

Repair surface  
damage in the  
details!

# Photo Restoration

From Snapshots to Great Shots

Improve the contrast  
in your images!

Robert Correll

Photo Restoration:  
From  
Snapshots to  
Great Shots

Robert Correll



Peachpit  
Press

## **Photo Restoration: From Snapshots to Great Shots**

Robert Correll

### **Peachpit Press**

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## Dedication

To my family.

## Acknowledgments

Although this page is shown at the beginning of things, it is actually among the last things I will write. For me, it is a time of celebration and rejoicing. Finishing a book is like winning a battle at the end of a long war. I get to hand out medals and express my thanks to those who have been at my side during the hard work.

Let me share how wonderful it was to work with everyone at Peachpit. I was given the freedom and support to write the book I thought should be written to help you transform your old raggedy snapshots into great shots using Adobe Photoshop.

I want to thank Valerie Witte (Project Editor), Lisa Brazieal (Senior Production Editor), Emily K. Wolman (Development and Copy Editor), Steffi Drewes (Proofreader), and WolfsonDesign (Composition) by name. Thank you all for your hard work, expertise, and camaraderie as we put this book together.

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My family continually encourages me, strengthens me, puts up with me, and helps me through every project. Special thanks to the love of my life, Anne, for sitting in the office looking at photos and reading chapters with me.

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# Introduction

I love introductions. They let us sit down and have a quick chat about the book you're considering purchasing. You get your first taste of who I am and how I think.

In writing *Photo Restoration: From Snapshots to Great Shots*, my goal was to create a user-friendly guidebook that shows you how to select, handle, scan, and restore aged or damaged photos using Adobe Photoshop (and, to a lesser extent, Photoshop Elements). I organized the material according to my own general restoration workflow. After selecting and scanning photos, I clean their surface and repair any damage. I then make color corrections and enhance the brightness and contrast. I conclude by putting my finishing touches on the photos.

As you can imagine, there are a lot of technical bits and pieces along the way. To keep things manageable, I focused on distilling and concentrating my knowledge and expertise for you. I winnowed out anything that was not absolutely necessary and prioritized what was left. I also tried to impart as much about the touch and feel of restoring photos as I could.

I hope this book is fun, friendly, detailed, and practical for you. Bon appétit!

**Q: Who is this book for?**

A: Anyone who wants to learn more about restoring old or damaged photos using Adobe Photoshop. Although there are occasional differences, you will be able to follow along if you plan on using Photoshop Elements.

**Q: Do I need to be a Photoshop expert?**

A: No, but it will help if you've used Photoshop before. If you know nothing about Photoshop, you have to be willing to learn the basics of the program on your own. I did not have the space to show you how to use Photoshop from the ground up *and then* teach you how to restore photos. I had to choose what to focus on.

**Q: Should I start at the beginning of the book?**

A: Yes and no. I introduce topics in the book according to a very specific workflow. You will benefit most from this design if you start at the beginning and continue fairly linearly. However, you can (and should) skip to subjects that interest you. Either way, by the time you've finished, you'll have learned that each small part of photo restoration is joined to a larger whole. Learning how these pieces fit together will help you restore photos in the long run.

**Q: I don't get your sense of humor. Do you have one?**

A: Yes. I love irony and absurdity. My humor can be dry and wet at the same time. I have tried to be friendly and funny but not slap you in the face with it. Mostly.

**Q: Are the assignments important?**

A: Yes, but not because they offer new information. I designed the assignments to help you review the important points in each chapter. By giving you something concrete to accomplish, I hope to focus your attention and lock the details into your memory. It would be a shame if you skipped them.

**Q: How did you get started restoring photos?**

A: Some time ago, my wife was going through her family photos and organizing them with her mom. When I looked through the photos with her, I realized that I could help by scanning and restoring some of them. I fell in love with it right away. I've learned far more about our families than I would have otherwise. It has been both rewarding and therapeutic.



