stacking 148
Making image selections 150
Quick Collections 151
Collections 152
Module collections 153
The module collections in use 156
Editing collections 156
Target collection 157
Collections sets 157
Smart Collections 158
Removing and deleting photos 159

4 Develop module image editing 161

Image editing in Lightroom 162
Smarter image processing 162
Steps for getting accurate color 163
Calibrating the display 163
Choosing a display 163
Calibrating and profiling the display 163

White point and gamma 164
Matching white balances 164
Steps to successful calibration and profiling 165
Raw or JPEG? 168
Process versions 170
Upgrading to Process 2012 171
Camera Raw compatibility 172
The Develop module interface 174
Develop view options 176
Develop module cropping 176
Rotating a crop 176
Crop to same aspect ratio 180
Crop aspect ratios 180
Repositioning a crop 181
Crop guide overlays 181
Crop guide orientation 181
Canceling a crop 184
Tool Overlay menu 184
The Tool Overlay options 184
Quick Develop cropping 185
The Basic panel 186
White Balance tool 186
White Balance corrections 188
Creative white balance adjustments 190
The Tone editing controls 191
Exposure 191
Contrast 193
Highlights and Shadows 193
Whites and Blacks 194
Auto Tone setting 195
Histogram panel 199
The Histogram panel and image adjustments 200
Navigating the Basic panel via the keyboard 201
Correcting an overexposed image 202
Correcting an underexposed image 204
Match Total Exposures 206
Highlight clipping and Exposure Settings 208
Clipping the blacks 208
Clarity slider 210
Using Clarity to decompress the Levels 211
Negative Clarity adjustments 212

Vibrance and Saturation 214
Quick Develop panel tone adjustments 216
The other Tone controls 217
A typical Quick Develop workflow 218
Editing video files in Quick Develop 221
The Tone Curve panel 226
Point Curve editing mode 228
RGB curves 230
The Tone Curve zones 232
Combining Basic and Tone Curve adjustments 234
Tone range split point adjustments 238
HSL / Color / B&W panel 240
Selective color darkening 242
False color hue adjustments 243
Using the HSL controls to reduce gamut clipping 244
Lens Corrections panel 246
Perspective transform corrections 246
Lens vignetting 246
Lens profile corrections 248
Accessing and creating custom camera lens profiles 249
Removing chromatic aberrations 252
The Defringe controls 252
Effects panel 254
Post-Crop vignettes 254
Post-Crop vignette options 254
Adding Grain to images 258
Camera Calibration panel 260
Camera profiles 260
How to create a custom calibration with DNG Profile Editor 262
Creative uses of the Camera Calibration panel 265
Assessing your images 268
Comparing before and after versions 268
Managing the Before and After previews 270
Image retouching tools 274
Spot Removal tool 274
Clone or Heal 276
Click and drag 276
Resizing the spot circles 276
Repositioning the spot circles 276
Tool Overlay options 277

Undoing/deleting spot circles 277
Auto source point selection 277
Synchronized spotting 278
Auto Sync spotting 279
Red Eye Correction tool 280
Adjusting the cursor size 280
Localized adjustments 284
Initial Adjustment Brush options 284
Editing the Adjustment Brush strokes 286
Saving effect settings 286
Adjustment Brush and gradient performance 286
Automasking 288
Previewing the brush stroke areas 290
Beauty retouching with negative clarity 290
Hand-coloring in Color mode 292
Localized Temperature slider adjustments 294
A localized Shadows adjustment 296
Clarity and Sharpness adjustments 298
Graduated Filter tool 300
History panel 303
Snapshots panel 304
How to synchronize snapshots 306
Easing the workflow 308
Making virtual copies 308
Making a virtual copy the new master 308
Synchronizing Develop settings 310
Auto Sync mode 310
Lightroom and Camera Raw 312
Viewing Lightroom edits in Camera Raw 312
Viewing Camera Raw edits in Lightroom 312
Keeping Lightroom edits in sync 313
Synchronizing Lightroom with Camera Raw 314
Copying and pasting develop settings 316
Applying a previous develop setting 316
Saving Develop settings as presets 318
Auto Tone preset adjustments 319
The art of creating Develop presets 319
Creating a new Develop preset 320
Understanding how presets work 321
How to prevent preset contamination 322
Resetting the develop preset settings 325
How to set default camera develop settings 326

5 The art of black and white 329

Black-and-white conversions 330
Black-and-white Develop controls 330
Black-and-white conversion options 332
How not to convert 332
Temperature slider conversions 334
Manual black-and-white adjustments 336
Black-and-white infrared effect 339
Fine-tuning black-and-white images 342
Split Toning panel 342
Split-toning a color image 344
HSL panel: Desaturated color adjustments 346
The HSL black-and-white method 347
Camera Calibration adjustments 347

6 Sharpening and noise reduction 351

Capture sharpen for a sharp start 352
Improved Lightroom raw image processing 353
Output sharpening 355
Default Detail panel settings 355
Sharpen preset settings 355
Sharpen – Portraits 356
Sharpen – Landscapes 357
Sample sharpening image 358
Evaluate at a 1:1 view 359
Luminance targeted sharpening 359
The sharpening effect sliders 359
Amount slider 360
Radius slider 362
The modifying controls 364
Detail slider 364
Interpreting the grayscale sharpening preview 367
Masking slider 367
Masking slider preview mode 368
How to apply sharpening adjustments 370
Creative sharpening with the adjustment tools 372
Applying localized blurring 374

Noise reduction 376
Luminance noise reduction 376
Color noise reduction 378
Noise reduction tips 378
Color noise corrections 379
Selective noise reduction 380
Selective moiré reduction 382
Moiré removal on non-raw images 382

7 Exporting from Lightroom 385

Opening images in Photoshop 386
The Edit in Photoshop options 386
Edit in Adobe Photoshop 387
Edit in additional external editing program 388
Opening non-raw images 389
Creating additional external editor presets 389
External editing file naming options 390
The file format and other file settings options 390
Camera Raw compatibility 391
How to use the external editing options 392
Photoshop as a sandwich filler for Lightroom 394
Extended editing in Photoshop 398
How to speed up extended editing in Lightroom 400
Opening photos as Smart Objects in Photoshop 402
Exporting from Lightroom 406
Export presets 406
Export Location 406
Exporting to the same folder 408
File Naming 410
File Settings 410
Image Sizing 411
DNG export size options 412
When to interpolate 413
Output sharpening 414
Metadata 414
Watermarking 415
How to create new watermark settings 416
Post-Processing 417
Adding export actions in Lightroom 418

Exporting catalog images to a CD or DVD 422
Exporting photos to Adobe Revel 423
Exporting catalog images as e-mail attachments 424
Third party Export plug-ins 426
Exporting video files 427
Photomatix Pro™ export plug-in 428

8 Printing 431

The Print module 432
Layout Style panel 434
Image Settings panel 434
Layout panel 437
Margins and Page Grid 438
Guides panel 439
Multiple cell printing 440
Page panel 442
How to add a photographic border to a print 444
Page Options 446
Photo Info 447
Picture Package and Custom Package 448
Image Settings panel 448
Rulers, Grid & Guides Panel 448
Cells panel 448
Custom Package layout style 452
Picture Package/Custom Package Page panel 457
Page Setup 458
Print resolution 459
Print Job panel 460
Print job color management 460
The Lightroom printing procedure 460
Managed by printer print settings (Mac) 461
Managed by printer print settings (PC) 462
Print Adjustment controls 463
Print 464
Printing modes 465
Print sharpening 465
16-bit output 466
Print to JPEG File 466

Custom profile printing 467
Managed by Lightroom print settings (Mac) 468
Managed by Lightroom print settings (PC) 469
Rendering intent 470
Soft proofing for print output 471
Why what you see isn't always what you get 471
Soft proofing in practice 473
Saving a custom template 477

9 Presenting your work 479

The Book module 480
Creating a new book 481
Book Settings panel 482
PDF book export 483
Preview panel 483
Toolbar 484
Auto Layout panel 484
Auto Layout Preset Editor 484
Editing the book pages 486
Editing the cover pages 488
Page panel 490
Guides panel 490
Cell panel 491
Caption panel 491
Type panel 492
Target adjustment tool options 494
Type panel Frame controls 494
Background panel 495
Publishing your book 495
The Slideshow module 496
The slide editor view in the content area 498
Layout panel 499
Options panel 500
Overlays panel 502
Creating a custom Identity Plate 503
Adding custom text overlays 504
Working with the anchor points 506

Backdrop panel 508
How to create a novelty slideshow template 510
Titles panel 514
Playback panel 515
Preview and Play 516
Navigating slideshow photos 517
Slideshows and selections 517
Template Browser panel 517
Creating a Slideshow collection 518
Exporting a slideshow 519
Exporting Slideshows to PDF 519
Exporting Slideshows to JPEG 520
Exporting Slideshows to Video 520
The Web module 522
Layout Style panel 524
The Lightroom HTML and Flash galleries 524
Lightroom HTML gallery layout 525
Lightroom Flash gallery layout 526
AutoViewer gallery 527
PostcardViewer gallery 528
SimpleViewer gallery 529
Third-party gallery styles 529
Site Info panel 531
Color Palette panel 532
Choosing a color theme 532
Appearance panel 534
Appearance settings for the HTML gallery 534
Appearance panel settings for the Flash gallery 535
Appearance panel settings for the Airtight galleries 538
Identity Plate 538
Image Info panel 539
Adding titles and captions 539
Customizing the title and caption information 540
Creating a custom Text template 542
Output Settings panel 544
Previewing Web galleries 544
Image appearance in Slideshow and Web modules 545
Slideshow module colors 545
Web module colors 545
Exporting a Web gallery 546

Uploading a Web gallery 547
Managing your uploads 551
Template Browser panel 551
Creating a Web collection 551

10 Managing your photos in Lightroom 553

Working with metadata 554
The different types of metadata 554
A quick image search using metadata 556
Metadata panel 558
Metadata panel view modes 558
General and EXIF metadata items 560
File Name 560
Sidecar Files 560
Copy Name 560
Metadata Status 562
Cropped photos 563
Date representation 563
Capture time editing 563
Camera model and serial number 564
Artist EXIF metadata 564
Custom information metadata 565
Metadata presets 566
Editing and deleting metadata presets 568
IPTC metadata 568
IPTC Extension metadata 570
A more efficient way to add metadata 571
Metadata editing and target photos 572
Mail and Web links 574
Copyright status 575
Keywording and Keyword List panels 576
Three ways to add new keywords 578
Keeping metadata private 578
Synonyms: The hidden keywords 579
Applying and managing existing keywords 580
Auto-complete options 580
Removing keywords 582
Keyword hierarchy 582
Keyword filtering 583
Importing and exporting keyword hierarchies 583

Implied keywords ... 584
Keyword suggestions ... 585
Keyword sets ... 586
Creating your own custom keyword sets ... 587
The Painter tool ... 588
Photo filtering and searches ... 590
Filtering photos in the catalog ... 591
Three ways you can filter the catalog ... 592
Filtering photos via the filmstrip ... 593
Adding folders as favorites ... 594
Filtering flagged photos ... 594
Filtering options ... 594
Creating refined color label selections via the filmstrip ... 594
Color label filtering ... 595
Virtual copy and master copy filtering ... 597
Subfolder filtering ... 598
Making filtered image selections ... 599
Filter bar ... 600
The filter bar layout ... 601
Text filter searches ... 601
Search rules ... 602
Combined search rules ... 603
Fine-tuned text searches ... 603
Attribute filter searches ... 604
Metadata filter searches ... 604
Metadata filter options ... 605
Metadata filter categories ... 606
Locating missing photos ... 607
Custom filter settings ... 608
Empty field searches ... 608
No content searches ... 609
Advanced searches ... 611
Publishing photos via Lightroom ... 613
Saving and reading metadata ... 617
Saving metadata to the file ... 619
Tracking metadata changes ... 619
XMP read/write options ... 621
Where is the truth? ... 624
Synchronizing the metadata settings ... 625

Sorting images 626
Sort functions 627
The sort by label text solution 629
Geotagging images 630
GPS devices 630
How to embed GPS metadata in a photo 631
Reverse geocoding 632
The Map module 632
Navigation 633
Location filter bar 634
Loading GPX tracklogs 634
Matching photos to a recorded tracklog 635
Editing pins 637
Manually geotagging photos in the Map module 638
Permanently reverse geocoding images 640
Exporting GPS encoded files 640
Saved Locations panel 641

Appendix
Lightroom Preferences and Settings 643

General preferences 644
Splash screens 644
Updates 644
Catalog selection 645
Import Options 645
Completion sounds and prompts 645
Presets preferences 646
Camera-linked settings 646
Location section 647
Lightroom Defaults section 647
External Editing preferences 648
File Handling preferences 648
Import DNG Creation 648
Convert and Export DNG options 651
Reading Metadata options 652
Filename generation options 652
Camera Raw cache Settings 652
Video cache size 653

Interface preferences 653
Panel end marks 653
Custom panel end marks 655
Panel font size 655
Lights Out 656
Background 656
Keyword entry 656
Filmstrip preference options 656
Interface tweaks 657
Lightroom settings and templates 658
The Lightroom preference file 658
Accessing saved template settings 659
Customizing the Lightroom contents 660
Hacking the Lightroom contents 660
Lightroom previews data 662
The ideal computer for Lightroom 663
RAM 663
Graphics card 663
Hard drives 664
Drive configurations 665
Striped RAID 665
Mirrored RAID 665
A mirror of stripes 666
RAID 5 666
Just a bunch of disks 666
The ideal system? 667

Index 668

Photograph: Monument Valley, Utah, © Martin Evening 2009
Canon EOS 1Ds Mk III | 130 mm | 200 ISO | f8 @ 1/400th

4 Develop module image editing

A definitive guide to working with the image processing controls in the Develop module

One of the most powerful features in Lightroom is the image processing 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.

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 the quality of the image processing. 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 image processing 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 quite a lot of juggling going on, including mode changes and image blending, but the essential point is that everything you do will eventually be 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, 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 quite 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 color-manage 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 get. 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 CG301W and the NEC LCD3090W. Both these displays are easy to calibrate and profile; plus, the large 30-inch 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 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 color-managed 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 in the first place, I suggest that you check your Photoshop Color Settings and ensure that you have the color management switched on so that Photoshop always embeds a profile in the files that 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.*

There are two stages to a profiling process. The first step is to calibrate the display to optimize the screen brightness and contrast, plus 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. While you can set a specific white point for an LCD, such as 6500K, doing so may well compromise the display's performance, so it is usually best to select the native white point for the LCD you are calibrating.

Matching white balances

The above advice may seem at odds with how you think a display should be calibrated, since you might imagine the ideal situation would be to aim for a standard white point of say, 6500K. People often assume the goal should be to match the white balance between different displays and viewing light sources. For side-by-side comparison this can help, but the fact is that 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 7000K and check the results with a viewing box that has a white balance of 5500K, as long as the two are a reasonable 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 very early days of Macintosh computers, long before color displays and ICC color management was universally adopted. 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 lightens the interface but has 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. 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.

NOTE

The screenshots shown here were all captured using Mac OS X 10.6.8. Note that iMatch is no longer compatible with Mac OS X 10.7. However, X-Rite has released a free update (i1Profiler D2LionEdition) for users of existing hardware such as the i1Display 2. Go to http://tinyurl.com/88mncud.

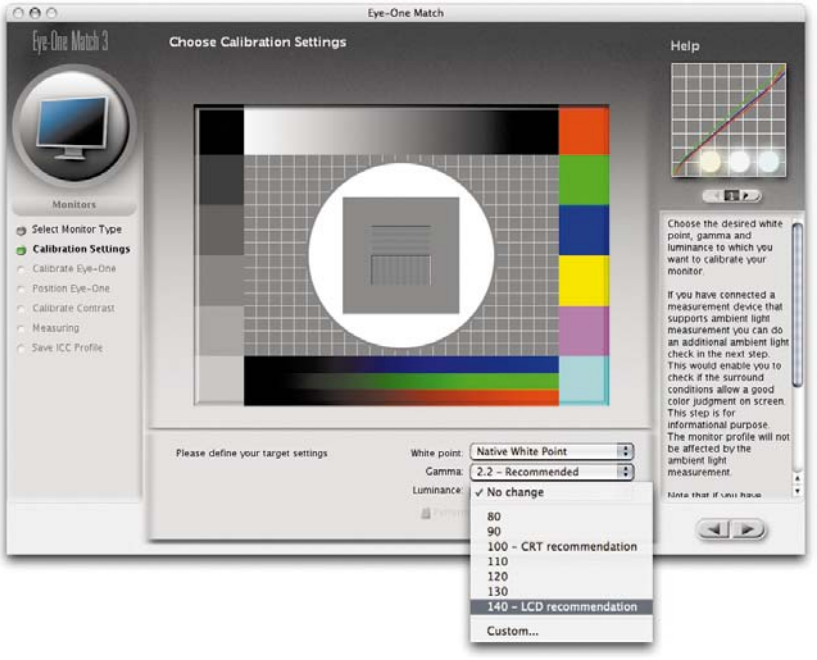
Steps to successful calibration and profiling

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.

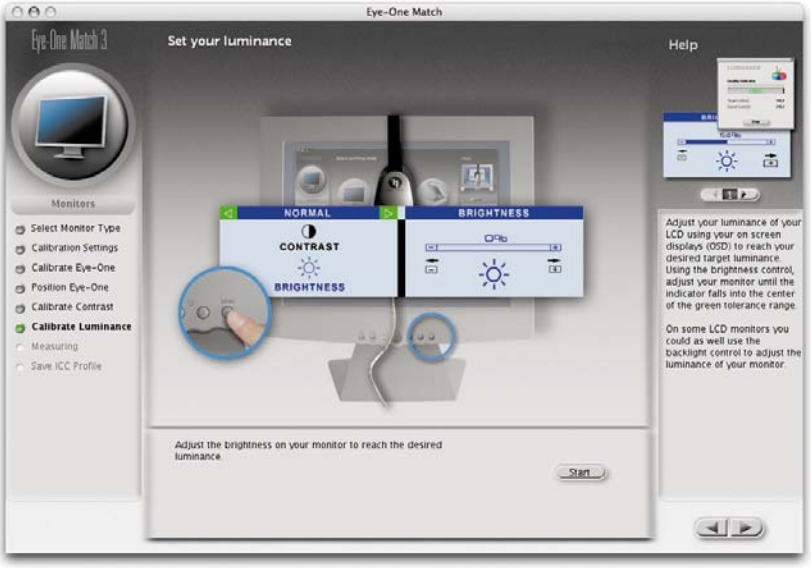
For accurate calibration you first need to decide whether you want to buy a basic device for calibrating the display only or a more advanced device that allows you to create your own custom print profiles (I use the X-Rite Eye-One Photo). The following steps show how the Eye-One Match 3.6.2 software can be used to calibrate and profile a display using either the Eye-One Photo or the more affordable Eye-One Display 2 calibrator. 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. This first screen asks you to identify the type of display you want to calibrate and profile. The decision made here will affect the recommended settings shown in the next dialog.

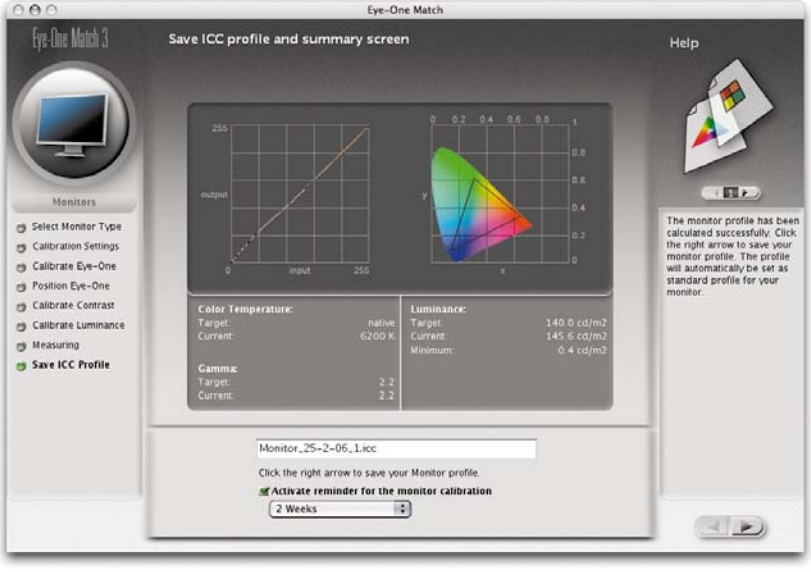
2. In the previous dialog I identified the monitor as being an LCD-type display and the settings shown here are those recommended for a desktop LCD. Since you cannot physically adjust the white point of an LCD, it is best to select the Native White Point option. This particular software recommends that a luminance of 140 candelas m^2 is ideal when calibrating and building profiles for a desktop LCD, but this is not an absolute figure. Ideally, you should use a luminance between 110 and 140 for a desktop LCD.



3. I was now ready to place the calibrator on the screen and start the calibration process. To measure an LCD, you must use a counterweight attachment to carefully hang the calibration device over the screen. The Eye-One Match software can auto-detect the location of the calibrator so it knows exactly which section of the screen the calibrator should take its measurements from.



4. I couldn't adjust the contrast on the LCD I was using, but I could use the computer operating system brightness controls to adjust the brightness of the display so that the measured brightness matched the desired, target setting. I then clicked on the Start button to initiate the profiling steps.



5. A series of color patches flashed up on the display. The calibration device measured these and used them to build the display profile. 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 battery-power mode may automatically dim the display halfway through the profiling process and this can adversely affect the results of the profile measurement. One way to ensure this does not happen is to keep the mouse cursor moving every minute or so (outside of the area being measured, of course) until the process is complete. At this stage you can click to save the monitor profile that has been generated, so it will automatically be configured as the new display profile.

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 demosiac processing that is found in Lightroom 3 onward.

Raw or JPEG?

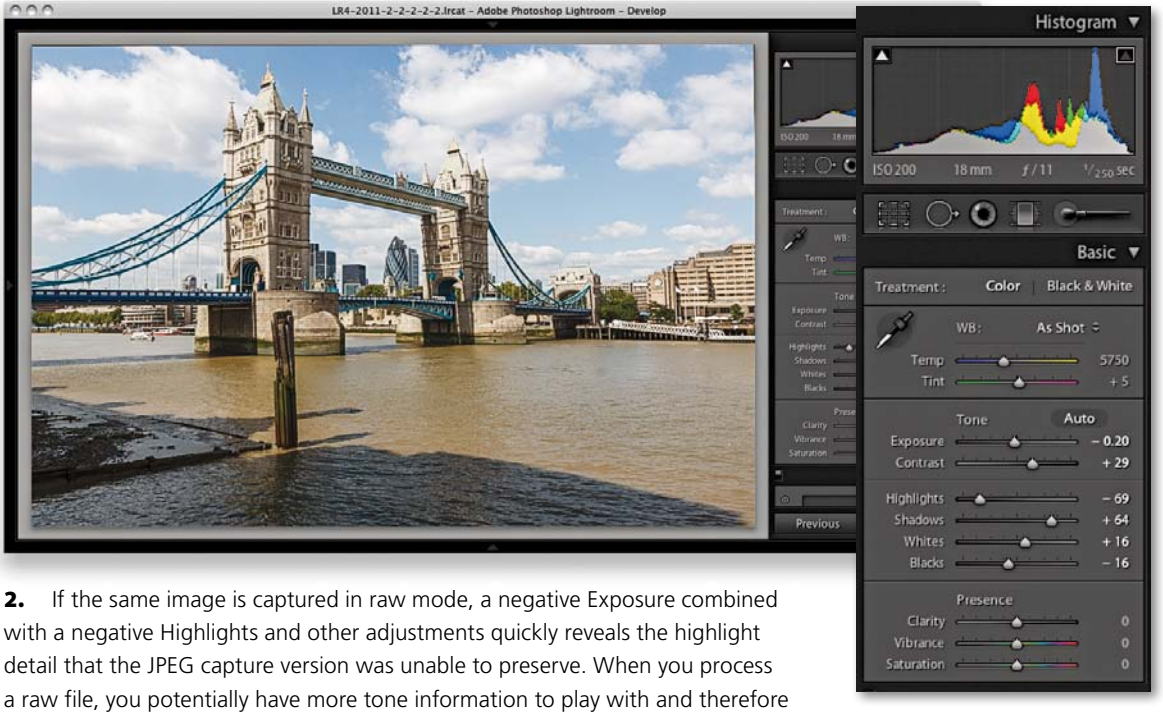
At first glance, Lightroom appears to handle the processing of raw images and non-raw images as if they were the same. The fact that you now have more controls at your disposal to edit the color and tone in a JPEG capture is in one way a good thing, but it would be dangerous to conclude from this that 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 is capable of capturing up to 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 really 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 different 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 other artifacts appearing in your JPEG-edited photos.

1. If you shoot a scene such as this in JPEG mode, the clipping gamut warning seen in the clouds indicates that there is nothing that 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 not just to raw and DNG files but also to TIFF, JPEG, and PSD images as well.

With Lightroom 4, there is now a newer Process Version option: Process 2012. This represents an even bigger change to the Camera Raw processing. This time, the underlying demosaic processing remains as it was for Process 2010, but the main image tone adjustments have been revised so that the controls you use in the Basic panel to adjust an image (as well as the localized adjustment tools) are now completely different from all previous versions of Lightroom and Camera Raw. It's a fairly radical update, but one that I think is for the better. It does mean that as a consequence there will now be two main methods of processing an image. You can, if you prefer, continue to edit your images using the traditional set of sliders using 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. In writing this book I felt it important to concentrate on what is new, so the rest of this chapter focuses solely on the Process 2012 controls. These may take a little adjusting to, but I believe the results you will be able to achieve using Process 2012 will more than justify the pain of adapting to the new system. But I would like to point out here that readers can download a PDF from the book's website, which is based on previous 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 new 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, the raw image processing tools will need to offer the flexibility to keep up with such developments.

Figure 4.2 *The Process Version warning icon. In Lightroom 4 this indicates that the image currently being viewed in the Develop module is using a process version older than Process 2012.*

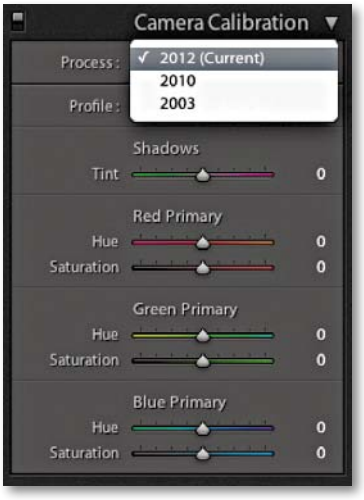


Figure 4.3 *The Camera Calibration panel showing the process version menu options.*

Upgrading to Process 2012

Shortly, I'll be going into more detail about working with the new Process 2012 controls, 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, an exclamation point button will appear in the bottom-right corner of the preview (see **Figure 4.2**). This indicates that this is an older process version image, and clicking on the button will update the image to Process 2012. This will show a warning dialog asking you to confirm the update and you can Alt-click the warning icon to bypass this dialog. This then allows you to 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 ⇨ 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 will therefore also allow you to revert to a previous Process 2003/2010 mode should you wish to do so. Whenever you choose to update to

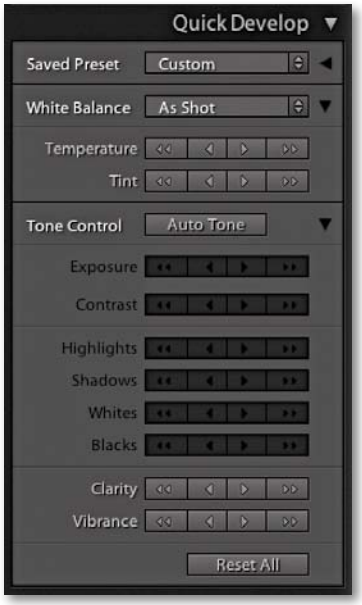


Figure 4.5 *If you use the Quick Develop panel to edit multiple images where there is a process version conflict between Process 2003/2010 and Process 2012 images, the tone control buttons will appear dimmed.*

NOTE

Images where the Blacks slider had been run up the scale using Process 2003/2010, will most likely appear somewhat different after conversion. The new Process 2012 Blacks sliders tends to back off quite a bit.

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. You will also see the dialog shown in **Figure 4.4**. This warns you about the consequences of updating and allows you to select a Before/After view if desired. I think you will mostly be fine choosing the "Don't show again" option and clicking Update. Though, by default all new files that are imported into Lightroom 4 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 you will encounter situations like that shown in **Figure 4.5**, whenever there is a process version mismatch.

There is a trade-off to bear in mind here when updating to the latest process version. With Lightroom 3, the Process 2010 rendering was more sophisticated than Process 2003 and as a result of this, it increased the amount of processing time that was required to render individual images. In some circumstances this could result in longer output processing times such as during an Export, but it didn't affect the overall catalog performance in Lightroom 3. With Process 2012 for Lightroom 4, 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 Lightroom 4 processing overall faster.

Figure 4.4 *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 provide 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 3.0, you would have had free access to all the incremental updates (i.e. Lightroom 3.1 through to 3.7). And if you purchased Photoshop CS5, you would have had access to all the Camera Raw updates from version 6.1 through 6.7. Once a product is replaced by a new full version, such as Lightroom 4.0, 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 4 does contain things like the new Develop module features 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 3 edited files to a Lightroom 4 user, because Lightroom 4 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 CS5 users can access a free Camera Raw 6.7 update that will allow them to read all the adjustments made in Lightroom 4 edited files, via Camera Raw. This means Photoshop CS5 users will be able to open raw images that have been edited in Lightroom 4 via Camera Raw and see their images appear the same as in Lightroom 4. But, and this is a big but, they won't be able to actually edit images that have been edited using Process 2012. This is because the Process 2012 Basic panel controls are effectively new to Camera Raw in Photoshop CS5. Nor will they be able to update an image from Process 2003 or 2010 to Process 2012.

When you choose the "Edit in Photoshop" command (⌘E [Mac] or Ctrl E [PC]), having Camera Raw 6.7 installed for Photoshop CS5 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 CS5 without automatically having to create a rendered duplicate that will be added to the Lightroom catalog.

Earlier versions of Camera Raw (prior to 6.7) won't be able to recognize Lightroom settings that are new to Lightroom 4. However, when choosing the "Edit in External Editor" command (⌘Alt E [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 4 and older versions of Photoshop and Camera Raw.

NOTE

Lightroom does now 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. While on one level this gives you more control to fine-tune the look of your CMYK images, this could lead to problems. If the original source CMYK files are opened directly via Photoshop (because the Lightroom adjustments won't be seen). Also, 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 then 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 418).

NOTE

Smart Objects that have been created via Lightroom, which use Process 2012, can also be opened in Photoshop CS5 using Camera 6.7, but again, you won't be able to edit the Basic panel settings unless until you are able to update to Photoshop CS6.

NOTE

The panels in the right section of the Develop module can be expanded by clicking the panel headers. If you Alt–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.

TIP

You can reset the individual Develop settings at any time by double-clicking 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 ⌘?). In addition to these are shortcuts that will enable you to switch between individual modules. (These are the Mac shortcuts. PC users should use Ctrl Alt plus the number).

⌘Alt1 to select Library
⌘Alt2 to select Develop
⌘Alt3 to select Slideshow
⌘Alt4 to select Print
⌘Alt5 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, K selects the Adjustment brush, and D selects the main Develop module again.

The Develop module interface

The Develop module provides all the controls photographers need for making 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 your main image 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 have to drag the sliders. Similar target mode controls are also available when making HSL and B&W panel adjustments. Note that the Tone Curve panel also features a point curve editing mode.

Below that is the HSL / Color / B&W panel. The HSL tab section provides similar controls to the Hue/Saturation adjustment in Photoshop, as these allow you to adjust separately 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 V shortcut) will convert 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 in an image.

