

VISUAL QUICKSTART GUIDE



Photoshop CC

ELAINE WEINMANN
PETER LOUREKAS



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VISUAL QUICKSTART GUIDE

Photoshop CC

FOR WINDOWS AND MACINTOSH

**ELAINE WEINMANN
PETER LOUREKAS**

For Alicia

Visual QuickStart Guide

Photoshop CC

Elaine Weinmann and Peter Lourekas

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To our daughters, Alicia and Simona — we treasure the time we share with you and look forward to the adventures and discoveries ahead of us.

— Elaine Weinmann and Peter Lourekas

In this table of contents and throughout this book, new or improved Photoshop CC features are identified by red stars.★

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NOTE TO OUR READERS

Before going to press with this book, we tested (and retested) our text to ensure that it accurately describes the options and features we viewed in the prerelease version of Photoshop CC. Due to the nature of the Creative Cloud, however, some features may change or update at a later date. If there are any significant changes to Photoshop, we will post an addendum in the [Access Bonus Content](#) link at [Peachpit.com](https://peachpit.com), so be sure to register your book (see the directions above). Also, you can find supplemental information about Photoshop on our blog at elaineandpeter.com.

Using the powerful and wide-ranging controls in the Adobe Camera Raw plug-in, you can apply corrections to your photos before opening them into Photoshop. In this comprehensive chapter, you'll learn how to open digital photos into the Camera Raw dialog and correct for defects, such as poor contrast, under- or overexposure, color casts, blurriness, under- and oversaturation, geometric distortion, color fringes, and noise. You will also learn how to enhance your photos with special effects, such as a vignette, grain texture, or tint; merge multiple exposures of the same photo; retouch blemishes; save and synchronize Camera Raw settings among related photos; and of course, open your photo into Photoshop.

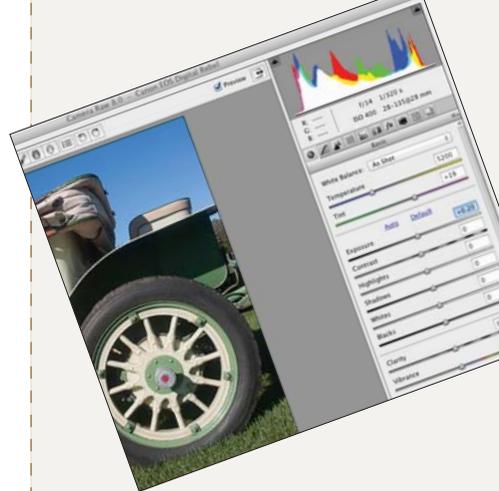
Note: The Camera Raw plug-in, which we refer to simply as "Camera Raw," is included with Photoshop. Some users also refer to the plug-in as "ACR," short for Adobe Camera Raw.

Why use Camera Raw?

Amateur-level digital cameras store images in the JPEG or TIFF format, whereas advanced amateur and pro models offer the option to save images as raw data files, which offers substantial advantages. Cameras apply internal processing to photos that are captured as JPEG or TIFF, such as sharpening, automatic color adjustments, and a white balance setting. With raw files, you get only the original raw information that the lens captured onto the camera's digital sensor, leaving you with full control over subsequent image processing and correction.

These are some basic facts about Camera Raw:

- ▶ Camera Raw can process raw, TIFF, and JPEG photos from most digital camera models.
- ▶ Camera Raw offers powerful controls for correcting problems in your photos, such as over- and underexposure and color casts, and for applying enhancements, such as a vignette or a grain texture.
- ▶ Camera Raw saves edits to TIFF and JPEG files in the file itself, whereas edits to raw files are saved as instructions (in a separate "sidecar" file or in the Camera Raw database). When you open a photo from Camera Raw into Photoshop, the instructions are applied to a copy of the file, and the original raw file is preserved.
- ▶ To any image layer in Photoshop, you can apply some Camera Raw features via the Filter > Camera Raw Filter command. ★



CAMERA RAW

4

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More reasons to use Camera Raw

In case you're not fully sold on the benefits of correcting your digital photos in Camera Raw before opening them into Photoshop, consider these points:

Ability to preview raw files: The only way to preview a raw photo is in Camera Raw (or other software that converts raw files). Note: The photo that you view on the LCD screen of your digital camera is merely a JPEG preview of the raw capture, not the "actual" raw capture.

Great correction features: Camera Raw offers many unique adjustment controls that you simply won't find in Photoshop.

Less destructive edits: When applying corrections to a photo, the goal is to preserve as much of the image quality as possible. Adjustments that you make to a photo in Camera Raw (and that are applied automatically when the photo is opened in Photoshop) cause less data loss than similar adjustment commands in Photoshop.

Preserves 16 bits per channel: To preserve more of the original pixel data in a raw photo, Camera Raw keeps the bit depth as 16 bits per channel. This helps offset the data loss from subsequent image edits in Photoshop, and results in a better-quality photo.

Tonal redistribution: The sensor in a digital camera captures and records the existing range of tonal values in a scene as is, in a linear fashion, without skewing the data toward a particular tonal range. **A** That sounds fine on paper, but the reality is that the human eye is more sensitive to lower light levels

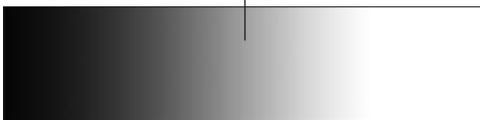
than to higher light levels. In other words, we're more likely to notice if shadow areas lack detail and less likely to notice extra details in highlight areas. The result is that digital photos typically contain more data than necessary for the highlight values in a scene and insufficient data for the lower midtone and shadow values. In a Camera Raw conversion, data is shifted more into the midtone and shadow ranges of your photo. This not only helps compensate for the peculiarities of human vision, but also helps prepare your photos for subsequent image edits in Photoshop. **B** If you apply tonal adjustments in Photoshop to a photo that contains insufficient shadow data, the result is posterization and a noticeable loss of detail; if you apply the same edits to a good-quality photo that has been converted in Camera Raw, the destructive edits will be far less noticeable.

Superior noise reduction and sharpening: Not to knock Photoshop, but the noise reduction and sharpening features in Camera Raw cause less data loss than similar features in Photoshop.

Learning the Camera Raw features will give you a head start: The tonal and color controls in Camera Raw are similar to many of the adjustment controls in Photoshop (e.g., Levels, Curves, and Hue/Saturation) that are discussed in later chapters. As you proceed through the lessons in this book, you will apply and build on the skills you have mastered in this chapter.

CAPTURING TONAL VALUES: YOUR CAMERA VERSUS THE HUMAN EYE

50% light value



A The digital sensor in a camera captures tonal values in a linear fashion, from light to dark, without altering the incoming data. A light value of 50% is located at the midpoint of the tonal range.

50% light value



B Camera Raw redistributes some of the captured tonal values to the shadows and midtones, shifting the 50% light value past the midpoint. As a result, the lower tonal values — the range the human eye tends to be more sensitive to — contain more data.

Raw, JPEG, or TIFF?

Unfortunately, Camera Raw can't correct deficiencies in digital JPEG and TIFF photos as fully as it can in raw photos, for several reasons. First, cameras reduce digital JPEG and TIFF photos to a bit depth of 8 bits per channel, and in so doing discard some of the captured pixels. Cameras save raw photos at a bit depth of 16 bits per channel, and preserve all the captured pixels.

Second, cameras apply color and tonal corrections to JPEGs and TIFFs (called "in-camera" processing). Camera Raw must reinterpret this processed data, with less successful results than when it has access to the raw, unprocessed data.

All of the above notwithstanding, if your camera doesn't shoot raw photos or you acquire JPEG or TIFF photos from other sources, you can still use practically all of the outstanding correction and adjustment features in Camera Raw to process them.

Note: In this chapter, we focus only on processing raw and JPEG files in Camera Raw — not TIFF files. The JPEG format is mentioned only when a particular feature treats a JPEG differently than a raw file.

- ▶ **Factoid:** Each digital camera manufacturer creates its own version of a raw file and attaches a different extension to the names of its raw files, such as .nef for Nikon and .crw or .cr2 for Canon.

KEEPING CAMERA RAW UP TO DATE

Of the many proprietary raw "formats" in the universe, some are unique to each manufacturer (such as Nikon or Canon) and some are unique to each camera model. To ensure that Camera Raw is using the latest interpreter for your camera, visit www.adobe.com periodically, and download and install any Camera Raw updates that are posted for your camera model.

JPEG ...

JPEG advantages

- ▶ JPEG files have a smaller storage size than raw files, so your digital camera can store more of them.
- ▶ In sports, nature, and other fast-action photography, speed is a necessity. Photo sequences can be captured more rapidly as JPEG files (due to their smaller storage size) than raw files.
- ▶ Most software programs can read JPEG files, but only a few programs can read raw files.

JPEG drawbacks

- ▶ The JPEG format discards some captured pixels due to its lower bit depth of 8 bits per channel.
- ▶ The JPEG compression methods destroy some image data and can produce defects, such as artifacts, banding, and loss of detail.
- ▶ The pixel data in JPEG photos is processed internally by the camera. Although Camera Raw can be used to improve your JPEG photos, it won't have access to the original pixel data (nor will you).

... COMPARED TO RAW

Raw advantages

- ▶ The raw compression methods are nondestructive.
- ▶ Raw files have a higher bit depth of 16 bits per channel.
- ▶ Raw files contain the original, unprocessed pixel data and full range of tonal levels that were captured by the camera. Camera Raw is given all that image data to work with, and the result is a higher-quality image — even after adjustments.
- ▶ Because the white point setting isn't applied to your raw photo (it's merely stored in the metadata of the file), you can adjust that setting at any time in Camera Raw.
- ▶ Camera Raw does a better job of redistributing tonal values in raw files than in JPEG files, making raw files better candidates for Photoshop edits.

Raw drawbacks

- ▶ Raw files have larger storage sizes than JPEG files.
- ▶ Digital cameras create and store raw files more slowly than JPEG files, a potential drawback in fast-action photography (although as camera technology improves, this may become less of an issue).

The bottom line

Despite the faster speed and smaller storage sizes of JPEG files, raw files have more advantages.

Opening photos into Camera Raw

For a smooth workflow, we recommend setting the proper preferences so your raw photos (and JPEG or TIFF photos, if any) will open directly into Camera Raw.

To set a preference so your raw photos open directly into Camera Raw:

1. In Photoshop, go to Edit/Photoshop > Preferences (Ctrl-K/Cmd-K) > **File Handling**.
2. Under File Compatibility, check **Prefer Adobe Camera Raw for Supported Raw Files**, then click OK. When you double-click a raw file, it will open into Camera Raw (as opposed to other software that can be used to convert raw files).

To set a preference so your JPEG or TIFF photos open directly into Camera Raw:

1. In Bridge, choose Edit/Adobe Bridge CC > **Camera Raw Preferences**.
2. At the bottom of the dialog, from the JPEG menu, choose **Automatically Open JPEGs with Settings**.
3. If you shoot digital TIFF photos, from the TIFF menu, choose **Automatically Open TIFFs with Settings**; or if you shoot only raw or JPEG photos (not TIFF photos), choose **Disable TIFF Support**.
4. Click OK.

When you want to open a JPEG or TIFF photo into Camera Raw that has *not* yet been edited (doesn't have Camera Raw settings), click the thumbnail in Bridge, then click the **Open in Camera Raw** button  or press Ctrl-R/Cmd-R.

To open a JPEG or TIFF photo that *has* been edited previously in Camera Raw (that is “with Settings”), double-click its thumbnail or press Ctrl-R/Cmd-R.

- ▶ If you enable both “Automatically Open” options (steps 2–3, above), but there is an occasion when you want to open a JPEG or TIFF photo directly into Photoshop instead of Camera Raw, click the thumbnail, then press Ctrl-O/Cmd-O. This shortcut will work only if the file hasn't yet been edited in Camera Raw.
- ▶ If the Open in Camera Raw button  is available when you click a thumbnail in Bridge, it's a sign that the file can be opened into Camera Raw.

You can set a preference to have either Bridge or Photoshop host the Camera Raw plug-in when you open a raw or JPEG photo. In the case of Photoshop, the program will launch, if it's not already running. Also, when Bridge is the host for Camera Raw, the default (highlighted) button for exiting that dialog is labeled Done, whereas when Photoshop is the host for Camera Raw, the default exit button is Open Image or Open Object, depending on a setting in the Workflow Options dialog (see step 7 on page 60).

To choose a host for Camera Raw:

1. In Bridge, choose Edit/Adobe Bridge CC > Preferences (Ctrl-K/Cmd-K), then show the **General** pane.
2. Check **Double-Click Edits Camera Raw Settings in Bridge** if you want Camera Raw to be hosted by Bridge when you double-click a thumbnail in Bridge (a raw photo or a JPEG that was previously edited in Camera Raw), or uncheck this option to have the file open into Camera Raw hosted by Photoshop. Click OK.

RECOGNIZING THE BADGE

In Bridge, the thumbnail for a file that has been opened and edited previously in Camera Raw will display this badge  in the upper-right corner, and the thumbnail and preview will reflect the current settings. Another clue: If the currently selected file has been edited in Camera Raw, you will see a Camera Raw category in the Metadata panel.

After setting the necessary preferences, and before learning the particulars of Camera Raw, you should familiarize yourself with this basic workflow.

To open a raw or JPEG digital photo into Camera Raw:

1. Launch Bridge, display the thumbnail for a raw or JPEG photo, then do either of the following:

For a raw photo, double-click the thumbnail.

For a raw or JPEG photo, click the thumbnail, then press Ctrl-R/Cmd-R or click the **Open in Camera Raw** button on the Bridge toolbar  (or right-click the photo and choose Open in Camera Raw).

