

How to fix images

Other than correcting color, one of the most common tasks you will perform in Adobe Photoshop is fixing images to correct imperfections, edit out undesired parts of the photo, and correct problems that result from the photo-taking process. This guide covers several ways to retouch photos using the Retouching tools (**Figure 1**), including use of the Spot Healing Brush tool, the Red Eye tool, the Patch tool, and the Content-Aware Move tool. Smart Sharpen and Camera Shake Reduction can help fix blurred images. Use these tools individually, or in combination to fine-tune your photo retouching tasks.

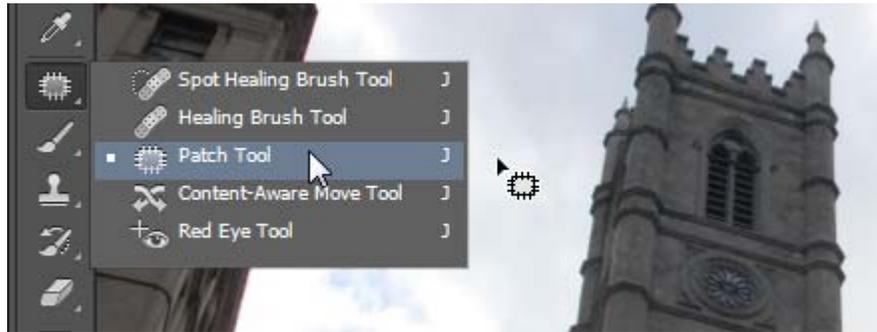


Figure 1 Retouching tools

Using the History panel

Because retouching can require trial and error, you should know how to use the History panel to undo steps.

Like most computer users, you're probably aware of the Undo command available in many applications. This command lets you undo the effects of whatever command you've just applied.

Photoshop takes the Undo command several steps further with the History panel. The History panel keeps track of the last 20 commands you've applied to an image, allowing you to revert to any one of these. When you execute a command, such as transforming an image or adding text, these are added to the History panel. The commands appear in the list in the order in which you performed them. Each command is listed with the name of the tool or command you used to change the image.

You can also take a "snapshot" of a particular set of commands, allowing you to revert to this snapshot later.

Note: Although the History panel is great, it does consume memory (RAM), as do layers. So, if you're working with a complex, multi-layered image, you may want to reduce the number of History commands saved. You can do so by choosing Edit > Preferences > Performance (Windows) or Photoshop > Preferences > Performance (Mac OS).

To use the History panel:

1. Open an image in Photoshop.
2. Click the History button in the right-side panel set (or choose Window > History) to open the History panel (**Figure 2**).
3. Execute several commands—such as selecting a part of the image, applying a filter, and adding a layer.

The point is to add some commands to the History panel.

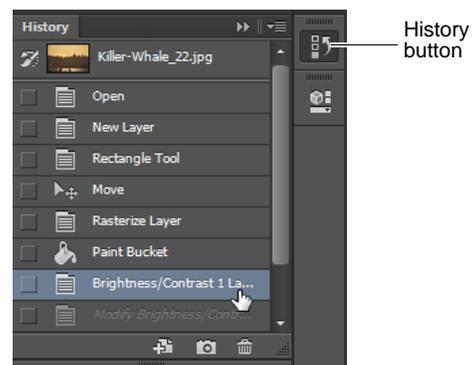


Figure 2 History panel

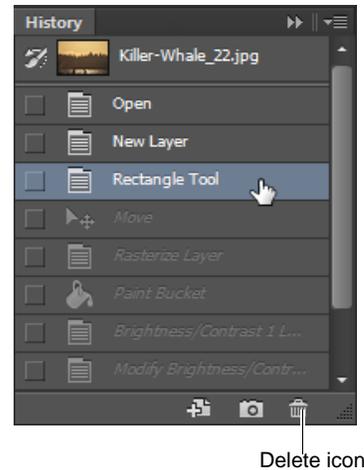
- Click one of the earlier commands, such as Move (**Figure 3**).

Observe that the image reverts to its appearance at the time this command was executed. Any commands executed afterward are temporarily discarded and appear dimmed. In **Figure 3**, for example, the Eraser, Paint Bucket and New Layer are dimmed and the effects no longer appear in the image.