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 and manual transforms. The Effects panel includes Post-crop vignette sliders for applying vignette effects to cropped images plus Grain sliders for adding film grain effects.

The Camera Calibration panel allows you to 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 an effect to an image.

Figure 4.6 *The Develop module interface.*

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, 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 249), this means that profile corrected images will end up being warped to some degree. The same is also true for images that have been warped using the Manual transform controls. 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… (⌘J [Mac] or Ctrl 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 with 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 will reset 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 182 to 183. 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 now been rationalized.*

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

TIP

You can toggle the Constrain Aspect Ratio lock by pressing A.

2. In this next step, I clicked the Constrain Aspect Ratio Lock button to unlock it. This allowed me to then click a corner or side handle of the crop bounding box and drag to reposition the crop relative to the photograph.

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 dragging. As you do, 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 to same aspect ratio

There is also contextual menu command and Develop module A keyboard shortcut that can be used to "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.

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 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.

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 the one that is applied. As you click on the photograph inside the crop bounding box area, you can reposition the image relative to the crop.*

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.

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.

Repositioning a crop

The Crop tool in Lightroom always restricts the cropping to within the boundary of the document. Unlike in 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 4.15).

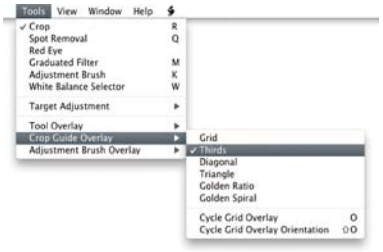


Figure 4.11 *The Crop Guide Overlay menu options.*

Crop guide overlays

In the Tools ⇨ Crop Guide Overlay menu (**Figure 4.11**) there are six different crop guide overlays to choose from. These range from the simple Grid crop guide overlay shown in **Figure 4.12**, to other more exotic overlay designs. For example, I have included on the following pages the Diagonal crop guide overlay (**Figure 4.13**) and the Triangle crop guide overlay (**Figure 4.14**). 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 different crop guides? 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.

Note that regardless of which crop guide you choose, the Grid overlay design shown in Figure 4.12 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 O keyboard shortcut can be used to cycle quickly through the crop guide overlays and you can also use the ⇧Shift O 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). In **Figure 4.15** I have shown the Golden Spiral with an inverted overlay.

Figure 4.12 *The Grid crop guide overlay.*

Figure 4.13 *The Diagonal crop guide overlay.*

Figure 4.14 *The Triangle crop guide overlay.*

Figure 4.15 *You can use the ⇧Shift O shortcut to switch the orientation of the Triangle and Golden Spiral crop guide overlays.*

Figure 4.16 *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 in Figure 4.19 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 would become the one that Lightroom would revert back to when you readjusted the crop and then hit the Esc key. Essentially, canceling a crop is not the same as resetting the develop settings (⌘ Alt R [Mac] or Ctrl Alt 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, but it can also be used to control the Spot Removal, Red Eye, Adjustment brush, and Gradient filter. 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.

The Tool Overlay options

The Tool Overlay options can be accessed via the Toolbar at the bottom (T) or the Tools menu (**Figure 4.16**). 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 Gradient 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-to-remember (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

In the Quick Develop panel in the Library module, the Crop Ratio menu options (**Figure 4.17**) can be used to apply a preset crop ratio that trims photos evenly on either side. Image cropping is something that you usually want to carefully apply to each photograph individually, but I would say that having a quick way to change the aspect ratio of a bunch of pictures might be quite useful for someone like a school portrait photographer who is looking for a way 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 177). Note that the custom crop settings are shared between the Develop module and the Quick Develop panel in the Library module. In the **Figure 4.18** example below, I selected an 8.5 x 11 proportional crop and applied this to the selected photograph.

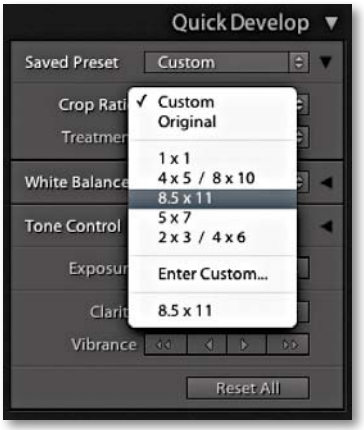


Figure 4.17 *The Quick Develop Crop Ratio menu contains a list of presets.*

Figure 4.18 *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

In Lightroom 4, the Basic panel settings will appear grayed out when they are set to their default settings.

TIP

You can also use the ⌘ Shift U (Mac) or Ctrl Shift U (PC) keyboard shortcut to apply an Auto White Balance.

TIP

As you zoom out, the magnified pixel view shows more and more of the image (which 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).

The Basic panel

If you click on the inside panel edge and drag you can adjust the width of the side panels. **Figure 4.19** 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.

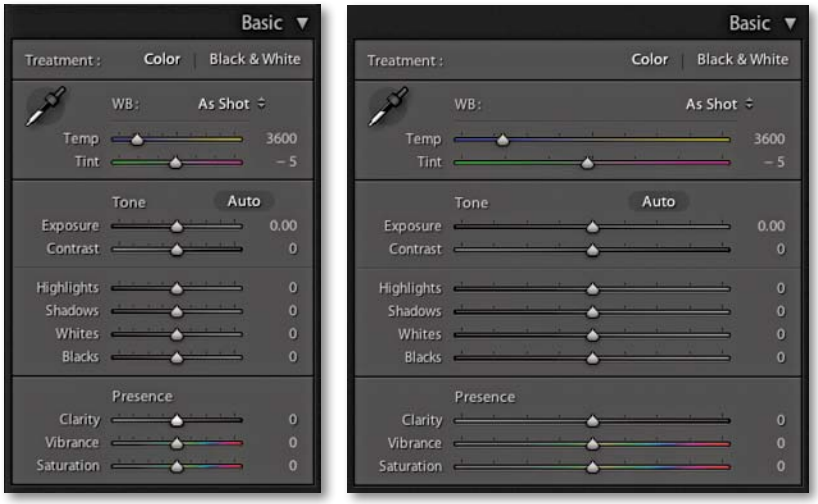


Figure 4.19 *The Lightroom panels can be expanded by dragging on the side edge. An expanded Develop panel offers greater precision when making image adjustments.*

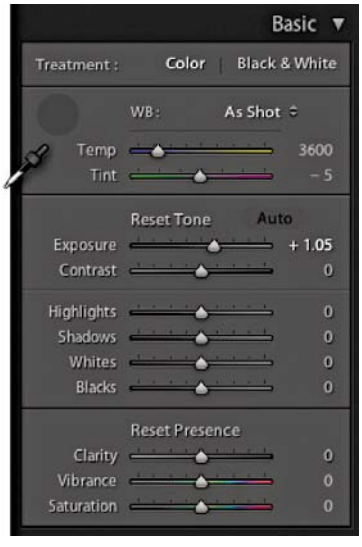
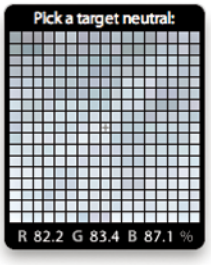


Figure 4.20 *To activate the White Balance tool, click the tool to undock it from the panel.*

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 color-correct 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 4.20**). 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 4.21**), 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). The light gray stone in this photo is a perfect spot to sample from. 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.



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 now samples an area that is dependent on the zoom setting. In other words, the White balance sample area is now zoom-level dependent.

Figure 4.21 *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.*

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 471 to 476).

Figure 4.22 *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 4.22 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 4.22** 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 4.23** 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 the 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 4.23 *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 4.24**).

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 4.24 *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.

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 color temperature at the capture stage on every type of image. You now have 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 4.25**).

Figure 4.25 *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 of these of these examples uses what could be described as a "correct" white balance.*

The Tone editing controls

The tone adjustment controls are meant to be applied in the order they appear listed in the Basic panel (**Figure 4.26**). 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.

Figure 4.26 *The Basic panel controls using Process 2012.*

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 the 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 Alt 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 would not recommend you be so 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 Alt key Threshold view analysis when adjusting the Highlights and/or Whites sliders.

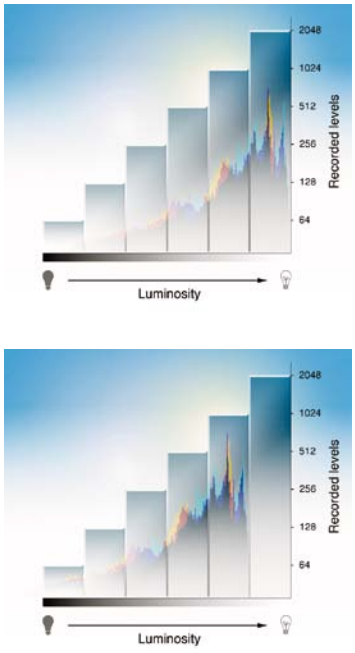


Figure 4.27 *If you don't optimize the camera exposure, you may be missing the opportunity to record a greater number of levels via the sensor. The top diagram shows how a correctly optimized exposure makes maximum use of the sensor's ability to record the fullest amount of levels information possible. 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 4.27**, 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 4.28** 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 4.28 *This image is divided diagonally. The top section shows the enhanced shadow detail using an optimum camera exposure setting, and the bottom section shows the same scene captured at minus two stops camera exposure and then processed to match the luminance of the normal exposure. Notice that there is more noise and less tonal information in the underexposed version.*

Contrast

The Contrast slider in Process 2012 operates in almost the same as the Process 2003/2010 one. Basically with 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 4.29**). 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 also 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. By always starting with a linear curve you have more flexibility in the Tone Curve panel to enhance the contrast of any image.

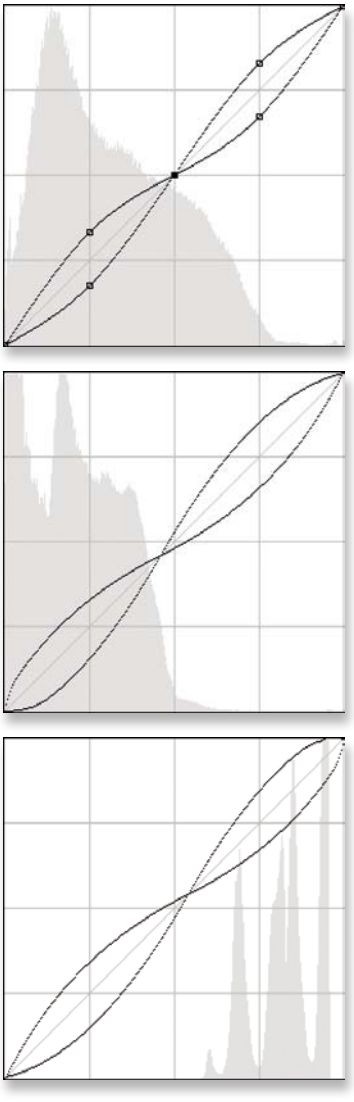


Figure 4.29 *Here, you can see the effective Contrast curve range for the Contrast slider. The top view shows the range for Process 2003/2010, where the midpoint was always locked. Below are representations of a Contrast adjustment in Process 2012, where the midpoint adapts according to the tone range bias of the image being adjusted.*

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

Figure 4.30 *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 auto-metering 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.

when lightening or darkening. As you apply adjustments greater than this the 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 Lightroom 4, 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 this 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 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 Alt 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 towards a –100 value. This does mean though 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

The Auto Tone (⌘U [Mac] or Ctrl U [PC]) can work well on a great many images as a quick-fix tone adjustment (see **Figure 4.30**). It automatically sets the Exposure, Contrast, Highlights, Shadows, Whites, and Blacks. Note that you can also use Shift plus a double-click to apply an auto setting to 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 ⌘Shift R [Mac] or Ctrl Shift R [PC] shortcut to reset everything.

An Auto 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 quite 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.

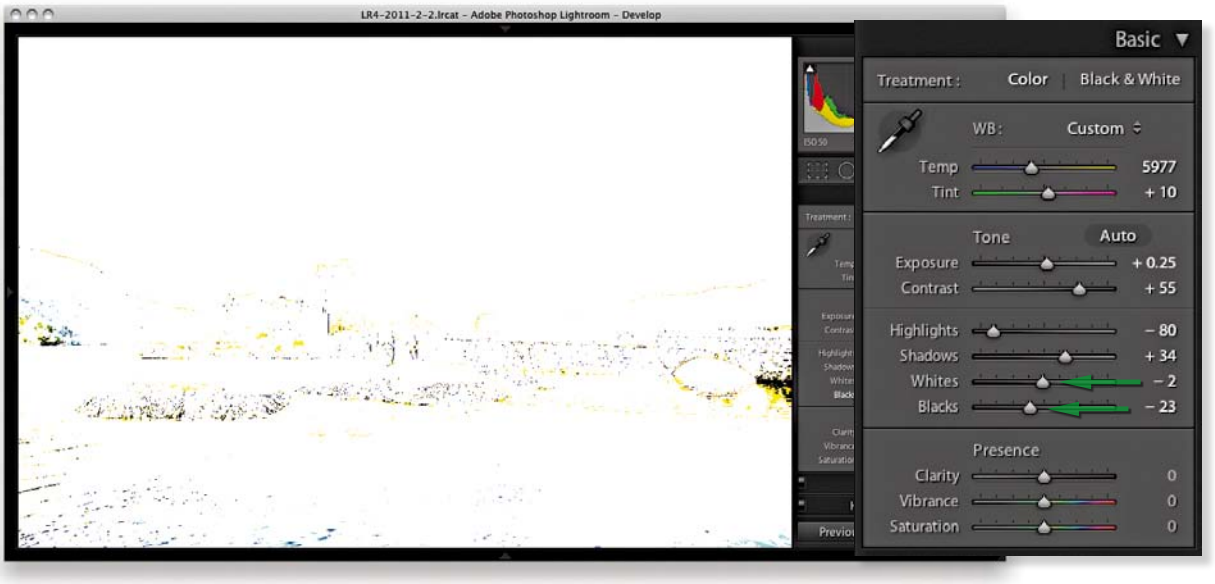
1. Here is a before image in which the Lightroom Basic adjustments have been set to the Lightroom defaults and the White Balance is using the As Shot White Balance setting (as recorded by the camera). I began by selecting the White Balance tool (W) to click on a nonreflective neutral color. In this example I hovered the cursor over the clouds. Note that if the Auto Dismiss option is unchecked in the Toolbar, you can keep clicking to sample new white balance settings and press the W key again to return the White Balance tool to the dock. The RGB percentage readouts where I had clicked with the White Balance tool now showed a more neutral balance.

2. I dragged the Exposure slider to the right to lighten the image. When making this adjustment you simply adjust the Exposure until the image appears 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. The Shadows slider allowed me to independently adjust the shadow to midtone regions. Here, I raised the Shadows 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. It is at this stage that it can be useful to hold down the Alt key to see a threshold clipping preview for the whites and blacks. For example, 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 a small amount of Clarity.

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 4.31** or press J to toggle displaying the clipping preview shown below. Blue 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 ⌘0 (Mac) or Ctrl 0 (PC) shortcut to toggle collapsing and expanding this panel.

If you are editing an imported JPEG, 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 what is 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.

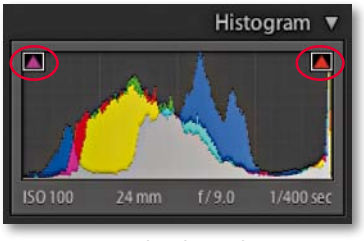


Figure 4.31 *This shows the Histogram panel with the clipping warning triangles highlighted. With this particular image the clipping preview shows red and blue channel clipping in the shadows and red color channel clipping and highlight regions.*

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 4.32** you'll notice how as the Exposure was increased the levels expanded to the right. As the Exposure amount was increased more 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.

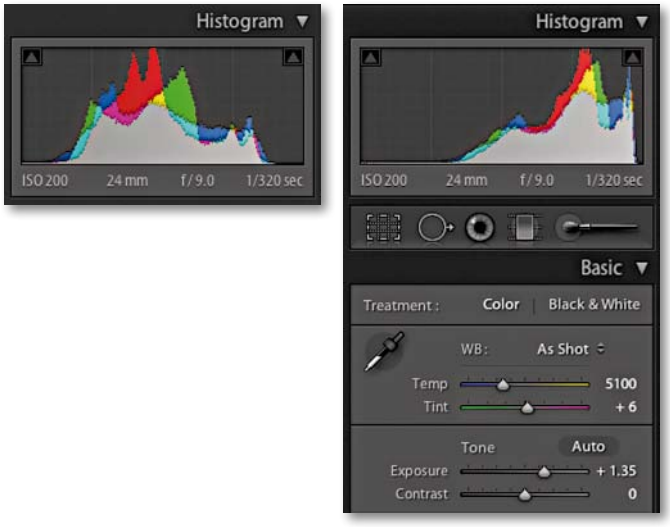


Figure 4.32 *In the Histogram panel view on the left, the highlights needed to be expanded to fill the width of the histogram. It was also evident in the image itself that the Exposure needed to be increased. In the example on the right, I adjusted the Exposure slider to make the image brighter.*

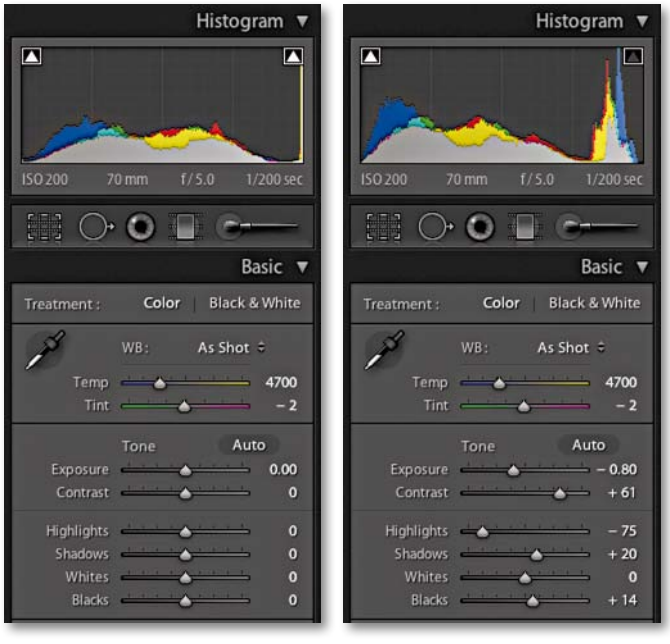


Figure 4.33 *In this example the Histogram panel view on the left shows the histogram of an overexposed image with shadow and highlight clipping. The example on the right shows how the histogram looked after applying negative Exposure and Highlights adjustments to recover detail in the highlights that would otherwise have remained clipped.*

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 4.33**). But note that the ability to recover highlight detail in this way only really applies when processing raw images.

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 in the histogram (**Figure 4.35**). 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.

Figure 4.34 *This shows the overlay that appears as you use keyboard shortcuts to edit the Basic panel settings.*

Navigating the Basic panel via the keyboard

You can use the < and > 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 +/− 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 4.34**).

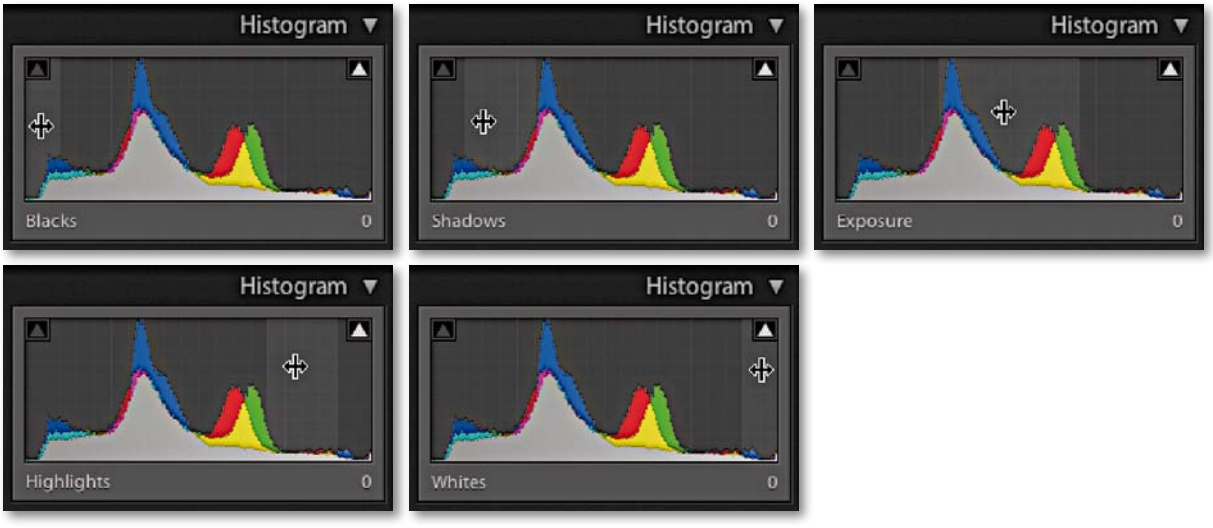


Figure 4.35 *The Basic panel adjustments shown here were all achieved by clicking on different sections of the histogram and dragging right or left to increase or decrease the setting represented by that particular section of the histogram. You can also double-click on these areas of the histogram to reset the values.*

Figure 4.36 *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 too much.

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. It may be possible to use this technique on a JPEG image to darken the highlights, but the technique shown here really works best with 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 reckon 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. Although Lightroom can work its magic on most images, it will have a limited effect on pixel-based images such as JPEGs or TIFFs. For best results, you can only really use this technique when processing raw images.

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. Note that 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 some of 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 4.36** 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 4.36.

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 there 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. 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 use Exposure—just drag the 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 get the image looking roughly the right 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 did also over-brighten 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 at the bottom 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 here is a photo that is actually 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.

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, plus 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 were going up and down as I shot this photo sequence.

2. I selected the photo with the most correct-looking exposure and made this the most selected, target image. I then went to the Develop module and chose Match Total Exposures from the Settings menu (⌘ Alt Shift M [Mac] or Ctrl Alt Shift M [PC]).

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

Figure 4.37 *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 one 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 4.37** 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 4.37, 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 non-specular highlights) need to be treated more carefully, because they'll 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 real risk that any important detail in these highlights may print to the same paper white as the clipped highlights.

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, and in practice I use the highlight clipping preview when adjusting the Whites slider (discussed on page 198) 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 or not. 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 Exposure and Recovery so that the reflective highlights are slightly clipped, but at the same time, I carefully check the nonreflective highlights to make sure these are protected. To do this, I'll either reduce the Highlights slider to protect the highlights more 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 really 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 will similarly make sure that the blackest blacks are translated to a black value that will print successfully on the press.

On page 198 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 4.38** 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 4.39** may contain important information in the shadows. In this example there is a lot of information in the shadow region that 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 4.38 *With this photo, I set the Blacks slider to 17 because I deliberately wanted to clip some of the shadows to black.*

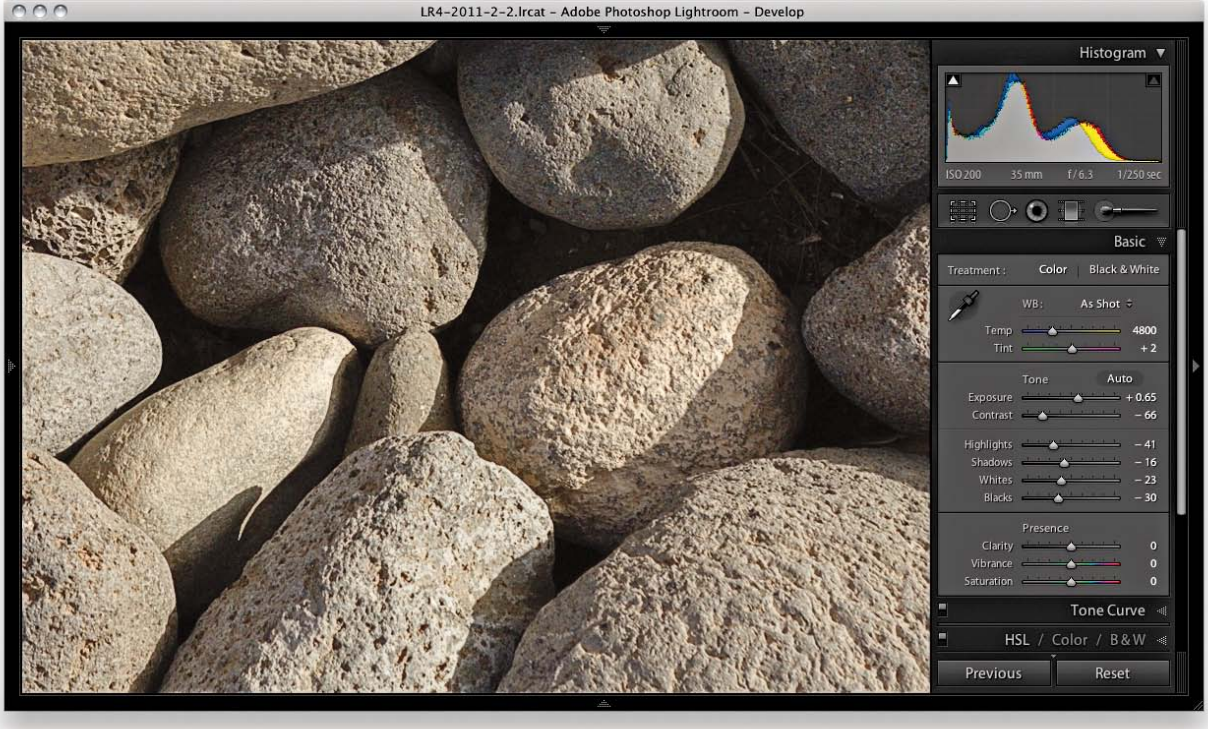
Figure 4.39 *Here is an example of a photograph that contains predominantly dark tones. When adjusting this photo it would be important to make sure the blacks weren't clipped any more than necessary to produce good, strong blacks in the picture.*

NOTE

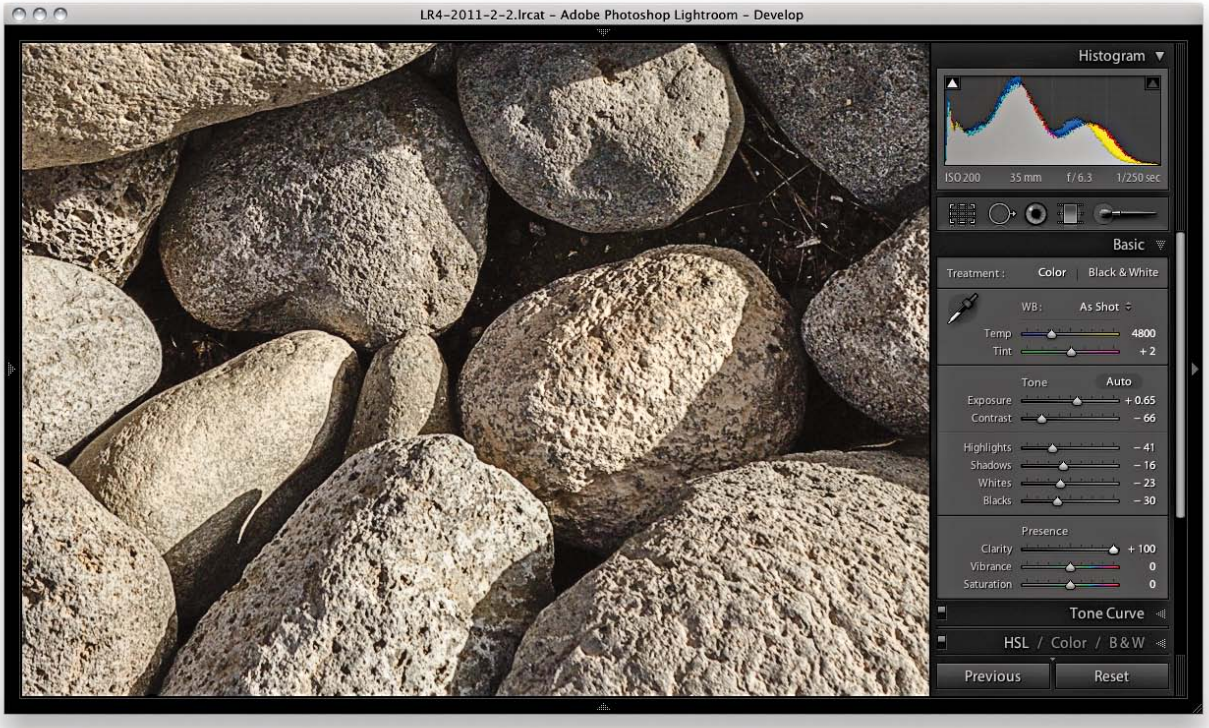
Clarity is a hybrid of two separate contrast enhancing techniques. One is a local contrast enhancement technique, devised by Thomas Knoll, using a low amount and high radius setting in the Photoshop Unsharp Mask filter. The other is a midtone contrast enhancement Photoshop technique that was originally 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. A Clarity adjustment 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 through 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 will boost the apparent contrast in the midtones, but it does so without affecting the overall global contrast. Normally, you would want to start with a Clarity setting of around 10 and try not to overdo the effect too much. But as you increase the Amount this strengthens the midtone contrast effect and this 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 utlilized for the Highlights and Shadows sliders. As a consequence of this the Clarity halos are now less noticeable. At the same time, positive Clarity adjustments in Process 2012 are roughly double the strength of earlier process versions.



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



2. In this next screenshot you can see how the stones 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 contrast detail here in the stones.

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 I'll be showing 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 from a traditional darkroom diffusion printing technique (see **Figures 4.40** and **4.41**). The net result is that you can create some quite beautiful diffuse soft-focus image effects, which are particularly suited to black-and-white photography. Note that while positive clarity has undergone some refinement in Process 2012, the negative clarity adjustments remain unchanged.