# 5

## Repairing Physical Damage

### **Building on Success**

Don't let the prospect of trying to repair physical damage scare you. Although it can be more challenging than covering lint or removing a few specks of dust from the surface of a photo, the principles are largely the same. Find clean, undamaged material that matches the area that has been damaged, then use the good stuff to hide the damage. At times, you'll use undamaged material to re-create missing elements of the photo. Build on the skills you learned in the last chapter as you attempt to repair damaged photos.

## Filling Holes and Other Surface Damage

Holes and other surface damage often require you to make up for lost material. Don't panic. Use the same techniques that you have learned to clean photos and repair other damage. You've been covering blemishes and damage with clean material all along, albeit different shapes and sizes.

**Figure 5.16** shows how simple repairing this type of damage can be. This photo has been pinned to a wall or a bulletin board. There are three holes along the top edge and one in the bottom center. Repair them as you would a circular blemish, by covering them with undamaged material. When repairing damage this close to the top or bottom borders, I keep my brush strokes horizontal. I also make sure to watch the brush size. If it is too large, you'll see overspray outside of the edges of the photo. Because this hole is close to the border, you could also choose to crop it out of the photo.



Before

During

After

**Figure 5.16**  
While severe-looking, this hole was very easy to fix.

**Figure 5.17** has a hole that is a bit tougher to tackle. This repair requires delicate work with the Clone Stamp and careful attention to the clothing and shadows. The largest challenge with this repair was selecting good source material to cover the missing areas. The tones and shading all had to match.

I started cloning along the photo's edge, then worked my way inward, toward the other details. I find that getting details like lines fixed first works well. When they were done, I filled in the easier areas. Don't be afraid to create more than one layer to handle repairs like this.



Before

During

After

**Figure 5.17**  
To make repairs like this, you must be able to pull source material from nearby areas of the photo.

The photo in **Figure 5.18** has a large area in the center that has been badly damaged. To make this repair, I used the Clone Stamp, paying attention to the changing light and shadowy areas on the wall. There was plenty of good source material close by to pull from. The damaged area on my sister's hair was more challenging. I tried cloning first, but it didn't look right. So I switched to the copy and paste technique. I selected an area to copy (shown in the first image of **Figure 5.19**), copied, then pasted and flipped it horizontally. Following that transformation, I placed it over the damaged area. Next, I masked out part of it and cloned material to complete the blending.

**Figure 5.18**  
I repaired the large area by cloning.

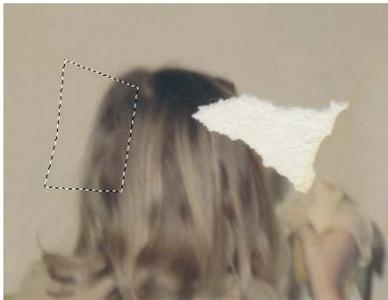


Before

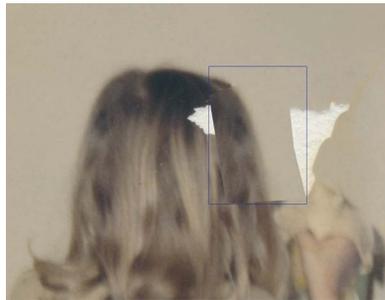


Cloning

**Figure 5.19** The key to this repair was copying, pasting, and then flipping hair from another area.



Selecting



Pasting



Blending

The result is a repair that used existing material as a foundation to clone around and over. **Figure 5.20** shows both areas finished.