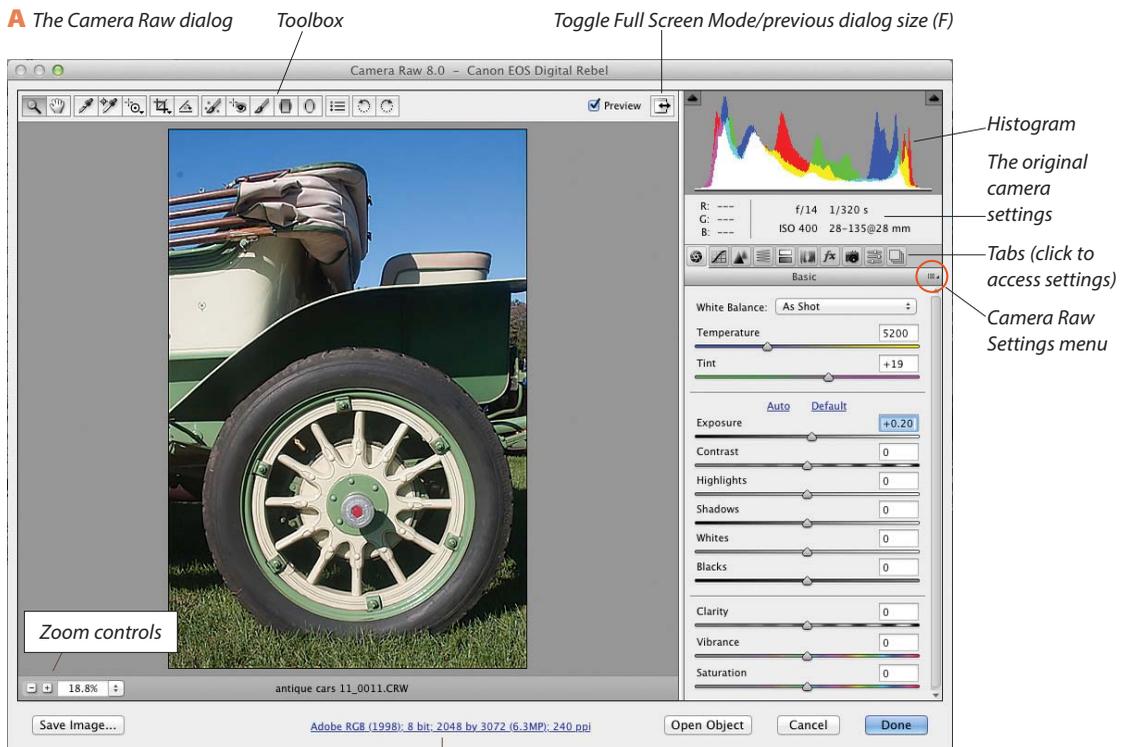
▶ To open a file from the Mini Bridge panel in Photoshop into Camera Raw, right-click the thumbnail and choose Open With > Camera Raw from the context menu.

2. The Camera Raw dialog opens. **A** An alert symbol  may display in the upper-right corner of the preview while Camera Raw reads in the image data, and will disappear when it's done.

Information about your photo (taken from the metadata that was embedded into it by the camera) is listed in several locations: the camera model in the title bar at the top of the dialog; the file name below the preview; and the camera settings used to take the photo (aperture, shutter speed, ISO, and focal length) below the histogram.

The adjustment features are located in 10 tabs: Basic, Tone Curve, Detail, HSL/Grayscale, Split Toning, Lens Corrections, Effects, Camera Calibration, Presets, and Snapshots. Switch among the tabs to correct your photo (we cover most of the tabs in depth in this chapter).

3. When you're done correcting the photo, you can either click Open Image to open the photo into Photoshop or click Done to close Camera Raw without opening the photo. In either case, the Camera Raw settings will stick to the photo, and the original data will be preserved. (Note: If you want to open the photo into Photoshop as a Smart Object, see the Note on page 94.)



Link to the Workflow Options dialog (see page 60)

A file that you open from Camera Raw into Photoshop as a Smart Object can be reedited using the full array of features in Camera Raw at any time. A standard image layer in a Photoshop document can also be edited using most—but not all—of the Camera Raw features by way of the Camera Raw Filter, as described in the task below. If you convert the image layer to a Smart Object first (an optional step), you will be able to edit the filter settings at any time. Note: To learn about layers, which are used in this task, see Chapter 8. To learn more about Smart Objects, see pages 262–269. See also the Note on page 94.

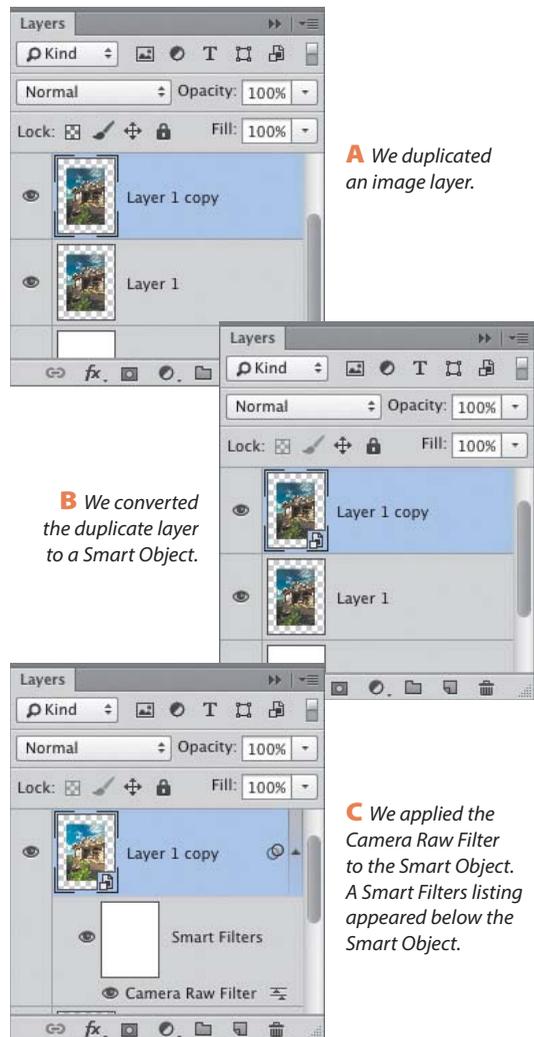
Among the Camera Raw features that aren't available via the Camera Raw Filter are the Crop and Straighten tools, the rotate buttons, the Workflow Options dialog, the Snapshots tab, and some options on the Camera Raw Settings menu. Don't be dissuaded by this list of "nos," however—the filter gives you access to the essential Camera Raw features.

To open and edit a Photoshop image layer in Camera Raw: ★

1. In an RGB document in Photoshop, display the Layers panel.  Click the image layer (or the Background) that you want to edit in Camera Raw, then press Ctrl-J/Cmd-J to duplicate it. Keep the duplicate layer selected. **A**
 2. *Optional (but recommended):* To keep your Camera Raw settings editable, choose Filter > Convert for Smart Filters, or right-click the duplicate image layer and choose Convert to Smart Object. **B** If an alert dialog appears, click OK.
 3. With the image layer or Smart Object selected, choose Filter > **Camera Raw Filter** (Ctrl-Shift-A/Cmd-Shift-A).
 4. The image layer opens in Camera Raw. Apply the needed corrections.
 5. Click OK (a progress bar may display while the filter is processing).
 6. If you applied the filter to a Smart Object, on the Layers panel, you will see a Camera Raw Filter listing below a Smart Filters listing. **C** To edit the Camera Raw settings at any time, double-click the Camera Raw Filter listing. To learn more about Smart Filters, see pages 362–366.
- ▶ To create a document via the Merge to HDR Pro command, then adjust the new document via the Camera Raw Filter, see pages 248–251.

CAMERA RAW FILTER OR PHOTOSHOP?

Although we sing the praises of Camera Raw in the first two pages of this chapter and strongly recommend using it as a first step before opening a photo into Photoshop, Photoshop is no slouch when it comes to adjustment options. In fact, Photoshop has some commands and features that you won't find in Camera Raw, such as adjustment layers. You can easily hide, show, clip, or restack any adjustment layer; edit its layer mask; and change its opacity or blending mode (see Chapter 12). Fortunately, you don't have to decide between Camera Raw and Photoshop—you can use both!



A We duplicated an image layer.

B We converted the duplicate layer to a Smart Object.

C We applied the Camera Raw Filter to the Smart Object. A Smart Filters listing appeared below the Smart Object.

The Camera Raw tools **A**

In the upper-left corner of the dialog, click the **Zoom** tool, , then click the image preview to zoom in or Alt-click/Option-click it to zoom out.

Use the **Hand** tool  to move a magnified preview image in the window (if another tool is selected, hold down the Spacebar for a temporary Hand tool).

For the **White Balance** tool, , see the sidebar on page 62.

Choose the **Color Sampler** tool, , then click in the image preview to place up to nine samplers. A breakdown of the RGB components below each sampler in the photo displays in a readout below the tool box; the readouts will update as you make color and tonal adjustments. To reposition a sampler, drag it with the Color Sampler tool. To remove a sampler, hold down Alt/Option and click it. To remove all samplers, click Clear Samplers.

For the **Targeted Adjustment** tool  (or TAT for short), see pages 68–69 and 73.

For the **Crop**  tool, see page 58.

For the **Straighten**  tool, see page 59.

For the **Spot Removal**  tool, see page 90.

The **Red-Eye Removal** tool  works like the Red-Eye tool in Photoshop (for the latter, see page 307).

For the **Adjustment Brush** tool,  see pages 74–76.

For the **Graduated Filter** tool,  see pages 86–87.

For the **Radial Filter** tool,   see pages 88–89.

Note: If tool settings are displaying on the right side of the Camera Raw dialog (if, say, you were using the

Adjustment Brush tool) and you want to redisplay the row of tab icons, click one of the first seven tools.

- ▶ The tools in Camera Raw are “memory-loaded,” meaning that you can toggle them. Press a tool shortcut to select a different tool, then press the same key again to return to the original tool.

Other buttons at the top of the dialog:

- ▶ The **Open Preferences Dialog** button  (or press Ctrl-K/Cmd-K) opens the Camera Raw Preferences dialog.
- ▶ The **Rotate 90° Counterclockwise** button  and the **Rotate 90° Clockwise** button  rotate the image. The results preview in the dialog.

MORE WAYS TO ZOOM IN THE PREVIEW

- ▶ Hold down Alt/Option-Spacebar and click to zoom out, or hold down Ctrl/Cmd-Spacebar and click to zoom in.
- ▶ Press Ctrl-/Cmd- (hyphen) to zoom out or Ctrl-/Cmd+ to zoom in.
- ▶ Use the zoom buttons (– or +) or the Zoom Level menu, located below the image preview.
- ▶ Double-click the Zoom tool to set the zoom level to 100%.
- ▶ Double-click the Hand tool to fit the image in the preview window.

H Hand: Moves a magnified preview in the window	S Color Sampler: Places up to nine RGB color sampler points in the preview	A Straighten: Straightens the photo along a line you drag	E Red-Eye Removal: Corrects red-eye in a portrait photo	Graduated Filter G and Radial Filter J tools: Apply edits gradually across an area that you designate	L Rotate 90° Counterclockwise: Rotates the image									
														
Z Zoom: Reduces or magnifies the preview	I White Balance: Sets the white balance	T Targeted Adjustment: Applies adjustments where you drag in the preview	C Crop: Crops the photo based on a marquee you drag	B Spot Removal: Heals imperfections	K Adjustment Brush: Applies local edits to areas you have masked	Opens the Camera Raw Preferences dialog	R Rotate 90° Clockwise: Rotates the image							

A The shortcuts for the Camera Raw tools are listed in boldface above.

Cropping and straightening photos

With the Crop and Straighten tools, you can control which portion of a photo opens into Photoshop. You can readjust the crop box at any time without losing any image data, and the outlying areas will remain available even after you click Save, Done, or Open.

To crop a photo:

1. Open a photo into Camera Raw **A** (see step 1 on page 55).
 2. Choose the **Crop** tool  (C).
 3. Drag in the preview to make a crop box appear. **B**
 4. *Optional:* To move the crop box, drag inside it. To resize the box, drag a handle.
 5. To preview the results of the Crop tool, press Enter/Return or click any tool except the Crop or Straighten tool. **C**
- ▶ To redisplay the current crop box after exiting crop mode, click the Crop tool. If you want to remove the box and redisplay the whole image, press Esc.



A This is the original photo, in Camera Raw.



B With the Crop tool, we drew a crop box in the preview window. Here, we are resizing the box.



C We pressed Enter/Return to preview the results.

To straighten a crooked photo:

1. Open a photo into Camera Raw (see step 1 on page 55).
 2. Choose the **Straighten** tool  (A).
 3. Drag along an edge in the photo that you want to align to the horizontal or vertical axis. **A** A crop box will display, aligned to the angle you drew. **B**
 4. To preview the straighten results, press Enter/Return or click any tool except the Crop or Straighten tool. **C**
- To change the straighten results after exiting crop mode, choose the Straighten tool (A), then drag again. If you want to remove the crop box, choose the Crop tool (C), then press Esc.



A With the Straighten tool, we are dragging along an edge that we want to align to the vertical axis.



B A crop box displays.



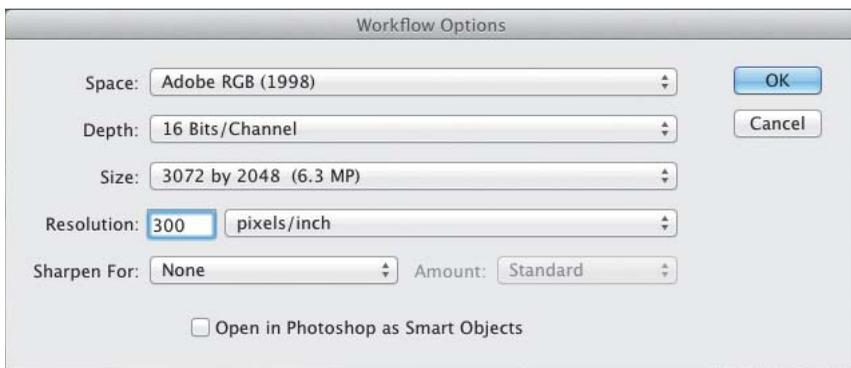
C We pressed Enter/Return to preview the results.

Choosing default workflow settings

Via the Workflow Options dialog, you can resize or sharpen a photo, or change its color space or bit depth, before opening it into Photoshop (the original raw or JPEG file isn't altered). Your choices will become the new default settings.