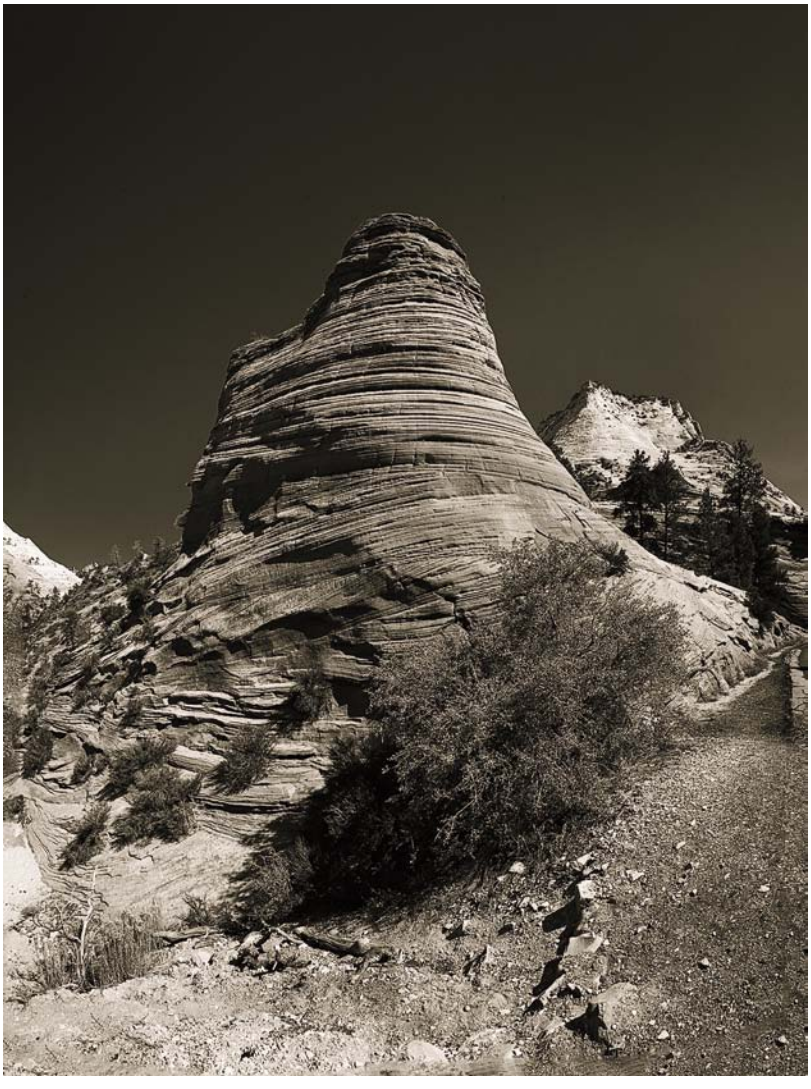


Figure 4.40 *This shows how the photograph I was about to work with looked before I had applied a negative Clarity adjustment. It's a nice picture with lots of sharp detail, but it's also a good candidate for this "pseudo" diffusion printing technique.*

Figure 4.41 *This screenshot shows the photograph in Figure 4.40 where I had applied a –66% Clarity adjustment. As you can see, the negative Clarity creates a kind of diffuse printing effect.*

Figure 4.42 *The Vibrance and Saturation sliders are located at the bottom of the Basic panel.*

Vibrance and Saturation

The Vibrance and Saturation sliders are located at the bottom of the Basic panel (**Figure 4.42**) 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 non-linear 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 really 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. Several examples of Saturation and Vibrance adjustments are shown in **Figure 4.43**. A positive Saturation adjustment will boost all colors equally. In the example shown here it makes all the colors equally more saturated and as a consequence there is 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 that 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, while 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 4.43 *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. Lastly, what I would consider to be an optimum Vibrance setting for this image of +50%.*

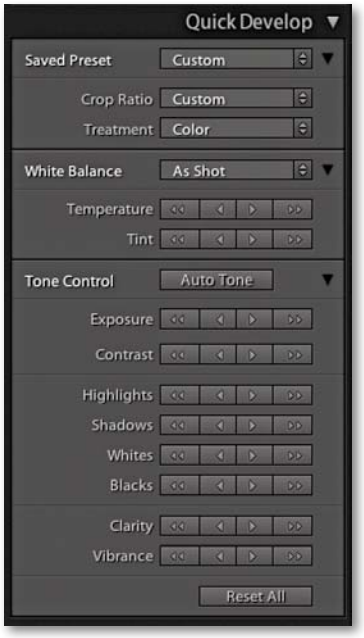


Figure 4.44 *This shows the Quick Develop panel. Note that in order to see all the controls shown here, you will need to click the expansion arrows on the right. To restore an adjustment to its default setting, click on the name of the adjustment. The Auto Tone button will apply an automatic adjustment 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 4.44**). With the Quick Develop panel you can apply all the Basic panel tone and color adjustments without having to leave the Library module. 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).

The other main advantage is that you can apply Quick Develop adjustments to multiple selected images in a Grid view or in the filmstrip. Using Quick Develop is the same as working in the Develop module, except you don't have quite the same degree of control. Quick Develop is therefore ideal for making first pass 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 modules to apply image adjustments. However, it is important to bear in mind here 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 preview you see in Develop is 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 in part be dependent on whatever settings you have selected in the Catalog Settings File Handling section. And you have to bear in mind that the Library preview mechanism is primarily designed to generate decent quality 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 4.45** and choose a default setting or a previously saved preset as your starting point (note here 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 will 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 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 4.45) 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 Ctrl 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, it 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, make it more magenta. Note the single-arrow buttons produce small shifts in color, and the double-arrow buttons will 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 can 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 172).

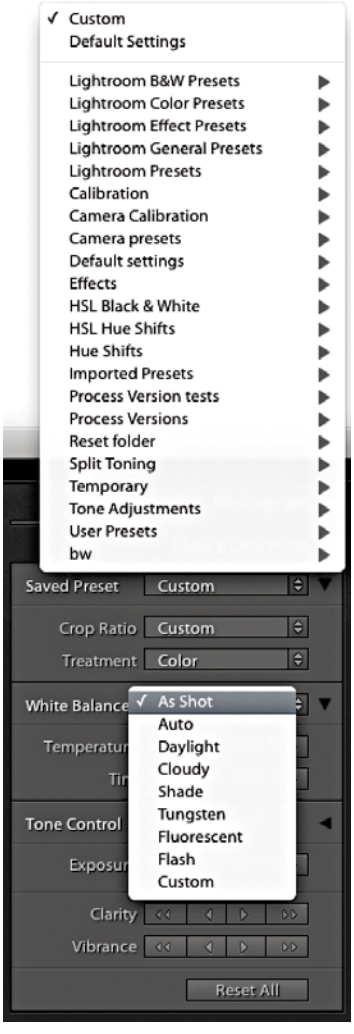


Figure 4.45 *The Quick Develop panel showing the Preset and White Balance menu lists. The preset list displays all default and all saved develop settings. See "Saving Develop Settings as Presets" on page 318.*

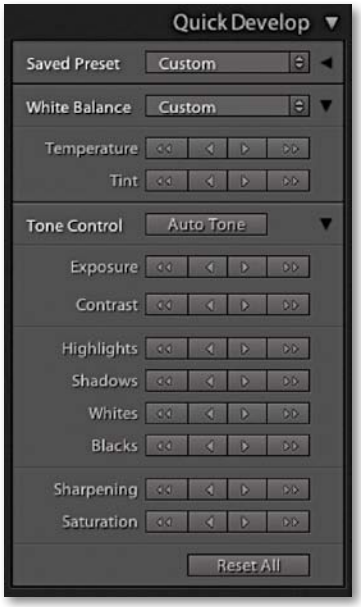


Figure 4.46 *The Quick Develop panel view with the Alt key held down, to make the Saturation and Slider controls visible.*

If you hold down the Alt key the Clarity buttons in the Quick Develop panel will switch to become Sharpening buttons (see **Figure 4.46**). In this Alt 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 Alt 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 on the Auto Tone button to apply an auto tone adjustment (⌘U [Mac] or Ctrl U [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 ⌘ Shift R (Mac) or Ctrl Shift R (PC) shortcut. This action will reset 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.

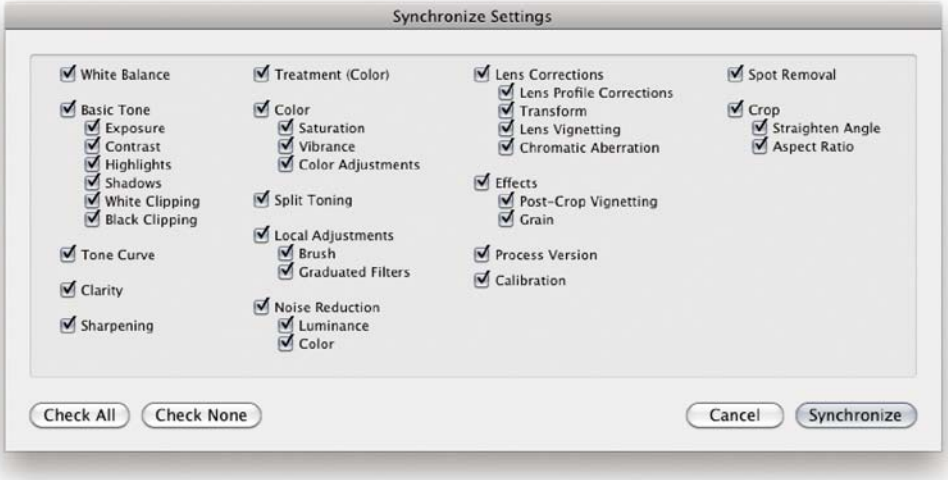
1. These daylight photographs were shot with a digital camera in raw mode and were imported using the Default develop settings and "As Shot" White Balance. In this first step I made a selection of all the photos that I wanted to adjust.

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

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 in Quick Develop one image at a time. 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).



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.

NOTE

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

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 4. Previously, 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 you can now 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.

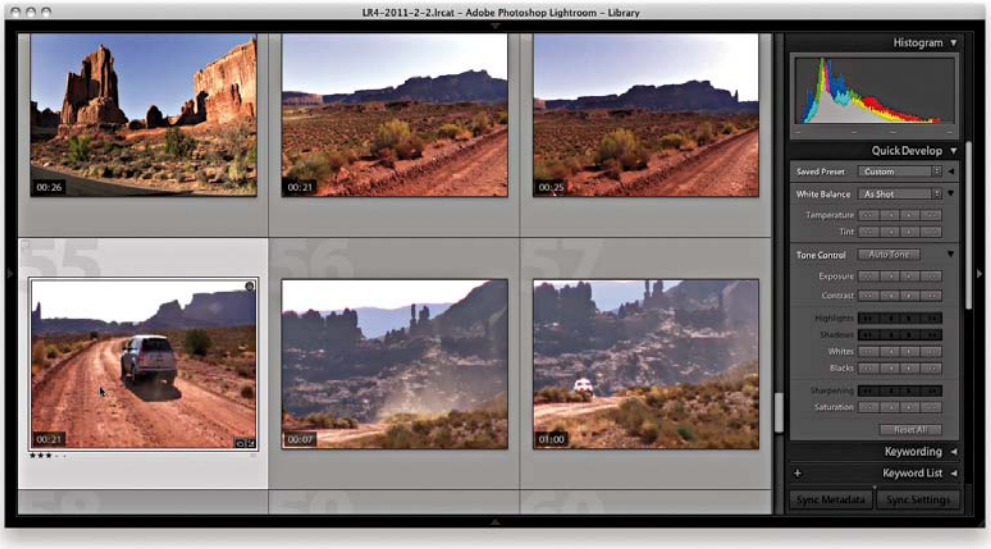
So let me run through some of the key features. **Figure 4.47** shows how video files are now displayed in the Library module Grid view and over the page you can see some steps showing how video files are now displayed in the Library Loupe view. You can navigate a clip to play it and edit the start and 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 have this used as the thumbnail preview in Lightroom (Slideshow will then also uses the poster frame). Lastly, there is the "Display Trim Time as SMTPE" option. This is an absolute time code which 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 doing professional video editing.

Figure 4.47 *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).



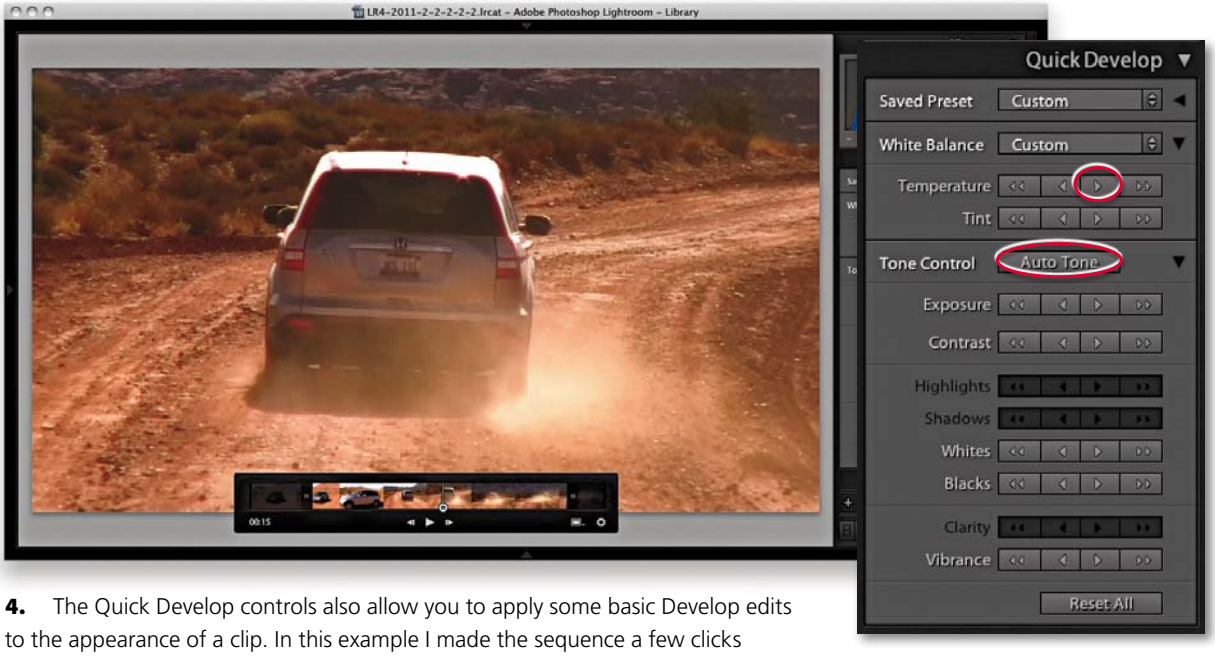
1. When you inspect a video file in the Lightroom Library module Grid view you can quickly track all the frames in a sequence by hovering the mouse over the thumbnail and moving the cursor from left to right.

2. I double-clicked the thumbnail in the grid to go to the Loupe view. Here, you can click the Play arrow button or tap the spacebar to play the selected movie clip (click again to pause). You can quickly navigate a video clip by dragging the frame selection button. You can also reveal the key frames (shown above) by clicking the gear button (circled above). 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.

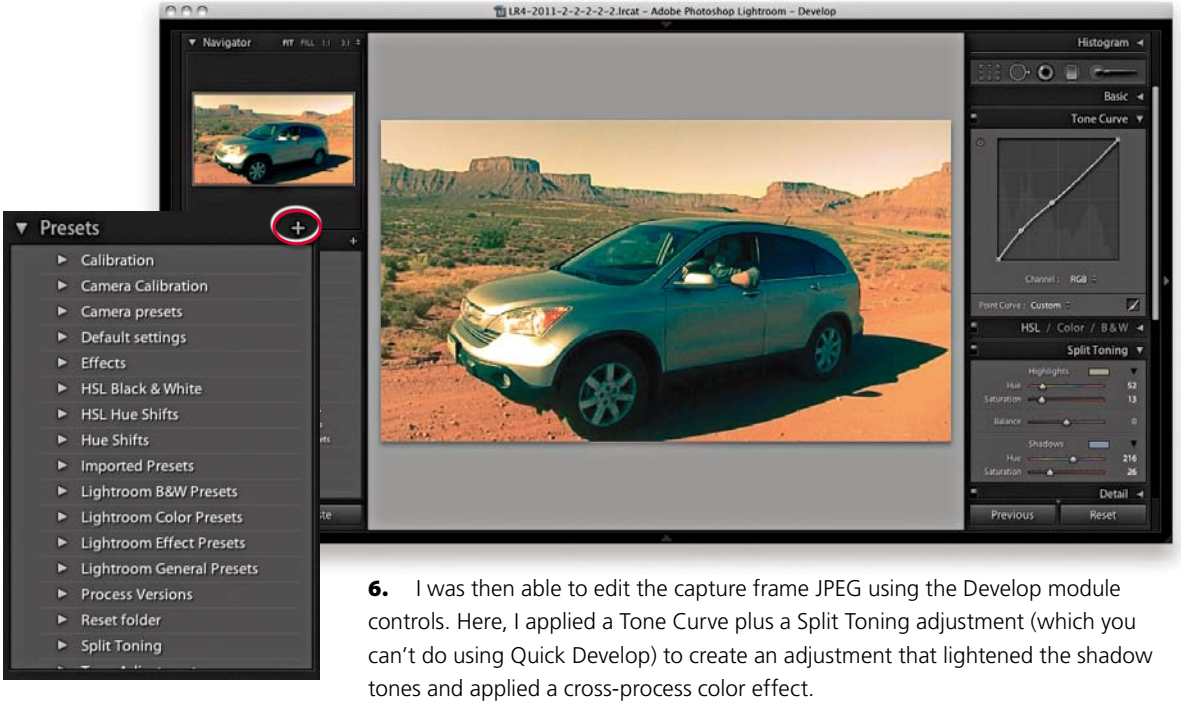
TIP

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

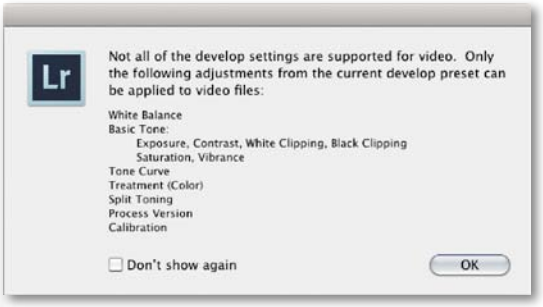


4. The Quick Develop controls also allow you to apply some basic Develop edits to the appearance of a clip. In this example I made the sequence a few clicks warmer to remove the slight bluish cast and also clicked on the Auto Tone button to optimize the tone balance.

5. Although the Quick Develop panel won't let you edit videos extensively and you can't edit videos in the 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.



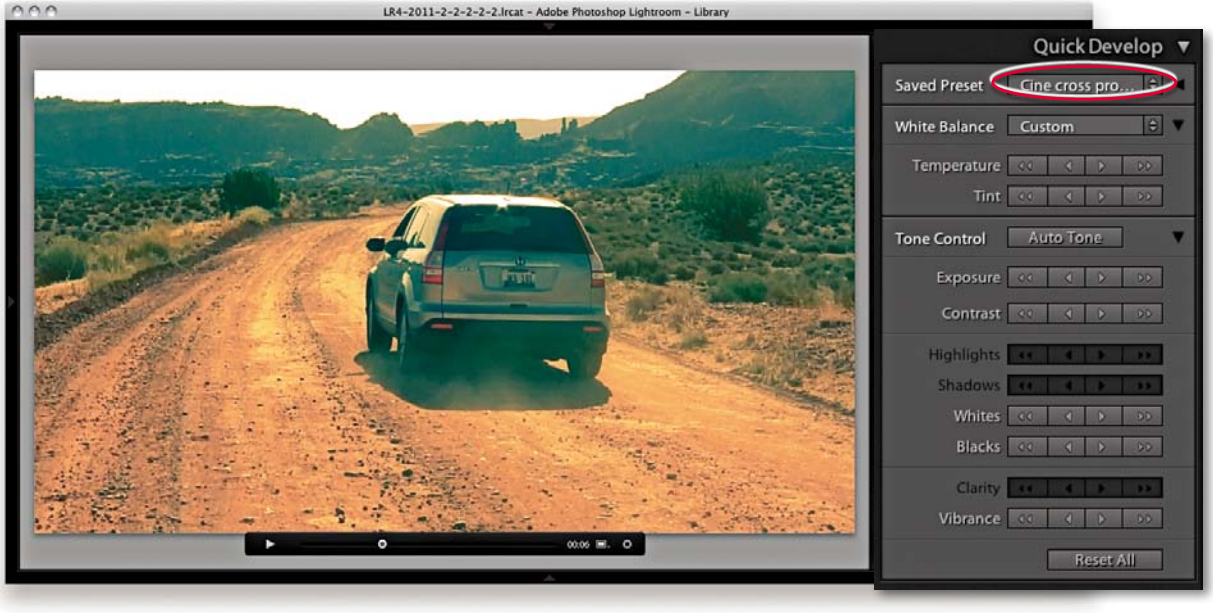
6. I was then able to edit the capture frame JPEG using the Develop module controls. Here, I applied a Tone Curve plus a Split Toning adjustment (which you can't do using Quick Develop) to create an adjustment that lightened the shadow tones and applied a cross-process color effect.



7. I then clicked on 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 are 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 new 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.

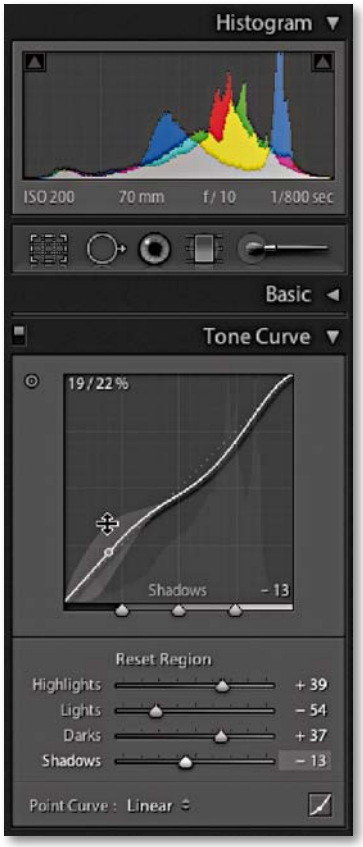


Figure 4.48 *The Tone Curve panel controls are shown here with an adjustment in progress being made to the Darks. Notice how the histogram in the Histogram panel is mirrored in the curve graph and both are updated as you edit the Tone Curve controls.*

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 adjustments. The reason the Tone Curve controls are presented in this way is 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 adjusting them 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 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 also 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 ⇧Shift 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 using 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 4.48**, 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 4.49**). 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 non-raw 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 4.50**). 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 238).

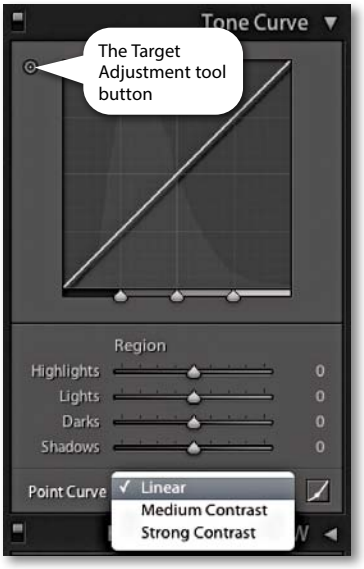


Figure 4.49 *The Point Curve menu offers a choice of three curve settings.*

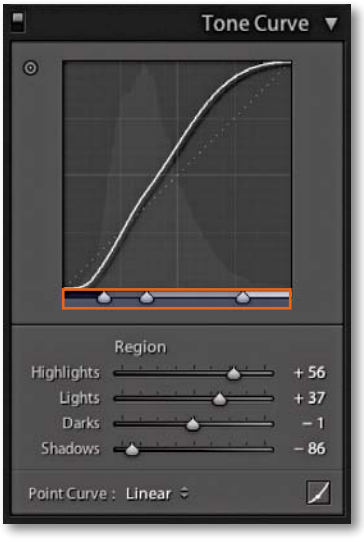


Figure 4.50 *The tone range split point controls.*

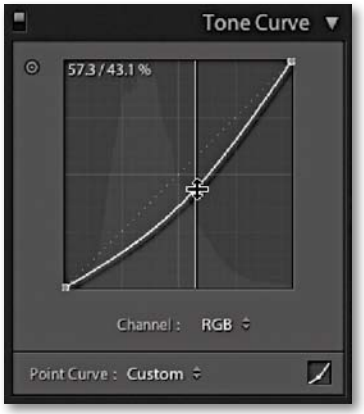


Figure 4.51 *The Tone Curve in Point Curve editing mode.*

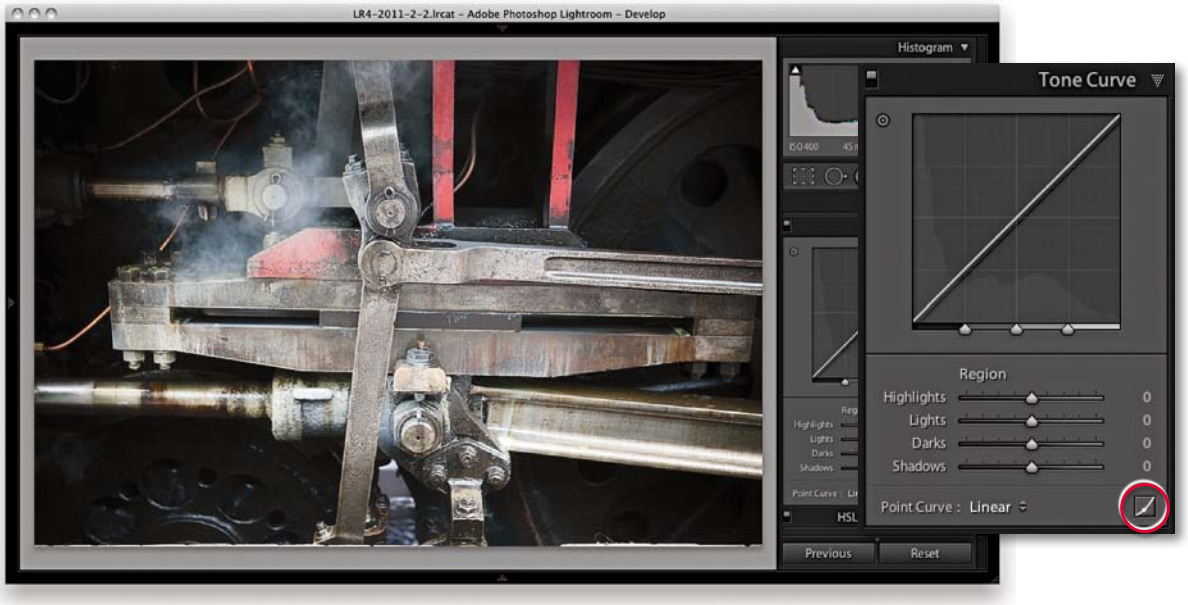
NOTE

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.

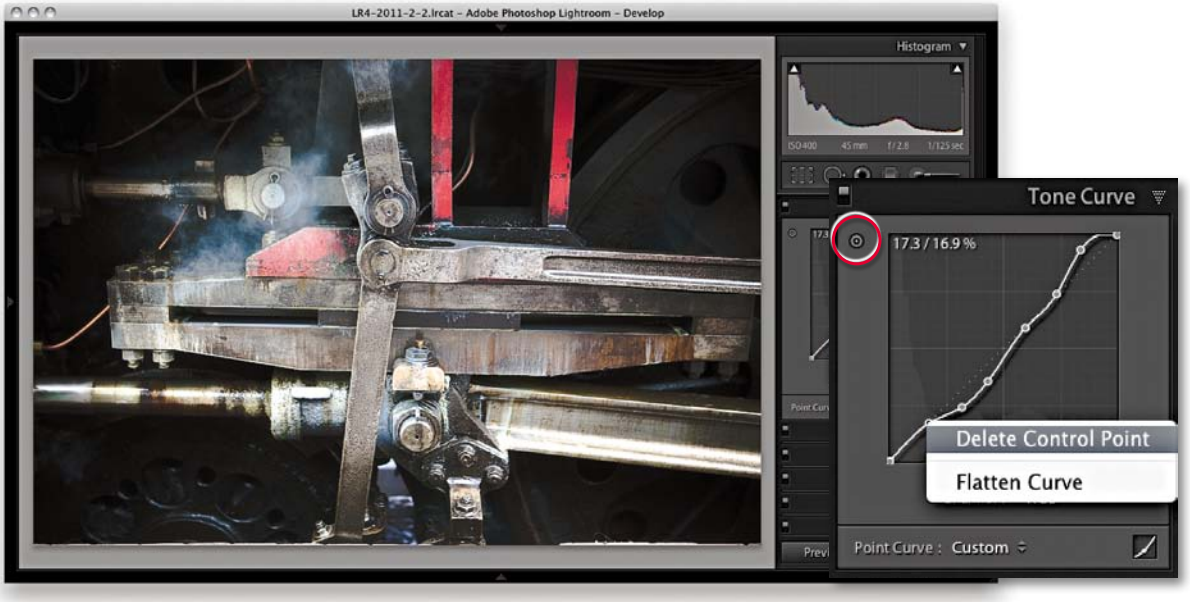
Point Curve editing mode

Lightroom now allows you to edit the Tone Curve the same was 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 4.51**), click on 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 ⌘ Alt Shift T (Mac) or Ctrl Alt Shift T (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. What this means is 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.

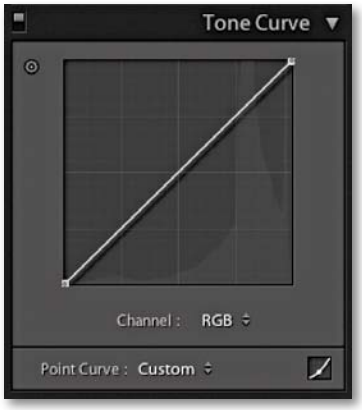


Figure 4.52 *This shows the Tone Curve in Point Curve editing mode in the default RGB curve mode.*

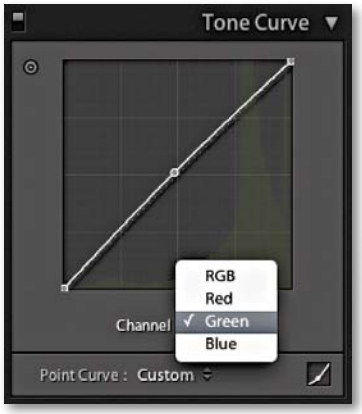


Figure 4.53 *This shows the Tone Curve in Point Curve editing mode with the Green channel selected.*

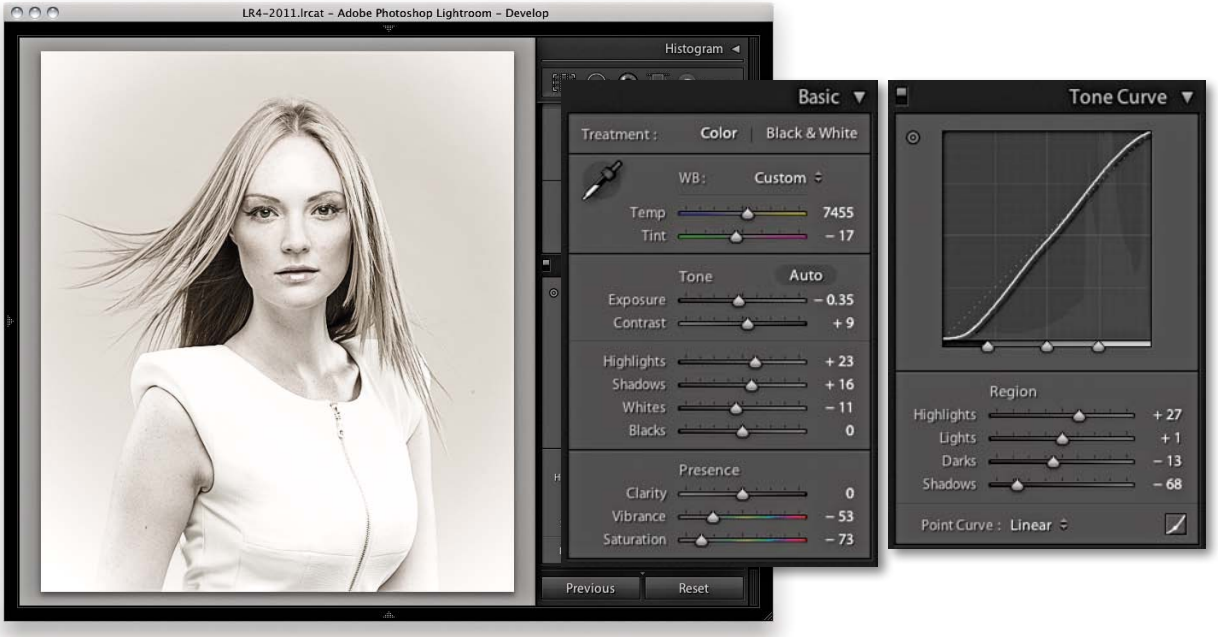
TIP

RGB Curves allow you to push the boundaries when editing color images. For example, you can use this feature to apply strong colored overlay effects.