At this point, the later commands are still available in the panel (if you select either). However, if you execute another command, the dimmed commands will be permanently discarded.

- To delete a command, select it and then click the Delete icon (**Figure 3**).

The image permanently reverts to the command prior to the deleted command.



Delete icon

Figure 3 Earlier command selected

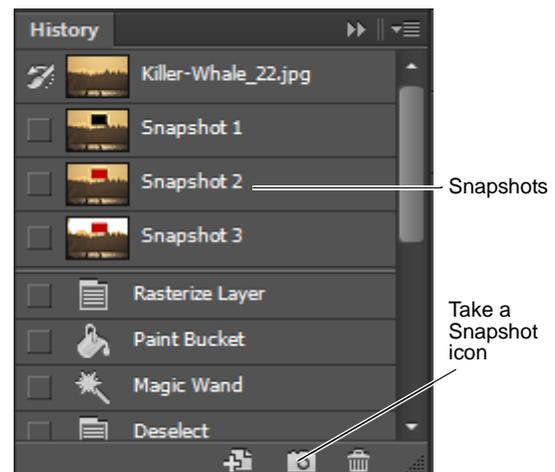
Taking a snapshot

You can use the Snapshot feature to capture the image as it appears at any point in the list of History commands. Once you're satisfied with an image, it's a good idea to take a snapshot.

To take a snapshot:

- Click the History command you want to capture.
- Click the Snapshot icon (**Figure 4**).
- Scroll to the top of the History panel as necessary to view the snapshot (**Figure 3**).
- To revert to the snapshot, click it as you would any other History command.

You can compare different snapshots by clicking on them.



Snapshots

Take a Snapshot icon

Figure 4 Snapshots in the History panel

Using the Spot Healing Brush tool

The Spot Healing Brush tool quickly removes blemishes and other imperfections in your photos. The Spot Healing Brush works similarly to the Healing Brush: it paints with sampled pixels from an image or pattern and matches the texture, lighting, transparency, and shading of the sampled pixels to the pixels being healed. Unlike the Healing Brush, the Spot Healing Brush doesn't require you to specify a sample spot. The Spot Healing Brush automatically samples from around the retouched area.

Note: If you need to retouch a large area or need to better define the source sampling area, you can use the Healing Brush instead of the Spot Healing Brush.

To use the Spot Healing Brush tool:

1. Click the Spot Healing Brush tool in the Tools panel.
The pointer changes to a brush. Usually the brush appears as a circle.
2. You can change the size or shape of the brush in the Options bar (**Figure 5**).
The brush should be large enough to cover the entire spot, with some room around the edges.
3. Confirm that the Content-Aware option is selected.
Content-Aware seamlessly fills the selection with similar image content from nearby. For the best results, create a selection that extends slightly into the area you want to replicate.
4. Position the Spot Healing Brush tool over the area you want to correct (**Figure 6**).
5. Click to apply the correction (**Figure 7**).

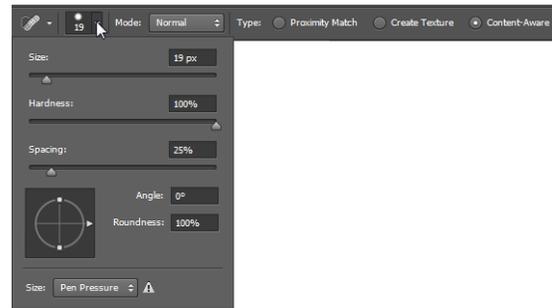
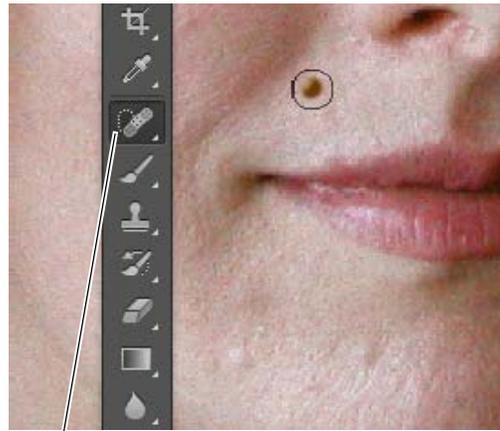


Figure 5 Brush options



Spot Healing Brush tool

Figure 6 Spot Healing brush positioned over a blemish



Figure 7 Spot Healing brush applied

Using the Red Eye tool

When you take photos with a flash, red eye can often result. You can quickly correct red eye in flash photos of people or animals with the Red Eye tool.