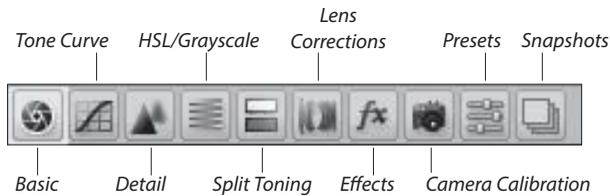
To choose default workflow settings:

1. Open a photo into Camera Raw, then at the bottom of the dialog, click the underlined link that lists the color space, bit depth, etc. The **Workflow Options** dialog opens. **A**
 2. From the **Space** menu, choose a color profile to be used for converting the raw file to RGB: Adobe RGB (1998), ColorMatch RGB, ProPhoto RGB, or sRGB IEC61966-2.1 (or "sRGB," for short). In Chapter 1, you assigned Adobe RGB (1998) as the default color space for color management, so for optimal color consistency, you should choose it here, too.
 3. From the **Depth** menu, choose a color depth of 8 Bits/Channel, or if you have a large hard disk and a fast system with a lot of RAM, you can choose 16 Bits/Channel (see page 17). With those extra pixels, the photo will retain more of its original tonal levels when it's edited in Photoshop.
 4. If you need to resize the image, from the **Size** menu, choose a preset size (in megapixels); all the sizes that are listed have the same proportions as the raw image (the original size is the one without a minus sign [-] or plus sign [+]). Resampling will occur if you choose a different size than the original. To help prevent loss of detail, avoid choosing the largest size. If the photo has a crop box, the
- Size menu will be labeled as Crop Size, and it will list the current crop size.
- ▶ Alternatively, you can alter the dimensions (and/or resolution) of any photo via the Image Size dialog after opening it into Photoshop. See pages 134–137.
5. Enter a **Resolution** value. The default resolution of 240 ppi is assigned to all photos by Camera Raw.
 6. *Optional:* To apply predefined output sharpening to the photo for your output medium, from the Sharpen For menu, choose None, Screen, Glossy Paper, or Matte Paper. From the Amount menu, choose the desired level of sharpening (Standard is a good all-purpose choice). Note: The sharpening values that Camera Raw applies aren't listed in any dialog. If you want to control the values when sharpening, set the Sharpen For menu to None and use the sliders in the Detail tab instead (see pages 70–71).
 7. The **Open in Photoshop as Smart Objects** option converts the Open Image button in the Camera Raw dialog to an Open Object button, which opens the photo into Photoshop as a Smart Object. If you leave this option unchecked, you can convert Open Image to Open Object for any photo by holding down Shift. Learn about Smart Objects on pages 262–269.
 8. Click OK. Your chosen workflow settings will be listed in the link below the preview and will be applied to the current photo and to all photos that you subsequently open into Camera Raw.



A Use the Workflow Options dialog to choose color space, bit depth, size, resolution, and sharpening settings for the current—and future—photos.

Using the Camera Raw tabs



The Camera Raw tabs

To access a panel of related settings in Camera Raw, click one of the tab icons (shown above). We perform most of our work in the first four tabs, and recommend that you do the same. Use the other tabs for specialty corrections or enhancements, as needed.

Basic: Adjust the white balance and exposure (see pages 63–67).

Tone Curve: Fine-tune a specific tonal range, such as the upper or lower midtones (see pages 68–69).

Detail: Apply capture sharpening and reduce unwanted noise (see pages 70–71).

HSL/Grayscale: Adjust the hue, saturation, and luminance of individual colors (see pages 72–73).

Split Toning: Apply one color tint to the highlight areas of a photo and a second tint to the shadow areas (see page 77).

Lens Corrections: Correct a photo for the effects of lens distortion, such as geometric distortion (e.g., a building that is tilted backward or isn't level), under- or overexposure at the edges (an unwanted vignette), chromatic aberration, and color fringes.

Effects: As a special effect, apply a grain texture or a light or dark vignette (see pages 84–85).

Camera Calibration: The Process menu in this tab lets you update a file to the latest Camera Raw processing (see the sidebar on the next page). If the profile that Camera Raw provides for your camera model doesn't produce satisfactory color results, use the sliders in this tab to tweak the settings manually.

Presets: Create a custom preset of the current Camera Raw settings for future application to any other photos (see page 93).

Snapshots: For flexibility in editing, save interim versions of a photo as you make corrections. When

necessary, you can restore the photo to any snapshot version (see the sidebar on page 91).

If you find a need to undo or reset your slider settings as you work in Camera Raw, you can use any of the methods below. (To learn about related options on the Camera Raw Settings menu, see the next page.)

To restore default settings to sliders in the Camera Raw tabs:

Do any of the following:

Double-click a slider to reset it to its default value (usually 0).

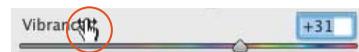
Shift-double-click a slider in the Basic tab to reset it to the **Auto** value.

Click **Default** in the Basic or HSL/Grayscale tab to reset all the sliders in just that tab to 0.

Hold down Alt/Option and click **Reset** at the bottom of the dialog (Cancel becomes Reset) to restore the settings, in all tabs, that were in effect when you opened the dialog.

USING THE SCRUBBIES

To change a value quickly in a Camera Raw tab, instead of dragging a slider, drag to the left or right across the slider name (this is called a scrubby-slider).



TOGGING THE PREVIEW

Check **Preview** at the top of the Camera Raw dialog (or press P) to preview changes made in all the tabs, or uncheck Preview to view the result of changes made in all the tabs except the current one, so you can compare the photo with and without the latest changes.

When you open a photo into Camera Raw, by default, it's adjusted according to the built-in profile for your camera model, and all the sliders in the Basic tab are set to 0. At any time, you can assign a different collection of settings to your file, or restore the original settings.

To restore settings via the Camera Raw Settings menu:

From the Camera Raw Settings menu,  choose one of these options: **A**

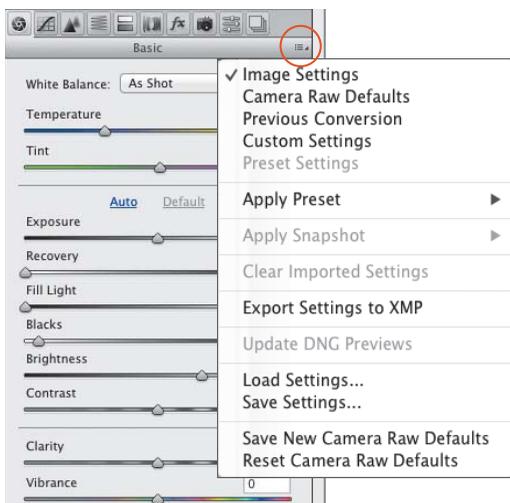
Image Settings to restore the settings that were attached to the file during the initial photo shoot or, if the photo was previously edited in Camera Raw, from the last Camera Raw session. When a photo is opened for the first time into Camera Raw, these settings will match the Camera Raw Defaults settings.

Camera Raw Defaults to remove all custom settings and reapply the default settings for your camera model, your specific camera, or the ISO setting that was used to take the photo.

Previous Conversion to apply the settings from the prior image that was adjusted in Camera Raw.

Custom Settings to reapply all the custom settings that you have chosen since opening Camera Raw.

If a user-saved preset is applied to the current photo, that preset will also be listed as an option on this menu (see page 93).



A Use options on the Camera Raw Settings menu to restore default settings to your photo or to reapply the prior settings.

UPDATING LEGACY PHOTOS AND THE CAMERA RAW SLIDERS

When you bring an unprocessed photo into Camera Raw 8.x, the dialog uses its most up-to-date profiles for noise reduction, de-mosaicing, sharpening, color calibration, and other processing. If you want to update a raw photo that was already processed in Camera Raw 6 or earlier using the new profiles, and also update the sliders in the Basic and other tabs to the newest versions (as described in this chapter), before applying any custom adjustments, click the **Update to Current Process (2012)**  icon at the bottom right of the preview window. The Process menu in the **Camera Calibration** tab  changes to the setting of **2012 (Current)**. Note: If you want to preserve access to the older rendering of the photo, take a snapshot of it before you update it (see the sidebar on page 91).

SETTING THE WHITE BALANCE

The color temperature of the lighting in which a photo is shot, whether natural or artificial, influences the relative amounts of red, green, and blue that are recorded by the camera. A digital camera attempts to balance the three colors to produce an accurate white, which in turn makes other colors in the photo more accurate; this is called the “white balance.”

To fine-tune the white balance of a photo in Camera Raw, we recommend using the **Temperature** and **Tint** sliders in the Basic tab (see the next page). Another method—clicking with the White Balance tool  on an area of the photo that you want to become a neutral gray—should be used with care because finding exactly the right area to click is harder than it sounds.

Using the Basic tab

As its name implies, the Basic tab contains the most essential correction features of Camera Raw — and it displays first, by default, when you open the dialog. We have divided the use of this tab into several tasks, beginning with setting the White Balance, on this page, then proceeding through exposure, contrast, and saturation adjustments, on pages 64–67.

To apply white balance adjustments via the Basic tab:

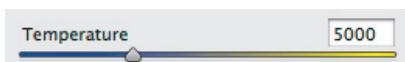
1. With a photo open in Camera Raw, click the **Basic** tab. **A** If the whole photo isn't visible in the preview, double-click the Hand tool  in the toolbox.
2. Do either of the following:

From the **White Balance** menu, choose a preset that best describes the lighting conditions in which the photo was taken, such as Daylight or Shade. (Choose As Shot, if needed, to restore the original camera settings. Note that only As Shot and Custom are available for JPEG and TIFF files.)

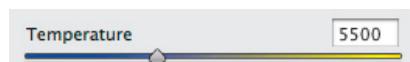
Lower the **Temperature** value to add blue and make the image look cooler, **B** or raise it to add yellow and make the image look warmer. **C** To fine-tune the temperature correction, move the **Tint** slider slightly to the left to add a bit of green or to the right to add magenta. (The White Balance menu setting changes to Custom, to indicate that you have chosen manual settings.)



A When a photo is opened for the first time into Camera Raw, the White Balance menu in the Basic tab is set to As Shot. This photo has a high Temperature value and looks too warm (yellowish).



B We lowered the Temperature value too much. Now the photo looks too cool (has a bluish cast).



C A Temperature value of 5500 strikes a good balance between warm and cool.

On the histogram in the Camera Raw dialog, the red, green, and blue areas represent the three color channels in a photo, and the white areas represent the areas where those three colors overlap. Clipping, the shifting of tonal values to absolute black or white in a photo, occurs if the tonal range of a scene is wider than the range that can be captured by the camera. You can tell that pixels are clipped in a photo if the vertical bars are primarily clustered in taller peaks at one or both ends of the histogram (shadow pixels on the left, highlight pixels on the right).

As you make slider adjustments in Camera Raw, your goal is to bring the pixels into the range of your chosen RGB color space and minimize clipping. When tonal values are redistributed, the histogram updates accordingly. Note: Remember, we recommended that you choose Adobe RGB as the color space both for your camera (see page 6) and for Camera Raw (see page 60).

To turn on the histogram clipping warnings for the preview:

In the top left corner of the histogram, click the **Shadow Clipping Warning** button (U); **A** clipped shadows display in the preview as blue. In the top right corner, click the **Highlight Clipping Warning** button (O); clipped highlights display in the preview as red. (When a button is activated, it has a white border.)

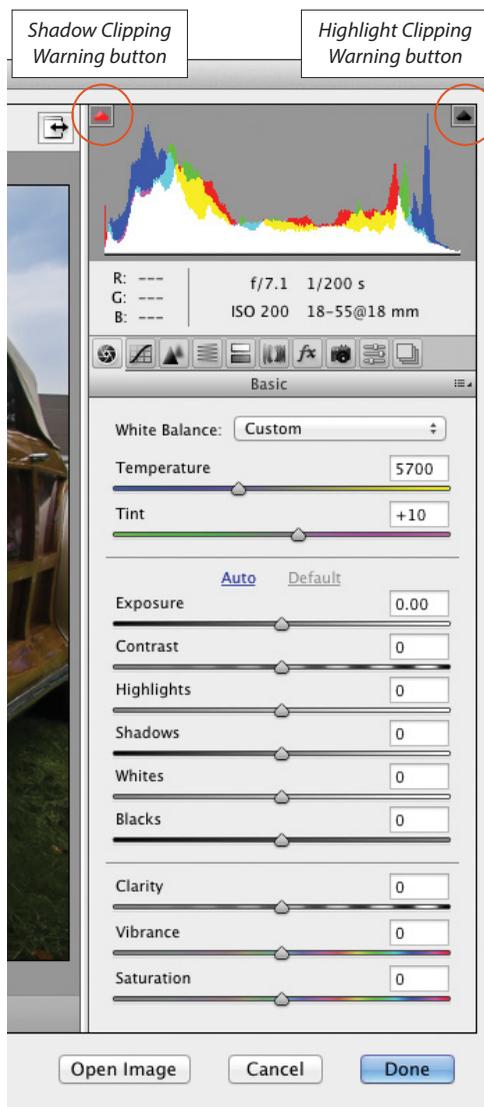
Use the middle batch of sliders in the Basic tab to apply tonal corrections to your photo, preferably in the order listed in the dialog (there's a logic to their sequence). At first, all the sliders are set to 0 and the underlined word "Default" is dimmed.

To apply exposure and contrast adjustments via the Basic tab:

1. Turn on the Clipping Warning buttons.
2. Use the **Exposure** slider to lighten or darken the entire photo, as needed.
3. Use the **Contrast** slider to increase or reduce the color intensity and tonal contrast (**A–B**, next page).
4. If you increased the contrast, the highlights and shadows probably now need to be adjusted:

To restore details in the highlights, move the **Highlights** slider to the left until only a smidgen remains of the red highlight warning color.

Instructions continue on page 66



A Use the Clipping Warning buttons to let Camera Raw display the blue and/or red highlight colors over any clipped areas of your photo.



A This original photo was underexposed (too dark), causing the colors to look dull. The blue warning color in the preview indicates the shadow areas in the photo that are clipped.