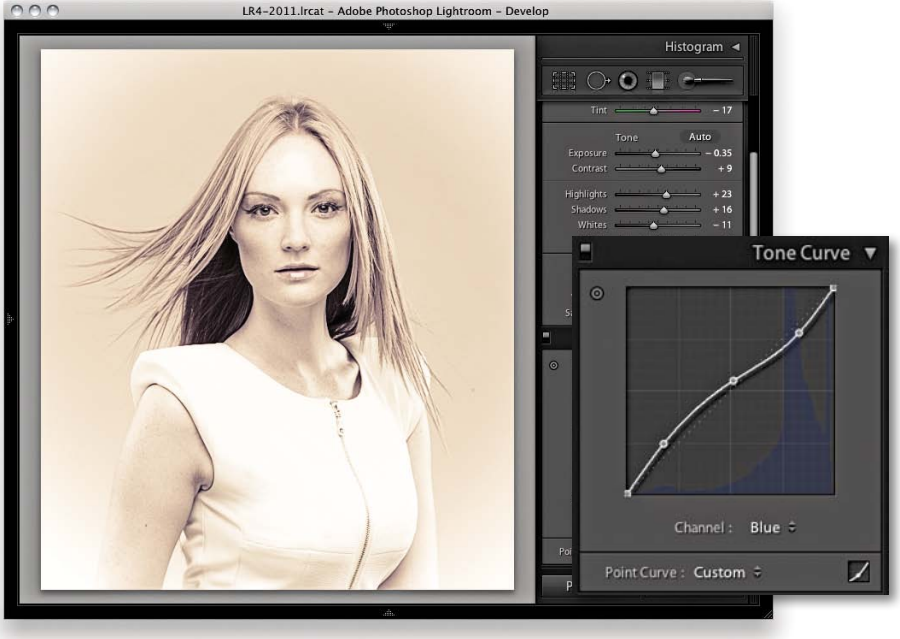
RGB curves

In Lightroom 4 you now have the option to edit the red, green, and blue channel curves separately, just as you can in Photoshop. This is only possible though if you have updated a photo to Process 2012. Do this and in the Tone Curve panel (**Figure 4.52**), 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 4.53**. When editing an image in Photoshop, the ability to edit the individual color channels is a useful feature to have. This is because in Photoshop you need the fine level of control that Curves adjustments can offer when color-editing a rendered pixel image. In the case of Lightroom one can argue that 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 when editing photographs in Lightroom. Having RGB curves in Lightroom means that we now have extra tools to work with when adjusting color. Just be aware that 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 some of the other controls such as the Split Toning panel (see page 342). However, RGB curves do extend the color editing possibilities. They can be useful for correcting photos shot under mixed lighting conditions and, as is shown here, I found that it is possible to achieve split toning effects that are distinctly different from those that can be achieved using the regular Split Toning panel.

1. In this example I took one of the shots from the book cover photo shoot and opened it in the Develop module. As you can see, I had already applied some desaturation to the colors in this photo.



2. I then desaturated the image further and went to the Tone Curve panel to apply the parametric curve adjustments shown here.



3. Lastly, I switched the Tone Curve panel to the point curve editor mode and adjusted the red, green, and blue channel curves separately to achieve a custom split tone 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 ⌘ Alt Shift T (Mac) or Ctrl Alt Shift T (PC) to enable the Tone Curve Target Adjustment tool and use Esc or ⌘ Alt Shift N (Mac) or Ctrl Alt Shift N (PC) to turn off the Target Adjustment tool.

The Tone Curve zones

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 zones 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; plus, 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 this selected portion of the curve. Note that you need to drag the mouse up to lighten and down to darken.

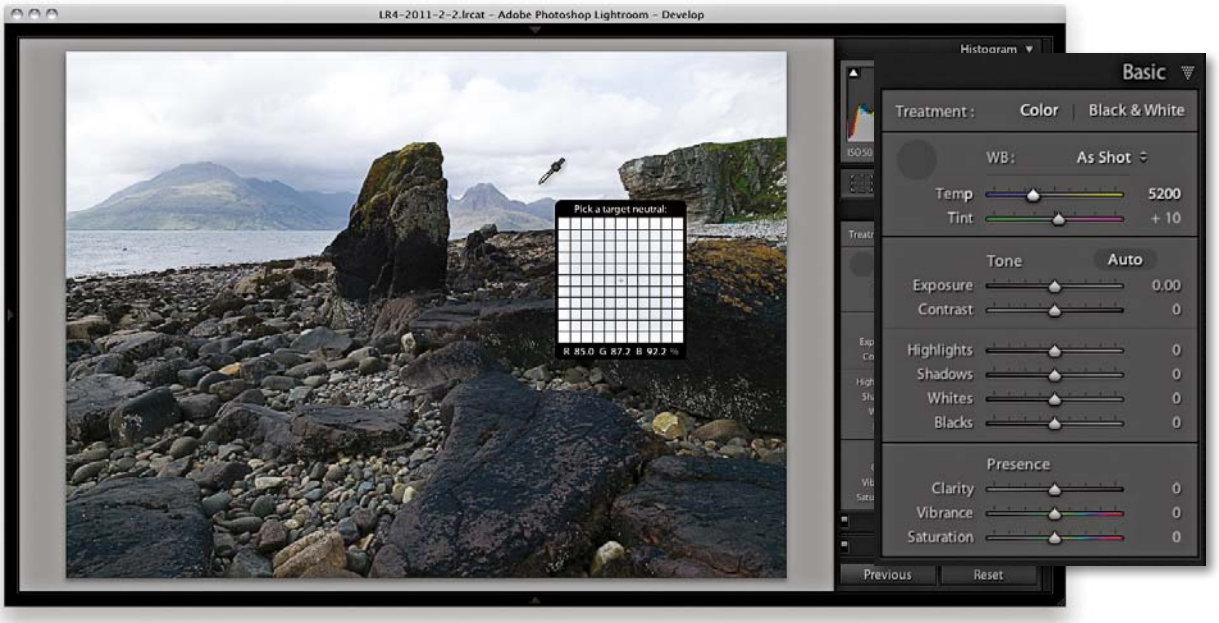
2. Next I wanted to concentrate on darkening the tones within the Lights zone of the curve. I placed the cursor over the monument in the foreground and this time dragged downward with the mouse.

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 here 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, recover lost highlight detail, and improve the overall contrast in the photograph. This was then followed by Tone Curve adjustments 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 in order to achieve a good-looking final image.



1. Here is a raw image where just 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.

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

3. Next, I adjusted the Highlights slider to bring out more detail in the clouds. Here, I applied a –82 adjustment.

4. I then adjusted the Shadows slider to lighten the shadow detail, applying a +29 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 adjust 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 4.54**, **4.55**, and **4.56** 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.

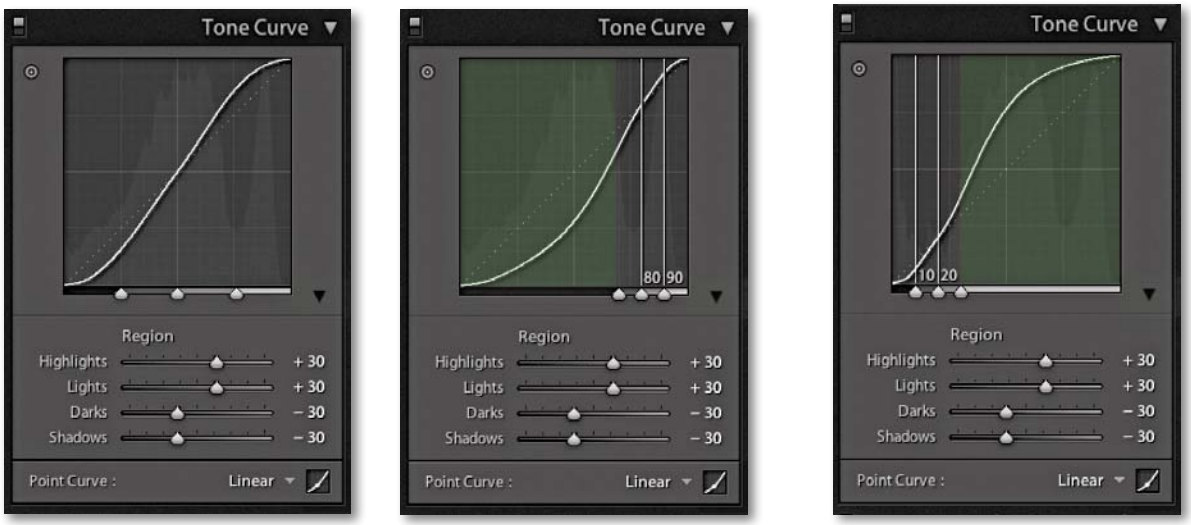


Figure 4.54 *The screenshot on the left shows an S-shaped tone curve with the tone range split points in their normal positions with equal spacing for the Shadows, Darks, Lights, and Highlights zones. The middle example shows the Shadows zone set to its widest extent, compressing the other three zones. The example on the right shows the Highlights zone set to the widest point, compressing the other three zones.*

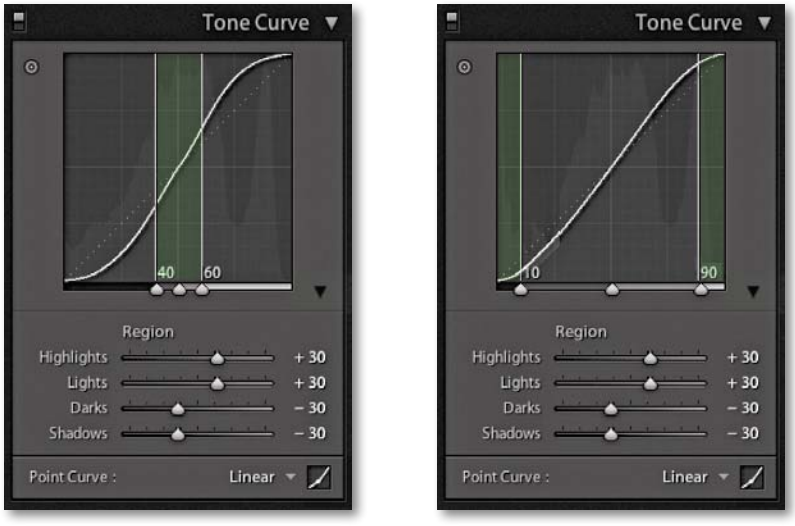


Figure 4.55 *By moving the two outer tone range split points in closer you can increase the midtone contrast; you can reduce the contrast by moving them farther apart.*

Figure 4.56 *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 screenshot, the tone range split points are in their default positions and the Tone Curve zones are 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 and revealed more tone detail in the face.*

Figure 4.57 *The HSL / Color / Grayscale panel with the HSL mode selected.*

Figure 4.58 *The HSL / Color / Grayscale panel with the Color mode selected.*

NOTE

Mark Hamburg and Thomas Knoll decided here 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 4.57**) 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 should be considered a color adjustment tool for 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 4.58**) 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 the greens 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 H (Mac) or Ctrl Alt Shift H (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 using 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 260). 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 in order to achieve the desired result. But the Lightroom sliders really do respond the way you would expect them to and these 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 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 flowers.

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. On my computer I have created a series of hue shifted develop settings. In the first, all the Hue sliders are shifted +30, in the second they are shifted to +60, and so on. I suggest this as one way to create creative hue shift coloring effects (see **Figure 4.59** on the next page).

Figure 4.59 *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 it doesn't mean they're not there!

In the **Figure 4.60** example you can see a photograph taken of one of the mittens at Monument Valley, 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 there 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 quality 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 an inkjet printer can print. This is where soft proofing can help you accurately pre-visualize what the final print should look like (see Chapter 8).

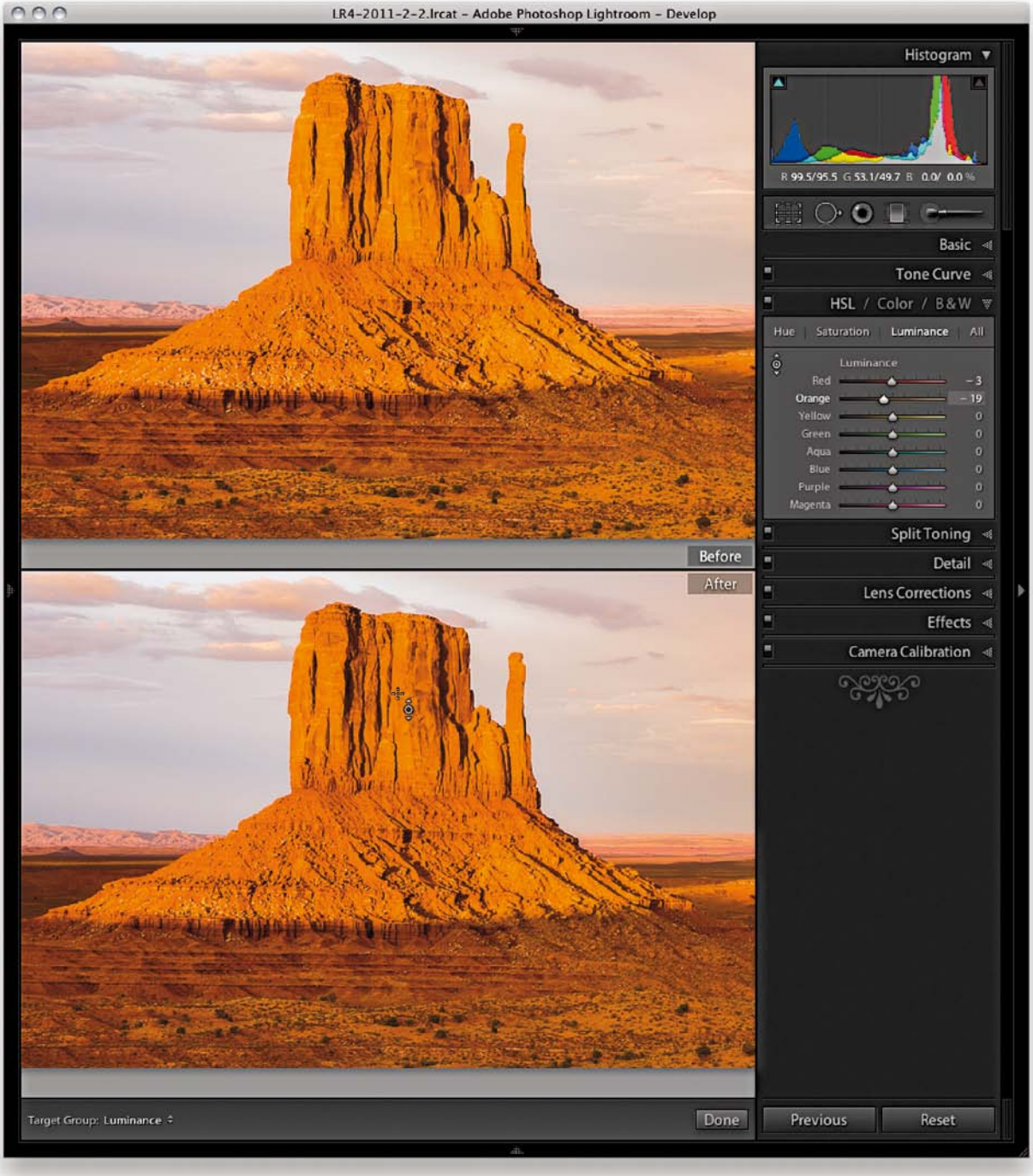


Figure 4.60 *This shows an example of a Luminance HSL adjustment being used to selectively darken the red and orange colors that initially appeared clipped.*

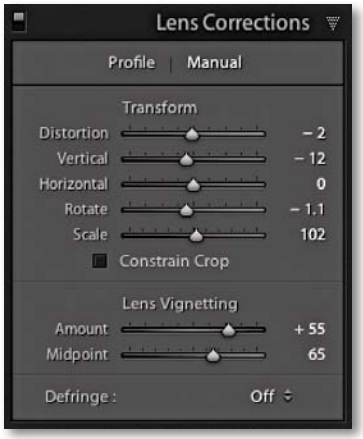


Figure 4.61 *The Lens Corrections panel showing the Manual tab options and with Transform adjustments applied to an image. Note that if you click the Constrain Crop check box, the image is automatically cropped to fit the frame.*

Lens Corrections panel

The Lens Corrections panel consists of two sections: Profile and Manual. We'll start here by looking at the manual corrections controls first.

Perspective transform corrections

In the Manual tab section of the Lens Corrections panel we have at the top the Transform controls (**Figure 4.61**). 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 Overlay mode (R) to do this. However, in the step-by-step example shown on pages 250 to 251, 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. Finally, 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 gray padded area (see Step 3 on page 251). 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.

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 will correct for the light fall-off 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.

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

2. Here I applied some Lens Vignetting adjustments via the Lens Corrections panel, in which I used a positive Amount setting to lighten the corners and fine-tuned this anti-vignetting adjustment by tweaking the Midpoint slider.

Figure 4.62 *The vignette controls can also be used to compensate for light fall-off in a studio shot.*

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 kind of possible to apply such adjustments that are missing the EXIF metadata.

The Lens Vignetting Amount and Midpoint sliders can also be used to compensate for the light falloff in studio lighting setups. In **Figure 4.62** you can see an example of a studio shot in which the model was photographed against a white background using a wide-angle lens. Although I tried to light the background as evenly as I could, there was inevitably some light fall-off 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. I'll be discussing these controls a little later in the Effects panel section.

Lens profile corrections

I began this section by showing you how to use the manual correction sliders because this seemed the best way to introduce you to what these controls do and why you would need to use them. In Lightroom 3 and 4 you will notice that the Lens Corrections panel normally defaults to showing you the Profile tab mode shown in **Figure 4.63**, which allows you to apply instant auto lens correction adjustments. 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. 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 come on to this 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 from the "Profile" menu. It is important to appreciate here that some camera systems capture a full-frame image (therefore making full use of the usable lens coverage area for many lenses), while compact SLR range cameras mostly have smaller-sized sensors that capture the image using a smaller area of the lens's total coverage area. The Adobe lens profiles have all been built using a camera that has 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 pin-cushion 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 also show "Default" as the selected option in the Setup menu in these instances.

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 make one yourself using the Adobe Lens Profile Creator program, or locate a custom profile that someone else has made. The Adobe Lens Profile Creator program 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. It isn't too difficult to do yourself once you have mastered the basic principles. If you are familiar with Photoshop CS5, you will be aware that Photoshop also has the auto lens correction feature included within the updated Lens Corrections filter and how it is very 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 quit Lightroom and restart before any newly-added lens profiles appear listed in the Automatic Lens Corrections panel profile list.

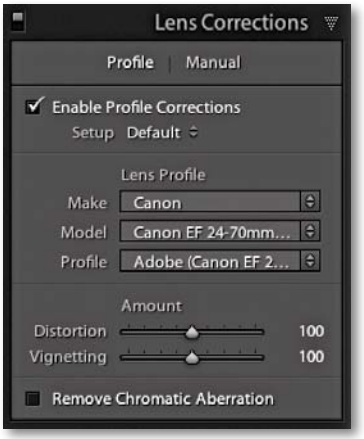


Figure 4.63 *The Lens Corrections panel showing the Profile tab options, with the "Enable Profile Corrections" box checked.*

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 Vista : ***C:\Program Data\Adobe\Camera Raw\Lens Profiles\1.0.***

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

2. In the Lens Corrections panel I simply 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 Manual tab in the Lens Corrections panel so that I could adjust the Vertical transform slider to correct for some of the keystone distortion in this photo. I also adjusted the Horizontal slider to center the two overhead poles. I also rotated the transform adjustment –3 clockwise and adjusted the Scale slider in order to zoom out slightly and reveal more of the image content.

NOTE

If you click the Constrain Crop option (circled in Step 3) the image will automatically crop to fit the frame.

4. Finally, I opened the photo in Photoshop CS5 and used the Content-Aware Fill feature to fill in the gray space at the bottom. If you are interested in seeing how this was done, I suggest watching the movie that's on the book's website.

Downloadable Content:
www.thelightroombook.com

NOTE

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.

It should also be mentioned here that the independent lens manufacturer Sigma was helpful in that it willingly shared its lens data with Adobe in order to help Adobe produce better lens correction profiles for the entire Sigma range of lenses.

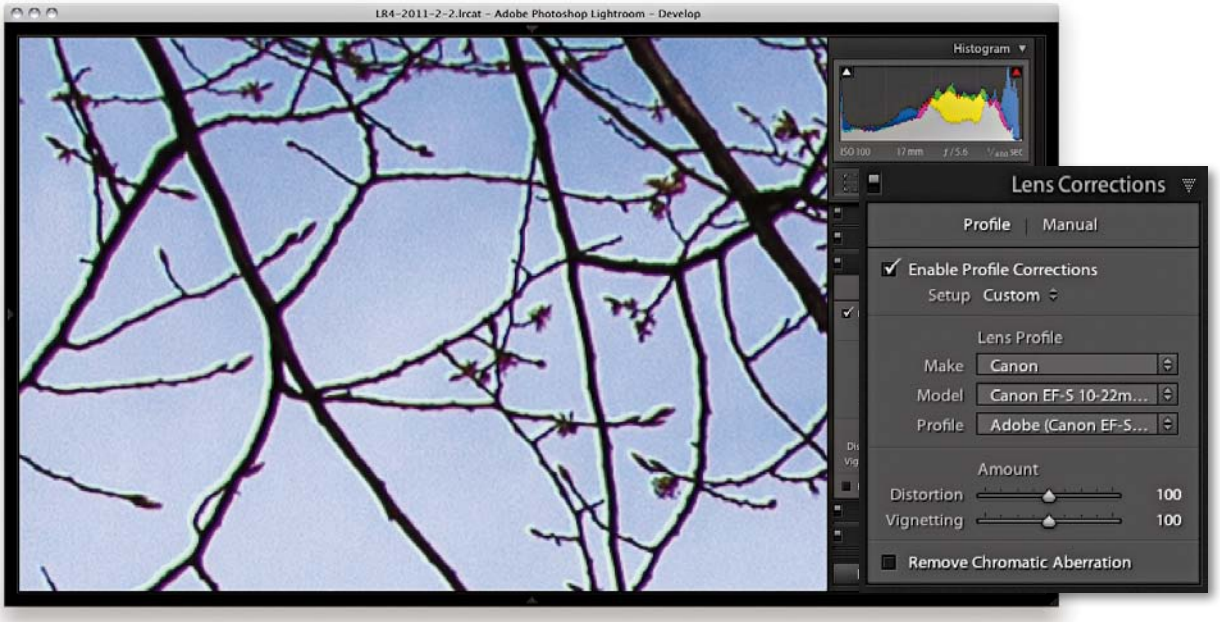
Removing chromatic aberrations

Chromatic aberrations are 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. There is also another type of chromatic aberration known as axial or longitudinal chromatic aberration, which describes the inability of lenses to focus different colors at the exact same distance—this is much harder to correct. Fortunately, 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. Basically, the chromatic aberration sliders that were once in the Manual tab and the Chromatic Aberration slider for lens profile corrections have been removed and the new Remove Chromatic Aberration option is now used in place to carry out an automatic correction whether you have a lens profile correction enabled or not. 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 with decentered lenses, such as tilt/shift lenses.

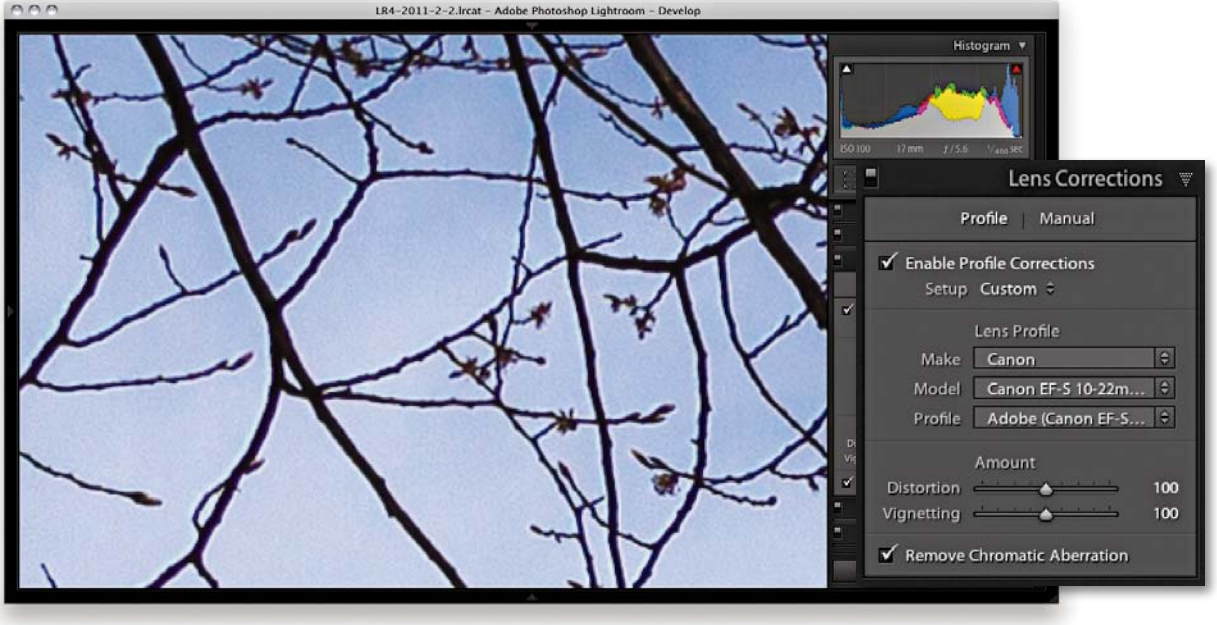
Figure 4.64 *The Lens Corrections panel showing the Defringe menu options.*

The Defringe controls

The Manual tab section of the Lens Corrections panel offers a Defringe menu (**Figure 4.64**). This allows you to correct for "Highlight Edges" and "All Edges." The Highlight Edges correction can correct for the color fringing you sometimes see in extreme burned-out highlight areas. This can be caused by extreme light exposure hitting the camera sensors, resulting in too many photons overloading the individual photosites. This, in turn, may create problems in the demosaic process. When enabled, the Highlight Edges Defringe option carries out a different kind of calculation in order to correct the magenta fringing that is sometimes seen around the highlight edges. The impact of this option was more significant in earlier versions of Lightroom and since the introduction of Process 2010 and 2012, and now the latest Remove Chromatic Aberration, you are less likely to experience such problems. But it's there for legacy reasons and those who need (or prefer) to use Process 2003 still. The All Edges correction offers a rather subtle auto correction. Here again, it is hard to find examples of where it continues to be needed. However, if you ever experience problems trying to remove chromatic aberration you may need this option to further clean up the edges.



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.

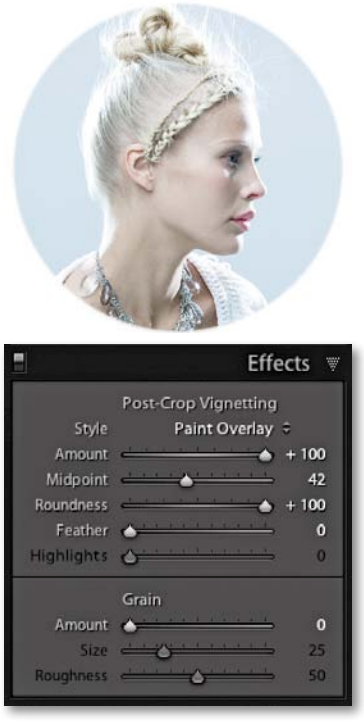


Figure 4.65 *This shows the Effects panel controls. At zero Roundness, the vignette shape matches the proportions of the cropped image. At +100, the Roundness slider makes the post-crop vignette more circular. At a zero setting the Feather slider allows you to apply a harsh edge to the vignette edge.*

Effects panel

Post-Crop vignettes

The Post-Crop vignette controls in the Effects panel (see **Figure 4.65**) can do more or less the same thing as the Lens Corrections 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, while the Roundness slider allows you to adjust the shape of the vignette relative to the proportions of the image (see Figure 4.65). Meanwhile, the Feather slider allows you to soften or harden the vignette edge. For example, in Figure 4.65 I applied a zero Feather amount to the vignette, which applied a hard edge to the vignette.

Since version 3 of Lightroom you now have access to the new Post-Crop Vignetting 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 4.66**). 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 4.66, 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 earlier 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 4.66 examples how the Paint Overlay vignette applies a soft-contrast, hazy kind of effect. This wasn't to everyone's taste (although for some images 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 kinds of vignette effects.

Figure 4.66 *Examples of different post-crop settings applied to the image shown in Figure 4.65.*

Figure 4.67 *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 4.67**), 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 4.68** 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, has the benefit of allowing better highlight recovery, but can lead to color shifts in the darkened areas.

Figure 4.68 *In this example I took an image that had been shot with a 12mm wide-angle 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).*

Figure 4.69 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 4.69, 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 4.69 *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

Actually, it can be useful to add small amounts of grain when treating heavily noise reduced images. An example is shown on page 378 in Chapter 6.

Adding Grain to images

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 you then make a 8" x 10" print, the effect will mostly be lost due to the downsizing of the image data. If such images are downsized to appear on the Web then I doubt you'll notice the grain effect at all. **Figure 4.70** shows a photograph where I added a heavy grain effect and **Figure 4.71** shows a 1:1 close-up of the same image where you can compare the before and after views. 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 friend and late 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 and 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 over-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.

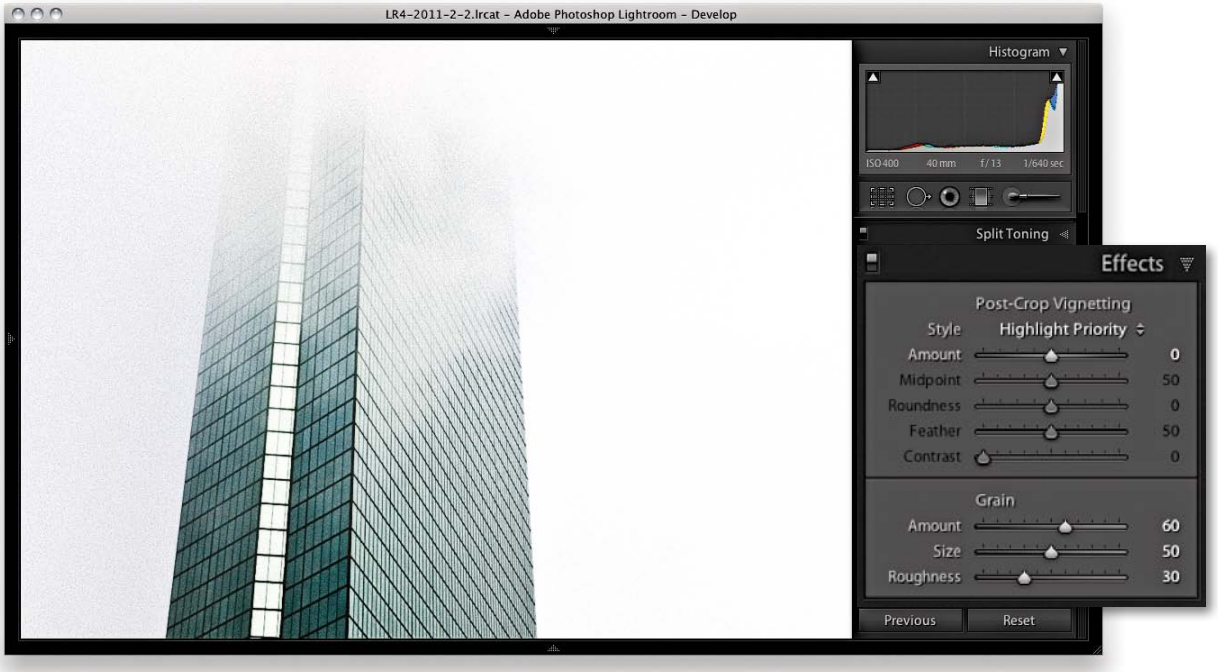


Figure 4.70 *This shows a full frame view of a photo where I applied a grain effect.*

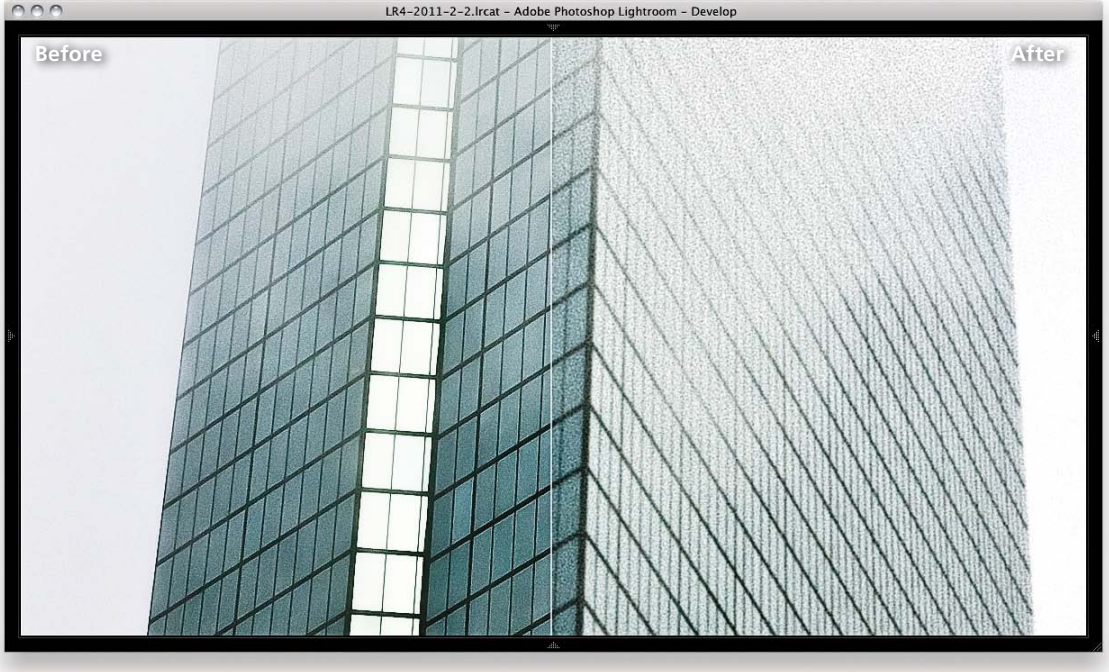


Figure 4.71 *This shows a before and after close-up view of the photo shown in Figure 4.76.*

Figure 4.72 *The Camera Calibration panel controls showing the Process options (top) and the 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 4.72**) 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 ⇨ 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 4.72) is now the recommended default, being 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 JPEG-processed 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 quite 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 be fond of the JPEG look and would prefer Lightroom to keep the colors the same on import, you can do so by selecting the Camera Standard profile from the Profile list shown in Figure 4.72. 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 JPEG camera 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 4.73**).

