

# Beginning GIMP

From Novice to Professional



Akkana Peck

Apress®

## **Beginning GIMP: From Novice to Professional**

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# Erasing and Touching Up

In Chapter 2, you learned some basic GIMP operations for improving photographs: the cropping, rescaling, and brightness/contrast tools.

But what if you have a photograph that needs more help than that? I know I sometimes take a photo that comes out just as I'd hoped, except that there's a lamppost growing out of someone's head, or there is an overflowing garbage can right behind the subject. Or maybe that photo of the Grand Canyon would look so much nicer without the guy in Bermuda shorts talking on his cell phone.

In an ideal world, we'd notice these things before taking the picture. We'd be able to move a little and re-frame the photo to eliminate any distractions. But in practice, we all take at least some photos like that. Fortunately, GIMP can help!

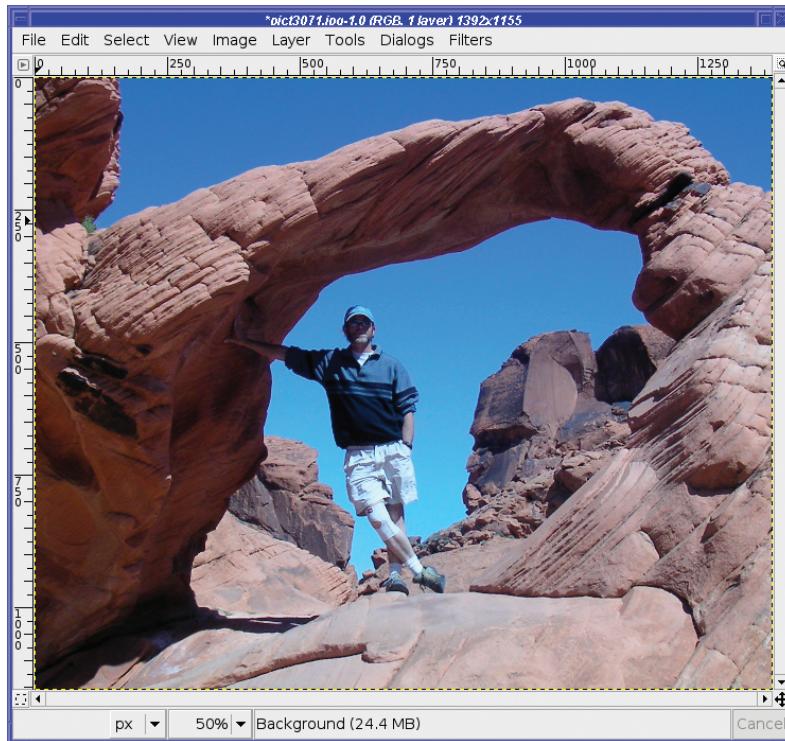
This chapter will introduce you to the following concepts:

- Dimming highlights with “Dodge and Burn”
- Smudging blemishes away
- Using the Clone tool for more difficult jobs
- Copying small regions
- Sharpening specific regions using the Convolve tool
- Blurring backgrounds with Gaussian Blur
- Correcting color balance

## Dimming Highlights with Dodge and Burn

I don't know about you, but I take a lot of bad shots of people. Casual “models” like to stand with their backs to the sun, or wear a hat with a visor to keep the sun out of their eyes. I fire away, thinking it'll be a good portrait. But when I look at it later, it's a shot of someone whose face fades into darkness (Figure 6-1).

The answer, as any book on portrait photography will tell you, is to use fill flash: turn on the flash even though it's daylight. It illuminates the face even if the sun is in the wrong place. I've read those books—and I still forget to do it. Do you?



**Figure 6-1.** Forgot to use fill flash . . . again!

Fortunately, GIMP has the perfect tool to fix that, along with a host of other exposure errors: the Dodge/Burn tool. Typically, it's used when some small part of the image is too dark or too light.

*Dodge* and *burn* are terms from film photography. When making a print from a negative, some areas may come out too bright, others too dark. Photographic film can record wider *exposure latitude* than can be easily seen by viewing either the negative or the print directly.

The developer turning that negative into a photographic print gets to choose whether to use a long exposure (which will show detail in the light areas, but leave the dark areas too dark) or a shorter exposure (which will make the light areas solid white, but show more detail in the shadows).

That's not always good enough. When professionals make prints, they correct light and dark areas by hand. They place masks over small parts of the image to keep bright areas from becoming too white (*dodging*), and to make sure dark areas get a little lighter (*burning*).

The great photographer Ansel Adams often said that the photographic negative was like a musical score, but the print was the performance. The time he spent making his prints perfect was a big part of what made his photographs so famous.

A digital camera can record at least as much exposure latitude as film can. Your photographs contain a lot more information than you can see just by looking at them. The GIMP's Dodge/Burn tool lets you adjust your digital photographs in the same way that professional photographers adjust their prints. And unlike Ansel Adams' technique, it doesn't require years of experience to learn! Or cost a bunch if you mess up.

