

How to fix images

Other than correcting color, one of the most common tasks you will perform in Adobe Photoshop is fixing images. You might be performing a photographic restoration (**Figure 1**), or correcting imperfections or problems that result from a photo-taking process.



Figure 1 Before (left) and after (right) states of a complete photographic restoration

This guide covers several ways to retouch photos using Retouching tools, 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. Download the assets used in [this tutorial here](#).

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 here is to add some commands to the **History** panel.

4. 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**, **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.

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

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

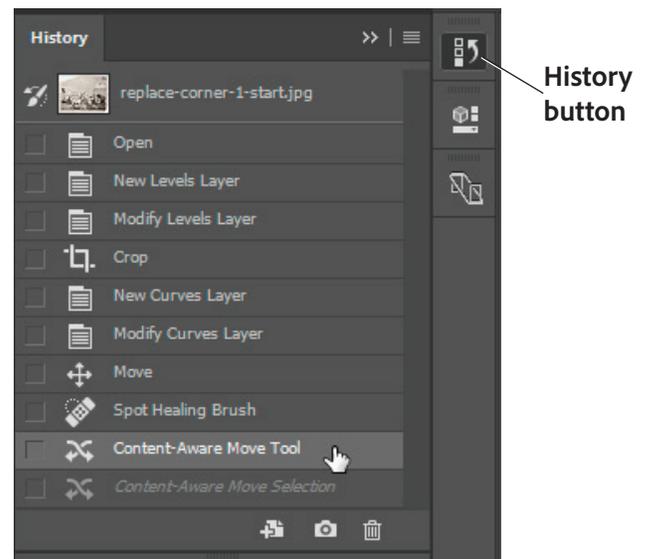


Figure 2 History panel

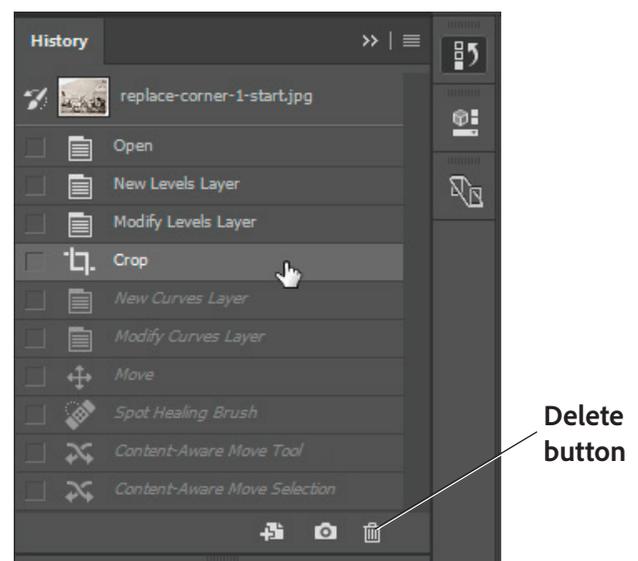


Figure 3 Earlier command selected

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:

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

You can compare different snapshots by clicking on them.

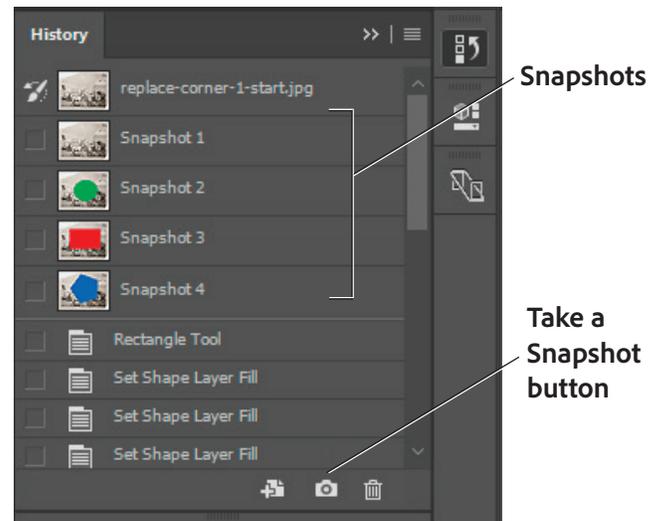


Figure 4 Snapshots in the History panel

Using the Spot Healing Brush tool

The Spot Healing Brush tool (**Figure 5**) quickly removes details, 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.



Figure 5 Retouching tools, with Spot Healing Brush Tool selected

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 (**Figure 5**).

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 6**).

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 7**).
5. Click to apply the correction (**Figure 8**).