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 350 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 4.73 *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, while 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 4.74 *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

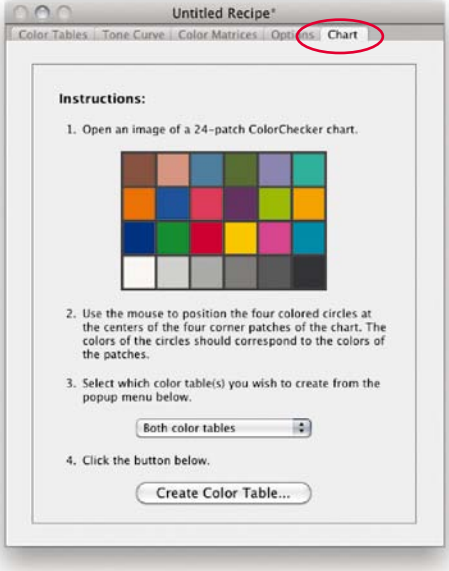
If you want to produce a super-accurate camera profile to match those created by Adobe, you can do so by photographing the target ColorChecker target twice: once using 6500 K balanced lighting and again using 2850 K balanced lighting. DNG Profile Editor allows you to read both captures independently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

How to create a custom calibration with DNG Profile Editor

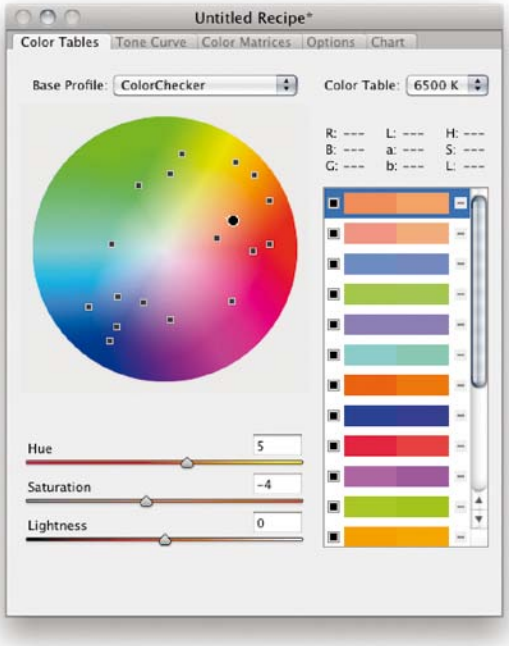
In the quest to produce improved Adobe Standard profiles, Lightroom engineer Eric Chan used a special utility program called DNG Profile Editor 1.0 to help reevaluate the camera profiles supplied with Camera Raw and with this produced the revised Adobe Standard profiles. You can get hold of a copy of this program by going to the labs.adobe.com website and doing a search for *DNG Profiles*. At the time of writing it is currently in version beta 3 and can be downloaded for free (see **Figure 4.74**). 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 ⌘S (Mac) or Ctrl S (PC) to save the Lightroom-edited metadata to the DNG file.

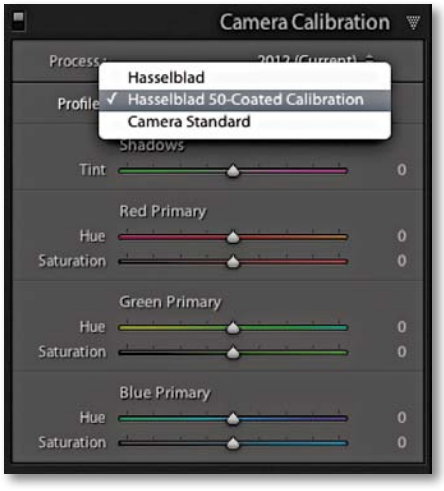
2. The next step is to launch DNG Profile Editor. Once launched, go to the File menu and choose File ⇨ Open DNG Image… Now browse to locate the DNG image you just edited and click Open. The selected image appears in a separate window and you can see the base profile is using the Adobe Standard profile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



3. Now click on 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.



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 ⌘E (Mac) or Ctrl E (PC) shortcut. Next, rename the profile as desired.



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 326 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 4.75** through **4.78** I. 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 347).

NOTE

If you create a custom camera profile for your camera and apply this 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. Which 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 4.75 *This shows a standard version of an image, using the Adobe Standard Camera Profile, but with zeroed Camera Calibration panel sliders,.*

Figure 4.76 *This shows a muted color setting, created using the Camera Calibration sliders.*

Figure 4.77 *To create this color infrared effect, I used the settings shown here (you may also want to reduce the Vibrance slightly).*

Figure 4.78 *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 4.79**) to select one of the four Before/After viewing modes from the fly-out 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 side-by-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

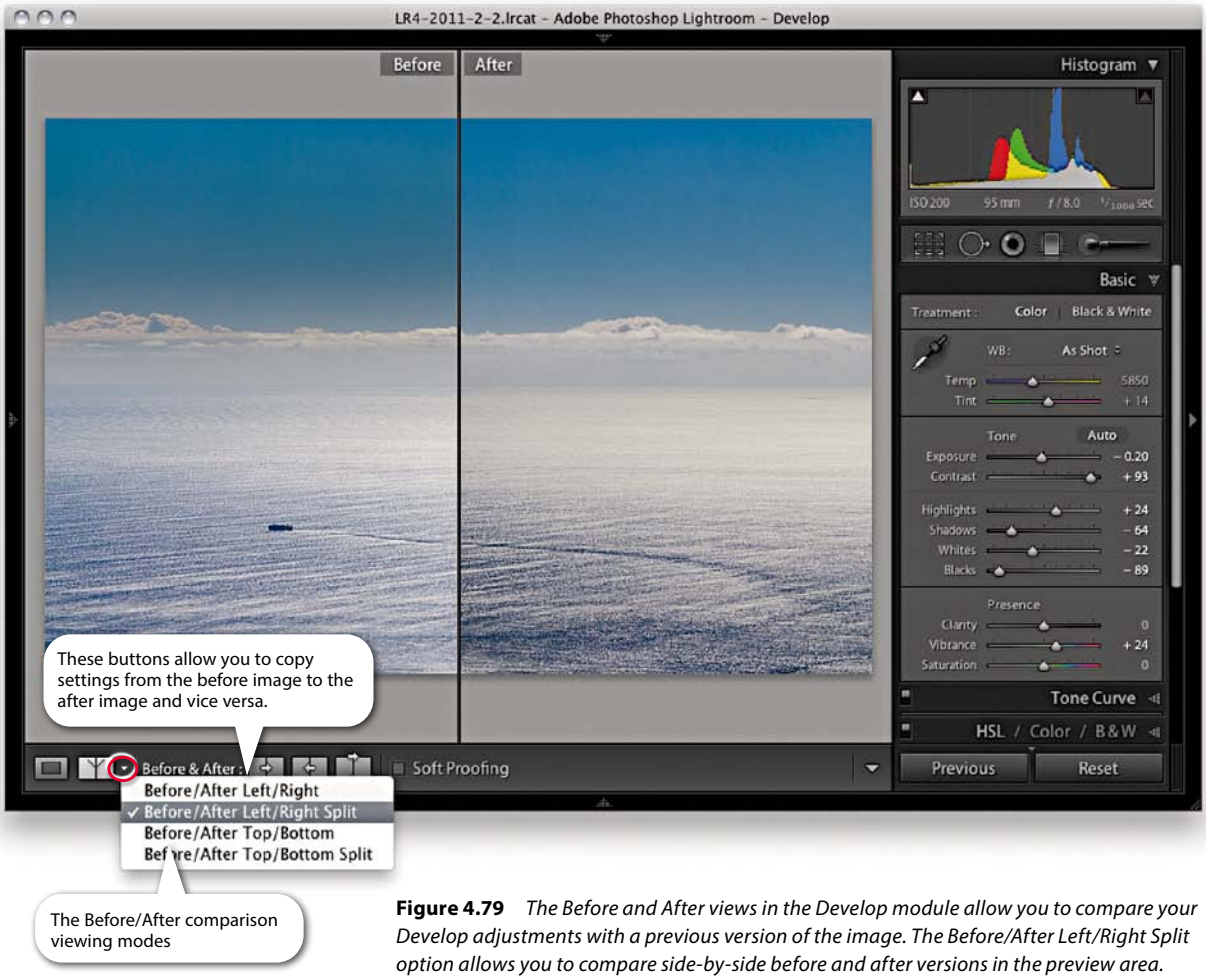


Figure 4.79 *The Before and After views in the Develop module allow you to compare your Develop adjustments with a previous version of the image. The Before/After Left/Right Split option allows you to compare side-by-side before and after versions in the preview area.*

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 4.80**]). 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 version.

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 (\) shortcut to quickly toggle between these two viewing modes.

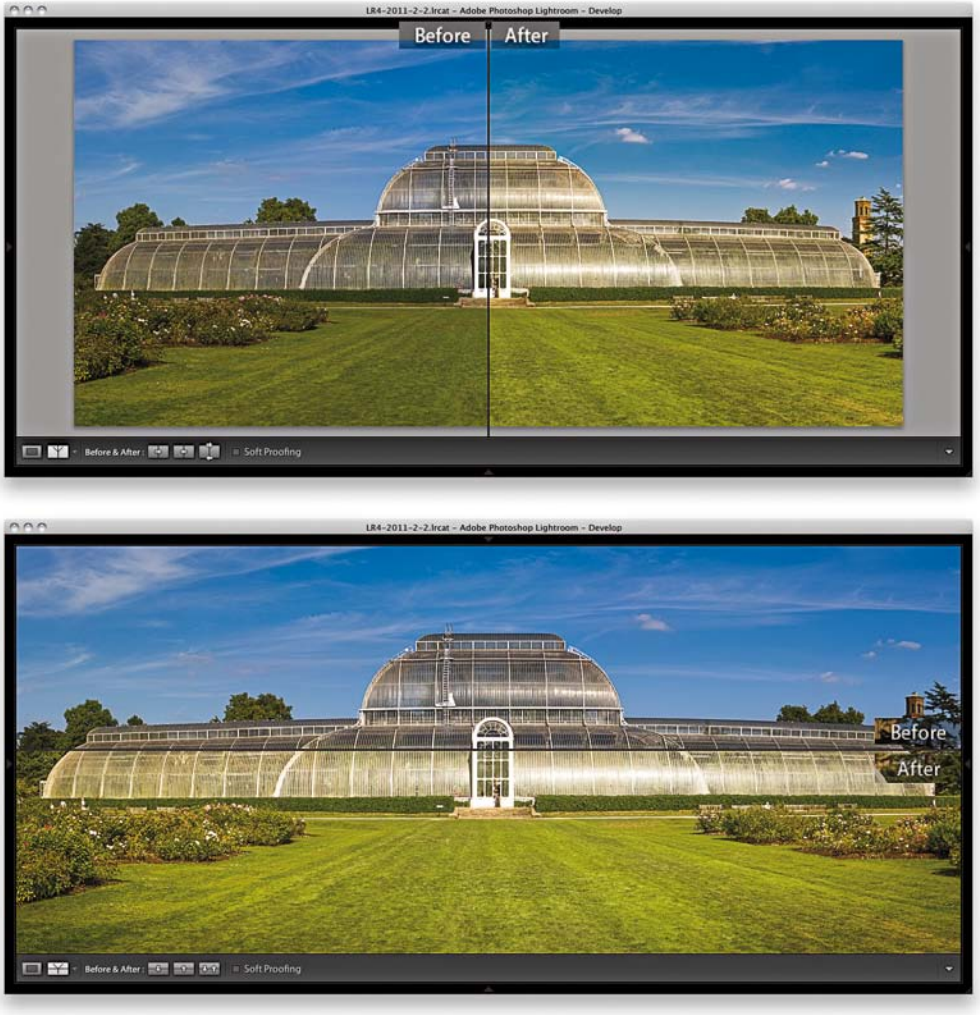


Figure 4.80 *These two screenshots show you the two main viewing modes for comparing before and after versions of an image. The top screenshot shows a photograph in the Before/After Left/Right, side-by-side preview mode and the bottom screenshot shows the Before/After Top/Bottom Split preview mode.*

TIP

The Copy After's Settings to Before keyboard shortcut is ⌘ Alt Shift ← (Mac) or Ctrl Alt Shift ← (PC). The Copy Before's Settings to After keyboard shortcut is ⌘ Alt Shift → (Mac) or Ctrl Alt Shift → (PC).

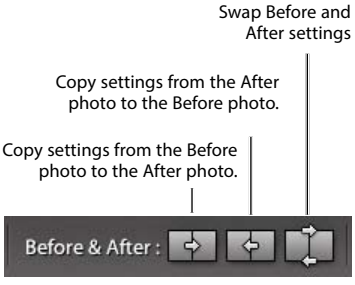
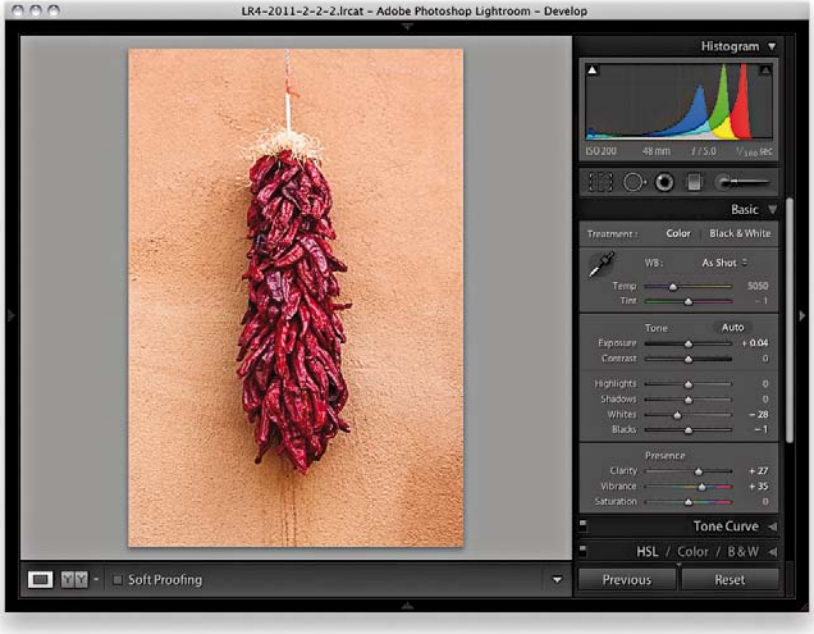


Figure 4.81 *The Copy settings buttons only appear at the bottom of the Develop module when either the Left/Right or Top/Bottom view modes have been selected. The buttons shown here are those for when the Left/Right view mode is selected.*

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 4.81**) 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.

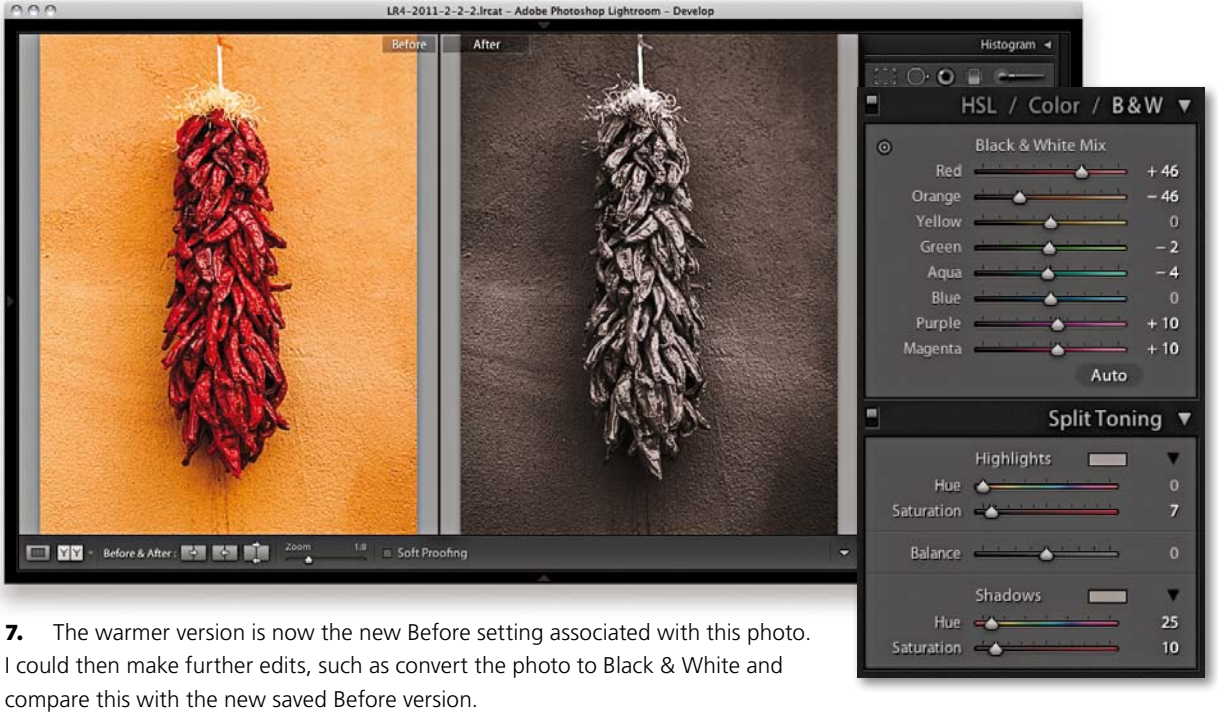
2. I clicked the Before/After view YY button (you can also use the Y keyboard shortcut) and began to adjust the image by altering the white balance so that the modified After version was warmer in color.

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 1:4 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 (⌘ Alt Shift ← [Mac] or Ctrl Alt Shift ← [PC]), making the current version the new Before setting.



7. The warmer version is now the new Before setting associated with this photo. I could then make further edits, such as convert the photo to Black & White and compare this with the new saved Before version.

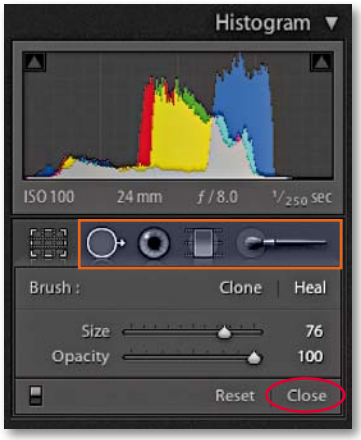


Figure 4.82 *The retouching tools are all located just below the Histogram panel in the Develop module. From left to right: Spot Removal, Red Eye, Graduated Filter, and Adjustment Brush. This screenshot shows the Spot Removal tool panel options.*

Image retouching tools

The retouching tools in the Develop module (**Figure 4.82**) 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, Adjustment Brush, or Graduated Filter tool, 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. 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 of 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 4.82) so that the Spot Removal cursor matches the size of the areas you intend to repair. A quicker method is to use the square bracket keys on the keyboard. Click or hold down the] key to make the Spot Removal circle size bigger, or use the [key to make the spot size smaller. Next, locate the spot or blemish you wish to remove, click on it with the Spot Removal tool, and set this as the target. If the cursor size is large enough, you'll see a small crosshair in the middle of the cursor circle and you can use this to target the blemish you want to remove and center the cursor more precisely. Then drag outward to select an image area to sample from. This will be used to repair the target area. At this stage 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 spot circle. A linking arrow also appears to indicate the relationship between the target circle and sample circle areas (**Figure 4.83**). When you have finished applying a spot removal, the target circle 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 4.82) 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 Spot Removal circle 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. Another way to work with the Spot Removal tool is to click and drag with the ⌘ key (Mac) or Ctrl key (PC) held down. This allows you to define a different spot size each time you drag with the tool; the sample circle will auto-pick anywhere that surrounds the target circle area. When using this method of spotting, the sample selection may appear quite random, but Lightroom is intelligently seeking an ideal area to sample from (this is similar to the logic used by Photoshop's Spot Healing Brush tool). You can also use the On/Off button at the bottom of the Spot Removal tool options (circled in Figure 4.83) to toggle showing and hiding the Spot Removal tool circles (or use the H key)and the Reset button can be used to cancel and clear all the current Spot Removal tool edits.

In Figure 4.83 I have illustrated several of the ways you can work with the Spot Removal tool. On the next page is a detailed summary of the Spot Removal tool behavior discussed so far, plus information on how to manage the Tool Overlays behavior.

Figure 4.83 *This screenshot shows a combined series of snapshots taken of the Spot Removal tool in action to illustrate the different ways you can work with this tool.*

NOTE

Dust marks are the bane of digital photography, and ideally you want to do as much as you can to avoid dust or dirt getting onto the camera sensor. I have experimented with various products and found that the Sensor Swabs used with the Eclipse cleaning solution from Photographic Solutions, Inc. (www.photosol.com), are reliable products. I use these from time to time to keep the sensors in my cameras free from marks. It is a bit scary when you first try to clean a sensor. Just remember to follow the directions and don't use too much solution on the sensor swabs, because you don't want to drench the sensor surface with cleaning solution.

TIP

It can be tricky to use the Spot Removal tool to remove certain types of blemishes where an elliptical shaped tool might help. However, there is a workaround you might like to try. After creating a spot removal circle you can lay down further spot removal circles and then edit these, sliding them so that they overlap the first.

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 circle area. You can also use the Clone/Heal buttons in the Tool Options panel to change the Spot Removal mode for any Spot Removal circle. Another important thing to be aware of is that if you simply click with the Spot Removal tool in Heal mode (or ⌘ [Mac] or Ctrl [PC] drag with the mouse), rather than just drag to set the sample point, the Spot Removal tool behaves like the Spot Healing Brush tool in Photoshop and Photoshop Elements. That is to say, when you click with the Remove Spot tool in Lightroom, it uses a certain amount of built-in intelligence to auto-select the best area to sample from.

Click and drag

One of the standard ways to work with the Spot Removal tool is to place the cursor over the area you want to remove, center the cursor using the crosshair and then click with the mouse and drag outward to determine the placement of the sample circle. As you do this, the preview area inside the target circle is updated as you drag to set the sample circle. The target circle itself is hidden while you drag so that you won't be distracted by the cursor circle remaining onscreen as you work with this tool. Note here that the visibility of the crosshair is dependent on the size of the brush cursor, the zoom ratio that's currently applied, as well as the size of the image.

Resizing the spot circles

You can edit the Spot removal circles by adjusting the size slider in the Spot Removal tool options (Figure 4.82) and you can also use the square bracket keys to adjust the circle size of the cursor before creating a new spot: use the left bracket ([) to make the circle size smaller and the right bracket (]) to make a circle size bigger. The Spot Removal circles always remain fully editable. You can select an individual circle and use the Spot Removal slider to readjust the size. Or, you can click on the edge of a target circle and drag to resize. Note that as you click and drag, the thin circle cursor conveniently disappears, which allows you so see more clearly the effect the circle resizing is having on the photo.

Repositioning the spot circles

If you click inside a target spot circle, the thin circle disappears and changes to show a hand icon. This allows you to drag and reposition the spot circle so that you can readjust the target position. You can also click on or inside a sample circle and drag to reposition the sample area relative to the target circle so that you can select a new area to sample from.

Tool Overlay options

The Tool Overlay options can now be accessed via the Develop module Toolbar (**Figure 4.84**), as well as via the Tools menu. These options refer specifically to the Crop Overlay, Spot Removal tool, Red Eye Correction tool, Adjustment Brush, and Graduated Filter tool. If you select the Auto option the Spot Removal circles only become visible when you roll the cursor over the preview area. If you select the Always option, the Spot Removal circles remain visible at all times. When the Selected option is chosen only the active Spot Removal circle 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 spot circle overlays.

TIP

The H keyboard shortcut toggles the Tools overlay view between "Auto" and "Never" and the Shift H keyboard shortcut toggles the Tools overlay view between "Selected" and "Never."

Figure 4.84 *The Tool Overlay options in the Develop module Toolbar.*

Undoing/deleting spot circles

Use ⌘Z (Mac) or Ctrl Z (PC) to undo the last spot circle. To delete a spot circle, click to select it and then hit the Delete key. And to remove all spot circles from an image, click the Reset button in the Tool Options panel.

Auto source point selection

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 spot circle 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 on pages 278 to 279).

TIP

If you have made a selection of images via the filmstrip (or in the Library Grid view) you can also use the Cmd Shift S (Mac) or Ctrl Shift S (PC) shortcut to open the Synchronize Settings dialog shown here.

Synchronized spotting

One of the best things about the Spot Removal feature is that you can continue to edit the tones and colors in the 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.

2. This opened the Synchronize Settings dialog, where I made sure only the Spot Removal check box was checked. When I clicked the Synchronize button, Lightroom synchronized the spot removal settings across all the selected photos.

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 say "Auto Sync." Then click on this 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 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 cloning out spots from areas such as skies or plain studio backdrops.

Figure 4.85 *The Red Eye Correction tool cursor design.*

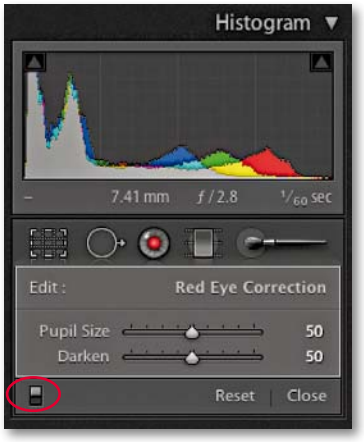


Figure 4.86 *The Red Eye Correction tool panel options.*

TIP

You can use the On/Off button at the bottom of the Tool Options (circled in Figure 4.92) to toggle showing and hiding all Red Eye Correction tool edits. Plus, you can use 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. On most compact cameras you can 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 people'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 4.85**). 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 is a lot bigger than that you need to define with the Red Eye Correction tool cursor. 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, the Red Eye tool options will appear below in the Tools panel selection (**Figure 4.86**). 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.

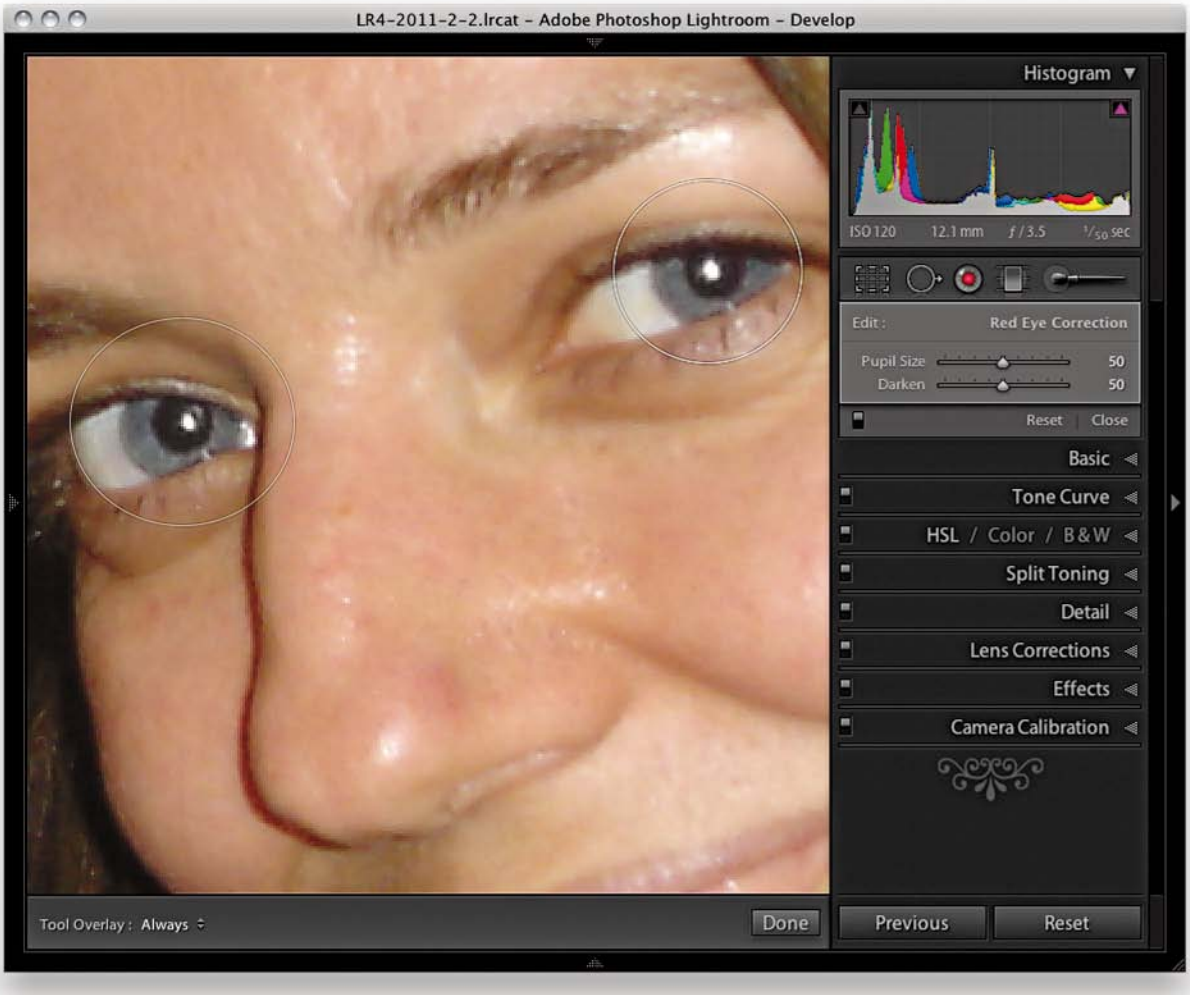
This feature raises an interesting question: if you know Lightroom can repair red eye so neatly, do you really need to use the anti-red-eye flash mode? What I propose here may sound like a lazy approach to photography, but bear with me. In my experience, the anti-red-eye flash mode often kills the opportunity 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 pre-flashes 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 occur.