**Figure 5.20**  
Both areas were repaired  
using different techniques.

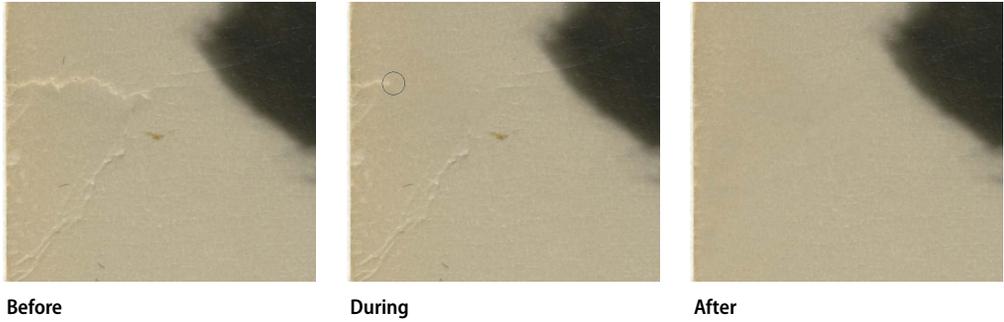
## Reconstructing Torn or Cut Photos

While creases, cracks, and scratches often damage the photo's surface, tears and cuts typically leave you with a clean edge, even if ragged. You can fix most tears with the Clone Stamp tool. Pull in undamaged material to bring the two edges of the tear together.

Photos that are more or less torn apart (either in half, into pieces, or partially torn and left dangling) are a bit more complicated. When repairing them, you should copy one section of the photo, paste it as a new layer, position it as if it were not torn, then use the Clone Stamp tool to stitch the two sides together.

**Figure 5.21** shows a minor tear along one side of a photo. Damage like this is fairly easy to handle. Use the Clone Stamp tool to repair it like a small crease. Don't turn up your nose at easy fixes. Appreciate them whenever you can, because you will also have your fair share of impossible problems.

**Figure 5.21**  
Treat small tears like creases or bends.

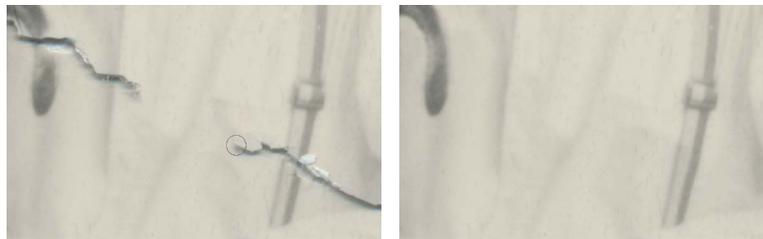


**Figure 5.22** shows a photo that has been nearly torn in half. Notice the edges of the tear. They are ragged, but the material is still there. In some ways, this makes repairing tears easier than large scratches. You just have to put the two edges together. To do that, use the Clone Stamp tool. As with other repairs in detailed areas, I brush with details like suspenders and folds in the shirt, not across them. Most of my strokes for this repair were essentially vertical. Some were from the top down, others were from the bottom up.

**Figure 5.22**  
Treat larger tears like cracks or scratches.



Before



During

After

**Figure 5.23** is a more challenging repair. Rather than being partially torn, it has been torn completely in half and taped together. Photos like this require a bit more effort to get started. Once you position both sides, however, the repair is relatively straightforward.

Here's a general outline of how to approach tears of this magnitude:

1. Copy one side of the photo, as shown in Figure 5.23.
2. Paste that as a new layer on top of the existing photo.
3. Position and rotate, if necessary, as shown in the first image of **Figure 5.24**.

This part feels like you're working on a puzzle. Notice that the white border has torn edges that should obviously fit together. Use areas like this to help you position the upper layer as perfectly as possible. If necessary, reduce that layer's opacity so that you can partially see the material underneath and be able to tell when details line up. Don't worry about making the tear invisible at this point, however. You will still have to fix it, even if you position the layers well.

4. Erase or mask out material on the top layer that extends too far over the bottom layer, as shown in the second image of Figure 5.24. You may not need to mask out much. Look for torn paper that covers the other side of the tear.