B Our first goal is to lighten the overall photo and recover details in the midtones and shadows without washing out the highlights. In the Basic tab, we increased the Exposure value,* then increased the Contrast value to intensify the highlights, shadows, and color saturation. We're not concerned that the photo is still too dark, as it can be lightened with further adjustments.

*We chose an Exposure value of +.60 for the raw version of this photo. If you are working with the JPEG version that we have supplied for downloading, use an Exposure value of +0.80 instead.

To restore details in the shadows, move the **Shadows** slider to the right until only a smidgen remains of the blue shadow warning color. **A** Or if you need to darken the shadows, move this slider to the left.

- Now that details have been restored to the mid-tones and highlights, you're ready to adjust the whites and blacks:

Increase the **Whites** value to brighten the white areas in the photo. This slider also has the effect of lightening the upper midtones and brightening the colors.

Use the **Blacks** slider to lighten or darken the black areas (**A**, next page). This slider may also affect the color brightness.

- ▶ If the colors are now washed out as a result of your increasing the Whites or Blacks value, you could try increasing the Contrast value.
- ▶ To further adjust the tonal values in the midtones, see pages 68–69.

REMOVE CLIPPING IN THRESHOLD PREVIEW

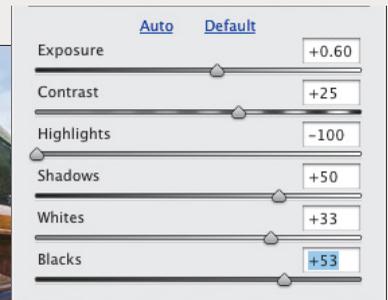
To remove shadow clipping a different way, Alt-drag/Option-drag the Shadows or Blacks slider. A **Threshold preview** displays (as shown below). Release the mouse when small amounts of color or black display in the white preview.

You can also Alt-drag/Option-drag the Exposure, Highlights, or Whites slider to display a Threshold preview for that adjustment. Release the mouse when only a smidgen of white displays in the black preview.



	Auto	Default
Exposure		+0.60
Contrast		+25
Highlights		-100
Shadows		+50
Whites		0
Blacks		0

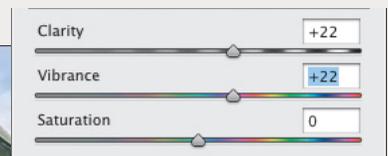
A We reduced the Highlights value to recover details in the sky and increased the Shadows value to recover details in the shadows and lower midtones. The colors and detail in the midtones, and the overall balance of lights and darks, are improved. However, reducing the Highlights value caused the white areas to look dull.



A We increased the Whites value to lighten the upper midtones and brighten the whites, and increased the Blacks value to recover more details in the shadows. Overall, the brightness, as well as the colors, are much improved.

To apply edge contrast and color saturation adjustments using the Basic tab:

1. To add depth by intensifying the edge contrast in the midtones, increase the **Clarity** value; or for a deliberate soft-focus effect (such as in a portrait or landscape), reduce the Clarity value.
 2. Change the **Vibrance** value to adjust the color saturation. **B**
 3. Turn off both clipping warnings by pressing U, then O.
- ▶ We recommend using the Vibrance slider instead of the Saturation slider to adjust color saturation because the former is less likely to cause oversaturation (and it protects skin tones), whereas the latter is more likely to cause oversaturation and highlight clipping. To view the effect of this, drag the Saturation slider to the far right.



B Finally, we increased the Clarity value slightly to sharpen the details and increased the Vibrance value slightly to boost the color saturation (note the change on the car body). Our cumulative adjustments to this photo improved the contrast, clarified the details, and produced richer color. Vroom, vroom!

Using the Tone Curve tab

After using the Basic tab, a next logical step is to make a more refined adjustment of the upper and lower midtones, which we recommend doing individually via the Parametric sliders in the Tone Curve tab. (If you use Adobe Photoshop Lightroom, these Parametric controls will look familiar.)

Note: We avoid manipulating the curve in the nested Point tab, because a misshapen curve can cause a photo to look posterized. The sliders in the Parametric tab don't cause this problem.

To apply tonal adjustments using the Parametric sliders in the Tone Curve tab:

1. With a photo open in Camera Raw, **A** click the **Tone Curve** tab,  then the nested **Parametric** tab. Behind the curve you'll see a static display of the current histogram.
2. Do either of the following:

If you have already adjusted the Highlights and Shadows sliders in the Basic tab, leave the Highlights or Shadows sliders in this tab alone and just tweak the upper and lower midtones using the **Lights** and **Darks** sliders. If you didn't adjust the Highlights and Shadows sliders in the Basic tab, you can use the sliders here to lighten or darken any individual tonal range: **Highlights**, **Lights** (upper midtones), **Darks** (lower midtones), or **Shadows**. As you move a slider, the

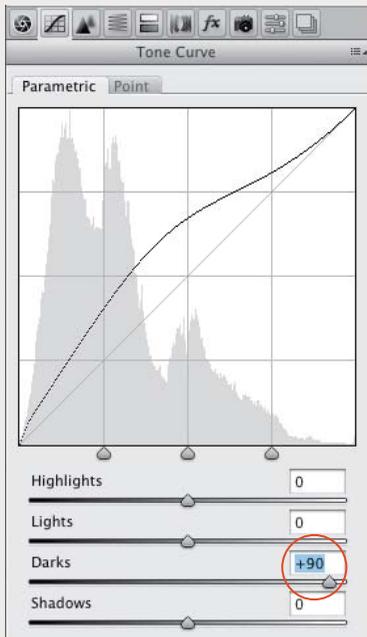
corresponding portion of the curve will be raised above or lowered below the diagonal line (**A–B**, next page).

Click the **Targeted Adjustment** tool  (T). Drag within a tonal range of the photo that needs adjustment (**C**, next page). As you do this, the slider and curve that correspond to the tonal range under the pointer will move accordingly.

- ▶ To boost the contrast in a photo, try moving the Lights slider to the right and the Darks slider to the left.
3. To control the range of tonal values that are affected by the slider adjustments you made in the preceding step, move any of the region controls (located below the graph). The left region control affects the Shadows slider, the right region control affects the Highlights slider, and the middle region control affects both the Lights and Darks sliders (**D–E**, next page). Move a control to the left to raise the curve and lighten adjacent tonal ranges, or move a control to the right to lower the curve and darken adjacent tonal ranges.
- ▶ To use one shortcut to get to the nested Parametric tab in the Tone Curve tab and select the Targeted Adjustment tool, press Ctrl-Alt-Shift-T/Cmd-Option-Shift-T.



A In this photo, the midtones are too dark — few details are visible in those areas.



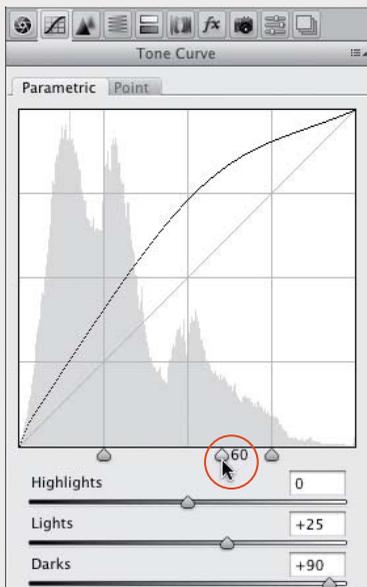
A To lighten the lower midtones, we increased the Darks value. This adjustment raised the middle of the curve.



B More details are now visible in the lightened midtones, such as on the sides of the buildings and on the side and surface of the canal. However, the sky looks a bit dull.



C To lighten the upper midtones (and thereby brighten the clouds, sky, and trees), we dragged upward over a light midtone area with the Targeted Adjustment tool; the Lights value increased automatically.



D Finally, we moved the middle region control slightly to the right, which had the effect of increasing the contrast and lightening the sky.



E Now the tonal values in the image look just right.

Using the Detail tab

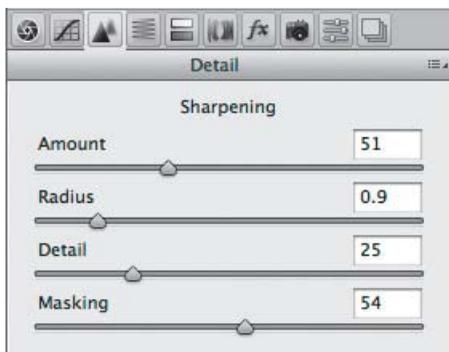
Via the Sharpening sliders in the Detail tab, you can adjust the sharpness of your photo (a process called “capture” sharpening), and via the Noise Reduction sliders, you can reduce any unwanted color noise.

To sharpen a photo using the Detail tab:

1. Click the **Detail** tab  **A** and choose a zoom level of 100%. In the preview, drag to reveal an area of the photo that has some detail (hold down the Spacebar for a temporary Hand tool).

Note: If the words “Sharpening (Preview Only)” display at the top of the Detail tab, click the Open Preferences button  in the toolbox. In the Camera Raw Preferences dialog, choose Apply Sharpening To: All Images, then click OK.

2. Under **Sharpening**, adjust the **Amount** value for the degree of edge definition. For subject matter that needs a lot of sharpening, such as hard-edged objects or buildings, try a value of 100; if less sharpening is needed, try a value of 50–60. (For a raw photo, the default Amount value is 25; for a JPEG photo, the default value is 0.)
 - ▶ To better evaluate the Amount value via a grayscale preview, Alt-drag/Option-drag the slider.
3. Use the **Radius** slider to control how many pixels surrounding each edge are modified. We recommend keeping this value between 1 and 1.3.
4. Alt-drag/Option-drag the **Detail** slider slightly to the right to sharpen edge details and textures.
5. Alt-drag/Option-drag the **Masking** slider to around 50 to protect low-contrast areas with a black mask, and thereby sharpen only high-contrast areas.



A These are the Sharpening controls in the Detail tab.

All digital cameras produce some luminance (gray-scale) noise and color artifacts (randomly colored pixels). Although budget cameras tend to produce the most noise, it can also be produced by a high-end camera if it’s used with a high ISO (light sensitivity) setting in a poorly lit scene. It’s a good practice to remove as much noise from your photos as possible in Camera Raw, because it can become accentuated by image editing in Photoshop.

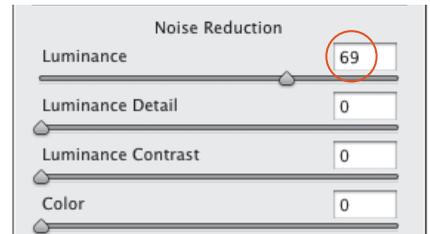
As you follow these steps, you’ll discover that after you shift one slider, another one will need adjusting.

To reduce luminance and color noise using the Detail tab:

1. With a photo open in Camera Raw (**A**, next page), click the **Detail** tab  and choose a zoom level of 200–300% for the preview.
2. To reduce grayscale noise (graininess), increase the **Luminance** value (**B**, next page). Try a value between 20 and 70.
3. Raising the Luminance value can cause high-contrast edges in a photo to lose definition. To resharpen them, raise the **Luminance Detail** value — but not to the point that noise is reintroduced (**C**, next page).
 - ▶ To move a different area of the photo into view, hold down the Spacebar and drag.
4. Raise the **Luminance Contrast** value to restore some edge contrast. The effect of this slider is most noticeable in photos that contain a lot of noise.
5. Color artifacts and random speckling tend to be most noticeable in solid-color areas of a photo (e.g., flat surfaces), especially in shadow areas. To reduce these defects in a raw photo, increase the **Color** value to around 40–50, depending on the subject matter (for a JPEG photo, which has a default Color value of 0, use a lower Color value).
6. Raising the Color value may lower the intensity of colors in areas of the photo that were poorly lit. To restore some saturation and intensity to those areas, increase the **Color Detail** value from the default value of 50 to around 75, or until the color saturation looks good (**D**, next page).
7. Lower the zoom level for the preview to judge the overall effect of the Detail settings.
 - ▶ To reduce noise in select areas via the Adjustment Brush tool and a mask (see pages 74–76).



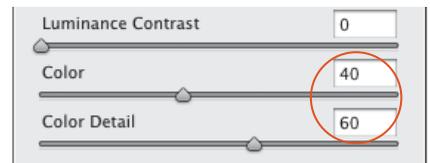
A This is a close-up of a photo of a shop window (viewed at a zoom level of 300%), with the Noise Reduction: Luminance and Color sliders in the Detail tab set to 0 (no noise reduction applied). Grayscale noise is evident in the signage, and color artifacts are evident on the poorly lit interior surfaces behind the letters.



B To remove noise from the letters, we increased the Luminance value to 69, but this also diminished the edge definition.



C To sharpen the edges of the letters, we increased the Luminance Detail value to 65.



D To remove color artifacts from the dark areas, we increased the Color value to 40; this also had the effect of desaturating the colors. To revive the colors and produce the final version of the image (shown at left), we increased the Color Detail value to 60.

Using the HSL/Grayscale tab

Using the powerful sliders in the HSL/Grayscale tab, you can adjust the hue, saturation, and luminance of each color component of a photo individually.

To adjust individual colors via the HSL sliders:

1. Click the **HSL/Grayscale** tab,  and double-click the Hand tool  to fit the image in the preview. **A**
2. Click the nested **Hue** tab. Move any slider to shift that color into adjacent hues, as shown in the bar. For example, you could shift the Greens

slider toward yellow to make a landscape look warmer, or toward aqua to make it look cooler.

3. Click the **Saturation** tab. Move any slider to the left to desaturate that color (add gray to it) or to the right to make it more vivid (pure). **B–C** Avoid oversaturating the photo, to keep it looking realistic and so it stays printable.

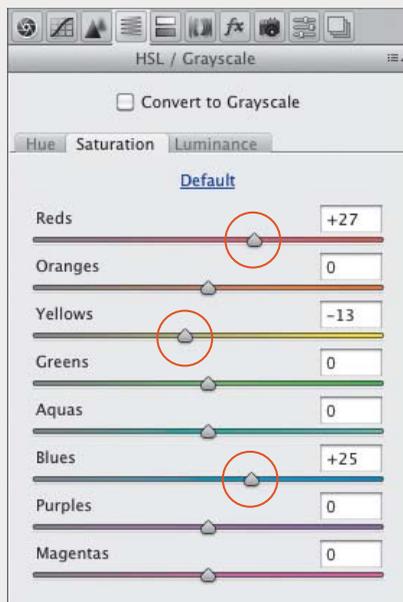
- ▶ To make a blue-ish sky more vivid, increase the saturation of the Blues and Aquas. To make a sunset look warmer, increase the saturation of the Oranges or Yellows.