## Dodging

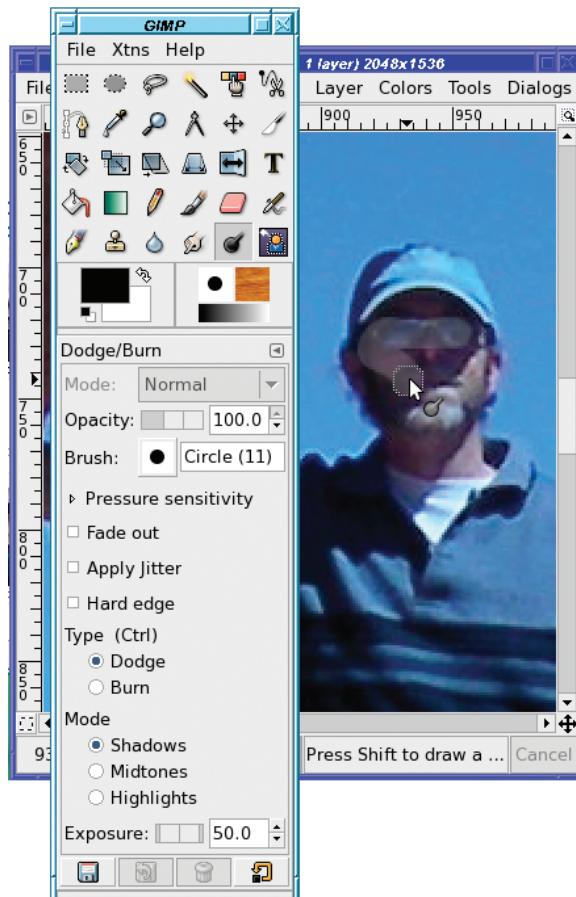
The Dodge/Burn tool starts in Dodge mode by default. It uses a brush—try a fairly large one to begin with, and then change to a smaller or soft-edged brush later.

The Dodge tool lets you choose between three modes: Shadows, Midtones, and Highlights. By default, it's set to Midtones, and that will work for many dodge or burn problems.

However, if you're trying to brighten a very dark shadow area, you may be better off choosing Shadows. Then the Dodge tool will selectively brighten the dark zones much more than other areas. That allows you to be slightly sloppier with your brush technique: if you slide a little outside of the shadow, it won't be very noticeable.

Try that with Midtones and you'll see some of the area that's not in shadow also get brightened. However, Midtones may sometimes bring out a little more detail than Shadows.

Take a look at the Dodge tool's options, as shown in Figure 6-2.



**Figure 6-2.** Use the Dodge tool to lighten areas that are too dark.

*Opacity* makes the tool's effect more subtle—as if the brush were more transparent (the default setting is 100%).

The *Pressure sensitivity* options control how the tool can respond to pressure if you're using a drawing tablet. Mouse users can ignore them.

*Fade out* makes the stroke end after a certain distance. This is one way to ensure that you use short strokes!

*Apply jitter* is a new option in GIMP 2.4 which makes the effect less regular. On some images this may give a more natural effect. The Dodge tool normally makes the edges of the brush slightly fuzzy, even if you're using a hard brush. *Hard edge* turns this off.

Finally, an *Exposure* slider controls the strength of the effect.

Time to get started! Choose Shadows or Midtones depending on how dark the area is, and then start scribbling.

The trick to dodging? Hold the mouse button down and try to cover a contiguous area all in one sweep. The Dodge tool is smart: it won't brighten the same area twice, so if you cross back over an area you've already covered, it won't get too bright. However, if you use separate strokes, you can brighten the same area more each time.

Dodging can turn a failed portrait into a better one. It still won't look as good as if you'd used fill flash or the correct lighting, but it can make the difference between seeing someone's face and not seeing it.

But wait—can't you do all of this by making a feathered selection that covers the shadowed area, then using one of the brightness/contrast tools to make the area brighter?

Sure! In fact, by selecting and using brightness tools you'll have more control: you can use a tool such as Curves or Levels to brighten just the way you want. And if you use the QuickMask to define the selection, you can have full control over *how much* brightening happens and *where*, by making the selection more transparent in areas where you want the effect to be less pronounced.

But all that takes time. Dodging is a shortcut—a quick way to brighten small dark areas, especially areas that are hard to select. It can be a lot quicker—and often it's good enough.