Adjusting the cursor size

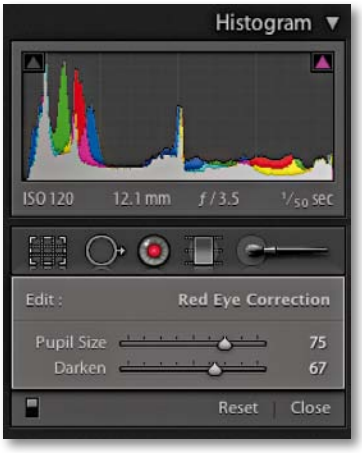
Before applying the Red Eye Correction tool you can adjust the size of the cursor by using the square bracket keys. Use the left bracket ([) to make the cursor size smaller and the right bracket (]) to make the cursor size bigger. To be honest, the cursor size doesn't always make much difference because 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 eye.

2. In this screenshot you can see that I selected the Red Eye Correction tool and dragged the cursor over the eye on the left, moving from the center of the pupil outward. Alternatively, I could simply have clicked on the pupil using the Red Eye Correction tool. Either method would have worked here.



3. After I released the mouse, the Red Eye Correction tool ellipse overlay shrank to fit the area around the eye. As I mentioned earlier, you don't have to be particularly accurate with the way you define the eye pupils. In this screenshot you can see that I first applied a red eye correction to the eye on the left before correcting the eye on the right. Notice here how the first ellipse overlay has a thinner border and the current ellipse overlay is thicker, indicating that this one is active. When a red eye ellipse is active, you can then use the two sliders in the Tool options to adjust the Red Eye Correction settings. Use the Pupil Size slider to adjust the size up or down for the area that is being corrected. Below this is the Darken slider that you can use to fine-tune the appearance of the pupil. I tend to find that the default Lightroom auto correction (using settings of 50) usually works fine in most instances.



4. If you then move the mouse over to the edge of an ellipse and drag to resize the area, or drag from inside to reposition the ellipse, you can fine-tune the shape and size of the red eye adjustment. In effect, the red eye adjustment is like a color overlay layer in Photoshop. The benefit is that you can get the Red Eye Correction tool coverage to match the eye pupil precisely. If you need to redo a red eye correction adjustment, the best thing to do is to make an ellipse overlay active, hit the Delete key to remove it, and apply the Red Eye Correction tool again.

5. All becomes clearer if you hold down the mouse over the ellipse circle and drag the ellipse overlay away from the pupil. Basically, the ability to reposition and resize the shape of the red eye correction provides you with a lot of scope to fine-tune any Red Eye Correction adjustment.

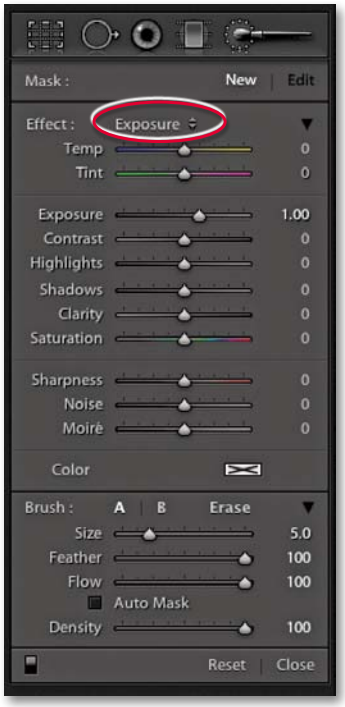


Figure 4.87 *The full Adjustment Brush options.*

Figure 4.88 *The Adjustment Brush options in compact mode.*

Figure 4.89 *The Adjustment Brush cursor.*

Localized adjustments

Let's now take a look at the Adjustment Brush and Graduated 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 an Auto Mask option. Just like the Spot Removal and Red Eye Correction tools, the Adjustment Brush and Graduated Filter 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. Note that the Adjustment tool layouts have changed again in Lightroom 4, so read on to find out what's new.

Initial Adjustment Brush options

When you first start working with the Adjustment Brush (K), the panel options will look like those shown in **Figure 4.87** or **4.88**. To begin with, you will be in 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 or Color (I'll be discussing Noise and Moire 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 they are otherwise 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 4.87, 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 4.88). If you want a simpler interface to work with, click on the disclosure triangle next to the Effect drop down menu to collapse the slider options. In Figure 4.88 All that 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 4.89**), you can use the] and [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 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 though 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 show "Reset" (**Figure 4.90**). 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. 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 4.91**) 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 H key (or use the View ⇨ 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 start painting away on an area of the picture to form a 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 4.90 *When you hold down the Alt key, Effect will change to show "Reset." Click on this to reset all the Effects sliders.*

Figure 4.91 *This shows the Adjustment Brush panel Edit options. The Reset button at the bottom here can be used to remove all the pin markers (note as you scroll the other panels that these slide beneath the tool options).*

Figure 4.92 *The Effect settings menu.*

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 non-linear 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 4.91). If you didn't get the slider settings right when you were 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 ↵Enter or click the New button to return to the New adjustment mode, where you can click on the image and 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 (⌘Z [Mac] or Ctrl Z [PC]), and you can erase brush strokes by clicking the Erase button to enter Eraser mode, or simply hold down the Alt key as you paint to erase any brush strokes.

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 4.92**). 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 291). 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 that these can easily be shared when 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 adding too many new adjustment groups.

1. This shows a photograph where some Basic adjustments had been applied to set the highlights and shadows and optimize the contrast.

2. In this example I used a modified Dodge (Lighten) effect to add a series of positive Exposure brush strokes to lighten the body of the bird.

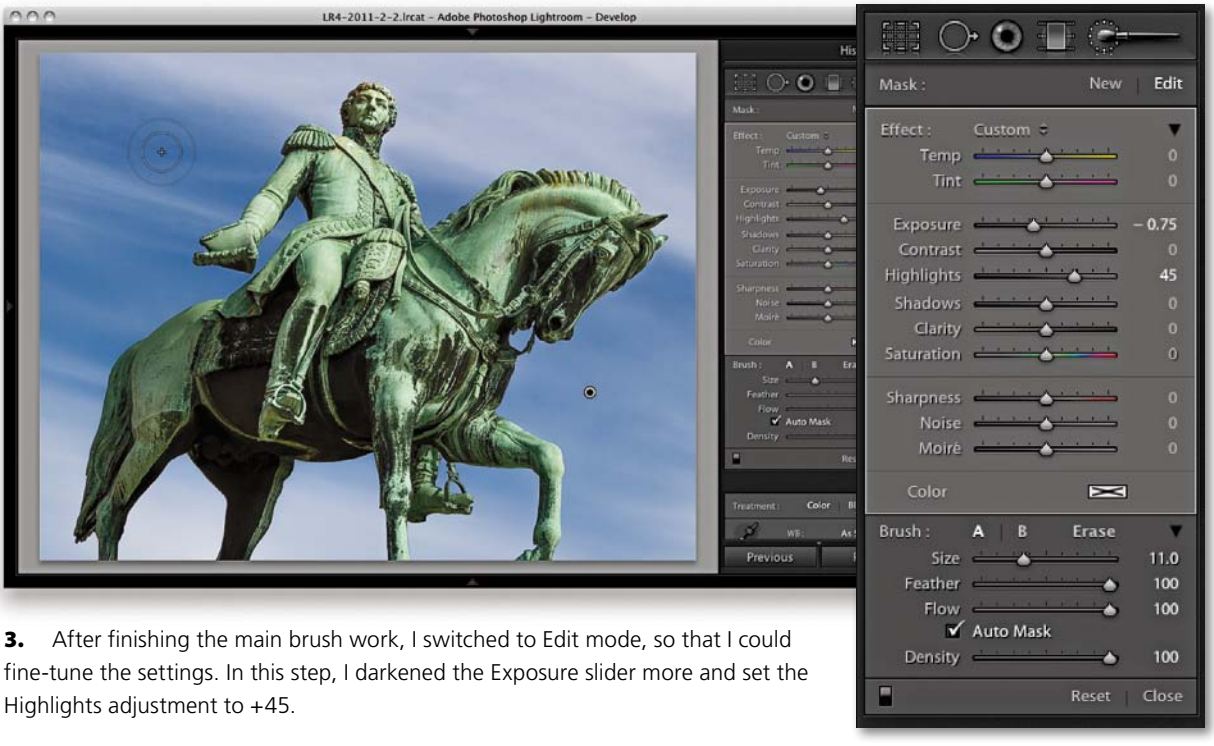
Figure 4.93 *Often, all you need to do is to click on an area of a picture with the color you wish to target and drag the Adjustment Brush in Auto Mask mode to quickly adjust areas of the picture that share the same tone and color.*

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 4.93** 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 that is to 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 some 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 left signs of any speckled edges.

1. This shows the original photograph with a warm-toned backdrop. I began by clicking on the Adjustment Brush to reveal the tool options.

2. I set the Exposure slider to –100% (to darken) and started painting. Because Auto Mask was checked, the brush only adjusted the blue sky areas.



3. After finishing the main brush work, I switched to Edit mode, so that I could fine-tune the settings. In this step, I darkened the Exposure slider more and set the Highlights adjustment to +45.

TIP

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

TIP

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

Figure 4.95 *This shows the Soften Skin Adjustment brush setting that was used to work on the photograph shown in Figure 4.96.*

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 4.94**). The colored overlay represents the areas that have been painted. You can also press O to switch the mask on or off and use ⇧Shift O 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.

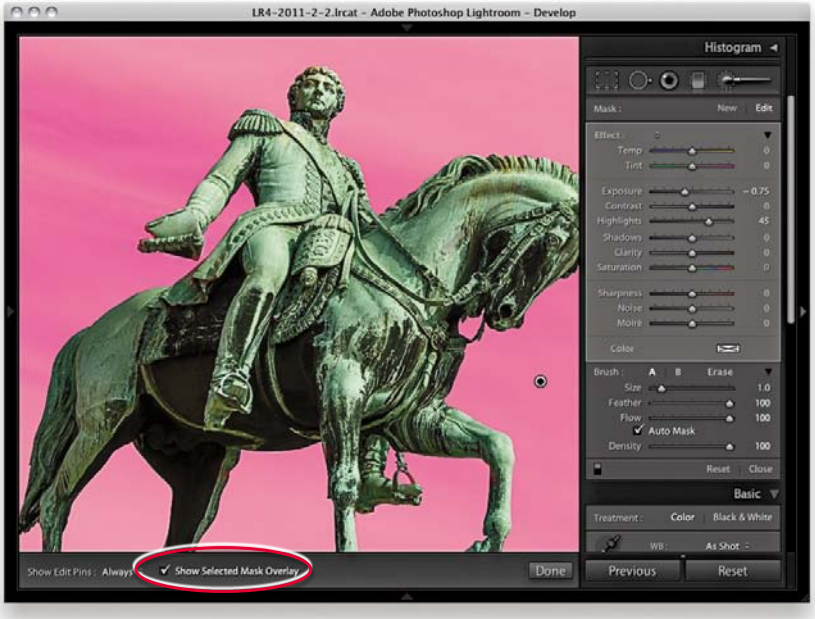


Figure 4.94 *This shows an overlay view of the Adjustment brush stokes and the "Show Selected Mask Overlay" option in the Toolbar (circled).*

Beauty retouching with negative clarity

On page 213 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 a 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 4.95** to create the after close-up view of the beauty photograph shown in **Figure 4.96**. 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 4.96 *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

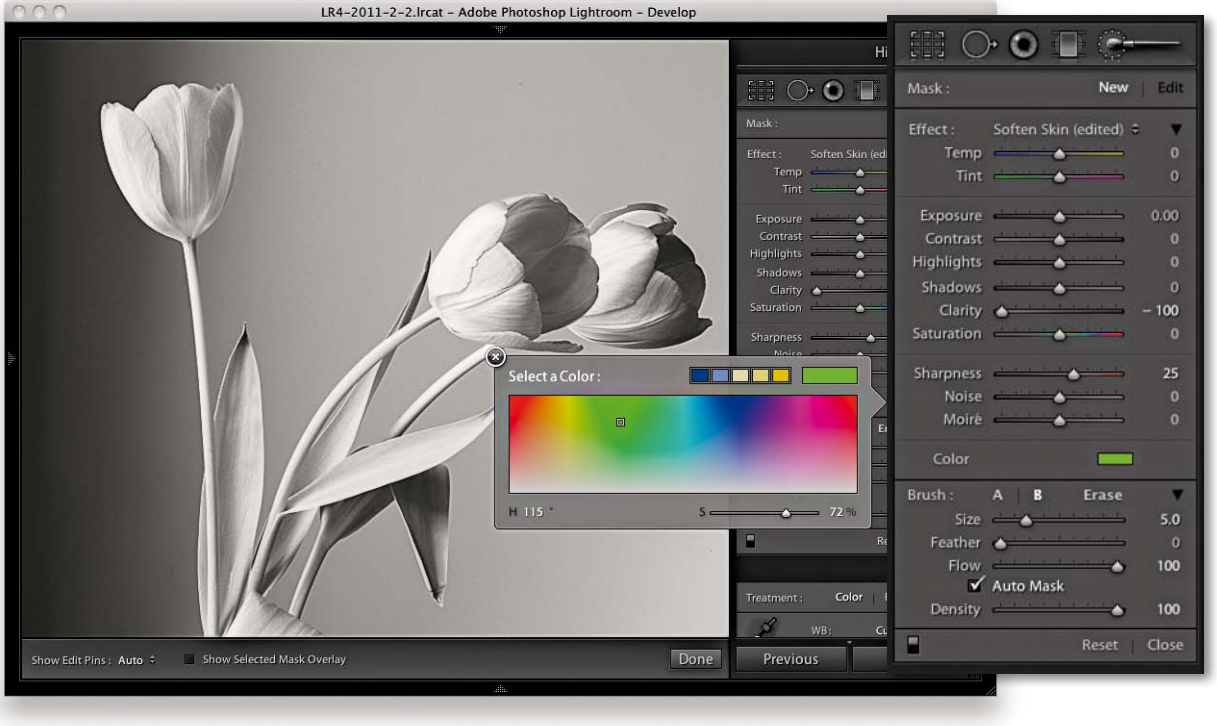
When dealing with images that require extreme highlight recovery, it can be useful to use the Adjustment Brush in Color mode to help the burned-out highlights blend better with the surrounding areas.

NOTE

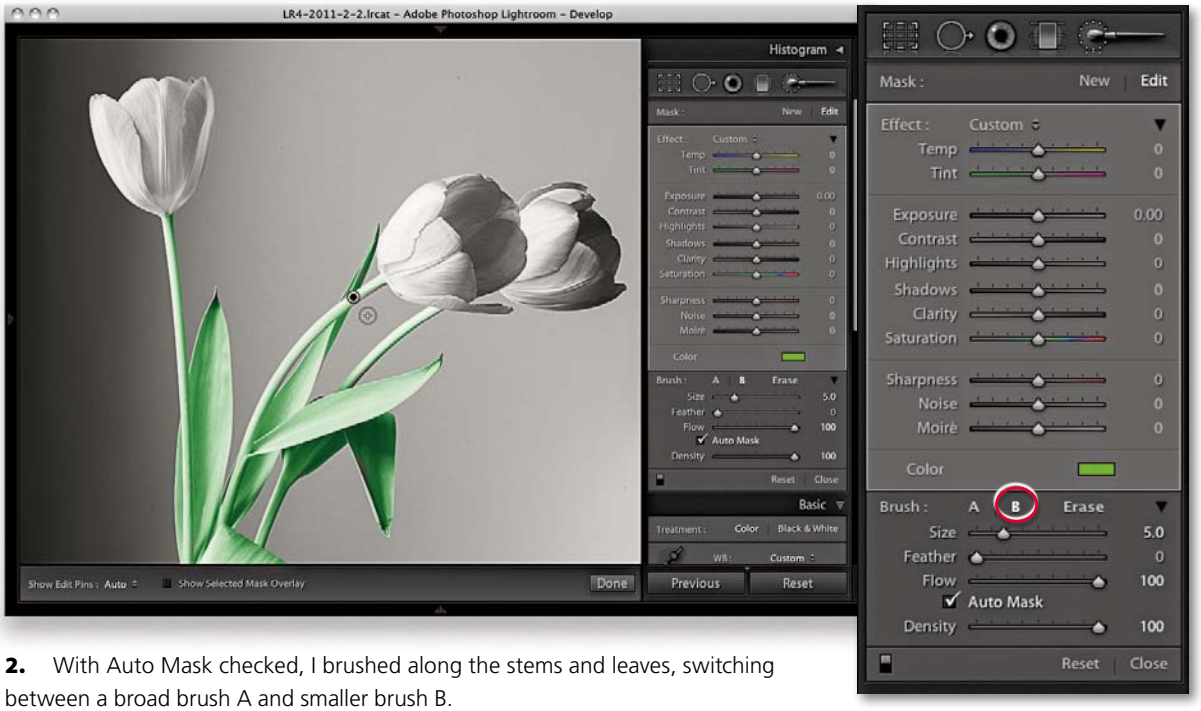
Where you see an X in the color swatch, this means that no color is selected.

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 his or her 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 still 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.



2. With Auto Mask checked, I brushed along the stems and leaves, switching between a broad brush A and smaller brush B.

3. I pressed ↵Enter to OK these brush strokes and created a new set of paint strokes. This time I selected a yellow color and began painting the flower petals, again with the Auto Mask option checked.

Localized Temperature slider adjustments

Let's now have a look at what can be done using the Temp and Tint slider adjustments. These sliders allow you to adjust the white balance locally by making the white point cooler, by dragging to the left or warmer, by dragging to the right. 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 will adjust 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, will 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 now apply a cooler "base" 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

Also new to the Adjustments panel are the Highlights and Shadows sliders. As you would expect, these allow you to lighten or darken the Highlights and Shadows areas, respectively.

In the example that's shown here, the photograph was taken against a black backdrop, 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 critical 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 to just start to clip the shadow areas on the couple in this photograph. However, in doing so I couldn't get the backdrop to go completely black.

2. To solve this problem, I selected the Adjustment Brush and set the Shadows slider to –50. I then started brushing in around the backdrop area.

3. The initial –50 setting was not quite strong enough so I continued painting with the brush set to –100 Shadows. I then applied a second pass using the same setting. This managed to darken the backdrop completely.

TIP

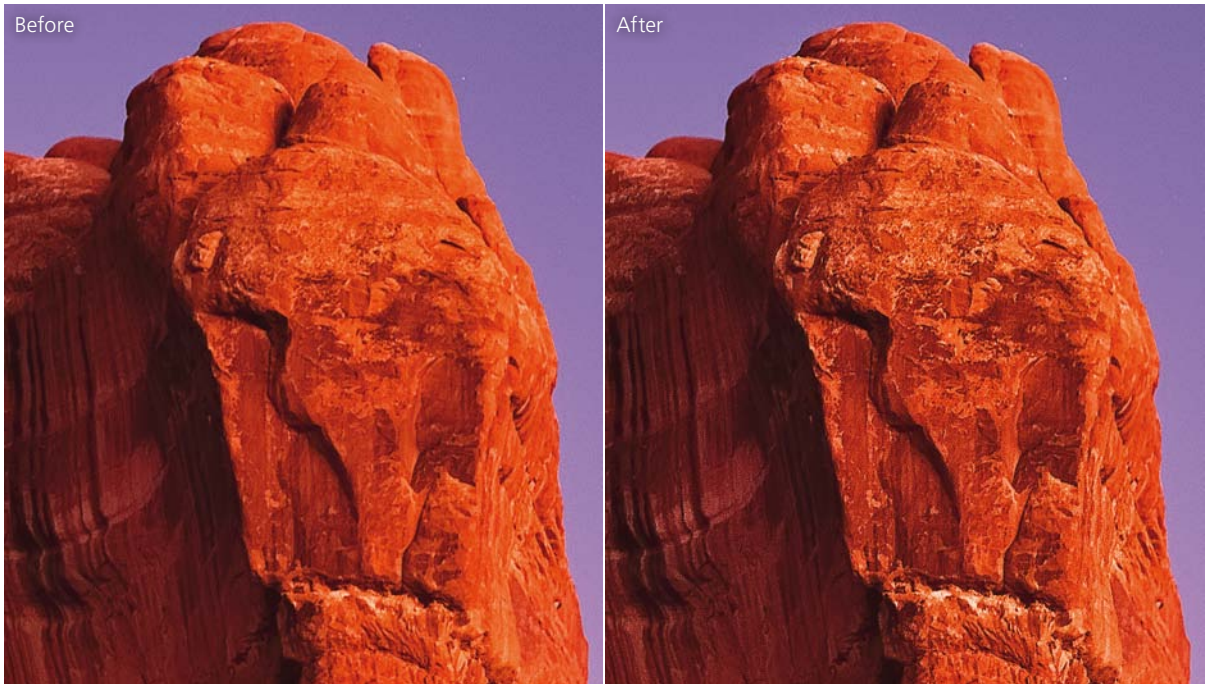
If you pump up the settings you are working with to produce a stronger effect than what is needed, you can see the results of your retouching more clearly. You can then use the Edit mode to reduce the Amount to reach the desired strength for the brush strokes.

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 plus 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 other settings that have already been established in the Detail panel Sharpening section. A negative Sharpness setting in the zero 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 produces a very 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.



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 4.97 *This shows the Graduated Filter tool options in the expanded mode.*

Figure 4.98 *This shows the Graduated Filter tool options in the compact mode.*

TIP

As you edit a localized adjustment, click on the pin marker, hold down the Alt key, and drag the cursor to the left to decrease the strength of an effect or drag to the right to increase it. 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 that I have described so far about working with the Adjustment brush more or less applies to working with the Graduated Filter tool (M) (see **Figures 4.97** and **4.98**). 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 therefore 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. A radial Graduated Filter would be nice, but we do at least have the post-crop vignette features in the Effects panel. If you hold down the Alt key, "Effect" will change to show "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* this 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 –0.40 Exposure setting, and dragged the Graduated Filter tool from the middle of the sky downward.

3. I decided to strengthen the burn effect by setting the Exposure slider to –0.94.

4. Next, I went to the Temp slider and set this to –37. This made the sky appear bluer in color.

5. Lastly, I added a new Graduated filter to the bottom half of the picture. Here, I also added a cooling Temp adjustment combined with a negative Exposure.

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 4.100**). The History feature in Lightroom has the unique advantage over Photoshop in that the history steps are always saved after you quit 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 you can 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 4.99** shows an example of how the History panel looked after I had made a series of Develop adjustments to the image. You'll also notice here 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.

Figure 4.99 *In this close-up view of the History panel in Figure 4.100, 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 4.100 *In this example you can see that the sequence of steps applied to the image are recorded to the History panel in the order in which they were applied.*

Figure 4.101 *The Snapshots panel can be used to store saved history steps as variations.*

Figure 4.102 *Click on the + button to create a new Snapshot and name it. In Lightroom 4, when you create a new snapshot you're given the option of using a date/time stamp to name the new snapshot.*

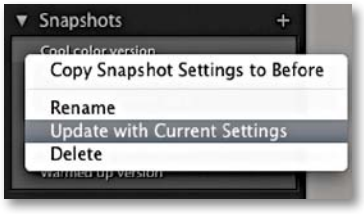


Figure 4.103 *You can use the contextual menu to choose Update with Current Settings.*

You can also select Edit ⇨ Undo or use (⌘Z (Mac) or Ctrl 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 ⇨ Redo or use the ⌘⇧Shift Z (Mac) or (Ctrl ⇧Shift Z (PC) shortcut. However, be warned that 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 be warned that 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 4.101**). 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.

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 in Lightroom 4, 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 4.102**). 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 4.103**). 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 4.104**). To delete a snapshot, just click the minus button.

The Sync Snapshots… command in the Develop module Settings menu (see page 307) is particularly useful for updating previously created snapshots with new settings. For example, if you have just spent some time removing blemishes or cropping 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).

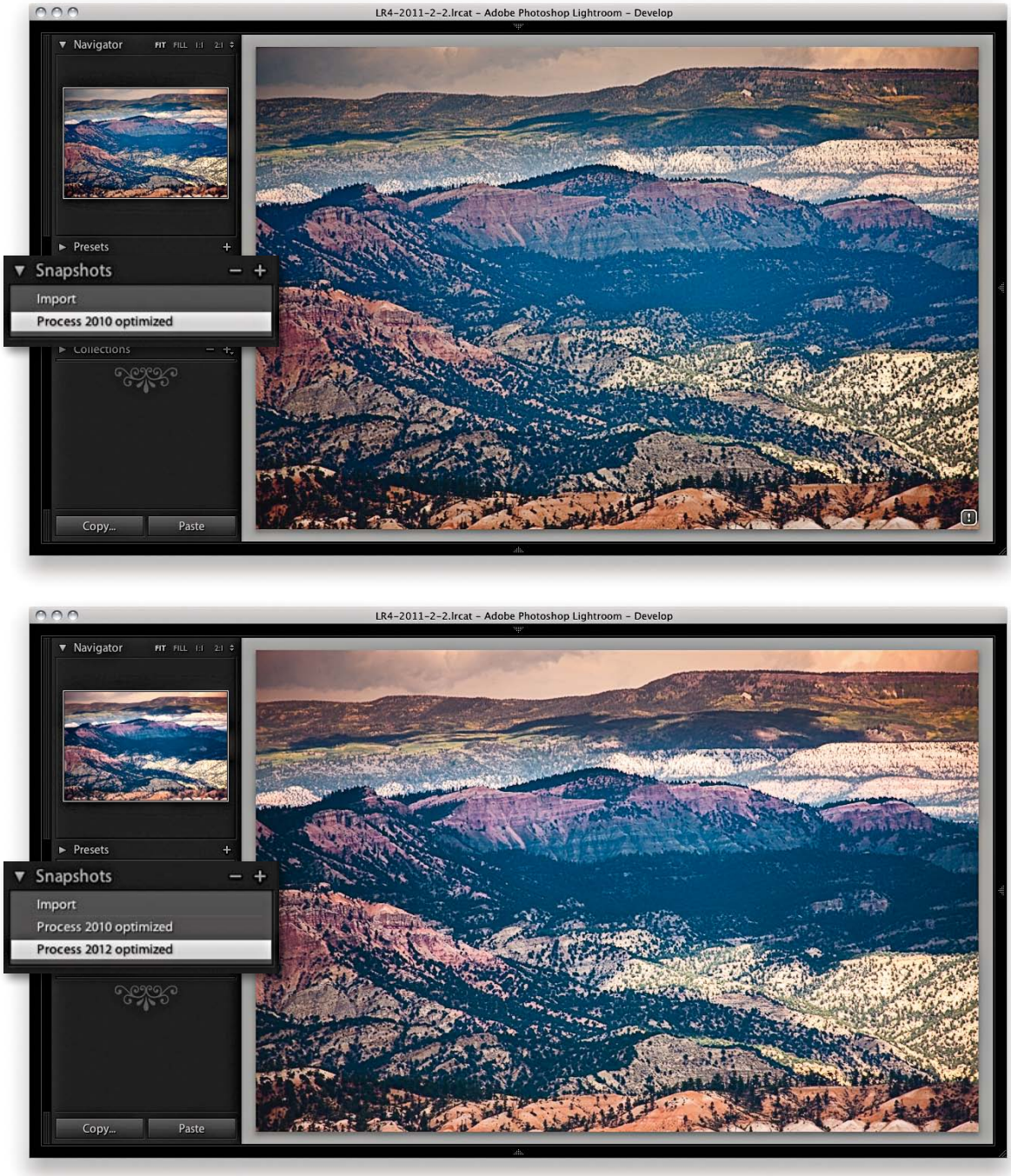


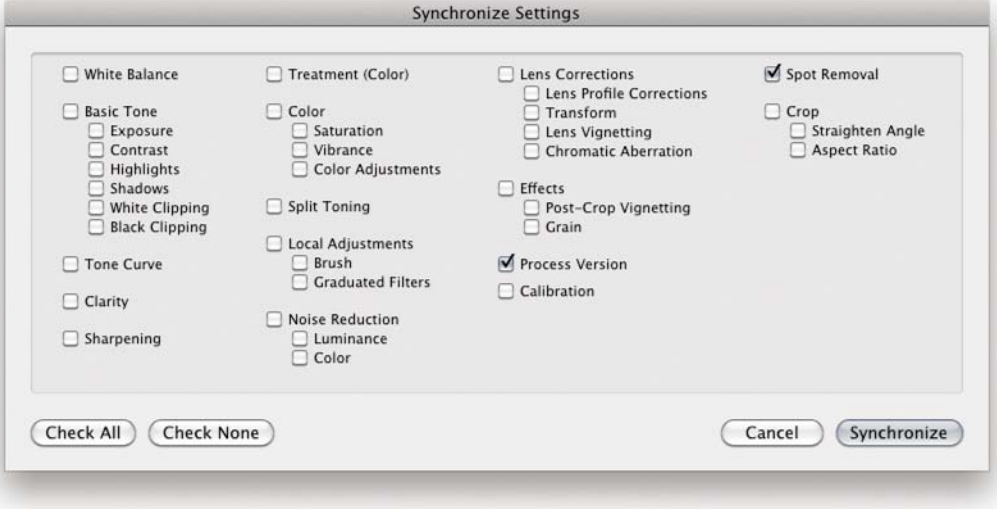
Figure 4.104 *In the top screenshot I saved a snapshot of the image using the Process 2010 settings. I then updated the image to Process 2012 and, once I had fine-tuned the settings for the new process version, saved this as another new snapshot.*

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, which had been carried out since saving the earlier snapshot.

3. Whenever you make changes to the Develop settings and wish to update the remaining saved snapshots, go to the Settings menu and choose Sync Snapshots…



4. This will open 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 4.105 *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 ⇨ Create Virtual Copy (⌘' [Mac] or (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 4.105** and **4.106**). 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 master and you can continue to edit 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 master image. 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 4.107** 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 could 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 ⇨ 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 4.106 *As you make new virtual copies of a master file, these are automatically stacked with the original master image.*

Figure 4.107 *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 4.108 *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 ⌘ key (Mac) or Ctrl 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 4.108**). 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 4.109**, 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 4.110**, where you can decide which settings are to be synchronized. Or, you can use the ⌘⇧Shift S (Mac) or Ctrl⇧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 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 327).

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 4.109 *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 gray surround, and the most selected photo is the one with the lightest gray color (and also the one displayed in the Navigator panel).*

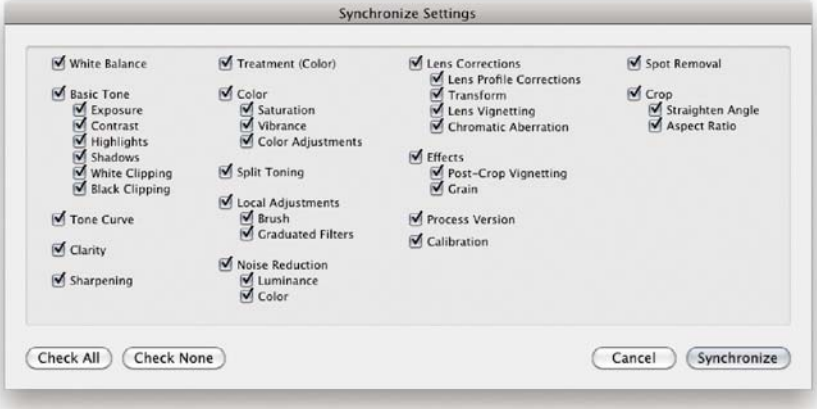


Figure 4.110 *In the Synchronize Settings dialog, use the Check All settings option with caution, since synchronizing everything may overwrite important Develop settings in the selected photos.*

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).