A In the original photo, the sky lacks contrast and the reds on the car body are slightly undersaturated.



C The Saturation adjustments intensified the reds in the car (particularly in the upper midtones) and intensified the blues in the sky.



B In the nested Saturation tab of the HSL/Grayscale tab, we reduced the saturation of the Yellows and increased the saturation of the Reds and Blues.

- Click the **Luminance** tab. **A–B** Move a slider to the left to darken that color (add black) or to the right to lighten it (add white). Avoid lightening any of the colors too much, to prevent the highlights from being clipped.

- ▶ For a more accurate rendering of your adjusted pixels, choose a zoom level of 66% or 100% for the Camera Raw preview.



A In the nested Luminance tab, we lightened the Oranges and darkened the Reds, Yellows, Greens, and Blues. (Tip: Reducing the Blues value can make a photo look as if it was shot with a polarizing filter on the camera.)



B Decreasing the luminance of the Blues darkened the colors in the sky, while decreasing the luminance of the Reds and increasing the luminance of the Oranges produced a brighter, richer red on the car body. Now the colors are equally intense in the upper and lower areas of the photo.

USING THE TARGETED ADJUSTMENT TOOL

To apply local color adjustments to a photo, hold down Ctrl-Alt-Shift/Cmd-Option-Shift and press H, S, or L. The nested **Hue**, **Saturation**, or **Luminance** tab in the **HSL/Grayscale** tab displays and the **Targeted Adjustment** tool  becomes selected. Drag upward or to the right over a color area to increase the slider values specifically for that area, or downward or to the left to decrease those values. The sliders that correspond to the color under the pointer will shift automatically.



Using the Adjustment Brush tool

Unlike corrections that are made in the Camera Raw tabs, which apply to the overall photo, corrections made with the Adjustment Brush tool are “local” (affect specific areas of the photo). You apply a mask in the preview to define which areas are going to be affected by the adjustment, then you apply the correction via the sliders. Use this tool after you have finished your broad, overall corrections, to fix a few specific areas or to accentuate some details. **A** Awesome feature!

To apply local edits with the Adjustment Brush tool:

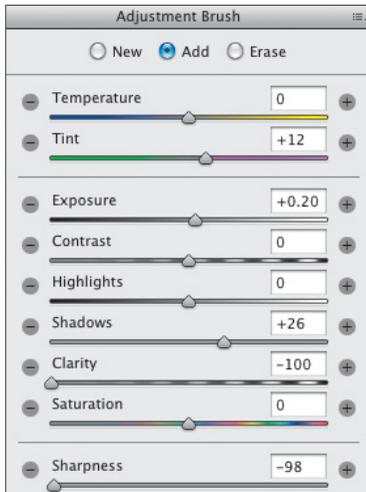
1. After making adjustments in the Basic and Tone Curve tabs, click the **Adjustment Brush** tool  (K). The sliders for the tool display (some are like the sliders in the Basic tab).
2. Click the + or – button for any slider to “zero out” all the sliders except the one you click.
3. For the brush settings (the last four sliders), try a **Feather** value of 50–95 (to allow the edits to fade into surrounding areas), a **Flow** value of 60 (for the amount of adjustment produced by each stroke), and a **Density** value of 60 (for the level of transparency in the stroke).
4. Check **Show Mask** (Y) (scroll down in the settings area if you don’t see this option), adjust the brush size by pressing [or], then draw strokes over areas of the photo that need the same adjustment. A tint covers the areas where you apply strokes, and a pin appears where you started dragging. **B**
 - ▶ The brush size is represented by the solid circle in the pointer; the feather value is represented by the black-and-white dashed circle.
5. Uncheck Show Mask, then use the sliders to apply adjustments to the masked areas (**A**, next page).
6. To apply different adjustment settings to other areas of the photo, click New, then repeat steps 2–5 (**B–E**, next page, and **A–C**, page 76).
7. To redisplay the main tabs, press H (Hand tool).
 - ▶ To show or hide all the pins, press V or check or uncheck Show Pins. To display the mask for an existing pin temporarily, with the mouse or your stylus, roll over the pin.
 - ▶ To edit an adjustment, click a pin (a black dot appears in the center of the pin), then add to the mask and/or move the sliders. To remove areas of a mask, see page 76.



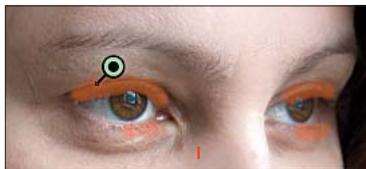
A We studied this photo and decided on what improvements to make: Smooth the skin, sharpen the eyelashes, darken the eyebrows, and minimize the under-eye circles.



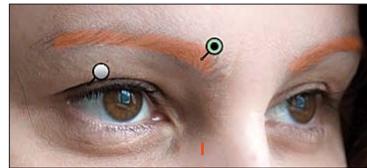
B We clicked the Adjustment Brush tool, zeroed out the sliders, checked Show Mask, then drew strokes on the face in the preview, avoiding the key facial features.



A We hid the mask, then chose a higher Tint value to add magenta to the skin tones, higher Exposure and Shadows values to lighten the skin tones, and lower Clarity and Sharpness values to smooth the skin texture. The results are shown at right.



B To sharpen the eyelashes, we clicked New, showed the mask, then covered the lashes using a small brush.



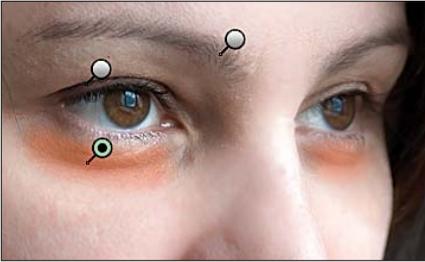
D To darken the eyebrows, we clicked New, checked Show Mask, then masked those areas.



C We hid the mask, then chose higher Contrast, Clarity, and Sharpness values to accentuate the masked areas, and a lower Exposure value to darken them.



E We hid the mask, then chose a higher Contrast value to define the hairs more crisply against the skin, and lower Highlights and Shadows values for a darkening effect.



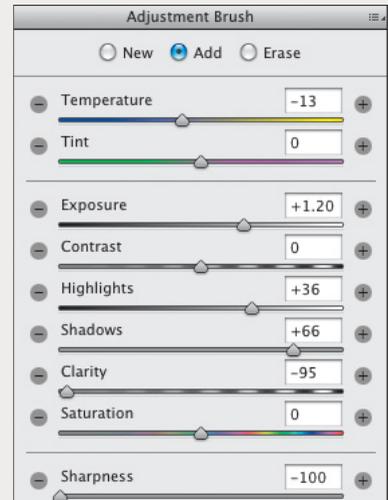
A To minimize the dark circles under the eyes, we clicked **New**, checked **Show Mask**, then applied a mask to those areas.



C This final image shows the cumulative results of all the local corrections that we applied via the Adjustment Brush tool.

To remove Adjustment Brush tool edits:

1. With the **Adjustment Brush** tool  selected (K), check **Show Mask** (Y) and **Show Pins** (V).
 2. Do either or both of the following:
 - To remove adjustments locally, click a pin, click the **Erase** button (or hold down Alt/Option), then apply strokes where you want to erase the mask.
 - To remove a pin and its adjustments, click the pin, then press Backspace/Delete.
- To remove all Adjustment Brush tool edits and reset the mode to **New**, click the **Clear All** button.



B We hid the mask, then reduced the **Temperature** value to cool the redness of the skin tones; increased the **Exposure**, **Highlights**, and **Shadows** values to lighten the skin; and reduced the **Clarity** and **Sharpness** values to soften the skin texture.

USING THE AUTO MASK OPTION WITH THE ADJUSTMENT BRUSH TOOL

To mask an area according to color, zoom into that area. Check **Auto Mask** (M), position the Adjustment Brush tool over the color, scale the brush tip to cover just the width of the area, and start drawing a stroke. The mask will cover only the areas that match the first color area the brush touches.

- If you want to change the mask overlay color, click the **Mask Overlay Color** swatch, then choose a color in the Color Picker.



Using the Split Toning tab

Using the Split Toning controls, you can apply one color tint, or tone, to the highlight areas of a photo and a different tint to the shadow areas. For the best results with this technique (and to mimic its traditional origins), convert the colors in your photo to grayscale first. We've gotten good results on photos of metallic objects, such as the antique car shown here. **A**

To apply a color tint to a grayscale version of a photo:

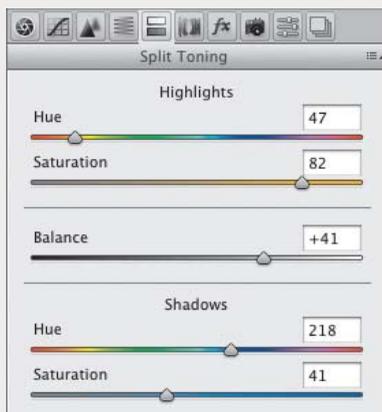
1. Click the **HSL/Grayscale** tab,  then check **Convert to Grayscale**.
2. Click the **Basic** tab, and adjust the exposure and contrast.
3. Click the **Split Toning** tab. 
4. Move both of the **Saturation** sliders approximately halfway across the bar to make it easier to judge the colors you will apply in the next step (don't worry that the photo looks awful).
5. Move the **Highlights Hue** slider to tint the highlights **B** and the **Shadows Hue** slider to tint the shadows.
6. Readjust the **Saturation** value for each hue.
7. Reduce the **Balance** setting to apply more of the Shadows tint to the entire photo, or increase it to apply more of the Highlights tint to the entire photo. **C–D**



A This is the original, full-color photo.



B After converting the colors in the photo to grayscale, we used the Split Toning tab to tint the highlights with a brownish yellow hue.



C Next, we tinted the shadows with blue, then moved the Balance slider to the right to favor the highlight color more.



D This is the final result of our Split Toning adjustments. Applying separate tints to the highlights and shadows accentuated the lines and graceful curves of this sleek antique.

Using the Lens Corrections tab

Via the Lens Corrections tab in Camera Raw, you can correct a photo for various adverse effects of lens distortion. You can straighten out an architectural feature, such as a building or fence, that looks as if it's leaning toward or away from the viewer, or that is tilted horizontally (isn't level); and you can correct for under- or overexposure at the edges of a photo (vignetting). The corrections can be applied using a preset profile (this page) or manually (pages 79–81).

To correct geometric distortion and vignetting via Profile settings: ★

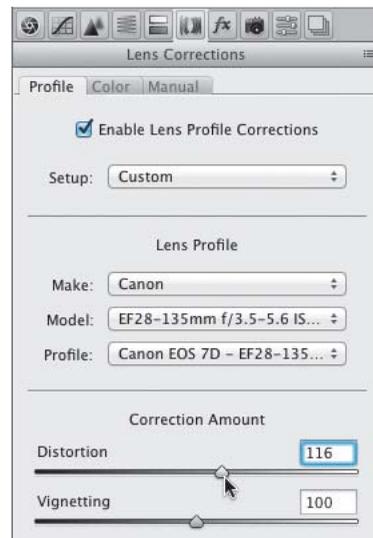
1. Click the **Lens Corrections** tab.  Double-click the Hand tool  to fit the image in the preview.
2. To access predefined lens profiles, click the **Profile** tab, then check **Enable Lens Profile Corrections**.
3. From the **Setup** menu, **A** do the following:
Choose **Auto** to have Camera Raw read the EXIF metadata in the photo and attempt to select the proper lens make, model, and predefined profile.
If an error message indicates that the Auto option was unable to locate a profile, choose your lens manufacturer from the **Make** menu. **B** Camera Raw will locate a matching lens model and list it on the

Model menu, and will locate a predefined profile and list it on the Profile menu. If the Model menu lists more than one model, choose the one with which the photo was shot.

4. Under Correction Amount, do the following:
Set the **Distortion** value to control the amount of correction.
Set the **Vignetting** value to correct for under- or overexposure at the edges of the photo.
5. *Optional:* If Camera Raw managed to locate your lens profile (step 3), you can save that profile and any custom Correction Amount settings as your new default profile by choosing Save New Lens Profile Defaults from the Setup menu. In future Camera Raw editing sessions, if you choose Default from the Setup menu, and the current photo was taken with this lens, the saved profile and settings will be applied. (To restore the Adobe predefined settings for your chosen lens, from the Setup menu, choose Reset Lens Profile Defaults.)
6. *Optional:* If you want to further correct any lens distortion manually, see the next task.



A Check *Enable Lens Profile Corrections*, then choose *Auto* from the *Setup* menu ...



B ... or choose your lens maker from the *Make* menu. Regardless of the *Setup* option, if necessary, adjust the *Distortion* value.

To correct geometric distortion or vignetting via the Manual tab: ★

1. Click the **Lens Corrections** tab,  and double-click the **Hand** tool  to fit the image in the preview. **A**
2. Click the **Manual** tab. **B**
3. In the **Upright** area, click a button to apply a preset correction:

Auto  to apply level correction and fix horizontal and vertical convergence, balanced with as little distortion as possible. **C**

Level  to apply only level correction (not fix horizontal or vertical convergence).

Vertical  to apply level correction and fix vertical convergence (but not horizontal convergence).

Full  for a stronger correction of horizontal and vertical convergence, in addition to level correction (**A**, next page).

4. If further manual correction is needed, do any of the following:

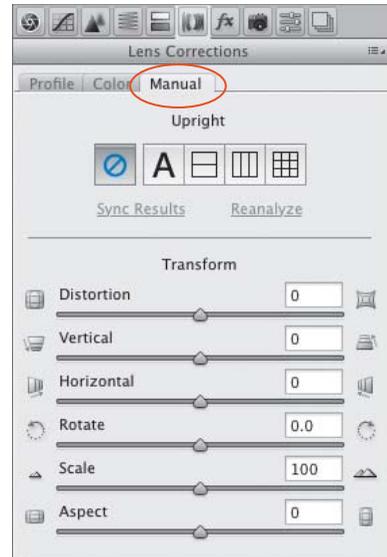
To spread the image out (fix pincushion distortion), lower the **Distortion** value; or to pinch the image inward (fix barrel distortion), increase the **Distortion** value.

