



**Movie 5 (Chapter 6 & 11 extract)**

# Reducing image noise

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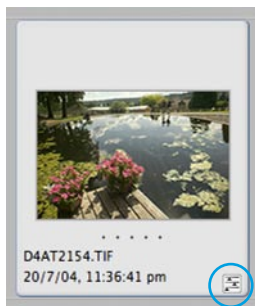
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### Panel previews

The initial Camera Raw dialog displays the Adjust panel control settings. In this mode the Preview checkbox will allow you to toggle previewing any global adjustments made in Camera Raw. Once you start selecting any of the other panels, the Preview will toggle showing only the changes that have taken place within that particular panel.



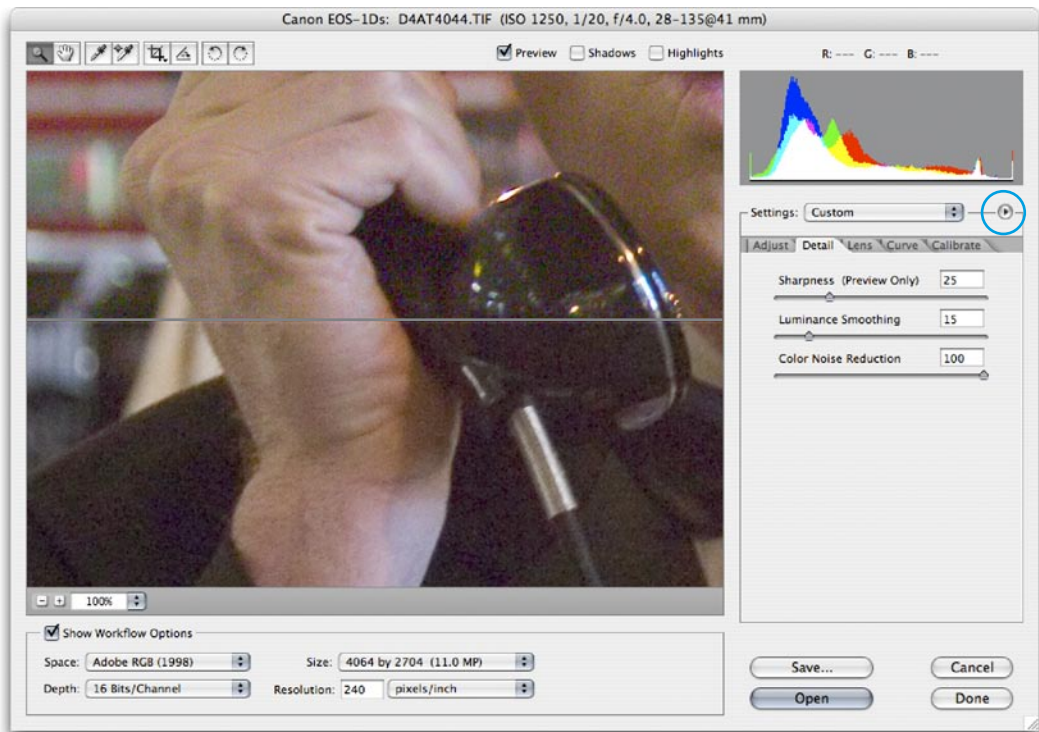
**Figure 1.1** After opening or applying Done to an image from the Camera Raw dialog a settings icon will be displayed in the bottom right corner of the image thumbnail to indicate that the image has been adjusted in Camera Raw.

### Camera Raw Detail panel controls

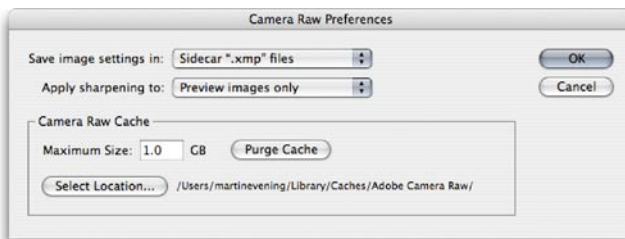
The Detail settings allow you to make improvements to the smoothness and sharpness of the raw conversion and compensate for any color noise. To make a proper judgement when using any of the detail slider controls, you should preview the image at 100%. The default settings will apply a 25% sharpening. This is a fairly gentle amount, but I prefer to leave the processed images unsharpened and carry out all the sharpening in Photoshop, starting with a capture sharpen, as described in Chapter 4 which will make the image slightly sharper before applying a larger amount of sharpening prior to output.