NOTE

To access the latest version of Camera Raw for Photoshop and Bridge, go to the Adobe website: http://www.adobe.com/products/photoshop/extend.html.

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 limitations are 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 that 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. At the time of this writing, I anticipate that the launch of Lightroom 4.0 will coincide with a Camera Raw 6.7 update for Photoshop CS5. This will allow Photoshop CS5 users to open images processed in Lightroom 4 using Process 2012 and render such files in Photoshop. But because Process 2012 has completely new Basic panel controls you won't be able to actually edit Process 2012 images using Camera Raw 6.7; it will just open them. Meanwhile, Photoshop CS4 users will have been provided with a Camera Raw 5.7 update. Now, although Camera Raw 5.7 for Photoshop CS4 has the ability to read most Process 2003/2010 edits, no further functionality was added to this particular version of Camera Raw for Photoshop CS4. Camera Raw 5.7 does enable the auto demosaicing that was new to Process 2010 and it can read all the Camera Raw settings that were effectively new to Camera Raw 6, including those specific to Process Version 2010. You just can't edit those new settings and can't use Camera Raw 5.7 to update from Process Version 2003 to 2010. All you can do if using Camera Raw 5.7 for Photoshop CS4 is read Process 2003 and Process 2010 images and edit Process 2003 images only. You definitely won't be able to read or edit Process 2012 images using Camera Raw 5.7.

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 4, you will at some point need to upgrade to Photoshop CS6. However, the Camera Raw 6.7 update will 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 Bridge and choose Camera Raw Preferences from the Bridge menu. This opens the dialog shown in **Figure 4.111**, where you need to select "Sidecar .xmp files" from the "Save image settings in" menu.

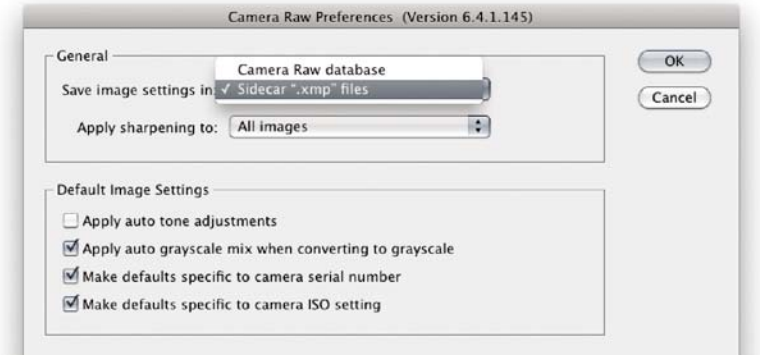


Figure 4.111 *To keep the Camera Raw edits in sync with Lightroom, you need to make sure that the Camera Raw settings are always saved to the sidecar .xmp files.*

Figure 4.112 *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: Grid View options (see page 116).*

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 4.112**). Clicking this badge opens the dialog shown in **Figure 4.113**. If you see no warning but have good reason to believe that the metadata has been updated, then choose Metadata ⇨ Read Metadata from files (in the Library module), or Photo ⇨ Read Metadata from file (in the Develop module). Alternatively, choose Library ⇨ Synchronize Folder (**Figure 4.114**). 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 4.113 *The metadata status change warning dialog.*

Figure 4.114 *The Synchronize Folder command can run a quick scan for updates.*

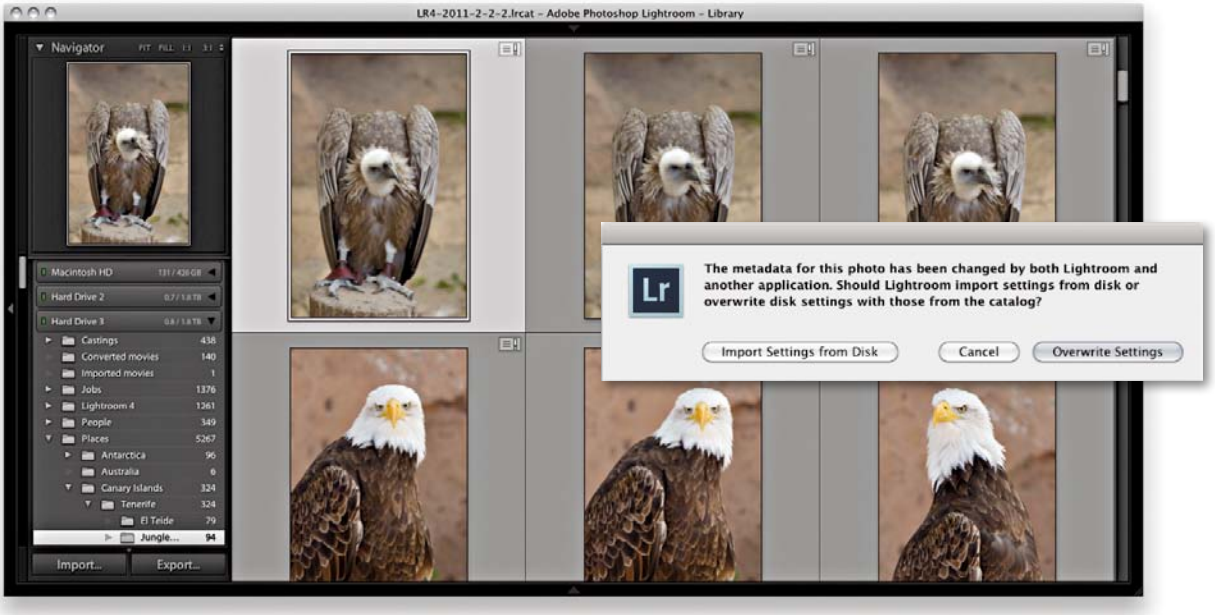
NOTE

If the Unsaved Metadata option is checked in the Library View: Grid View options 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. This shows a selection of photos in Lightroom that, so far, have only the default settings applied.

2. I opened the same photo selection in Camera Raw, optimized the settings, and synchronized these 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, indicating 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 4.115 *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 310 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 4.115**). Alternatively, select a photo from the Library Grid or filmstrip and use ⌘⇧ShiftC (Mac) or Ctrl⇧ShiftC (PC) to copy the settings. This opens the Copy Settings dialog shown in **Figure 4.116**, 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 will copy 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 ⌘⇧ShiftV [Mac] or Ctrl⇧ShiftV [PC] shortcut).

Figure 4.116 *This shows the Copy Settings dialog where you can check the items you wish to copy.*

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 ⌘AltV (Mac) or CtrlAltV (PC) shortcut to apply a previous setting.

If more than one photo is selected in the filmstrip, the Previous button will change to say 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 4.117 *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 4.117** 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 the Presets panel. This opens the New Develop Preset dialog shown in **Figure 4.118**, 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 in turn 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 4.117.

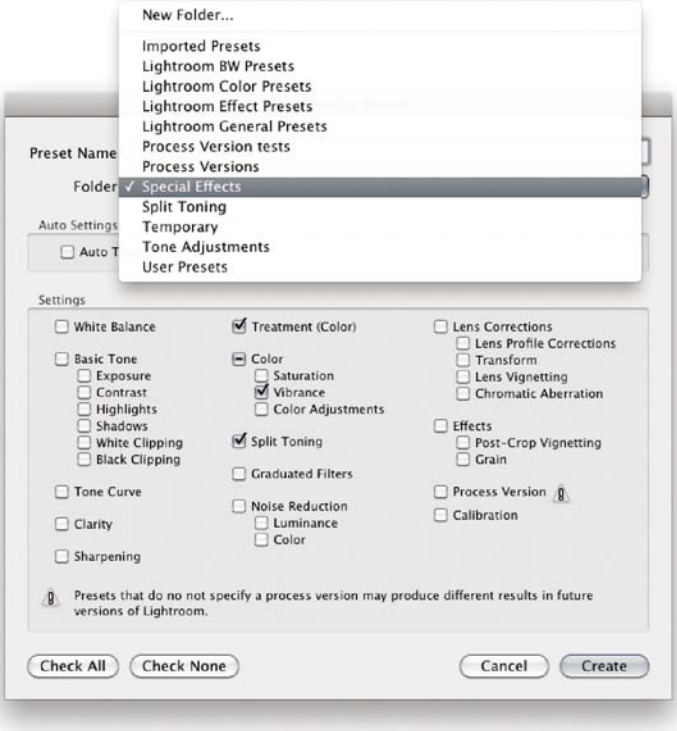


Figure 4.118 *In the New Develop Preset dialog, check the items you want to include in a preset, give the preset a name, and decide which folder to save the preset to. The process version of the current selected photo determines which Basic panel adjustments are displayed here. Note also the process 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 4.119** I added a number of preset folders which 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 4.119, and choose "New Folder," which will open 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.

Figure 4.119 *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.*

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 preset. 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 quick 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 4.118, where the Process Version box has been deliberately unchecked there is a reminder that you should include the process version when saving new settings.

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/.

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 4.120**, 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 split tone color effect. Incorporating all these Develop adjustments into one preset has its disadvantages and can lead to messy situations like that described in **Figure 4.121**.

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.

	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		✔	✔	✔	✔	✔	✔	✔	✔			✔						✔		✔	✔
Muted Color Contrast									✔			✔		✔					✔	✔	
Final settings		✔	✔	✔	✔	✔	✔	✔	✔			✔		✔				✔	✔	✔	✔

Figure 4.120 *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		✔	✔	✔	✔	✔	✔	✔	✔			✔								✔	✔
Muted color contrast									✔			✔		✔					✔	✔	
Split tone effect														✔						✔	
Infrared color effect		✔					✔		✔	✔				✔			✔			✔	
Final settings		✔	✔	✔	✔	✔	✔	✔	✔	✔		✔		✔			✔		✔	✔	✔

Figure 4.121 *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). What this highlights is 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.

How to prevent 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 4.121 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 4.122** 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		✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔							✔	✔
Light contrast									✔											✔	
SFX-Cool tone													✔	✔						✔	
*RESET Special Effects										✗	✗	✗	✗	✗				✗	✗	✔	✗
Black & White infrared		✔					✔		✔	✔							✔			✔	
Sepia split tone														✔						✔	
Cool tone														✔						✔	
Burn Corners																			✔	✔	
Final settings		✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔			✔		✔	✔	✔

Figure 4.122 *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 4.121 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 with I tried out 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 out 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 4.123**). 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 presets 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 ⌘⇧Shift R (Mac) or Ctrl⇧Shift R (PC) shortcut to reset all the develop settings.

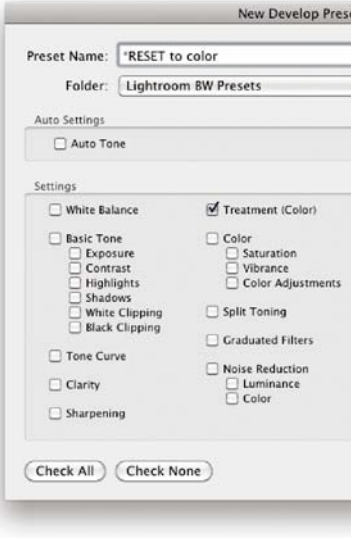


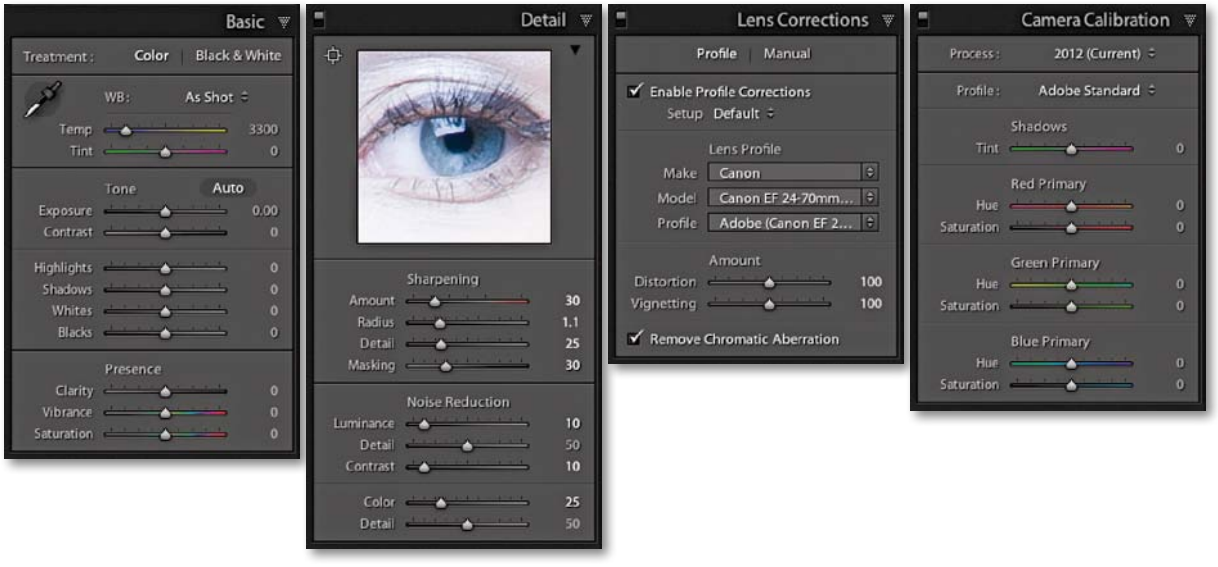
Figure 4.123 *Here is an example of a preset that I created for converting a B&W setting back to Color mode again. To do this, select any image that is in Color mode and save a preset with the Treatment (Color) box checked.*

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.

How to set 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 allow 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 would recommend checking "Enable Profile Corrections" and also "Remove Chromatic Aberrations." In the Camera Calibration panel I would 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."

2. Go to the Lightroom Presets preferences (⌘, [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.

3. Now go back to the photo you worked on in Step 1 and choose Develop ⇨ 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.

Index

1:1 previews, 127, 128, 359, 376
16-bit printing, 466
16-bit processing, 162, 411
64-bit processing, 10, 663

A

actions
  export, 418–421
  extended editing, 400
Adjustment brush, 284–299
  Auto Mask option, 288–289
  Clarity effect, 298–299
  Color effect, 292–293
  editing brush strokes, 286
  gradient performance and, 286
  initial settings, 284–286
  moiré removal, 382–383
  previewing stroke areas, 290
  saving effect settings, 286
  selective noise reduction, 380–381
  Shadows slider adjustments, 296–297
  Sharpness effect, 298–299
  Soften Skin effect, 290–291
  Temp slider adjustments, 294–295
Adobe Acrobat, 519
Adobe Bridge. *See* Bridge program
Adobe Camera Raw. *See* Camera Raw
Adobe color engine (ACE), 468
Adobe Flash player, 524
Adobe Kuler, 532
Adobe Photoshop. *See* Photoshop
Adobe Reader, 519
Adobe Revel, 423
Adobe RGB color space, 199, 390, 410, 411, 420, 545
Airtight galleries, 527, 538
Amount slider
  Lens Corrections panel, 246, 248
  Post-Crop vignetting, 254
  Sharpening controls, 360–361
anchor points, 506–507
aperture information, 606–607
Appearance panel (Web module), 522, 534–538
  Flash gallery settings, 535–537
  HTML gallery settings, 534
Apply During Import panel, 63
Armes, Timothy, 426
artist name metadata, 564–565
aspect ratios, 180–181, 607
attribute filter searches, 604
audio
  slideshow soundtrack, 515, 521
  task completion sounds, 645
Auto Dismiss option, 186, 187
Auto Import Settings dialog, 74
Auto Layout option
  Book module, 480, 484–485
  Picture Package, 448–449, 451
Auto Layout Preset Editor, 484–485
Auto Mask option, 288–289
Auto Sync mode, 279, 310
Auto Tone setting, 194, 216, 218, 319
Auto White Balance setting, 188
Auto-Align Layers dialog, 401
automatic program updates, 644
Auto-Stack by Capture Time feature, 148–149
AutoViewer galleries, 527

B

B&W panel (Develop module), 330, 333
  Auto button, 330, 334
  manual adjustments, 336–338
  slider controls, 330, 332, 334–335, 336
  See also black and white conversions
Back Up Catalog dialog, 86
Backdrop panel (Slideshow module), 496, 508–509
Background panel (Book module), 495
backgrounds
  book, 495
  module interface, 656
  print layout, 442
  slideshow, 508–509
backups
  catalog, 85–88
  imported photo, 59
  software for, 87–88
badges, thumbnail, 117
Barroso, Clicio, 290
Basic panel (Develop module), 186–215
  Auto Tone setting, 194, 195
  Blacks slider, 194, 198, 208–209, 237
  Clarity slider, 210–213
  Contrast slider, 193, 196
  Exposure slider, 191, 196, 202–205, 208, 235
  Highlights slider, 193–194, 197, 236
  Histogram panel used with, 200–201
  image adjustment procedure, 195–198
  keyboard shortcuts for, 201
  Saturation slider, 214–215, 347
  Shadows slider, 193–194, 197, 236, 296
  Temperature slider, 189, 334–335
  Tint slider, 189, 334, 339

Tone Curve panel and, 193, 234–237
Vibrance slider, 214–215, 347
White Balance tool, 186–190, 195, 235
Whites slider, 194, 198, 237
beauty retouching, 290–291
Before/After viewing modes, 268–273
Copy settings buttons, 270
keyboard shortcuts, 269, 270
managing previews in, 270–273
bit depth, 15, 390, 411
Black & White button, 330
black and white conversions, 329–349
camera settings and, 332
desaturating color for, 346–349
Develop module controls, 330–331
fine-tuning B&W images, 342–349
infrared effect and, 339–341
manual adjustments for, 336–338
RGB channels and, 332
Saturation slider for, 330
Split Toning panel for, 330, 341, 342–345
Temperature slider for, 334–335
Tint slider for, 334, 339
See also B&W panel
Blacks adjustment
Basic panel, 194, 198, 208–209, 237
Quick Develop panel, 217
blur effect, 374–375
Blurb photo books, 480
Bombich, Mike, 87
Book module, 40, 480–495
Auto Layout panel, 484–485
Background panel, 495
Book Settings panel, 482–483
Caption panel, 491–492
Cell panel, 491, 494
Guides panel, 490–491
interface overview, 480–481
Page panel, 490
Preview panel, 483–484
Toolbar, 484
Type panel, 492–494
Book Preferences dialog, 492
Book Settings panel, 480, 482–483
books, 480–495
backgrounds for, 495
captions for, 491–492
covers for, 487, 488–489
creating new, 481–482
editing, 486–489
guides used for, 490–491
multi-page view of, 484
page layout options, 490
PDF export of, 483
presets for, 484–485
previewing, 483–484
publishing, 495
setup options, 482–483
text options, 492–494
borders, 444–445, 446
Brazieal, Lisa, v
Bridge program, 147, 571, 618, 622, 627–629
bucket system, 115
burning CDs/DVDs, 422

C

calibrating the display, 163–167
devices used for, 163–164
steps in process of, 165–167
white point and gamma, 164–165
Calvert, Terry, vi
Camera Calibration panel (Develop module), 260–267
camera profiles, 260–261
creative uses for, 265–267, 347, 349
custom calibrations, 262–265
Camera Raw, 4
cache size for, 652
camera profiles, 260–261
Lightroom compatibility with, 172–173, 312–315, 391
processing images in, 4
See also raw files
cameras
black and white mode, 332
cleaning sensors on, 276
connecting to computers, 75–76
custom calibrations for, 262–265
default develop settings for, 326–327, 646–647
exposure settings for, 192
lens correction info in, 252
memory cards for, 50–53
metadata info about, 564, 606–607
previews generated by, 128
profiles for, 260–261
tethered shooting with, 75–79
transmitting photos from, 75
Campagna, Matthew, 529
candidate images, 132
Canon EOS Utility, 76, 564
Caption panel (Book module), 480, 491–492
captions
book, 491–492
viewing in Metadata panel, 558
Web gallery, 539–543
capture sharpening, 352–353, 413
capture time editing, 563–564
Carbon Copy Cloner, 87
Cast Shadow option, 500, 501
Catalog panel (Library module), 102, 151
Catalog Settings dialog, 14, 85, 619, 623
catalogs, 84–99
about, 84–85
backing up, 85–88
copying between computers, 96–99
corrupted, 88, 618
creating new, 89
exporting, 91–93, 94, 95, 96, 98, 422
filtering photos in, 591–597
folders and, 111–112
importing, 93–95, 99
opening existing, 90, 93, 97
optimizing, 86
removing photos from, 159
selecting default, 645
upgrading, 10–12
Causa, Ettore, 290
CD/DVD exports, 422
Cell panel (Book module), 480, 491, 494
Cell Size/Spacing sliders, 438

cells
Book module layout, 491, 494
Custom Package layout, 452–453
Picture Package layout, 448–451
Single Image/Contact Sheet layout, 437–441
Cells panel (Print module), 448–451, 452–453
centering prints, 438
Chan, Eric, 4, 262, 353
Channel menu, 230
character controls, 493–494
Choose Profiles dialog, 467
chromatic aberration removal, 252
ChronoSync backup program, 87
Clarity adjustment
Adjustment brush, 298–299
Basic panel, 210–213
negative, 212–213, 290–291
Quick Develop panel, 217
Clarity slider, 210–213
Clevenger, Phil, vi
clipping
gamut, 244–245
highlight, 191, 199, 208
shadow, 199, 208–209
Clone mode, Spot Removal tool, 274, 276
close-up Loupe view, 120, 124, 125
CMYK images, 60, 173, 420–421
collections, 35, 151–158
book, 481–482
creating new, 152–153
duplicating existing, 155
editing, 156–157
module-specific, 153–156, 480
print, 432, 456
publishing, 613–616
Quick, 35, 151–152
renaming, 156–157
saving creations as, 480
sets of, 157
slideshow, 496, 518
Smart, 158
target, 157, 589
Web gallery, 531, 551
Collections panel, 153–158, 482, 551
color adjustments
Adjustment brush, 292–293
desaturated color, 346–349
HSL controls, 240–245, 346
noise reduction, 378, 379–380
selective color darkening, 242–243
Split Toning panel, 344–345
color gamut considerations, 471–472
color labels, 146–147
assigning to photos, 146
Bridge label compatibility, 147, 627–629
filtering photos with, 595–596, 606, 609–610
sort functions and, 627–629
Color Management settings, 460, 467
Color Palette panel (Web module), 522, 532–533
Color Priority vignette, 256, 257
color profiles, 163
color spaces, 15, 163, 390, 410, 420
color themes, 532–533
Color Wash controls, 508, 509
ColorChecker chart, 188, 262
colorimeter, 163
ColorSync option, 460, 463, 467
Compact Cells view, 116, 117
comparing images
Before/After viewing modes for, 268–273
Compare view for, 132–136, 139, 141
compression options, 48, 520, 651
computers
connecting cameras to, 75–76
ideal setup for Lightroom, 663–667
system requirements for, 8, 663
See also Macintosh computers; Windows computers
Configure FTP File Transfer dialog, 547–548
Constrain Aspect Ratio button, 180
Constrain to Warp option, 176
Contact Info box, 531
contact sheets, 440–441
content area, 21, 55–57
contiguous selections, 150
Contrast adjustment
Basic panel, 193, 196
Quick Develop panel, 217
Contrast slider, 193, 196, 377
controlled vocabularies, 415, 576, 582, 583, 584
Convert Photo to DNG dialog, 48–49, 651
Copy as DNG option, 48, 53
Copy Name field, 560, 562
Copy Settings dialog, 316
copying
Before/After view settings, 270
catalogs between computers, 96–99
Develop module settings, 316–317
importing photos by, 48
copyright information, 414, 568, 575
corruption
catalog, 88, 618
file, 53, 59
Cotterill, Harriet, vi
create bar, 432
Crop Frame tool, 178
Crop Lock button, 180
Crop Marks option, 446
Crop Overlay mode, 176
Crop Overlay tool panel, 176, 177
Crop Ratio menu, 185
cropping photos, 176–185
aspect ratios for, 180–181
basic steps for, 178–179
canceling crops, 184
guide overlays for, 181–183
metadata info on, 563
post-crop vignettes, 254–257
Quick Develop options, 185
repositioning crops, 181
rotating and, 176
custom filters, 608–612
custom metadata, 565–571
Custom Package layout, 452–456, 457
custom profile printing, 467–470
customizing Lightroom, 16–18, 660–661
Cut Guides option, 457

D

DAM Book, The (Krogh), 115, 147
date/time information, 563–564, 606

defaults
camera develop setting, 326–327, 646–647
restoring Lightroom, 647–648
Defringe controls, 252–253
deleting
files from memory cards, 53
history list, 304
metadata presets, 568
photos, 159
templates, 477
See also removing
demosaic processing, 168, 353, 354, 376
Density slider, 285
desaturated color adjustments, 346–349
Destination panel (Import dialog), 64–66
Detail panel (Develop module), 352, 355
Noise Reduction controls, 354, 376–380
Sharpening controls, 352, 359–369
Detail slider, 364–366, 367
Develop module, 5, 36, 161–327
Adjustment brush, 284–299
Auto Tone setting, 194, 195, 319
B&W controls, 330–349
Basic panel controls, 186–215, 234–237
Before/After viewing modes, 268–273
Blacks adjustment, 194, 198, 208–209
Camera Calibration panel, 260–267
Camera Raw compatibility, 172–173
camera-specific settings, 326–327, 646–647
Clarity adjustments, 210–213
color adjustments, 240–245
Contrast adjustments, 193, 196
copying and pasting settings, 316–317
cropping procedures, 176–185
Detail panel, 352, 359–369
Develop Presets panel, 261
display calibration, 163–167
Effects panel, 254–259
Exposure adjustments, 191, 196, 202–205, 208
Graduated Filter tool, 300–302
highlight adjustments, 193–194, 197
Histogram panel, 199–201
History panel, 36, 303–304
HSL controls, 240–245
image processing engine, 162
interface overview, 174–175
Lens Corrections panel, 246–253
localized adjustments, 284–302
Match Total Exposures command, 206–207
presets used in, 318–327, 355
Process Versions, 170–172
profile recognition, 163
Red Eye Correction tool, 280–283
retouching tools, 274–307
Saturation adjustments, 214–215
shadow adjustments, 193–194, 197
Snapshots panel, 304–307
Soft Proofing option, 471, 473–477
Spot Removal tool, 274–279
synchronizing settings, 37, 221, 310–311
Tone Curve panel, 226–239
Tool Overlay options, 184, 277
Vibrance adjustments, 214–215
View Options, 176
White Balance tool, 186–190, 195
Whites adjustment, 194, 198
Develop Presets panel, 261
Develop Settings menu, 63
Diagonal crop overlay, 181, 182
digital asset management (DAM) system, 554
Discard 1:1 Previews warning dialog, 128
display screen
calibrating, 163–167
dual-display setup, 138–141, 397
soft proofing considerations, 471–473
tips on choosing, 163
Distortion slider, 246
DNG files, 8, 648–651
compression for, 48, 650, 651
converting raw files to, 48–49, 651
copying photos as, 48, 53, 648–651
exporting images as, 410, 412, 422, 651
saving non-raw files as, 411
updating, 49, 650
DNG Profile Editor, 262–265
DPX video format, 427
Draft Mode Printing option, 440, 465
drag-and-drop import, 70–71
Drobo storage system, 666
drop shadows, 500
droplets, Photoshop, 418–421
dual-display setup, 138–141, 397
Dubovoy, Mark, 469
Dutton, Harry, vi
DVD/CD exports, 422

E

Earney, Richard, 320, 659
Edit in External Editor command, 388–389, 392
Edit in Photoshop command, 39, 387, 391
editing
books, 486–489
brush strokes, 286
capture time info, 563–564
collections, 156–157
external editor options for, 386–393
images in Photoshop, 39, 386–405
metadata presets, 568–570
video files, 221–225
Effects panel (Develop module), 254–259
Grain effects sliders, 258–259
Post-Crop vignette controls, 254–257, 511
email
exporting photos for, 424–425
links to Web sites in, 550
metadata links to, 574
preconfigured signature for, 550
Web gallery links to, 531

empty field searches, 608
Eraser mode, 286
EXIF metadata, 248, 542, 558
ExifTool editor, 565
Expanded Cells view, 116, 117
Export as Catalog dialog, 91, 95, 96, 98
Export dialog, 42, 406, 407, 408, 426, 640
Export Photo command, 428
exporting, 42, 406–429
  actions for, 418–421
  to Adobe Revel, 423
  bit depth options for, 411
  books as PDF documents, 483
  catalogs, 91–93, 94, 95, 96, 98, 422
  to CDs or DVDs, 422
  color space options for, 410–411, 420
  as email attachments, 424–425
  file settings for, 410–411
  GPS encoded files, 632, 640
  keywords, 414–415, 584
  location options for, 406, 408–409
  metadata options for, 414–415
  naming files for, 410
  output sharpening for, 414
  plug-ins for, 426, 428–429
  post-processing options for, 417
  presets for, 406
  to the same folder, 408–409
  selected photos, 96, 98
  sizing images for, 411–413
  slideshows, 519–521
  video files, 42, 427, 520–521
  watermark options for, 415–417
  Web galleries, 546
exposure
  Basic panel adjustments, 191, 196, 202–205, 208, 235
  camera settings for optimum, 192
  Histogram panel and, 200–201
  Match Total Exposures command, 206–207
  overexposed image correction, 202–203
  Quick Develop panel adjustments, 217
  underexposed image correction, 204–205
Exposure slider, 191, 196, 208
Expression Media, 84, 196
external editing options, 386–393
  file format/settings, 390
  naming/renaming files, 390
  Photoshop editing option, 387, 391
  preference settings, 386–387
  preset creation, 389
  program selection, 388–389
  steps for using, 392–393
Eye-fi cards, 75, 631
Eye-One calibration, 164, 165

F

favorite folders, 594
Feather slider
  Adjustment brush, 285
  Post-Crop vignette, 254
Fetch software, 547
File Format options, 15
file handling
  imported photos and, 58–60
  setting preferences for, 15, 648–653
File Handling panel (Import dialog), 58–60, 126
File Renaming panel (Import dialog), 61–62
File Transfer Protocol (FTP), 40, 547–548
File Type filtering, 606
Filename Template Editor, 61
files
  corruption of, 53, 59
  organization of, 56–57
  saving metadata to, 617–619
filmstrip, 23
  filtering photos via, 593–594
  making image selections in, 150
  navigating photos via, 136–137
  setting preferences for, 656–657
filter bar, 21, 115, 600–612
  advanced searches, 611–612
  Attribute section, 604
  component layout, 601
  custom settings, 608–612
  Metadata section, 604–607
  searching with, 556–557, 601–607, 608–612
  shortcut for toggling, 600
  Text section, 601–603
filtering photos, 33, 590–612
  attribute searches, 604
  catalog options for, 592
  collections based on, 35, 158
  color labels for, 595–596, 609–610
  custom settings for, 608–612
  filmstrip options for, 593–594
  flags used for, 142, 594
  GPS data used for, 634, 641
  keywords used for, 583
  master copy filtering, 597
  metadata searches, 604–607
  refined selections for, 594
  rules defined for, 602–603, 608–610
  selections used for, 599
  star ratings for, 144–145
  subfolder filtering, 598
  text searches, 601–603
  virtual copy filtering, 597
finding. *See* searching
Firewire connections, 75, 664
flagged photos, 117
  deleting rejects, 159
  filtering picks/rejects, 142, 594
  rating picks/rejects, 142–143
Flash galleries, 524, 526
  Appearance panel settings, 535–537
  Color Palette panel settings, 532
  Identity Plate options, 538
  Site Info panel settings, 531
  Title/Caption information, 539, 541
Flash updates, 12
FlashFXP software, 547
Flickr Web site, 613–616
flipping photos, 181
Flow slider, 285
folders
  catalogs and, 111–112
  creating new, 110

docked/undocked, 55
exporting to same, 408–409
favorite, 594
hierarchy of, 103
import options, 51–52, 66, 68–69
maintaining links to, 107
managing, 103–104
naming/renaming, 105, 549
organizing, 113–115
publishing photos to, 615
restoring links to, 107
synchronizing, 108–109, 313
system, 104–106
template settings, 659–660
Folders panel (Library module), 103–115
adding new folders via, 110
system folders and, 104–106
fraction characters, 657
Fraser, Bruce, 258, 352, 367, 414
Friedl, Jeffrey, 426, 560
FTP (File Transfer Protocol), 40, 547–548
full-screen mode, 28