- ▶ To display a grid over the image so you can check the alignment, check **Show**

Continued on the following page



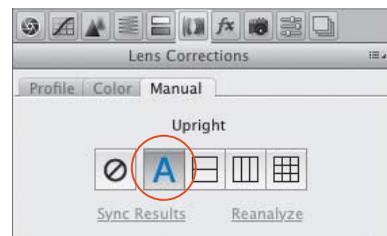
A The original photo (above) shows signs of lens distortion: The house looks as if it's tilting away from the camera, and it's not level.



B We clicked the **Manual** tab (under **Lens Corrections**) to access these menu options and sliders.



C Under **Upright**, we clicked the **Auto** button for a balanced correction. This partially corrected the vertical lines and vertical tilt, but the left side of the house still looks as if it's farther away from the viewer than the right side.



Grid or press V. Adjust the grid size via the slider. **B**

To widen the top of the image, (correct key-stoning) reduce the **Vertical** value; to widen the bottom of the image, increase the Vertical value. Readjust the Distortion value, if needed.

To widen the left edge of the image, reduce the **Horizontal** value; to widen the right edge of the image, increase the Horizontal value.

To rotate the image, change the **Rotate** value.

To enlarge or shrink the photo, change the **Scale** value. Note: You could crop the photo instead.

To stretch the image horizontally or vertically, change the **Aspect** value. This option is useful for correcting strong perspective distortion in photos taken with a wide-angle lens (**A–B**, next page).

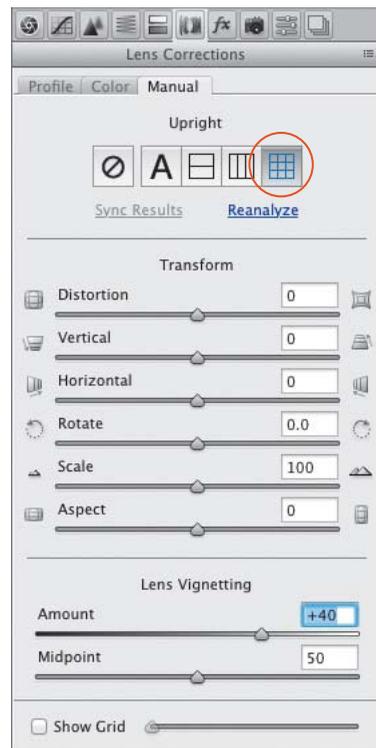
► If you moved the Distortion slider, you can click Reanalyze (below the buttons) to force a recalculation of the Upright correction based on the Distortion value. If you want to turn off (but preserve) all your Upright corrections, click the Off button. ◯ If you click a different Upright button, as an alert will inform you, all the Transform sliders (except Distortion) will be reset to 0.

5. To correct or apply Lens Vignetting (lighten or darken the outer areas of the photo), set the **Amount** value for the strength of the correction, then set the **Midpoint** value to expand the vignette inward or outward. Readjust the Amount value, if needed.

► To learn about the Lens Correction filter in Photoshop, see pages 332–333 and 439.



A We clicked the Full button instead, which successfully made the house level and upright. To lighten the outer areas of the photo, we increased the Amount value (under Lens Vignetting).



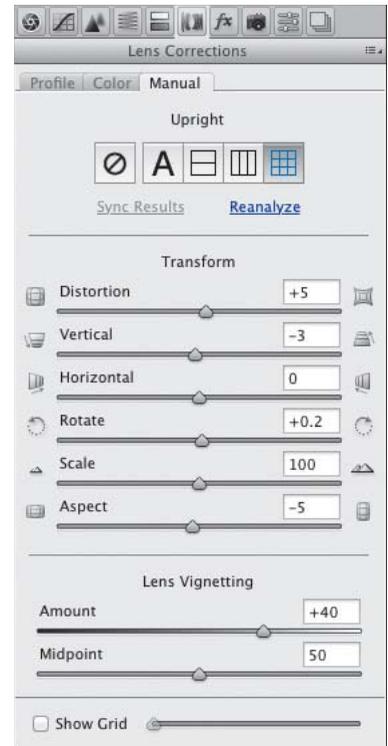
B We made some minor Vertical and Rotate adjustments, with Show Grid checked to help us gauge the effect.



A We tried increasing the Aspect value, but this setting exaggerated and distorted the verticals of the house too much.



B Instead, we set the Aspect value to -5 , which exaggerated the horizontal proportion only slightly. The final settings we chose for the image are shown at right.



SYNCING LENS CORRECTIONS TO MULTIPLE PHOTOS ★

To apply **Lens Corrections** edits to multiple photos that you open into Camera Raw:

► If the photos *don't* require exactly the same corrections, click one photo, choose settings in the **Manual** tab of Lens Corrections, then on the left side of the dialog, click **Select All**, then click **Synchronize**. In the dialog, choose **Lens Corrections** from the menu, check only **Transform** and **Lens Vignetting**, then click **OK**. Camera Raw will analyze and correct each photo separately (see also page 93).

► If the photos *do* require exactly the same correction (e.g., bracketed shots of the same subject), click one photo, then click an **Upright** button in Lens Corrections. Click **Select All** on the left side of the dialog, then click **Sync Results** in Lens Corrections. The first photo will be analyzed according to the chosen Upright mode, then the same correction will be applied to all the other photos.

Another use for the Lens Corrections tab is to correct for chromatic aberration (blue-yellow or red-green color shifts), as well as purple or green color fringes. These occur when a camera lens (especially one that is set to a wide aperture) doesn't properly focus all the wavelengths of colored light precisely to the same spot.

To correct color shifts and/or fringes: ★

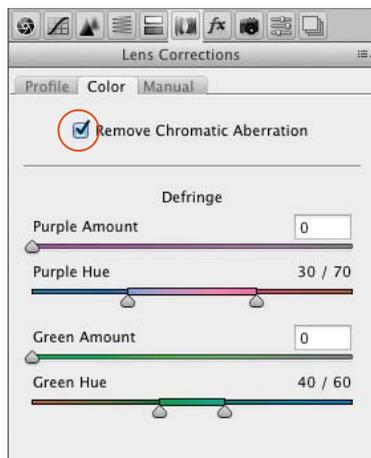
1. Click the **Lens Corrections** tab,  then click the **Color** tab.
2. To remove any blue-yellow or red-green color shifts, check **Remove Chromatic Aberration**. **A–B**
3. Zoom to 100% view on an area where you suspect there is a purple or green color fringe, and with the Hand tool (H), center it in the preview.

Adjust the **Purple Amount** and/or **Green Amount** values. The higher the value, the wider the area on the edges of shapes in which fringe removal occurs. If the photo contains objects that are purple or green, beware of setting too high a correction value, which could degrade their color.

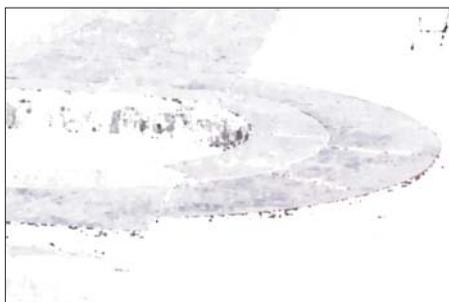
- To help you locate which areas of a photo contain purple or green fringes, zoom out, then Alt/Option click-and-hold on the Purple Amount or Green Amount slider. Areas where the fringe is present display as black. **C–D** Purple fringes commonly occur around specular highlights. Zoom back in when you're done.



A We noticed a purple fringe along the edge of the stone semicircle in this photo.



B To remove any blue-yellow and red-green color shifts, we checked **Remove Chromatic Aberration**.



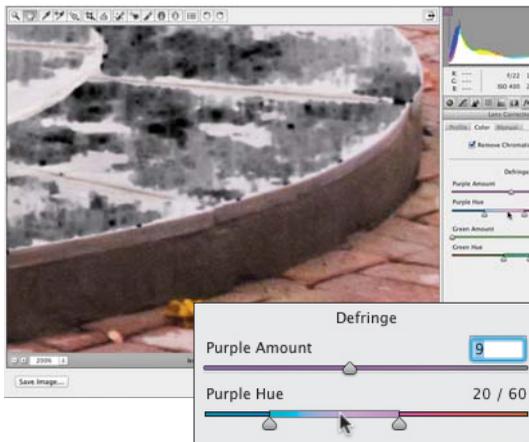
C To preview any purple fringe as black, with Alt/Option held down, we clicked and held the **Purple Amount** slider. Black displayed along the edge of the stone semicircle.



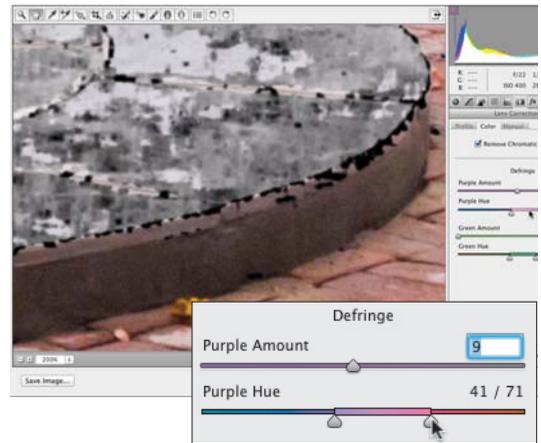
D To preview any green fringe as black, with Alt/Option held down, we clicked and held the **Green Amount** slider. No black displayed, a sign that green fringe wasn't an issue in this area of the photo.

To control the range of hues that the Purple Amount and Green Amount sliders affect (in other words, the area in which fringe removal occurs), drag the **Purple Hue** or **Green Hue** bar over a hue area on the spectrum (the spectrum of affected colors displays within the bar) and/or widen or narrow the range by dragging either endpoint of the bar. (To reset the bar to its default length and position, double-click within it.)

- ▶ To display the affected colors temporarily as black in the preview, zoom out a bit, then with Alt/Option held down, drag the Purple Hue or Green Hue bar. **A–D**
- ▶ When adjusting a photo that contains foliage, avoid positioning the Green Hue bar over the orange/yellow color range (at the left end of the spectrum), which could gray out the essential yellows in the image.



A We increased the Purple Amount value, then held down Alt/Option and dragged the Purple Hue bar slightly to the left. At this setting, the fringe correction is affecting the top of the stone semicircle — which wasn't our intention.



B We held down Alt/Option and dragged the Purple Hue bar to the right, then dragged the right endpoint inward to narrow the range. At this setting, the fringe correction is affecting primarily the edge of the semicircle — mission accomplished.



C Compare this original image to the final image, which is shown at right.



D The purple fringe is gone from the edge of the semicircle.

Using the Effects tab

In traditional photography, the faster the film speed, the larger and more apparent the grain. As an intentional effect, you can simulate this grainy texture via the Grain controls in Camera Raw. Choose a photo that won't suffer aesthetically when its details lose definition.

To add a grain texture to a photo:

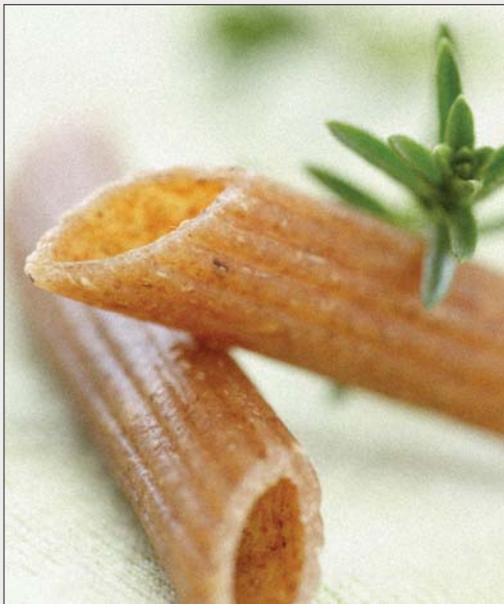
1. Click the **Effects** tab,  and double-click the Hand tool  to fit the image in the preview. **A**
2. To create a noticeable grain, under Grain, choose an **Amount** value of around 50.
3. To emulate the fine grain of slow film or the coarse grain of fast film, do as follows:

Set the **Size** value for the size of the grain particles. **B** When this value is greater than 25, a small degree of blurring is also applied, to help blend the grain with the imagery.

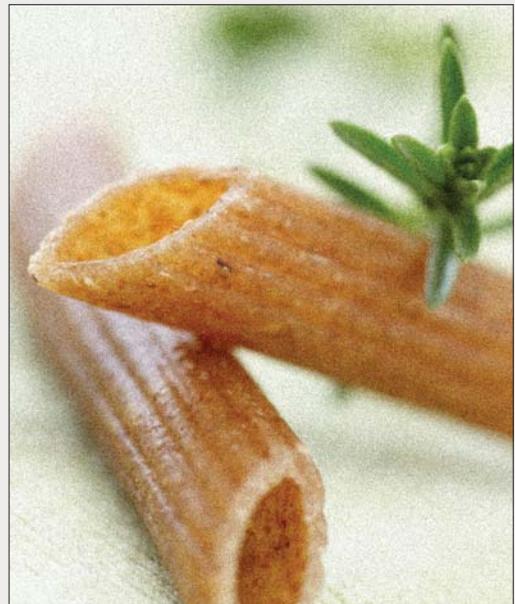
Reduce the **Roughness** value below the default value of 50 for a more uniform grain, or increase it for an uneven, coarse grain. **C** Zoom in to examine the grain, then readjust the Amount value, if needed.



A This photo is a good candidate for the Grain effect because we won't mind if the details are softened and it contains muted colors.



B The first settings we chose were Grain Amount 50 and Size 80 (we left the Roughness control at the default value of 50). The food textures are beginning to blend with the soft background.



C We increased the Amount to 75, the Size to 60, and the Roughness to 65. The coarser grain unifies the highlights and background with the food textures even more. Please pass the Parmesan...