To use the Red Eye tool:

1. Click the Red Eye tool in the Tools panel (**Figure 8**).
2. Position the Red Eye tool over the pupil you want to correct.
3. If you are not satisfied with the result, undo the correction, set one or more of the following options in the options bar (**Figure 9**), and click the red eye again.

Pupil Size increases or decreases the area affected by the Red Eye tool.

Darken Amount sets the darkness of the correction.

4. Click to apply the correction (**Figure 10**).

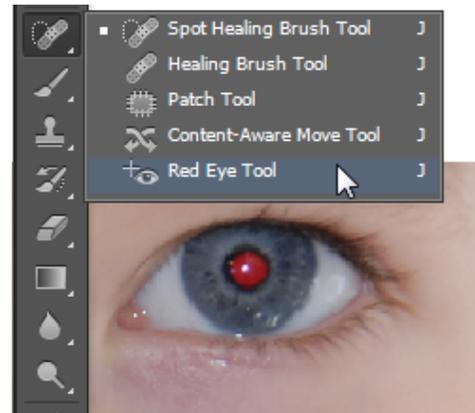


Figure 8 Red Eye tool

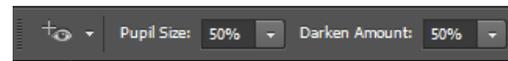


Figure 9 Red Eye tool options



Figure 10 Red Eye tool applied

Using the Patch tool

The Patch tool lets you repair a selected area with pixels from another area or a pattern. The Patch tool matches the texture, lighting, and shading of the sampled pixels to the source pixels, making an imperfection disappear into the surrounding image. You can also use the Patch tool to clone isolated areas of an image.

Note: When repairing with pixels from the image, select a small area to produce the best result.

To use the Patch tool:

1. Identify the object you want to remove from an image.

For example, you can remove the lightpost from the tourist landmark photo shown in **Figure 11**.



Figure 11 Initial image to be patched

2. Select the Patch tool.
3. Drag in the image to select the area you want to repair, and confirm that the Source option is selected in the options bar (**Figure 12**).

Note: You can also make a selection prior to selecting the Patch tool.

4. To adjust the selection, do one of the following:
 - Shift-drag in the image to add to the existing selection.
 - Alt-drag (Windows) or Option-drag (Mac OS) in the image to subtract from the existing selection.
 - Alt+Shift-drag (Windows) or Option+Shift-drag (Mac OS) in the image to select an area intersected by the existing selection.
5. Position the pointer inside the selection, and drag the selection border to the area from which you want to sample (**Figure 13**). When you release the mouse button, the originally selected area is patched with the sampled pixels (**Figure 14**).



Figure 12 Patch tool options

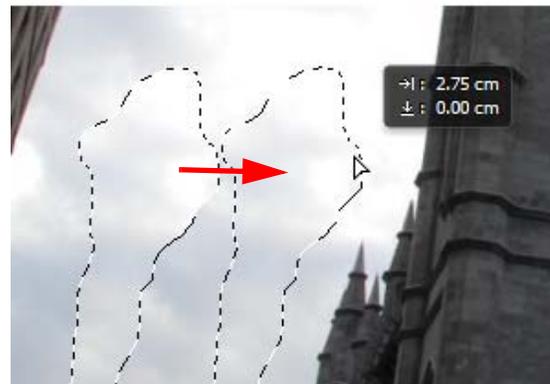
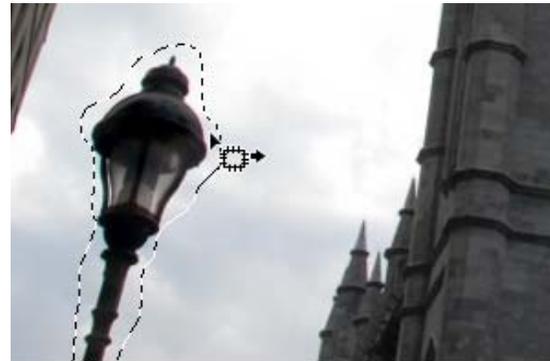


Figure 13 Drag the selection to the sample area



Figure 14 The patched image

Using the Content-Aware Move tool

The Content-Aware Move tool functions in a similar way to the Patch tool, with the exception that dragging a selection relocates a selected part of an image to a new location. The Content-Aware Move tool automatically samples from around the selection area to blend together the moved content with the background pixels.