But it is nonetheless useful to see sharpening applied to the preview images in Camera Raw as this will help you make better judgements when making tonal and contrast edit adjustments. If you mouse down on the small triangle next to the Camera Raw settings you can open the Camera Raw preferences shown in Figure 1.3. I prefer to set the sharpening so that it is applied to the preview images only and then leave the Detail Sharpness setting at 25%.

Whenever you shoot using a high ISO setting on the camera, then you will almost certainly encounter noise in your images. The Luminance Smoothing and Color Noise Reduction can be used in conjunction to improve the appearance of images that suffer from such noise artifacts. The luminance smoothing can be used to smooth out the physical clumpiness of the noise artifacts while the color noise reduction can soften the color and get rid of the colored speckles. The noise will vary a lot from camera to camera, so it is hard to give out any specific settings advice. You can safely set the color noise reduction to maximum. Figure 1.2 shows the settings used on a fairly grainy capture that was shot using the camera's maximum 1250 ISO setting. The luminance should probably not be set any higher than the 15% setting used here. I would recommend that you also consider using the Reduce Noise filter in Photoshop as a method for reducing heavy image noise artifacts.



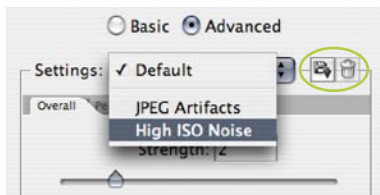
**Figure 1.2** The Camera Raw Detail panel controls. If you mouse down on the Camera Raw settings options (circled) and select the Camera Raw Preferences dialog shown below in Figure 1.3. The preview is shown here divided in two. The top half shows the before image and the bottom half the preview with the luminance smoothing and color noise reduction applied.



**Figure 1.3** Here is the Camera Raw Preferences where you can set the Sharpening to apply to Preview Images Only. I would also suggest having the Camera Raw image settings saved as sidecar “.xmp” files (this is discussed on page 456). You may also want to increase the Camera Raw cache if you have plenty enough free hard disk space available.



**Figure 1.4** In Basic mode you can only adjust the Reduce Noise settings so that they affect the overall strength and preservation of image detail. If the Advanced mode button is checked you can apply the noise reduction adjustments on a per channel basis.



**Figure 1.5** Favorite Reduce Noise settings can be saved by clicking on the Save Changes to Current Settings button. And Reduce Noise settings can be deleted by clicking on the trash icon next to it.