**Figure 5.23** Select one area of a torn photo to move into the proper place.



**Positioning**

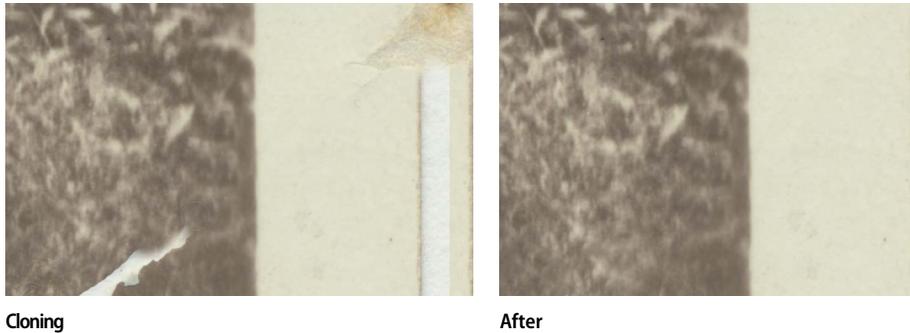


**Mask overlap**

**Figure 5.24** Match details and position the top layer precisely, then blend.

5. Finally, switch to the Clone Stamp, and on a new layer (above both photo layers), cover the tear with matching material from either side. Your goal is to “erase” it, as shown in the first image of **Figure 5.25**. The second image of Figure 5.25 shows a small portion of the completed repair.

**Figure 5.25**  
Use the Clone Stamp to cover the remaining damage.



**Figure 5.26** is a photo of my dad sitting in his 1955 Thunderbird. The photo was cut across the bottom in order to fit it in an album. This is a perfect photo to illustrate how you can use very simple techniques (copy and paste) to restore photos and make them look new. It’s far easier to copy and paste an undamaged side to create the bottom border than it is to try and re-create it using the Clone Stamp.

**Figure 5.26**  
The bottom border and some photo area were cut off of this print.



Here's how to approach repairs like this:

1. Enlarge the canvas, as shown in **Figure 5.27**, so that you can size and fit the border properly.
2. Select a border that isn't missing.
3. Copy and paste it as a new layer.
4. Rotate it to the proper orientation, then position it, as shown in **Figure 5.28**.

As you can tell from the date, I used the top border of the photo. It's the one side that has both corners. Cloning out the text was an easy thing to do at the end. What you can't see is that I copied, pasted, and rotated the top border two other times and placed those copies along the sides so that I would know where all four good corners were supposed to be. That gave me all the information I needed to position the new bottom piece in place.

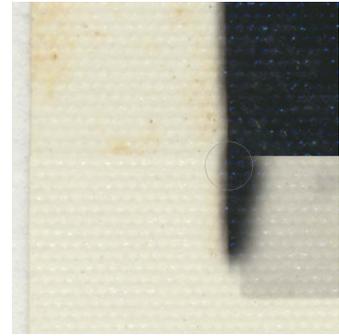


**Figure 5.27** Having a larger canvas gives you room to position copied and pasted elements.



**Figure 5.28** Line up the new bottom border.

5. Use the Eraser or mask out areas that should be hidden.
6. Use the Clone Stamp tool to blend the new piece with the other borders, as shown in **Figure 5.29**.
7. To finish the repair, I chose to copy a square selection in the center of the photo and paste it as a new layer. I then enlarged it using the Edit, Free Transform menu (see **Figure 5.30**) so that it fit the new border.



**Figure 5.29** Clone over areas to blend new and old together.

**Figure 5.30**  
This photo is repaired  
and ready for more  
restoration work.



### What the wut?

You may have noticed that I have basically used a single tool throughout this chapter: the Clone Stamp tool. I have done so because it's the most consistently versatile photo restoration tool in Photoshop (as well as Elements). It does exactly what you want it to with very few side effects. You don't often have to fix something and then make repairs to your repairs. What you fix stays fixed, and I like that. I like being able to use the tool and not worry about it.

There is also some benefit to a single-minded approach. Namely, I have gotten really good at using this tool because I've spent so much time with it. I have been able to develop a mindset where the tool recedes into the background of my consciousness. I don't have to worry about using it—I simply use it. Attention I would otherwise devote to the tool is freed to focus on the photo, where it is most needed.

When you think about it, that should encourage you. Photo restoration isn't necessarily about learning how to use a thousand tools—it's about mastering a few tools and being able to use them in a variety of circumstances.

You may prefer using a combination of the Clone Stamp, Spot Healing Brush, and Healing Brush tools. That's okay too.