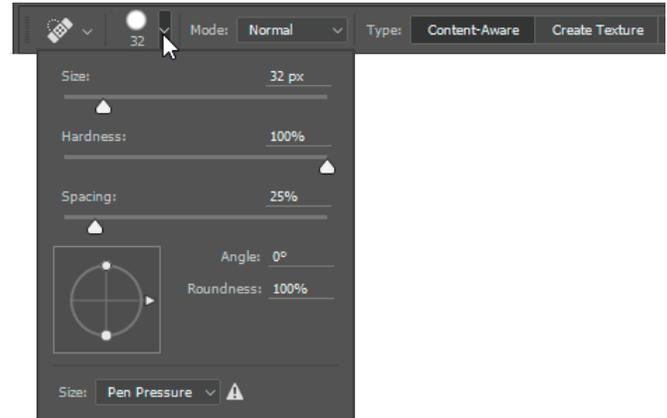


Figure 6 Spot Healing Brush options



Figure 7 Spot Healing brush positioned over a detail



Figure 8 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 9**).
2. Position the **Red Eye Tool** over the pupil you want to correct (**Figure 10**) and click to apply.
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 11**), 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 12**).



Figure 9 Red Eye tool



Figure 10 Position Red Eye tool over eye to be fixed

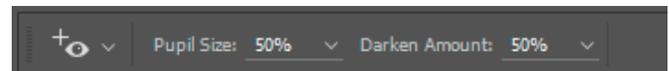


Figure 11 Red Eye tool options



Figure 12 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 a tourist landmark photo.

2. Select the **Patch Tool** (Figure 9).
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 13).

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 14). When you release the mouse button, the originally selected area is patched with the sampled pixels (Figure 15).

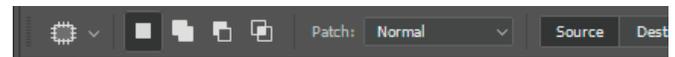


Figure 13 Patch tool options

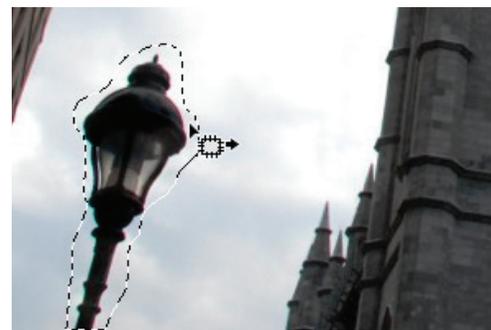


Figure 14 Drag the selection to the sample area



Figure 15 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 to on the tourist landmark photo shown in **Figure 15**, 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 **Content-Aware Move** 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 16**). When you release the mouse button, the originally selected area is moved (**Figure 17**).

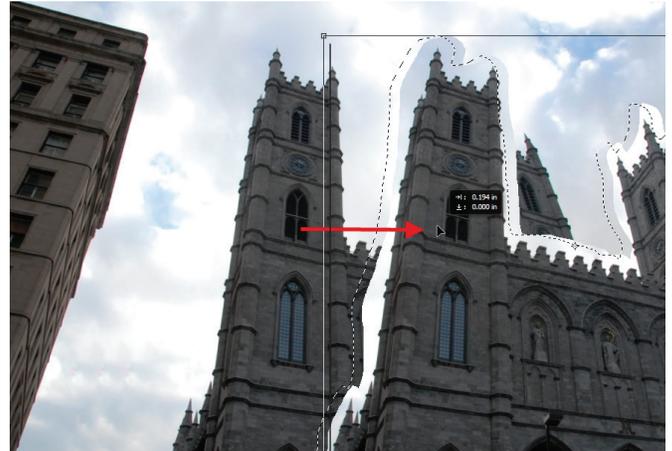


Figure 16 Dragging the image content to be moved



Figure 17 The final retouched image

Sharpen using Smart Sharpen

Sharpening enhances the definition of edges in an image (**Figure 18**). Whether your images come from a digital camera or another source, most raw images can benefit from sharpening. The degree of sharpening needed varies depending on the quality of the source material. Keep in mind that sharpening cannot correct a severely blurred image.



Figure 18 Detail of original image (left); image after Smart Sharpen (right)

The Smart Sharpen filter offers enhanced controls not available with other sharpening filters (**Figure 19**). You can set the sharpening algorithm or control the amount of sharpening that occurs in shadow and highlight areas.