To use the Content-Aware Move tool:

1. Identify the object you want to move in an image.

For example, continuing work on the tourist landmark photo shown in **Figure 11**, it might be preferable to move the right-most building away from the looming office building on the left.

2. Drag in the image to select the area you want to move. Be sure to leave enough of a margin that edge-region pixels can be suitably blended with background pixels.

Note: You can also make a selection prior to selecting the Patch tool.

3. To adjust the selection, do one of the following:
 - Shift-drag in the image to add to the existing selection.
 - Alt-drag (Windows) or Option-drag (Mac OS) in the image to subtract from the existing selection.
 - Alt+Shift-drag (Windows) or Option+Shift-drag (Mac OS) in the image to select an area intersected by the existing selection.
4. Position the pointer inside the selection, and drag the selection border to the area from which you want to move the selection (**Figure 15**). When you release the mouse button, the originally selected area is moved (**Figure 16**).

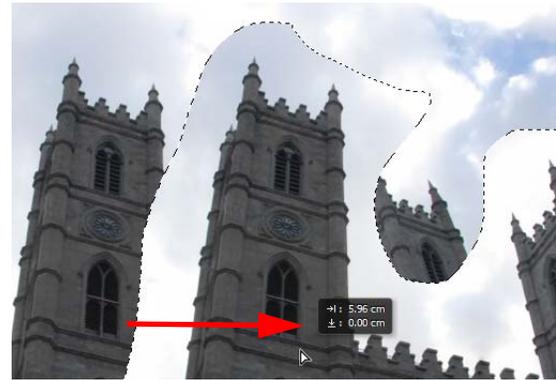


Figure 15 Dragging the image content to be moved



Figure 16 The final retouched image

Sharpen using Smart Sharpen

Sharpening enhances the definition of edges in an image. Whether your images come from a digital camera or a scanner, most images can benefit from sharpening. The degree of sharpening needed varies depending on the quality of the digital camera or scanner. Keep in mind that sharpening cannot correct a severely blurred image. The Smart Sharpen filter offers enhanced controls not available with other sharpening filters (**Figure 17**). You can set the sharpening algorithm or control the amount of sharpening that occurs in shadow and highlight areas.

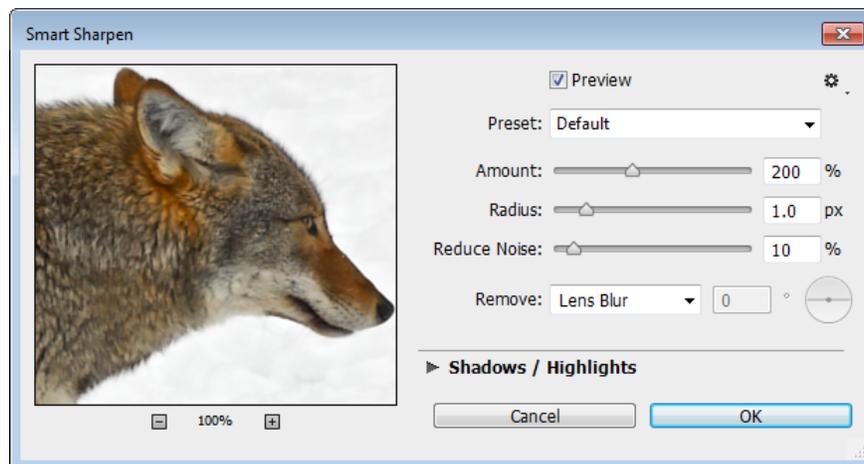


Figure 17 Smart Sharpen dialog box

To use the Smart Sharpen filter:

1. Open the image and zoom the document window to 100% to get an accurate view of the sharpening.
2. Choose Filter > Sharpen > Smart Sharpen.
3. Confirm the Preview option is selected and set the controls in the Smart Sharpen dialog box (**Figure 17**):

Amount Sets the amount of sharpening. A higher value increases the contrast between edge pixels, giving the appearance of greater sharpness.