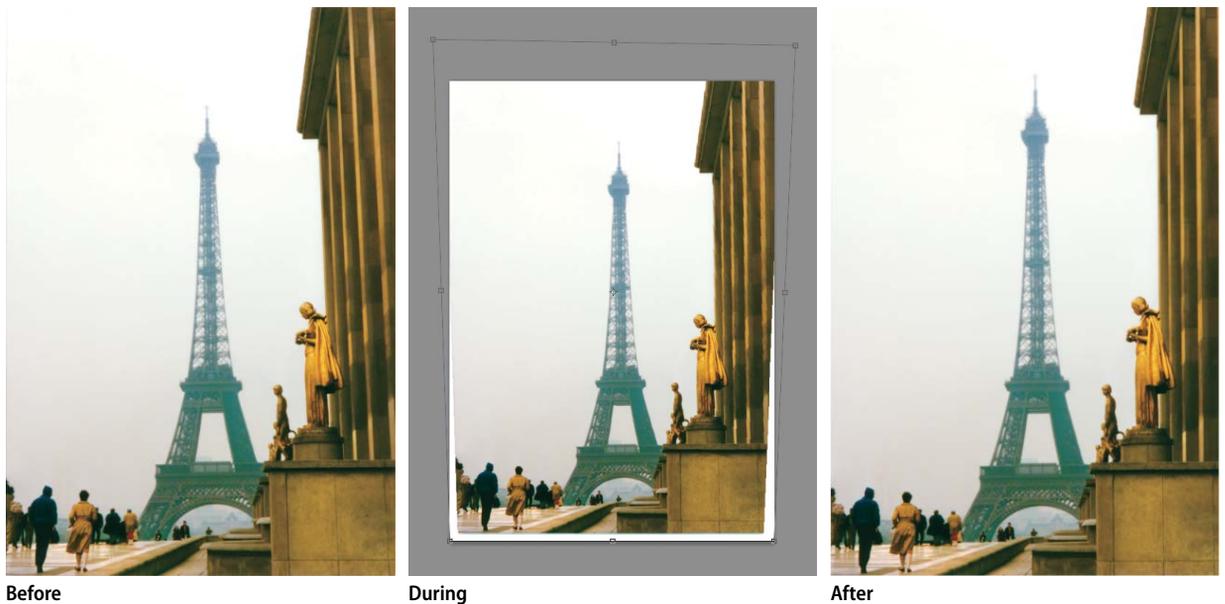
## Using Photoshop Elements

Once again, the Photoshop tools that I use to repair physical damage are essentially identical to those now found in Photoshop Elements. Likewise, the techniques carry over from program to program very well.

I prefer working in Photoshop, but if need be, I could make virtually every repair using the same basic tools in Elements. That means you can too. Master the Clone Stamp tool, layers, copying and pasting, positioning, and in some cases, making transformations. That's it. These are classic restoration tools, and for a good reason: They work quite well.



**Figure 7.17** At times, it is necessary to transform photos to fix them.



## Using Clarity

Clarity can be a great tool to add or remove local contrast to your photos. When reduced, this has the effect of making the photo look like it was shot with a soft focus. It looks dreamy. When increased, the photo will look grittier and have a hyper-detailed (and often artificial, but hey, this is a special effect) look to it.

Experiment with clarity to see what effects you can create. I like reducing clarity a smidge when I want to make people look better. Conversely, increasing clarity will make most people look very unattractive.

The only way to use Clarity is from the Camera Raw Filter, which is in the Filters menu. I always apply the filter to a Smart Object layer.

My father-in-law took the photo shown in **Figure 7.18** when he was in the Air Force, assigned to a base in Canada in the 1950s. I love the repetitive nature of the trees and the stark sky; the hills in the background hint at the scale of the photo.

To show you the effect of Clarity, I have used three different settings on this photo. The first shows settings well into the negative numbers. The second shows the photo with a Clarity setting of zero. The last shows Clarity increased. Notice the first has a wispy look and the last has a definition that borders on harshness.

Less



None



More



**Figure 7.18** Three different Clarity settings applied to one scene

## Creating Duotones

Duotones enjoy a long history as a printing technique that uses two different colored inks (often shades of black and another color, such as blue) to print what is effectively a colored grayscale image. You get a wider range of possible tones out of using two inks than one. Tritones are printed with three inks; quadtones use four inks.