Using the Post Crop Vignetting controls, you can apply a light or dark vignette to a photo (lighten or darken the outer areas). If you crop the photo subsequently in Camera Raw, the vignette will conform to the new dimensions.

To apply a vignette to a photo:

1. Click the **Effects** tab,  and double-click the Hand tool  to fit the image in the preview. **A**
2. Under **Post Crop Vignetting**, do all of the following: **B–D**

Choose Style: **Highlight Priority**.

Choose a negative **Amount** value for a dark vignette or a positive value for a light vignette.

Adjust the **Midpoint** value to expand the vignette inward or outward.

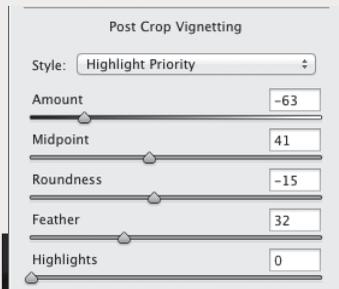
Adjust the **Roundness** value to make the vignette shape more oval or more like a rounded rectangle.

Adjust the **Feather** setting to control the softness of the transition to the nonvignetted areas.

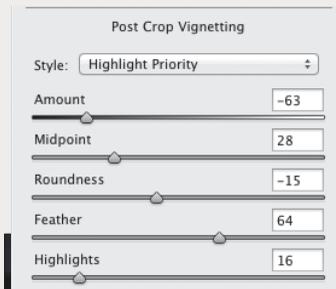
Adjust the **Highlights** setting to control the brightness of the highlights within the vignette area.



A This is the original image.



B In the Effects tab, under Post Crop Vignetting, we chose the values above.



C We lowered the Midpoint value and raised the Feather and Highlights values.



D When we cropped the image, the vignette readjusted automatically.

Using the Graduated Filter tool

When shooting landscapes, you may have run into this common predicament: You set the proper exposure for the foreground, and the sky winds up being overexposed. To solve this problem on site, you can reduce the light on the upper part of the lens with a graduated neutral-density filter. To darken a sky in a photo that is shot without such a filter (Plan B!), you can use the Graduated Filter tool in Camera Raw.

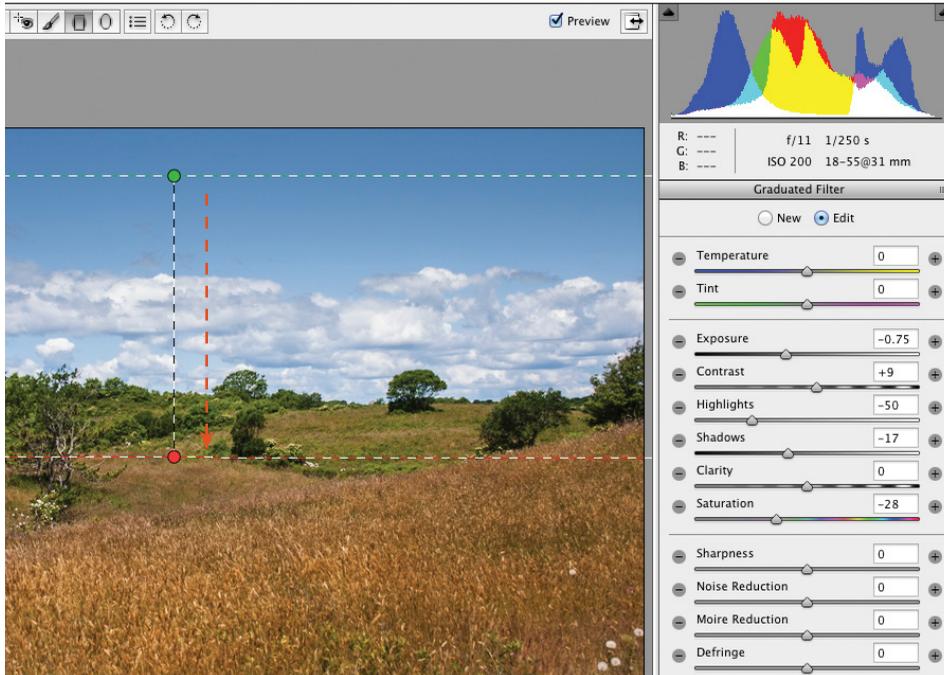
With this tool, you create an overlay to define the area to be edited, then you apply the adjustment via any of a dozen sliders. The slider options are the same as for the Adjustment Brush tool.

To adjust an area of a photo using the Graduated Filter tool:

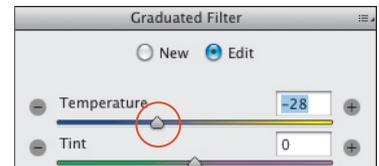
1. After adjusting your photo via the Basic and Tone Curve tabs, **A** choose the **Graduated Filter tool** (G). The sliders for the tool display in the right panel.
2. Click the + or – button for any slider to “zero out” all the sliders except the one you click.
3. Shift-drag over an area in the photo to define the area where the filter edits will be applied, beginning from the location where you want the strongest adjustment. The filter will be applied fully at the green dashed border of the overlay, gradually diminishing to nil at the red dashed border.
4. Do either or both of the following:
 - Use the Temperature and/or Tint slider to make the filtered area warmer or cooler.
 - Use the sliders to adjust such characteristics as the exposure, sharpness, or noise in the filtered area (**A–C**, next page).
5. To redisplay the main tabs, press H (for the Hand tool).
 - ▶ At any time, you can lengthen or shorten the filter overlay by Shift-dragging the green or red dot. To reposition the whole overlay, drag the line that connects the two dots.
 - ▶ To apply a separate filter to another area of the photo, click New, then repeat steps 2–4.
 - ▶ If you want to draw an overlay on a diagonal, don’t hold down Shift while dragging.
 - ▶ To hide the filter overlay, uncheck Show Overlay or press V. To remove a filter overlay, click one of its dots or the line that connects them, then press Backspace/Delete.



A Despite our applying Basic and Tone Curve adjustments, the sky in this photo looks overexposed (washed out).



A After zeroing out the sliders for the Graduated Filter tool, we Shift-dragged downward in the photo (as shown by the arrow above), then chose slider settings to darken the exposure within the overlay area.



B To add more blue to the upper area of sky, we lowered the Temperature value.



C In the final image, the adjustment is strongest in the sky, fading to nil in the upper part of the ground.

Using the Radial Filter tool

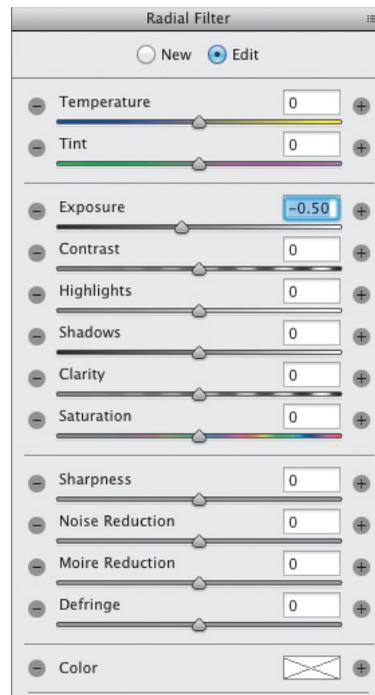
With the Radial Filter tool, you define an elliptical area with an overlay, then apply adjustments via sliders to the area either inside or outside the overlay.

To darken an area of a photo via the Radial Filter tool: ★

1. After adjusting your photo via the Basic and Tone Curve tabs, **A** click the **Radial Filter** tool (J). The sliders for the tool display.
2. Click the + or – button for any slider to “zero out” all the sliders except the one you click. At the bottom of the panel, click Effect: **Outside** or **Inside** to control where the filter effect will occur relative to the overlay you will draw in the next step.
3. Drag over an area in the photo to produce an overlay. **B** If you want to reposition the overlay as you create it, drag with the Spacebar held down.
4. Use any of the sliders to adjust the filtered area (**A–C**, next page). If the Effect setting is Outside, the adjustment will be at full strength outside the overlay, then diminish gradually to no adjustment at the dashed border. If the Effect setting is Inside, the adjustment will be at full strength at the center of the overlay and diminish gradually to no adjustment at the dashed border.



A Although the exposure in this photo is well balanced, we want to spotlight the spa products more.

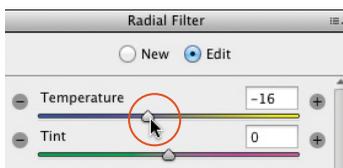


B We zeroed out the sliders for the Radial Filter tool, then dragged in the preview to create an overlay.

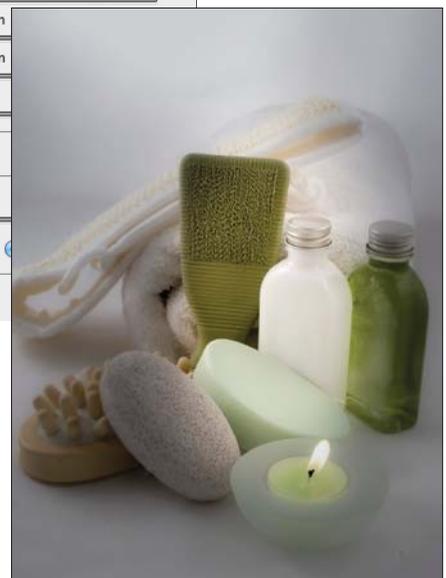
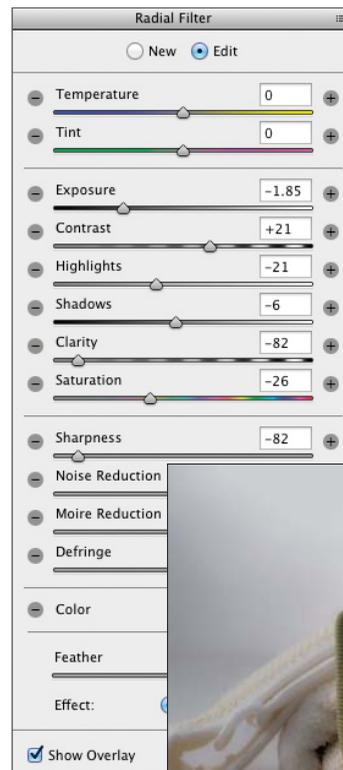
5. To control how gradual the adjustment is at the edge of the overlay, use the **Feather** slider.
6. To hide the overlay(s) to gauge the adjustment, uncheck **Show Overlay** or press V. Redisplay the overlay for the next step.
7. To edit the overlay, do any of the following (all optional):
 - To **reposition** the overlay, drag inside it.
 - To **reshape** the overlay, drag one of the handles.
 - To **resize** the overlay, Shift-drag a handle.
 - To **swap** the adjustment from Outside to Inside the overlay, or vice versa, click the unselected Effect button or press X.
8. *Optional:* To add another overlay, click New, then follow steps 2–7. Be aware that the adjustment will be cumulative where the overlays overlap. When there are multiple overlays, you need to click the pin of the one you want to edit. To delete a selected overlay, press Backspace/Delete.
9. To redisplay the main tabs, press H (Hand tool).
 - ▶ To expand an overlay to the edges of a photo, double-click inside it. To produce a new overlay that does the same thing, double-click in the preview.



A We used the first four sliders to darken the filtered area and the Clarity and Sharpness sliders to soften the image details.



B To make the lighting in the darkened areas cooler, we reduced the Temperature value (added blue).



C The tonal, temperature, and sharpness adjustments help to accentuate the candle, soap, and white bottle.

Using the Spot Removal tool

Use the Spot Removal tool to remove small imperfections, such as spots caused by dust on the camera lens, blemishes in a portrait, or insects on flowers. Camera Raw locates a source area for the repair automatically, but you can also have some input.

To remove blemishes or spots: ★

1. Choose the **Spot Removal** tool  (B).
2. Zoom in on an area to be repaired.
3. Press [or] to size the brush cursor, then do one of the following:

Ctrl-Alt-drag/Cmd-Option-drag outward from the center of a blemish to create and scale a target circle **A**; or click a blemish; or if you want to control which area Camera Raw uses as the source, Cmd-drag/Ctrl-drag from the target area to the desired source area. When you release the mouse, a red dashed circle surrounds the target region and a green dashed circle surrounds a source area. **B**

Drag across a blemish to create a target region. When you release the mouse, a red pin and dashed border surrounds the target region and a green pin and dashed border surrounds a source region. **C-D**

- ▶ To display a black-and-white version of the photo to help you pinpoint dust spots or other irregularities, check **Visualize Spots** (Y). Adjust the black-to-white threshold via the slider.

4. From the **Type** menu, choose **Heal** to blend source pixels into the texture and luminosity values of the target pixels (usually the best choice) or **Clone** to copy the source pixels exactly without any healing.

Optional: To cycle through alternative source locations that Camera Raw detects, press /.

5. Select a target or source region by clicking its pin or select a circle by clicking inside it, then do any of the following optional steps:

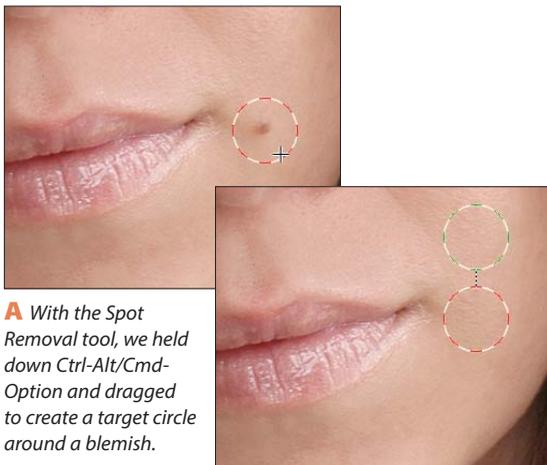
To **reposition** a region or circle, drag inside it.

To control the opacity of the repair, use the **Opacity** slider.

To **resize** a pair of target and source circles (not irregular-shaped regions), drag the dashed border.