Radius Determines the number of pixels surrounding the edge pixels affected by the sharpening. The greater the radius value, the wider the edge effects and the more obvious the sharpening.

Reduce Noise Reduce unwanted noise while keeping important edges unaffected.

Remove Sets the sharpening algorithm used to sharpen the image.

- Gaussian Blur is the method used by the Unsharp Mask filter.
- Lens Blur detects the edges and detail in an image, and provides finer sharpening of detail and reduced sharpening halos.
- Motion Blur attempts to reduce the effects of blur due to camera or subject movement. Set the Angle control if you choose Motion Blur option of the Remove control.

4. Click Shadow/Highlights to expand the options and adjust sharpening of dark and light areas using in the Shadow and Highlight options (**Figure 18**). If the dark or light sharpening halos appear too strong you can reduce them with these controls, which are only available for 8-bits and 16-bits-per-channel images:

Fade Amount Adjusts the amount of sharpening in the highlights or shadows.

Tonal Width Controls the range of tones in the shadows or highlights that are modified. Move the slider to the left or right to decrease or increase the Tonal Width value. Smaller values restrict the adjustments to only the darker regions for shadow correction and only the lighter regions for highlight correction.

Radius Controls the size of the area around each pixel that is used to determine whether a pixel is in the shadows or highlights. Moving the slider to the left specifies a smaller area, and moving it to the right specifies a larger area.

5. Click OK to close the Smart Sharpen dialog box.

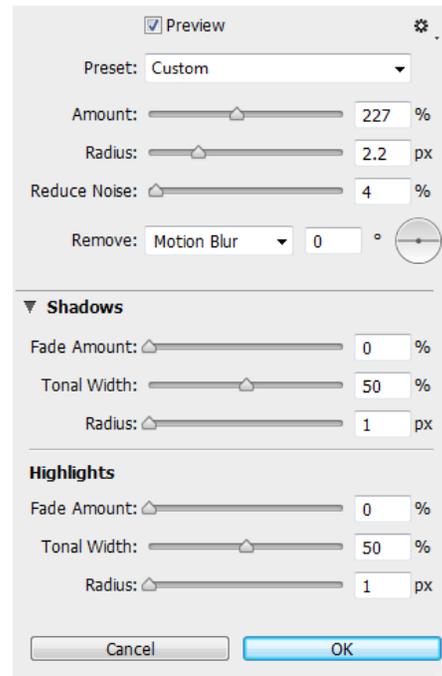


Figure 18 Shadow and Highlights options in the Smart Sharpen dialog box

Using the Camera Shake Reduction filter

Photoshop features an intelligent mechanism to automatically reduce image blurring caused by camera motion (**Figure 19**).



Figure 19 Camera shake reduction, before (left) and after (right)

The Shake Reduction filter can reduce blurring resulting from several types of camera motion (**Figure 20**); including linear motion, arc-shaped motion, rotational motion, and zigzag motion. If necessary, you can adjust advanced settings to further sharpen the image.