You can mimic this real-world process using the Duotone feature in Photoshop. It's a great way to tone black-and-white photos that have color imbalances or add luster to photos that are too bland.

Regardless of whether you use this as an interim step or save it for last, I suggest creating a copy of your working restoration file (Image, Duplicate), flattening it, and saving it with a new file name to start. The changes made to the file by the Duotone process make continued restoration impossible.

When you're ready, follow these steps:

1. Convert the photo to grayscale using the Grayscale option, which you can find in the Image, Mode menu.

If you want more control over the conversion process, try creating a Black and White adjustment layer as the top layer in your file, then tweak the settings to achieve the look you prefer. Then convert the photo to grayscale.

2. If prompted, go ahead and flatten the image. This makes the file use fewer resources.

Again, I prefer starting with a flattened copy of my working file, so I am ahead of the game.

3. Confirm that you want to discard color information.
4. Select Duotone from the Image, Mode menu.
5. Select a Preset from the drop-down list (see **Figure 7.19**) and preview it.

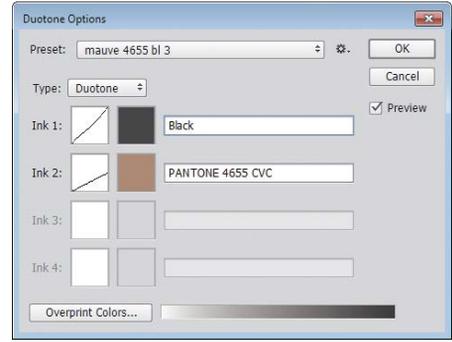
The presets are generally named for the colors used. For example, "mauve 4655 bl 3" is the third combination of mauve and black. This is a trial-and-error process, so select as many presets as it takes to find something that looks interesting to you.

In Figure 7.19 I am previewing the mauve preset on a photo shot at, you guessed it, the same general location in Canada as the last figure. Rather than a serene landscape, this time my father-in-law captured the fierce action of a plow cutting through the snow.

**Figure 7.19**  
The duotone gives  
the photo a pleasing  
tone.



**Original**



**Preset**



**Duotone**

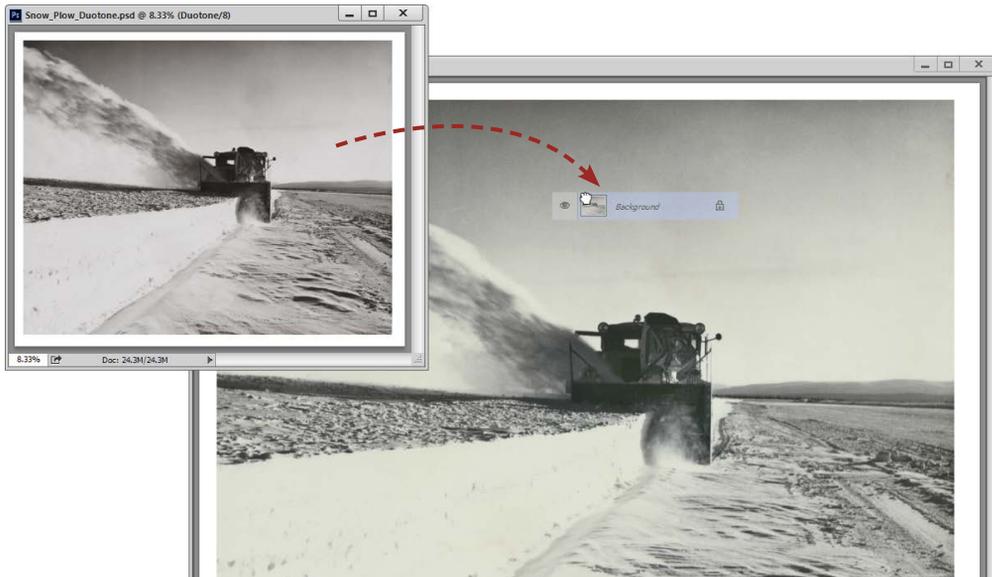
6. Select OK to close the dialog box.
7. If you like, save your duotone image.