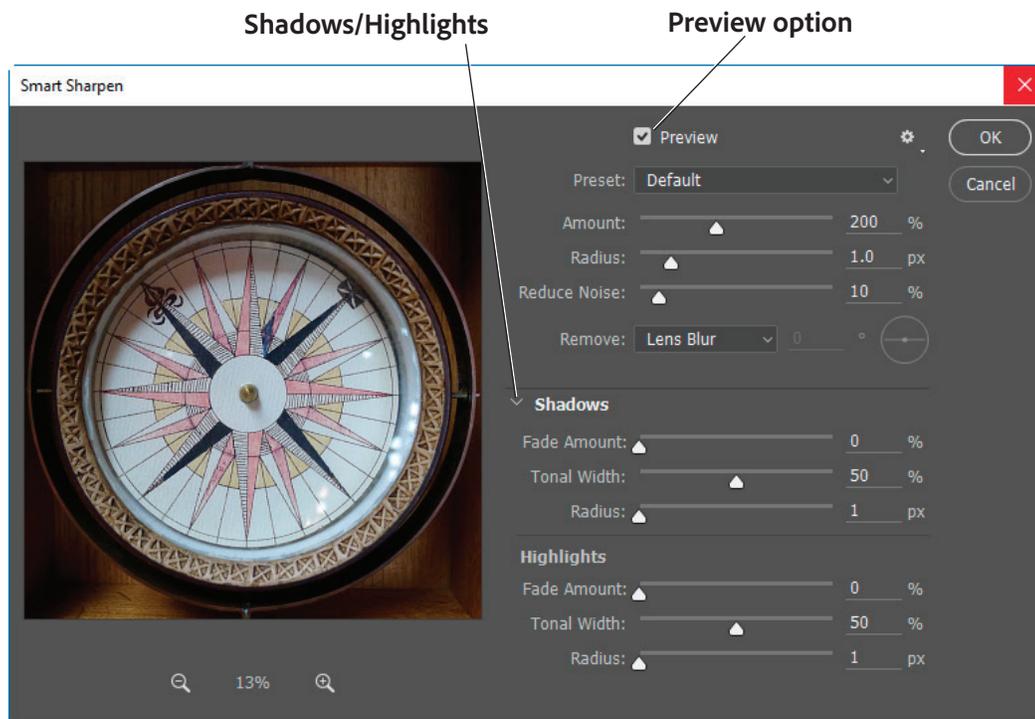


Figure 19 Smart Sharpen dialog box

To use the Smart Sharpen filter:

1. Open the image you want to sharpen.
2. Zoom into the document window to at least 100%, or larger; enough to get an accurate view of the image details. Do one of the following:
 - Choose **View > 100%**, or another value such as **200%**
 - Use the Zoom Tool from the Tools panel (**Figure 20**)
 - Manually set a zoom level in the zoom level number field
3. Choose **Filter > Sharpen > Smart Sharpen**.

The **Smart Sharpen** dialog box opens (**Figure 19**).

4. Confirm the **Preview** option is selected and set the controls in the Smart Sharpen dialog box:
 - **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.
5. Click **Shadow/Highlights** to expand the options and adjust sharpening of dark and light areas using the **Shadow** and **Highlight** options. 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.
6. Click OK to close the **Smart Sharpen** dialog box.

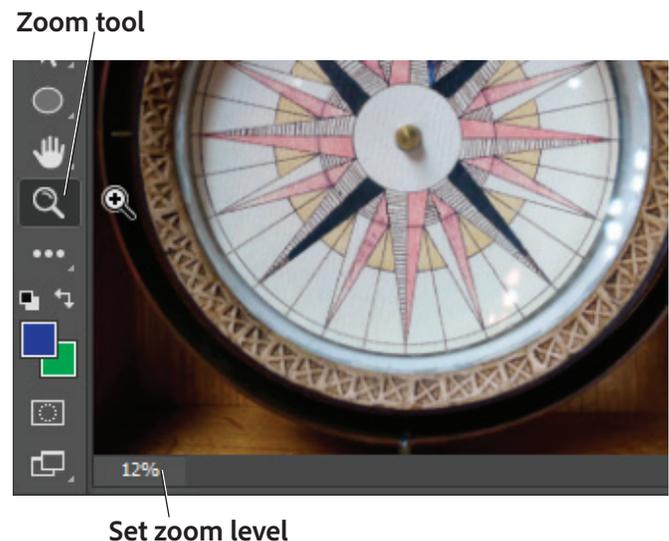


Figure 20 Tools panel and zoom level

Using the Camera Shake Reduction filter

Photoshop features an intelligent mechanism to automatically reduce image blurring caused by camera motion (Figure 21).



Figure 21 Original image (left); image after camera-shake reduction (right)

The Shake Reduction filter can reduce blurring resulting from several types of camera motion (Figure 22); including linear motion, arc-shaped motion, rotational motion, and zigzag motion. If necessary, you can adjust advanced settings to further sharpen the image.