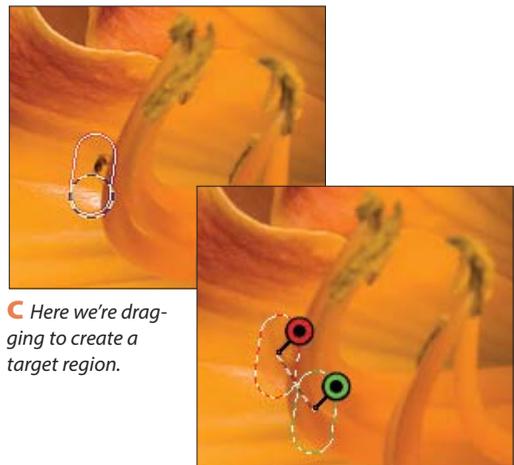
To **add** to an existing region (or to convert a circle to a region), Shift-click or Shift-drag just outside it.

6. *Optional:* Create more regions or circles to correct other blemishes. To remove a pin or circle, hold down Alt/Option and click it; or to delete multiple pins and circles, Alt/Option drag a marquee across them. (To remove all pins and circles, click **Clear All**.)
 7. To hide all regions and circles, uncheck **Show Overlay** (V).
 8. To redisplay the main tabs, press H (Hand tool).
- ▶ To redisplay the Spot Removal overlays at any time, choose the tool again (press B).



A With the Spot Removal tool, we held down Ctrl-Alt/Cmd-Option and dragged to create a target circle around a blemish.

B The tool created a linked source circle in a similar area and repaired the blemish.



C Here we're dragging to create a target region.

D The tool created a source region and two pins.

Saving and applying Camera Raw settings

After carefully choosing custom settings for a photo in Camera Raw, you'll be glad to know that you can save those settings as a preset and then apply the preset to other photos that need the same or similar corrections.

To save Camera Raw settings as a preset:

Method 1 (Camera Raw Settings menu)

1. With your corrected photo open in Camera Raw, choose **Save Settings** from the Camera Raw Settings menu. 
2. The Save Settings dialog opens. **A** Check the categories of settings you want saved in the preset. Or to filter the number of checked boxes, choose a category (tab name) from the Subset menu, then recheck any boxes, if desired.
3. Click Save. A different Save Settings dialog opens (yes, it's confusing that the two dialogs have the same name). Enter a name (preferably one that describes the function of the preset), keep the location as the Settings folder, then click Save.
4. The saved settings preset is now available in the Presets tab  for any open photo.

Method 2 (Presets tab)

1. With your corrected photo open in Camera Raw, click the **Presets** tab,  then click the **New Preset** button. 
2. In the New Preset dialog, enter a name for the preset. Check the settings you want saved in the preset, or choose a category (tab name) from the Subset menu, then recheck any boxes, if desired. Click OK. Your new preset is now available in the Presets tab for any open photo.
 - ▶ To delete a user-saved preset, click the preset name, then click the Delete button. 

You can apply a user-defined preset (saved collection of settings) to a single photo via Camera Raw (see below), to multiple photos via Bridge (see the following page), or to multiple thumbnails via the Synchronize option in Camera Raw (see page 93).

To apply a Camera Raw preset to a photo:

- With a photo open in Camera Raw, click the **Presets** tab,  then click a preset name.
- ▶ You can also apply a preset via the Apply Preset submenu on the Camera Raw Settings menu.



A In the Save Settings dialog, check which of your custom Camera Raw settings are to be saved in a preset.

TAKING SNAPSHOTS OF YOUR CR SETTINGS

A snapshot is a record of the current Camera Raw settings that you have chosen for a photo. By saving snapshots of your photo periodically while editing it, you preserve the option to restore the photo to those earlier settings. Unlike snapshots on the History panel in Photoshop, snapshots save with the Camera Raw file. Click the **Snapshots** tab,  then click the **New Snapshot** button.  In the New Snapshot dialog, enter a name, then click OK. To restore the photo to a snapshot at any time, click a snapshot name in the Snapshots tab. (For other ways to restore Camera Raw settings, see pages 61–62.)

- ▶ To update an existing snapshot with the current settings, right-click the snapshot listing and choose **Update with Current Settings** from the context menu.

The settings presets that you save in the Presets tab of the Camera Raw dialog can also be applied to multiple photos via the Develop Settings submenu in Bridge. In fact, as a strategy, you could save separate presets for settings in individual Camera Raw tabs and then assign them to multiple photos in succession (e.g., a preset for the Basic tab first, then a preset for the Tone Curve tab, and so on). If you haven't saved the needed settings as presets, a quick alternative method is to copy and paste all the current settings from one photo into one or more other photos.

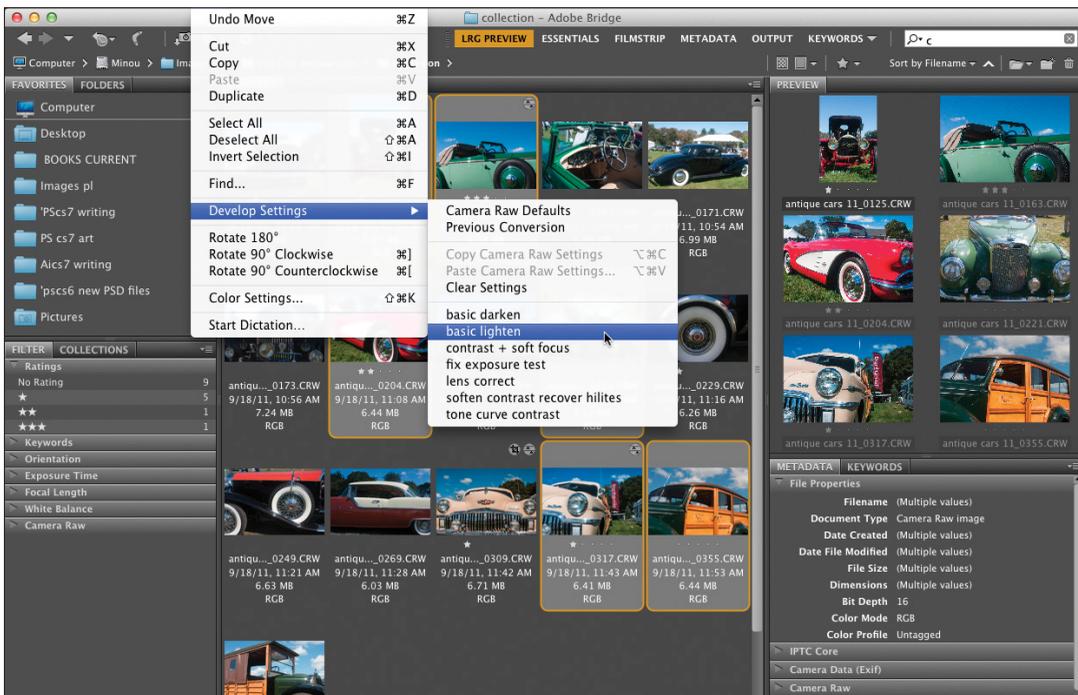
To apply Camera Raw settings to multiple photos via Bridge:

Method 1 (apply a preset)

1. In Bridge, Ctrl-click/Cmd-click multiple photo thumbnails (or Shift, then Shift-click a consecutive series of thumbnails).
2. To apply settings, from the Edit > **Develop Settings** submenu, choose a preset; or right-click a selected thumbnail and choose a preset from the Develop Settings submenu on the context menu. **A** Choose additional presets, if needed.

Method 2 (copy and paste settings from a photo)

1. Click the thumbnail for a photo that has the desired settings, then choose Edit > Develop Settings > **Copy Camera Raw Settings** (Ctrl-Alt-/Cmd-Option-C), or right-click the selected thumbnail and choose Develop Settings > Copy Settings from the context menu.
2. Click another thumbnail (or Ctrl-click/Cmd-click multiple thumbnails), then choose Edit > Develop Settings > **Paste Camera Raw Settings** (Ctrl-Alt-V/Cmd-Option-V), or right-click the selected thumbnail and choose Develop Settings > Paste Settings from the context menu.
3. The Paste Camera Raw Settings dialog opens. Uncheck any settings you don't want to paste; or choose a tab name from the Subset menu, then remove or add any check marks. Click OK.
 - ▶ To remove *all* Camera Raw settings from a selected photo thumbnail in Bridge, choose Edit > Develop Settings > Clear Settings or right-click the thumbnail and choose Develop Settings > Clear Settings from the context menu.



A Using commands on the Develop Settings submenu in Bridge, you can apply one or more saved settings presets to multiple selected thumbnails, or copy and paste the current settings from one thumbnail to other thumbnails.

Synchronizing Camera Raw settings

When you open multiple photos into Camera Raw, they are represented by thumbnails in a panel on the left side of the dialog. After adjusting one photo, you can click Synchronize to apply those settings to one or more of the other photos. Because it's unlikely that every single adjustment needed for one photo will be perfectly suited to all the others (even photos taken during the same shoot), a more practical approach is to adjust subsets of the grouping. For instance, you could apply a settings preset or some Basic tab adjustments to one photo (say, to correct the white balance and exposure), apply those settings to most or all of the other photos, then select incrementally smaller numbers of photos and apply more targeted or specialty adjustments.

To synchronize the Camera Raw settings among multiple photos:

1. In Bridge, select two or more photo thumbnails, preferably ones that were shot under the same lighting conditions and that require the same kind of correction (for the most accurate and consistent corrections, select all raw files or all JPEG files). Double-click one of the selected thumbnails.
 2. In the filmstrip panel on the left side of the Camera Raw dialog, click one of the thumbnails.**A**
 3. Make the needed adjustments to the selected image (including cropping, if you want to crop all the images in exactly the same way). You can apply adjustments via the tabs or tools or by clicking a preset in the Presets tab.
 4. Click **Select All** at the top of the filmstrip panel or Ctrl-click/Cmd-click the thumbnails to which you want to apply corrections, then click **Synchronize**.
 5. The Synchronize dialog opens (it looks like the Save Settings dialog, which is shown on page 91). Check only the settings you want to apply to all the selected thumbnails; or choose a category from the Synchronize menu, then remove or add any check marks. Click OK.
- To cycle through the photos in the filmstrip panel, click the left or right arrowhead below the preview (in the lower right). If more than one thumbnail is selected, Camera Raw will cycle among only those photos.



A We opened four photos into Camera Raw. The thumbnails for the images display in the filmstrip panel on the left side of the dialog.

WHERE CR SETTINGS ARE SAVED

Depending on the setting on the **Save Image Settings In** menu in the Camera Raw Preferences dialog (Ctrl-K/Cmd-K), settings for raw photos (not JPEGs) are saved either in the internal **Camera Raw Database** on your system or as hidden **Sidecar .xmp Files** in the same folder as the raw files. Don't confuse these files with user settings files that you create via the Save Settings command.

Converting, opening, and saving Camera Raw files

Still with us? At long last, you get to open your Camera Raw file into Photoshop.

To open a photo from Camera Raw into Photoshop:

1. After applying adjustments to your photo in Camera Raw, click **Open Image**; or if you opened and corrected multiple files, select them on the left side of the dialog, then click **Open Images**.
2. The photo appears as the Background in a new Photoshop document (or documents). Save the file(s) in the Photoshop (PSD) format.

Note: If Open in Photoshop as Smart Objects is checked in the Workflow Options dialog (see page 60), the Open Image button is labeled Open Object and a photo opens as a Smart Object in a new Photoshop document. To learn about the advantages of using Smart Objects, see pages 262 and 265. To edit the Camera Raw settings of a Smart Object, see page 266. If the workflow option is off, you can convert the Open Image button to Open Object by holding down Shift.

- ▶ To close the Camera Raw dialog without opening your file, but save your settings to the file as instructions, click Done. The settings will redisplay if you reopen the file in Camera Raw.

ARCHIVING PHOTOS AS DNG FILES

Photographs capture unrepeatable moments, and archiving them is both a priority and a concern for photographers. Ideally, there would be one standard file format for digital photos that photographers could depend on with confidence, knowing their photos will be stable and accessible for the foreseeable future. At the present time, each camera maker uses a unique, proprietary format for their raw files. Should a maker discontinue its format, raw photos from their cameras might become unreadable by Photoshop or other image-editing applications.

Luckily, **DNG** (short for Digital Negative), a format developed by Adobe, preserves all the raw, unprocessed pixel information that is recorded by the camera. The coding for the DNG format is nonproprietary (open standard), meaning that it is accessible to all interested companies. DNG may be the long-term solution that photographers will eventually come to rely on—provided it is adopted as the standard by a majority of camera and software manufacturers.

If desired, you can open a copy of a Camera Raw file with its current (custom) settings into Photoshop without changing the settings in the original raw or JPEG file.

To open a copy of a camera raw file:

In the Camera Raw dialog, hold down Alt/Option and click **Open Copy** (Open Image or Open Object becomes Open Copy).

Via the Save Options dialog in Camera Raw, you can convert and save a copy of a photo in the Digital Negative (DNG), JPEG, TIFF, or Photoshop (PSD) format.

When you save a copy of a photo in the DNG format via the Save Options dialog, the Camera Raw settings it adopts from the original file remain accessible and editable in Camera Raw. See also the sidebar on this page.

When you save a photo in the JPEG, TIFF, or PSD format via this dialog, the Camera Raw settings are applied to the copy permanently. Although you can open and edit the resulting JPEG or TIFF file in Camera Raw, you will see that the sliders are reset to their default values. PSD files can't be opened in Camera Raw.

To save a copy of a Camera Raw file in the DNG, JPEG, TIFF, or PSD format:

1. Open and adjust a photo in Camera Raw.
2. In the lower-left corner of the dialog, click **Save Image**. The Save Options dialog opens.
3. For the Destination, choose **Save in Same Location** or **Save in New Location**. For the latter, choose a location in the Select Destination Folder dialog, then click Select.
4. In the **File Naming** area, choose a naming or numbering convention from the menu or enter a file name. If desired, you can also choose a naming or numbering convention from the adjacent menu.
5. Choose a **Format**: Digital Negative, JPEG, TIFF, or Photoshop, then choose format-related options. For instance, if you cropped the photo in Camera Raw and choose the Photoshop format here, you will need to decide whether to check Preserve Cropped Pixels.
6. Click Save. A copy of the file appears in the designated location. The original file remains open in Camera Raw, with its current settings.

Unless noted otherwise, the listings in this index pertain to Photoshop.

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