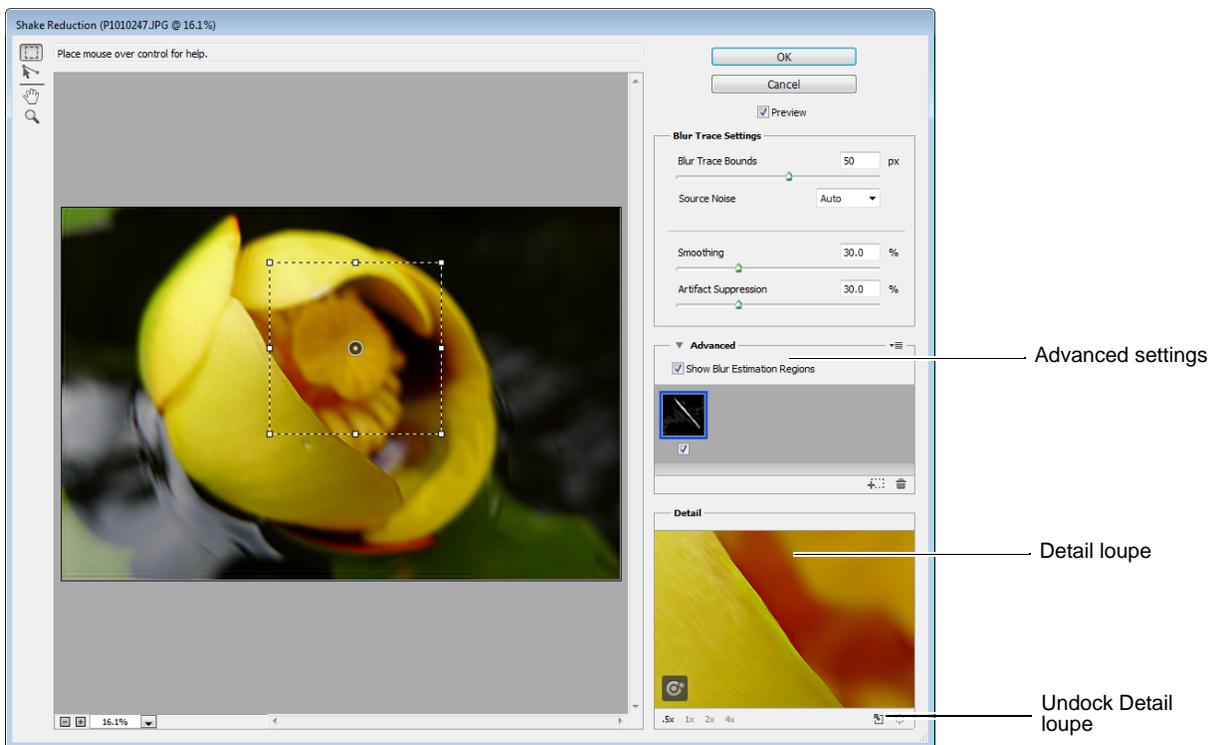


Figure 20 Shake Reduction dialog box

The camera shake reduction feature works best with decently lit still camera images having low noise. The following types of still images are particularly suitable for shake reduction:

- Indoor or outdoor images captured using a lens with a long focal length
- Indoor images of a static scene taken with a slow shutter speed and no flash

In addition, shake reduction can help sharpen blurred text in images affected by camera motion.

To use the Camera Shake Reduction filter:

1. Open the image.
2. Select Filter > Sharpen > Shake Reduction. Photoshop automatically analyzes the region of the image best suited for shake reduction, determines the nature of the blur, and extrapolates the appropriate corrections to the entire image. The corrected image is displayed for your review in the Shake Reduction dialog box (**Figure 20**).

The Detail loupe in the lower-right pane lets you closely examine the region in focus. If necessary, zoom in or zoom out on an image element. As you drag the Hand tool over the Detail loupe to examine an image region, release the mouse button to see a quick preview of the shake reduction changes for that region.

3. Confirm the Preview option is selected then click the Undock Detail Loupe button.

The loupe window detaches and is placed over the image (**Figure 21**). You can move the Detail loupe around the image to focus on a new image region suitable for camera shake reduction.

4. If needed, use the options in the Advanced panel of the Shake Reduction dialog box to modify blur traces.

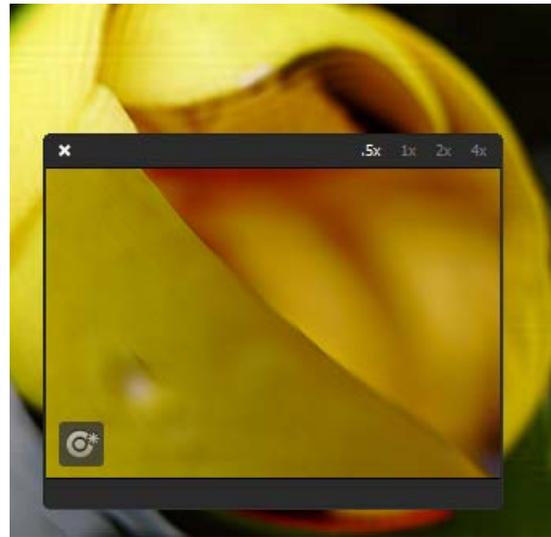


Figure 21 Undocked Detail loupe