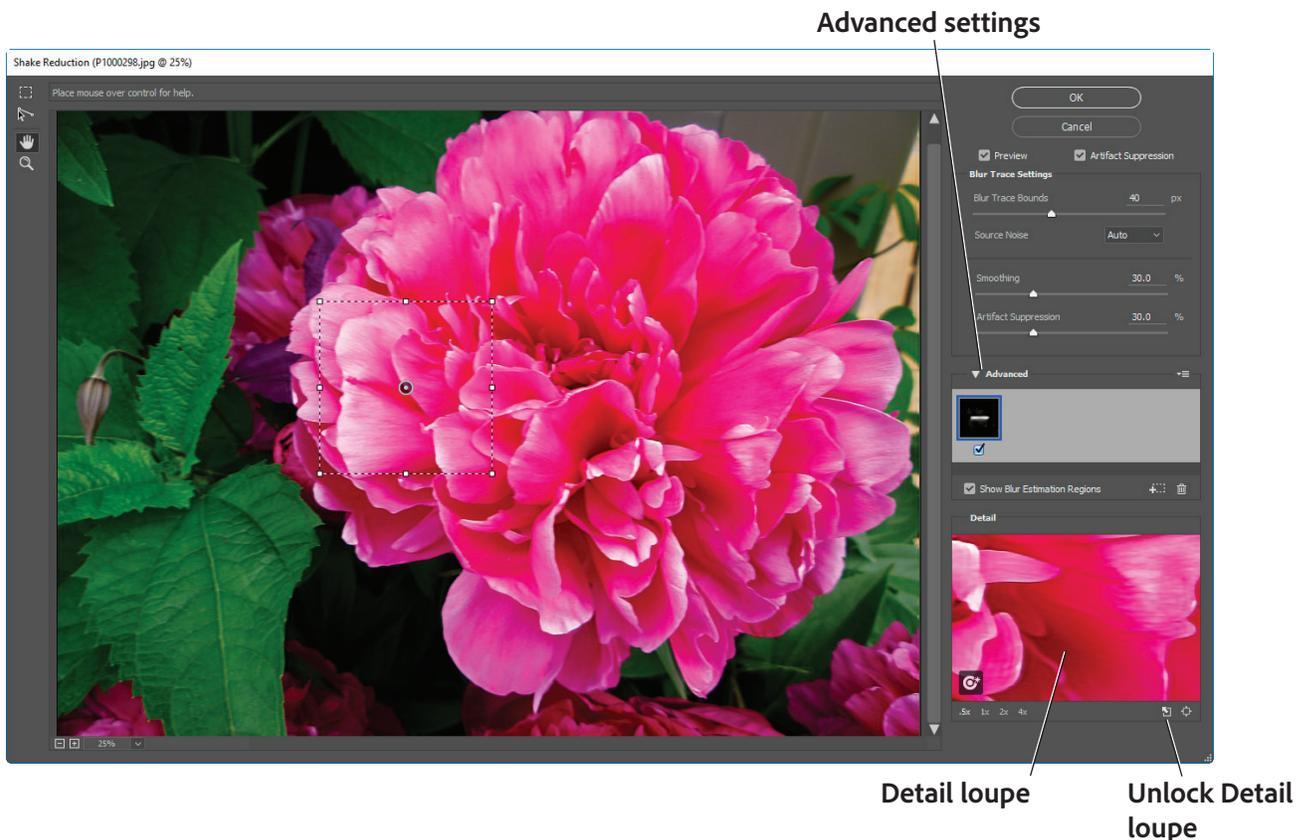


Figure 22 Shake Reduction dialog box

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 22**).

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.

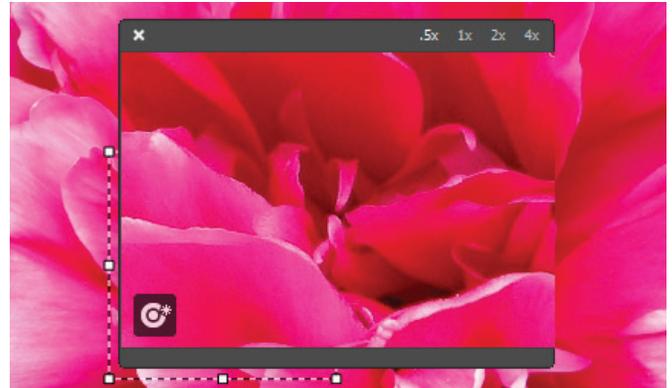


Figure 23 Undocked Detail loupe

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 23**). 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.

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