G

galleries. *See* Web galleries
gamma, 164–165
gamut clipping, 244–245
Gaul, Melissa, v
Gaul, Troy, v
General preferences, 644–645
Geotag Photos app, 630
geotagged images, 630–641
creating, 630–631
exporting, 632, 640
filtering, 634, 641
manually tagging, 638–639
reverse geocoding of, 632, 640
viewing and managing, 632–641
See also Map module
Gogolin, Tim, v
Golden Spiral crop overlay, 181, 183
Gorman, Greg, 209
GPS metadata, 31, 630–641
embedding into photos, 631
exporting files containing, 632, 640
filtering photos by, 634, 641
options for recording, 630–631
reverse geocoding of, 632, 640
See also geotagged images
GPX tracklogs, 630, 634–637
Graduated Filter tool, 300–302
Grain effects sliders, 258–259
graphics card, 663
grayscale conversions. *See* black and white conversions
grayscale previews, 360, 367
Gretag Macbeth ColorChecker chart, 188, 262
Grid crop overlay, 181, 182
Grid view, 25, 116–119, 120, 122, 123, 139
grouping photos, 148–149
guides
book, 490–491
print, 439, 448
Guides panel
Book module, 480, 490–491
Print module, 432, 439
Gulick, Rebecca, v

H

H.264 video format, 427, 520
halo suppression, 364
Hamburg, Mark, iv, 2, 206, 240, 423
Hampson, Damon, v
hard drives, 664–667
Harvey, Phil, 565
HDR processed images, 429
Heal mode, Spot Removal tool, 274, 276, 279
Help menu, 19, 43, 174
Herasimchuck, Andrei, vi
hiding/showing
panels, 27, 100
program interface, 34
Toolbar, 22
hierarchy
folder, 103
keyword, 415, 582–583
Highlight Priority vignette, 256, 257
highlights
clipping, 191, 199, 208
detail recovery, 197, 202–203
reflective vs. nonreflective, 208
Highlights adjustment
Basic panel, 193–194, 197, 236
Quick Develop panel, 217
Tone Curve panel, 232
Histogram panel
Develop module, 199–201
Library module, 216
History panel (Develop module), 36, 303–304
Hogarty, Tom, vi
Holbert, Mac, 210, 431
Horizontal transform slider, 246
HSL controls (Develop module), 240–245
B&W conversion method, 347
desaturated color adjustments, 346–349
false color hue adjustments, 243–244
overview of controls, 240
reducing gamut clipping with, 244–245
selective color darkening, 242–243
HSL/Color/B&W panel (Develop module), 240
HTML galleries, 524, 525
Appearance panel settings, 534
Color Palette panel settings, 532
Identity Plate options, 538
Site Info panel settings, 531
Title/Caption information, 539, 541
Hue sliders
HSL controls, 240, 241, 242, 243
Split Toning panel, 342
Hughes, Bryan O'Neil, vi

I

ICM Color Management, 460, 463, 467
Identity Plate, 16–17
custom package layout, 454
photo border options, 444–445
slideshow options, 502, 503, 512, 514
steps for creating, 442–443
Web gallery options, 538

Identity Plate Editor, 442–443, 445, 503, 512, 514
Image Info panel (Web module), 522, 539–543
image processing engine, 161, 162
Image Settings panel (Print module), 432, 434–436
  Picture Package layout, 448
  Single Image/Contact Sheet layout, 434–436
Image Size dialog, 510
implied keywords, 584
Import dialog, 46–47
  Apply During Import panel, 63
  compact mode, 47, 50–52
  content area, 55–57
  Destination panel, 64–66
  expanded mode, 46
  File Handling panel, 58–60, 126
  File Renaming panel, 61–62
  Import Presets menu, 66
  Source panel, 54–55
Import DNG Creation options, 648–651
Import from Catalog dialog, 94
Import Presets menu, 66
importing photos, 24, 45–81
  Auto Import feature, 74
  backing up and, 59
  camera card imports, 50–53
  catalog imports, 93–95, 99
  develop settings and, 63
  DNG conversion options, 48–49
  drag-and-drop method for, 70–71
  folder options for, 51–52, 66, 68–69
  Import dialog options, 46–47, 54–66
  keyword imports, 583–584
  Layout Overlay feature, 80–81
  metadata info and, 63, 568, 576, 577
  organizing and, 56–57
  pixel limit for, 60
  preferences for, 645
  presets created for, 52, 66
  previewing and, 58, 126–127
  problems with, 58–59
  raw+JPEG options, 60
  renaming options, 61–62
  storage locations for, 64–66
  tethered shooting and, 75–79
importing video files, 60, 67
info overlay, 133, 504
information
  camera, 564, 606–607
  caption, 539–543
  copyright, 414, 568, 575
  date/time, 563–564, 606
  photographic, 447
  title, 539–543
  See also metadata
infrared effect, 339–341
inkjet printers, 431
Inside Lightroom Web site, 320, 659
installing/upgrading Lightroom, 9–12
interface, 2, 20–23
  customizing, 18, 34
  hiding or subduing, 34
  setting preferences for, 653–657
  simplifying, 27–28
interpolation methods, 413
inverse searches, 603
IPTC metadata, 63, 558, 568–570, 576
ISO settings
  metadata info on, 607
  noise reduction and, 378

J

Jardine, George, vi
Jonsson, Michael, v
JBOD systems, 666–667
JPEG files
  advantages of, 168
  external editing options, 389
  print files saved as, 456, 464, 466
  raw files vs., 168–169
  slideshows exported as, 520
  specifying size limits for, 410
  Web gallery images as, 544
  XMP metadata options, 621–624

K

kerning, 493–494
keyboard shortcuts, 43, 174
Keyword List panel (Library module), 576, 577, 578, 579, 582–584
Keywording panel (Library module), 576, 577, 580, 584–587
keywords, 576–587
  adding to photos, 578
  applying existing, 580, 581
  auto-completion of, 580
  entry preferences, 656
  exporting, 414–415, 584
  filtering, 583
  hierarchy of, 415, 582–583
  implied, 584
  importing, 583–584
  Painter tool and, 588–590
  private, 578
  removing, 582
  sets of, 586–587
  suggested, 585
  synonyms of, 579
  See also metadata
Knoll, John, 4
Knoll, Thomas, 4, 210, 240
Kost, Julieanne, 456
Krogh, Peter, 115, 147
Kuler, Adobe, 532

L

labeling photos. *See* color labels
landscape sharpening, 357
Layout Overlay feature, 80–81
Layout panel
  Print module, 432, 437–439
  Slideshow module, 496, 499, 513
Layout Style panel (Print module), 432, 434
  Custom Package layout, 452–456
  Picture Package layout, 448–451
  Single Image/Contact Sheet layout, 434–447
Layout Style panel (Web module), 522, 524–531
  AutoViewer gallery layout, 527
  Flash gallery layout, 524, 526
  HTML gallery layout, 524, 525
  PostcardViewer gallery layout, 528, 538
  SimpleViewer gallery layout, 529
  third-party layout styles, 529–531
LCD displays, 163

Lens Corrections panel (Develop module), 246–253
chromatic aberration removal, 252
Defringe controls, 252–253
enabling profile corrections, 248–249
Lens Vignetting adjustments, 246–248
Transform perspective controls, 246
Lens Profile Creator program, 249
lenses
chromatic aberration from, 252
metadata information, 606
profiles for, 248–249
vignetting problems, 246–248
Library module, 83, 100–159
Catalog panel, 102, 151
Collections panel, 153–158
color labels, 146–147
Compare view, 132–136
dual-display setup, 138–141
filmstrip, 136–137, 593–594
filter bar, 21, 115, 600–612
Folders panel, 103–115
Grid view, 25, 116–119
Histogram panel, 216
Keyword List panel, 576, 577, 578, 579, 582–584
Keywording panel, 576, 577, 580, 584–587
Loupe view, 26
Metadata panel, 30, 558–575
Navigator panel, 102, 124–125
numbered star ratings, 144–145
overview of, 100–101
Painter tool, 588–590
panel controls, 100
picks and rejects, 142–143
previews, 126–129
Publish Services panel, 613–616
Quick Collections, 35, 151–152
Quick Develop panel, 185, 216–225
selection options, 150
shortcuts for, 43
Sort menu, 626–629
stacks, 148–149
Survey view, 33, 130–131
Toolbar, 102
video functions, 221–225
View options, 25–26, 100
Library View Options dialog, 116, 121
Lightroom Configuration Manager, 560
Lightroom Publishing Manager, 613
Lightroom RGB workspace, 162
Lights Dim mode, 34, 656
Lights Out mode, 34, 656
links
email and Web, 550, 574
to source images, 107
localized adjustments, 38, 284–302
Adjustment brush, 284–299
Clarity slider, 290, 298–299
Color effect, 292–293
Graduated Filter tool, 300–302
Moiré slider, 382–383
Noise slider, 380–381
Shadows slider, 296–297
Sharpness slider, 290, 298–299, 372–373
Temp and Tint sliders, 294–295
Location Filter bar, 634
lock files, 85
lossy DNGs, 48, 651
Loupe view, 26, 55, 120–125, 138, 657
Luminance sliders
Detail panel, 376–377
HSL controls, 240, 244, 245, 347, 349
luminous-landscape.com forum, 469
Lyons, Ian, vi, 400

M

Macintosh computers
gamma setting on, 164
keyboard preferences on, 118, 138
Lightroom preferences on, 13–15, 50
printer settings on, 458, 461, 464, 468
system requirements for, 8
magnification options, 29, 124–125
Managed by Lightroom print settings, 468–469
Managed by Printer option, 460, 467
Map module, 31, 632–641
GPX tracklogs, 634–637
Location Filter bar, 634
manual geotagging, 638–640
navigating, 633
pin markers, 637–638
Saved Locations panel, 641
See also geotagged images
margin settings, 437, 438–439
Masking slider, 367–369
master images, 308–309, 597
Match Total Exposures command, 206–207
Maximum Compatibility option, 58
McCormack, Sean, 444, 521
megapixels, 664
memory cards, 50–53
menu bar, 20
Merge to HDR feature, 398
Merge to Panorama feature, 398–401
metadata, 30, 554–587, 617–625
copyright status, 568, 575
custom information, 565–571
displayed in Metadata panel, 558, 560–565
editing for multiple images, 572
efficient way of adding, 571
export options for, 414–415
filter options for, 604–607
GPS coordinates as, 31, 630–641
imported photos and, 52, 63, 568
keywords and, 576–587
mail and Web links, 574
presets, 63, 566–570
private, 578
saving to files, 617–619
searching with, 556–557, 604–607
setting preferences for, 652
status information, 313, 315, 562, 621
synchronizing, 625
target photos and, 572–573
tracking changes to, 619–621
types of, 554–555
virtual copies and, 308
Web gallery images, 544
XMP space and, 617, 619, 621–624

Metadata panel (Library module), 30, 558–575
action buttons, 574, 575
customizing data in, 565–571
editing data in, 572–575
information displayed in, 558, 560–565
view modes, 558–559, 561
Midpoint slider, 246, 248, 254
Mirror Image mode, 125
mirrored RAID system, 665, 666
missing photos, 607
modules
collections specific to, 153–156
Lightroom design using, 2–3
menu for selecting, 20
removing from Lightroom, 660
shortcuts for, 3, 43, 174
See also specific modules
moiré reduction, 382–383
monitor. *See* display screen
movies. *See* video files
mRAW file format, 168
multiple cell printing, 440
music, slideshow, 515, 521

N

naming/renaming
collections, 156–157
exported photos, 410
externally edited photos, 390
folders, 105, 549
illegal characters for, 652
imported photos, 61–62
photo files, 61–62, 410, 560
snapshots, 304
Narayanan, Seetha, v
Nash, Graham, 431
Navigator panel (Library module), 29, 102, 124–125
negative sharpening effect, 374–375
negatives
exporting catalogs with/without, 91–92
importing catalogs without, 95
New Develop Preset dialog, 318, 320, 346
no content searches, 609–610
noise reduction, 376–381
color, 378, 379–380
luminance, 376–377
selective, 380–381
shadow, 358
tips for, 378
noncontiguous selections, 150
nonreflective highlights, 208
novelty slideshow layout, 510–513
numbered star ratings, 144–145
numbering sequences, 62

O

O'Hare, Sam, 374
Open as Layers option, 398, 400
Open Catalog dialog, 93, 97
optimizing catalogs, 86
Options panel (Slideshow module), 500–501
organizing
folders, 113–115
photos, 56–57
orphan works, 568, 575
Output Settings panel (Web module), 522, 544
output sharpening, 355, 414
overexposed image correction, 202–203
overlays, 80, 502–507
Identity Plate, 502, 503
Layout Overlay feature, 80–81
text, 502, 504–507
Overlays panel (Slideshow module), 496, 502–507

P

package contents, 661, 662
Page Bleed view, 438
Page Grid area, 438
Page panel
Book module, 480, 490
Print module, 442–447
Page Setup dialog, 458
Paint Overlay vignette, 254–256
Painter tool, 588–590
panels
end mark options, 653–655
font size options, 655
hiding and revealing, 27, 100
left panel controls, 22
opening and closing, 23, 26
right panel controls, 23
solo mode for, 174
See also specific panels
panoramas, 398–401
paper
photo book, 482
print profiles, 461, 469
size settings, 458
Pascucci, Camilla, vi
PCs. *See* Windows computers
PDF documents
exporting books as, 483
print files output as, 440, 464
slideshows exported as, 519–520
Pearce, James, vi
Perceptual rendering intent, 470
performance issues, 4, 86, 663
perspective corrections, 246
Pfiffner, Pamela, v
photo galleries. *See* Web galleries
Photo Info templates, 447
Photokit Sharpener, 414, 465
Photomatix Pro plug-in, 398, 428–429
Photomerge dialog, 399
Photoshop, 6–7, 385, 386–405
droplet creation, 418–421
editing images in, 39, 386–405
extended editing in, 398–401
Lightroom integration with, 7, 173, 386–405, 622
opening photos as Smart Objects in, 402–405
setting preferences for, 386, 390
steps for working in, 394–397
Photoshop Elements, 312
picks and rejects, 117
deleting rejected photos, 159
filtering photos flagged as, 142, 594
flagging photos as, 142–143
keyboard shortcuts for, 55, 142
Picture Package layout, 448–451, 457
pixel limit, 60
Playback panel (Slideshow module), 496, 515

Plug-in Manager, 426
plug-ins
export, 426, 428–429
slideshow, 521
PNG file format, 80, 655
Point Curve editing mode, 228–229
Point Curve menu, 227
portrait sharpening, 356
PostcardViewer galleries, 528, 538
Post-Crop vignette controls, 254–257, 511
post-processing options, 417
preferences, 13–15, 643–657
accessing, 13, 50
External Editing, 386–387
file for storing, 658
File Handling, 648–653
General, 644–645
Interface, 653–657
Presets, 646–648
presentations, 479–551
book, 480–495
slideshow, 496–521
Web gallery, 522–551
presets
Auto Tone, 319
book, 484–485
camera-specific, 326–327
Develop module, 318–327
downloadable
export, 406
external editor, 389
how they work, 321
import, 52, 66
metadata, 63, 566–570
preferences for, 646–648
resetting, 325
sharpening, 355–357
steps for using, 322–325
tone curve, 228
video clip, 225
watermark, 416
Presets panel (Develop module), 318–319, 320, 355
presharpening images, 351
Preview panel (Book module), 483
previews, 126–129
Adjustment brush, 290
Before/After, 268–273
Book module, 483
camera vs. Lightroom, 128
data file for, 662
Detail slider, 367
exporting catalogs with, 92–93
generation of, 127–128
grayscale, 360, 367
Identity Plate, 512
imported photo, 58, 126–127
Library module, 126–129
Masking slider, 368–369
missing, 129
Photoshop edit, 397
quality settings, 129
Radius slider, 367
size settings, 129
slideshow, 516
soft proof, 471–477
Web gallery, 544–545
Print Adjustment options, 463
Print button, 460, 464
print collections, 432, 456
Print dialog, 461, 464, 468
print drivers, 460, 461
Print Job panel (Print module), 41, 432, 460–470
Color Management settings, 460
Draft Mode Printing option, 465
Lightroom printing procedure, 460–464
Print Adjustment options, 463
Print Sharpening option, 465
Print to JPEG File option, 466
Profile menu, 467
Rendering Intent options, 470
Print module, 432–470
Cells panel, 448–451, 452–453
Custom Package layout, 452–456
Guides panel, 439
Image Settings panel, 434–436, 448
interface overview, 432–434
Layout panel, 437–439
Layout Style panel, 434
Page panel, 442–447
Page Setup dialog, 458
Picture Package layout, 448–451
Print Job panel, 460–470
Print Setup dialog, 458, 459
Rulers, Grid & Guides panel, 448
Single Image/Contact Sheet layout, 434–447
Template Browser panel, 477
Print One button, 434, 460, 464
print profiles, 461, 467–470
Print Resolution option, 465
Print Setup dialog, 458, 459, 462
Print Sharpening options, 355, 465
Print to JPEG File option, 466
Printer Properties dialog, 469
printing, 41, 431–477
16-bit, 466
contact sheets, 440–441
custom profiles for, 467–470
draft mode for, 440, 465
to JPEG files, 456, 464, 466
Lightroom procedure for, 460–464
margin adjustments for, 437, 438–439
mode settings for, 465
multiple cell, 440
to PDF files, 440, 464
rendering intent for, 470
resolution for, 414, 439, 459, 465
saving settings for, 41
sharpening images for, 355, 414, 465
soft proofing images for, 471–477
templates for, 41, 455, 462, 477
private metadata, 578
Process Versions, 170–172, 217, 310, 604
profiles
camera, 260–261
color, 163
lens, 248–249
print, 461, 467–470
Promote subfolders dialog, 104
ProPhoto RGB color space, 129, 162, 199, 390, 410–411, 420
PSD files, 58
external editing options, 389, 390
XMP metadata options, 621–624
Publish Services panel, 613–616
publishing
books, 495
photos, 613–616
Pupil Size slider, 282
Purchase Book dialog, 495

Q

Quality slider, 519, 544
Quick Collections, 35, 151–152
Quick Develop panel (Library module), 216–225
  cropping options, 185
  synchronizing settings, 221
  tone controls, 216–218
  typical workflow, 218–221
  video file editing, 221–225
quickstart guide to Lightroom, 24–42

R

Radius slider, 362–363, 367
Rahn, Andrew, vi
RAID systems, 87, 663, 665–666, 667
RAM memory, 663
rating photos, 32, 142–145
  numbered star ratings, 144–145
  picks and rejects, 142–143
raw files
  advantages of, 168
  converting to DNG, 48–49, 651
  Detail panel adjustments, 355
  editing in Photoshop, 387, 391
  external editor options, 388–389
  JPEG files vs., 168–169
  processing of, 353–355
  See also Camera Raw
raw+JPEG files, 60
Real World Image Sharpening with Adobe Photoshop, Camera Raw, and Lightroom (Fraser and Schewe), 367
Recovery slider, 193
Red Eye Correction tool, 280–283
  cursor size adjustment, 280
  steps for using, 281–283
Redo command, 304
Refine Photos dialog, 143
reflective highlights, 208
rejects and picks. *See* picks and rejects
Relative rendering intent, 470
Reload command, 540
removing
  keywords from the Keyword List, 582
  photos from the catalog, 159
  red eye from images, 280–283
  spots on photos, 274–279
  See also deleting
Rename Photos dialog, 62
renaming. *See* naming/renaming
Render Preview options, 58
Rendering Intent options, 470, 474, 475
Repeat One Photo per Page option, 434, 436
Resize to Fit options, 411, 412
resizing. *See* sizing/resizing
Resnick, Seth, 576, 583
resolution
  image size and, 412, 465
  print reproduction and, 414, 439, 459, 465
restoring default settings, 647–648
retouching photos, 38, 274–307
  Adjustment brush for, 284–299
  Graduated Filter tool for, 300–302
  History panel and, 303–304
  localized adjustments, 38, 284–302
  Red Eye Correction tool for, 280–283
  Snapshots panel and, 304–307
  Spot Removal tool for, 274–279
reverse geocoding, 632, 640
RGB channels, 230, 332
RGB curve mode, 230–231
RGB workspace, 162
Richmond, Eric, vi
Riecks, David, 584
Rotate slider, 246
Rotate to Fit option, 434, 436, 448
rotating photos
  cropping and, 176
  printing and, 434, 436
Roundness slider, 254
rulers and guides, 439, 448
Rulers, Grid & Guides panel (Print module), 448

S

Saturation adjustment
  Basic panel, 214–215, 347
  Quick Develop panel, 218
Saturation sliders
  Basic panel, 214–215, 347
  HSL controls, 240, 242, 346
  Split Toning panel, 342
Saved Locations panel, 641
saving
  Adjustment Brush settings, 286
  Develop settings as presets, 318–320
  metadata to photo files, 617–619
  print templates, 477
  Quick Collections, 151
  slideshow templates, 517–518
  snapshot variations, 304, 305
  Web gallery templates, 551
Scale slider, 246
Schewe, Jeff, iv, 367, 376, 414
Scouten, Eric, v
Screen output option, 414
Scripts folder, 660
searching
  advanced or complex, 611–612
  attribute filter for, 604
  metadata used for, 556–557, 604–605
  rules defined for, 602–603, 608–610
  text filter for, 601–603
second copy backups, 59
Second Display submenu, 138
Secure File Transfer Protocol (SFTP), 547
Select Catalog dialog, 13
selections
  contiguous/noncontiguous, 150
  filtering photos using, 599
  instructions on making, 150
  saving as collections, 152–153
  Slideshow module, 517
sensors, cleaning, 276
sequence numbers, 62
sets
  collection, 157
  keyword, 586–587

shadows
clipping, 199, 208–209
darkening, 209, 234
lightening, 197, 204–205
localized adjustments, 296–297
noise problems, 358
Shadows adjustment
Basic panel, 193–194, 197, 236, 296
Quick Develop panel, 217
Tone Curve panel, 234
sharpening, 351–375
capture, 352–353, 413
effect sliders, 359–363
evaluating at 1:1 view, 359
examples of applying, 370–371
grayscale previews of, 360, 367
improved features for, 353–355
interpolation and, 413
landscape, 357
localized, 298–299, 372–373
luminance targeted, 359
modifying controls, 364–369
negative, 374–375
output, 355, 414
portrait, 356
presets for, 355–357
print, 355, 414, 465
sample image for, 358
Web gallery images, 544
Sharpening controls
Adjustment brush, 298–299
Amount slider, 360–361
Clarity slider, 290, 298–299
Detail panel, 352, 359–369
Detail slider, 364–366
Masking slider, 367–369
Quick Develop panel, 218
Radius slider, 362–363
Sharpness slider, 290, 298–299, 372–373
shortcuts, keyboard, 43, 174
showing/hiding. *See* hiding/showing
shutter speed information, 606
sidecar files, 560
SimpleViewer galleries, 529
Single Image/Contact Sheet layout, 434–447
Site Info panel (Web module), 522, 531
Size slider
Adjustment brush, 284
Spot Removal tool, 274, 276
sizing/resizing
images for exporting, 411–413
interpolation and, 413
thumbnails, 118
skin tone corrections, 241
Skurski, Mike, 414
Slide Editor view, 498, 504, 507
Slideshow module, 496–521
Backdrop panel, 508–509
interface overview, 496–497
Layout panel, 499, 513
Options panel, 500–501
Overlays panel, 502–507
Playback panel, 515
Preview mode, 516–517
Slide Editor view, 498, 504, 507
Template Browser panel, 517–518
Titles panel, 514
Toolbar, 496, 517
slideshows, 496–521
backdrops for, 508–509
collection creation, 518
color processing for, 545
exporting, 519–521
Identity Plates, 502, 503, 512, 514
novelty layouts, 510–513
PDF or JPEG, 519–520
playback options, 515
plug-ins for, 521
previewing/playing, 516–517
selections for, 517
soundtracks for, 515, 521
templates for, 496, 517–518
text overlays, 504–507
titles for, 514
video, 520–521
Smart Collections, 158
Smart Objects, 173, 402–405
Snapshots panel (Develop module), 304–307
saving variations using, 304, 305
Sync Snapshots feature, 304, 306–307
soft proofing feature, 471–477
display screen considerations, 471–473
instructions on using, 473–477
Soft Proofing panel, 473, 474
Soften Skin effect, 290–291
solid state drives (SSDs), 662, 664
solo mode for panels, 174
Soni, Neil, vi
sorting photos, 626–629
color labels and, 627–629
tethered shooting and, 79
text labels and, 629
sounds, task completion, 645
soundtracks, slideshow, 515, 521
Source panel (Import dialog), 54–55
splash screen options, 644
Split Toning panel (Develop module)
black and white conversions, 330, 341, 342–345
color image adjustments, 344–345
Spot Removal tool, 274–279
auto-select sample point mode, 277
instructions for using, 274–276
keyboard shortcuts for, 274
synchronized spotting with, 278–279
Tool Overlay options, 277
SQLite3 database format, 84
sRAW file format, 168
sRGB color space, 199, 390, 411, 420, 545
stacking photos, 148–149
star ratings, 144–145
Stern, Zalman, v, 4
Straighten tool, 179
striped RAID system, 665, 666
Stroke Border option, 500, 501
subfolders
creating, 110
filtering, 598
importing, 55, 68
showing photos in, 104
suggested keywords, 585
Survey view, 33, 130–131, 141
Sync Snapshots feature, 304, 306–307
Synchronize Folder dialog, 108–109, 313
Synchronize Metadata dialog, 625
Synchronize Settings dialog, 221, 278, 307, 310, 311

synchronizing
Auto Sync mode for, 279, 310
Develop settings, 37, 221, 310–311
folders, 108–109, 313
Lightroom with Camera Raw, 313–315
metadata settings, 625
Photoshop edits, 395–396
snapshots, 304, 306–307
spot removal settings, 278–279
system folders, 104–106
System Info dialog, 667
system requirements, 8, 663

T

Target Adjustment tool, 226, 232, 240, 336, 347, 494
target collections, 157, 589
Temperature slider
B&W conversions, 334–335
localized adjustments, 294–295
White Balance adjustments, 189
Template Browser panel, 432
Print module, 477
Slideshow module, 496, 517–518
Web module, 522, 551
templates
Photo Info, 447
print, 41, 455, 462, 477
settings folder for, 659–660
slideshow, 496, 517–518
text, 540, 542–543
Web gallery, 522, 551
Tethered Capture Settings dialog, 77
tethered shooting, 75–79
cable connection for, 75
connecting cameras for, 75–76
Layout Overlay feature and, 80
Lightroom feature for, 76–79
speed considerations for, 77
steps in process of, 77–79
wireless, 75–76
text
book, 492–494
photo info, 447
searches, 601–603
slideshow, 502, 504–507
Sort by Label option, 629
Web gallery, 539–543
Text Template Editor
Print module, 447
Slideshow module, 504, 505
Web module, 540, 542
TheTurningGate.net Web site, 529–530
third-party gallery styles, 529–531
thumbnails
badges displayed with, 117
Flash gallery preview, 535
Library Grid view, 118
Thumbnails slider, 55, 118, 484
Tieskoetter, Kevin, vi
TIFF files
exporting photos as, 410
external editing options, 389, 390
XMP metadata options, 621–624
Time Machine backups, 87
time/date information, 563–564, 606
Tint slider
B&W conversions, 334, 339
localized adjustments, 294–295
White Balance adjustments, 189
titles
slideshow, 514
Web gallery, 539–543
Titles panel (Slideshow module), 496, 514
tone controls
Basic panel, 191–198
Quick Develop panel, 216–218
Tone Curve panel, 226–239
Tone Curve panel (Develop module), 226–239
Basic panel and, 193, 234–237
overview of controls in, 226–227
Point Curve editing mode, 228–229
Point Curve menu, 227
RGB curve mode, 230–231
Tone Curve zones, 232–234
tone range split points, 227, 238–239
Tool Overlay options, 184, 277
Toolbar, 22
Book module, 484
Develop module, 277
Import dialog, 55
Library module, 102
Slideshow module, 496, 517
tracklogs, 630, 634–637
Triangle crop overlay, 181, 183
Tull, Daniel, vi
Type panel (Book module), 492–494
typographic fractions, 657

U

underexposed image correction, 204–205
Undo command, 36, 304, 508
Unsharp Mask filter, 352
updates, automatic, 644
upgrading Lightroom, 10–12
Upload Settings panel (Web module), 547, 549
uploading Web galleries, 547–551
UPS power protection units, 88
USB connections, 75, 664
user Lightroom folder, 85

V

Vertical transform slider, 246
Vibrance adjustment
Basic panel, 214–215, 347
Quick Develop panel, 217
Vibrance slider, 214–215, 347
video files
editing, 221–225
exporting, 42, 427, 520–521
importing, 60, 67
slideshows as, 520–521
video cache size, 653
view modes
Develop module, 176, 268–273
Metadata panel, 558–559, 561
View options (Library module)
Compare view, 132–136, 139, 141
Grid view, 25, 116–119, 120, 122, 123, 139
Loupe view, 26, 55, 120–125, 138, 657
Survey view, 33, 130–131, 141
vignetting
applying to photos, 254–257
correcting problems with, 246–248

virtual copies
copy names for, 560, 562
creating for photos, 308–309
external editing with, 395–396
filtering for, 597
snapshots vs., 308
soft proofing with, 474

W

warped images, 176
watermarks, 415–417, 442, 502, 575
Web browsers, 545, 548
Web galleries, 40, 522–551
AutoViewer, 527
captions for, 539–543
collection creation, 551
color processing for, 545
color themes for, 532–533
exporting, 546
Flash, 524, 526
HTML, 524, 525
Identity Plate options, 538
layout appearance, 534–538
metadata information, 544
PostcardViewer, 528, 538
previewing, 544–545
quality settings, 544
sharpening images in, 544
SimpleViewer, 529
site info for, 531
styles for, 524–531
templates for, 522, 551
third-party, 529–531
titles for, 539–543
uploading, 547–551
Web module, 40, 522–551
Appearance panel, 534–538
Color Palette panel, 532–533
Export and Upload buttons, 546
Image Info panel, 539–543
interface overview, 522–523
Layout Style panel, 524–531
Output Settings panel, 544
Preview in Browser button, 545
Site Info panel, 531
Template Browser panel, 551
Upload Settings panel, 547, 549
Web resources
Lightroom Book companion site, v
third-party downloads, 320, 529–530, 659
Web safe colors, 532
Web site links
from email, 550
from metadata, 574
from Web galleries, 531
Weston, Stuart, vi
white balance
Basic panel adjustments, 186–190, 195, 235
display screen calibration, 164–165
Quick Develop panel adjustments, 217
White Balance tool, 186–190, 195, 235
white point, 164, 189, 471
Whites adjustment
Basic panel, 194, 198, 237
Quick Develop panel, 217
Will, Charlene Charles, v
Windows computers
Lightroom preferences on, 13–15, 50
printer settings on, 458, 459, 462–463, 464, 469
system requirements for, 8
wireless shooting, 75–76
workflow in Lightroom, 5–6
WS_FTP Pro software, 547

X

XMP space, 617
read/write options, 621–624
saving metadata to, 619
X-Rite Eye-One calibration, 164, 165
X-Rite Gretag Macbeth ColorChecker chart, 188, 262

Z

Zoom to Fill Frame option (Slideshow module), 500, 501
Zoom to Fill option (Print module), 434, 435, 448
zooming
clicked point to center, 124, 657
magnification options, 29, 124–125