As long as you perform the next step, you don't need to preserve this file.

8. Drag the duotone into your photo restoration file as a new layer, as shown in **Figure 7.20**.

This may seem odd, but I like converting the 8-bit grayscale duotone back into a 24-bit RGB image for further restoration. This way I am also able to use the duotone to blend creatively with the original photo. It always pays to experiment.

9. Continue working.



**Figure 7.20**  
Drag the duotone into  
your restoration file.

The one caveat I would mention about duotones is that they are limited to an 8-bit color space. Converting to grayscale doesn't sound all that bad, but what happens is that you convert three 8-bit color channels to a single 8-bit grayscale channel. It doesn't look as bleak as it sounds, but you do lose a smidgen of quality along the way. If you notice the difference (I'm not sure that I ever have), consider creating your own type of duotones using color fill layers with Blend Mode set to Color. To blend each color layer:

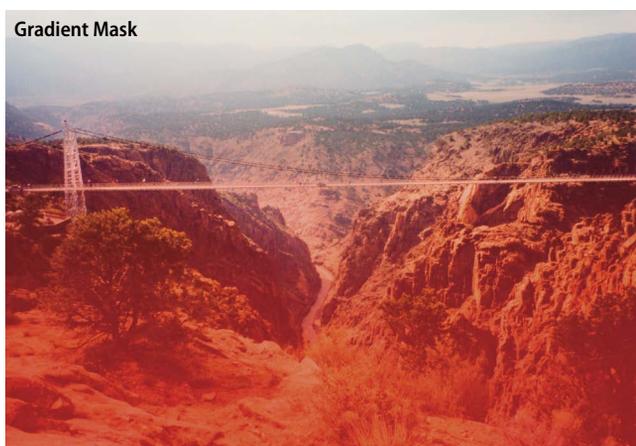
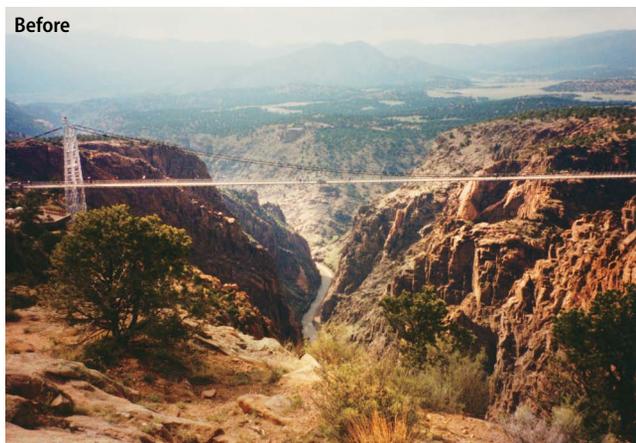
1. Double-click the layer in the Layers panel to open up the Layer Style dialog.
2. In the Blending Options section, adjust the Underlying Layer slider to assign the color to a specific tonal region. For example, if you want purples to "stick" to dark tones, slide the white slider down until the sliders encompass only those tones you want the color to blend with.
3. Set the color layer's Opacity to blend further.

## Using Creative Masks

Masks are powerful, are flexible, and help you solve problems like targeting adjustments and limiting changes to a specific area of a photo. They are so helpful to the photo restoration process that I've made sure to cover them whenever possible. It should be no surprise, then, that I've found a way to squeeze them into this chapter.

My wife took the photo shown in **Figure 7.21** of the Royal Gorge Bridge in Colorado. I reached a point in the restoration where I was unhappy with the tone of the distant background. I decided to apply a Photo Filter (as a Smart Filter) to cool the color but did not want the entire photo changed. Therefore, I used the Gradient Fill tool to mask out the foreground. The gradient provides a nice blend between the two areas of the scene.

Be on the lookout for ways to create and use masks imaginatively. If you can't paint them on, try using selections. If that doesn't match what you need, consider the different gradient fill options. Being able to create masks in a number of ways opens up many more possibilities for you to target and blend adjustments.



**Figure 7.21** The mask helps make the colors look "gorge-ous."

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