## Reduce Noise filter

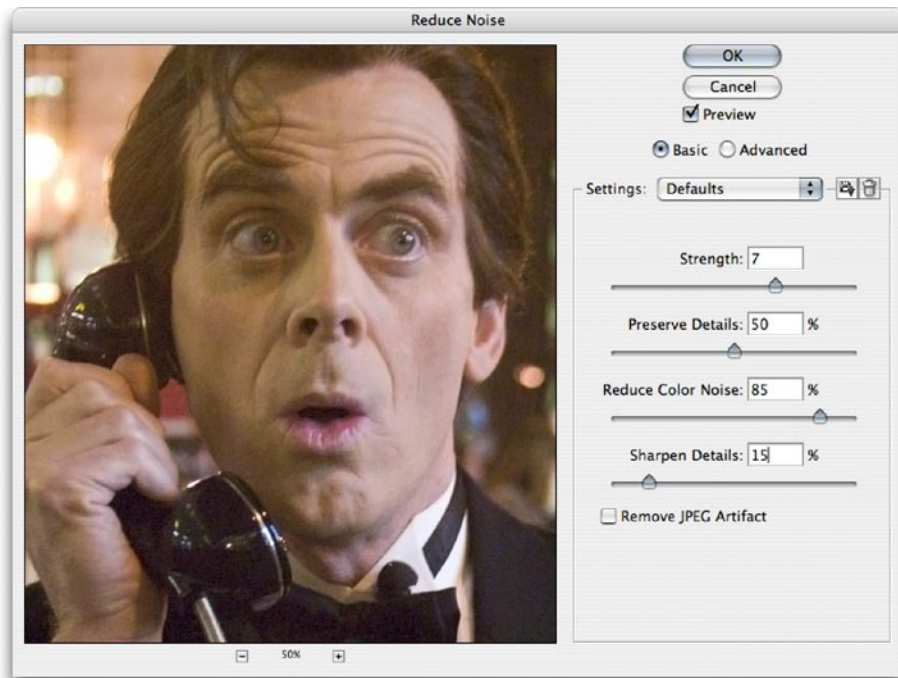
The Reduce Noise filter uses a method of smart noise reduction that can remove noise from an image without destroying the edge detail in the image. It is quite a memory intensive filter, so be prepared to wait a little while as it performs its calculations.

In Basic mode you can simply adjust the strength of the noise reduction and then use the separate controls below to modify the noise filtering. These should be adjusted in the order they are displayed. When the Preserve Details is left at 100%, the luminance information is preserved completely. Reduce the Preserve Details amount to introduce more image noise smoothing. Below that is the Reduce Color Noise slider. Increasing this amount will allow you to separately control the color noise suppression. So, if the Preserve Details is set to 100% and the Reduce Color Noise is at 0%, you will see little improvement in the image. As you adjust these sliders you will have separate control over the luminance noise and color noise. When you look at the combination of the noise reduction strength, the detail preservation and color noise reduction, the image is likely to have suffered some loss in sharpness. The Sharpen Details slider allows you to dial back in some more sharpness. But I would urge caution here as adding too much sharpening can simply introduce more artifacts.

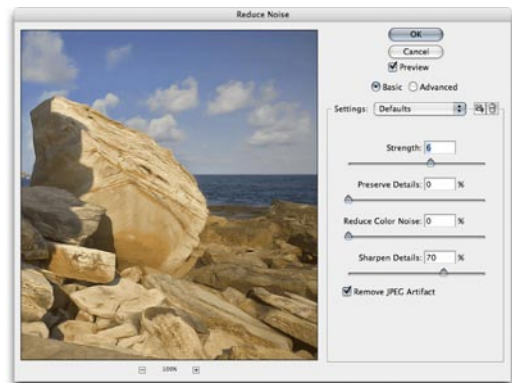
## JPEG noise removal

You can also use the Reduce Noise filter to smooth out JPEG artifacts. If you have a heavily compressed JPEG image, the Reduce Noise filter can certainly help improve the image smoothness. But I reckon you can use the Reduce Noise filter in this mode to improve the appearance of GIF images as well. Of course you will need to convert the GIF image from Indexed Color to RGB mode first. But once you have done this you can use the Reduce Noise Filter adjustments to help get rid of the banding by taking the Preserve Details slider down to zero % and raising the Sharpen Details to a much higher amount than you would be advised to use normally.





**Figure 1.6** Here is the Reduce Noise filter being used to help remove the noise from a digital capture of 'Special Agent' Russell Brown, which was shot at 1250 ISO. The Reduce Noise filter helped get rid of most of the noise artifacts.



**1** The Reduce Noise filter has a Remove JPEG Artifact option that can be useful if you wish to improve the appearance of an image that has suffered from over-heavy JPEG compression. But it can also help rescue a GIF image where a lot of the color levels information has been lost in the conversion to Indexed Color mode.

**2** A GIF image will have to be converted to RGB mode first. You can then apply the Reduce Noise filter. In this example I checked the Remove JPEG Artifact box. To remove the color banding, the Preserve Details had to be set to 0%. To make the image sharp again I increased the Sharpen Details to 70%.