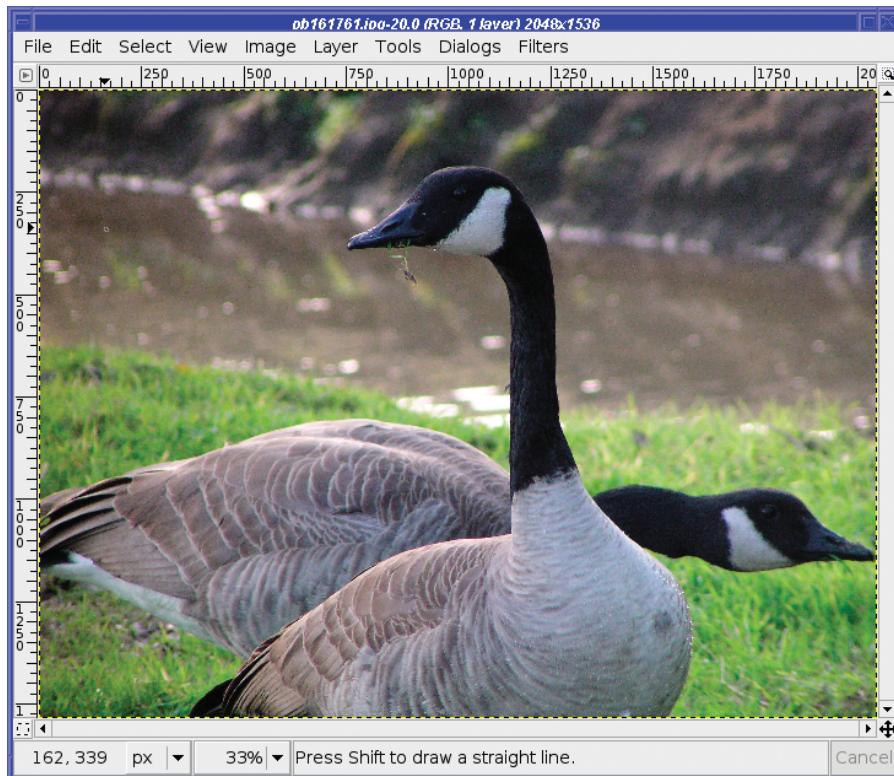
## Burning

Burning is the opposite of dodging—it makes light areas darker. Unfortunately, it's more difficult to use. The problem? In digital photographs, bright areas are often so “blown out” that there really isn't any detail left. The camera's electronics have reached their saturation point, and all they can do is record white.

When you use the Burn tool on areas that are completely white, all it can do is turn them gray, since it has no way to tell what colors or textures should be there.

That means that the Burn tool is best used on fairly small areas, or on areas that are only a little too bright rather than completely white. If you use it on a large white area, you'll end up with a large gray area, which will be surprisingly noticeable. But if you burn small spots of brightness, you can make them detract less from the subject of the photo.

For instance, in Figure 6-3 the glints off the water aren't adding anything to the image. All they do is distract from the subject and lead the eye away from the geese. The Burn tool can help.



**Figure 6-3.** The glints off the water distract from the geese.

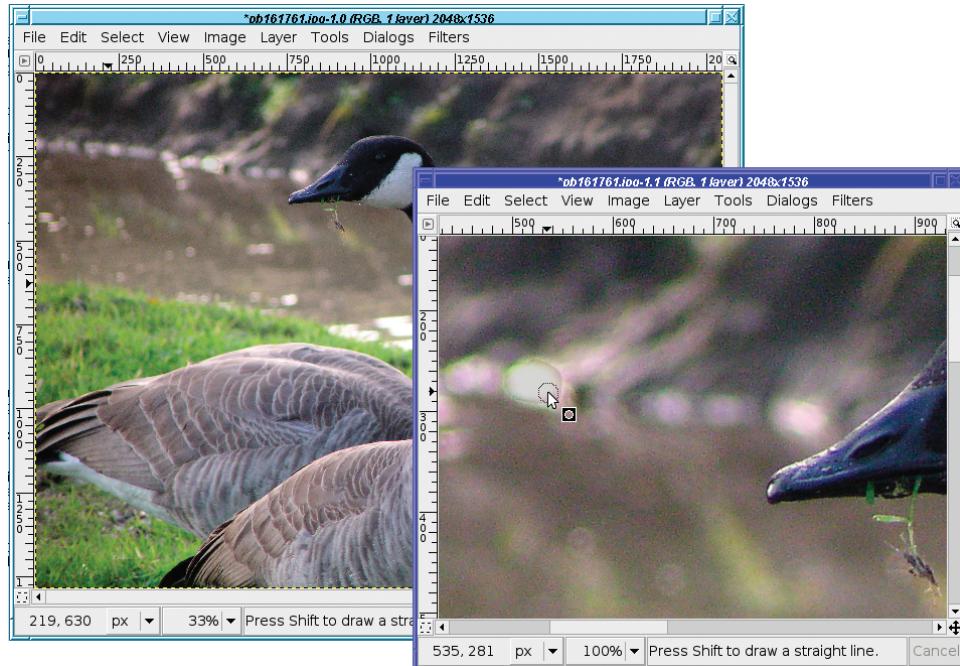
When using Burn, it's especially helpful to open a second view, like you did in Chapter 4 when you were drawing: *View > New View*. That way, you can see the effect of your changes in the full image, even while you work with a nice zoomed-in image.

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**Note** When burning completely white areas, the mode makes a greater difference than it did when dodging shadow areas. You *must* choose *Highlights*; the other two settings will have no effect on the white areas. (Try it and see!)

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Now use the Burn tool in the zoomed view, to burn in the bright areas (Figure 6-4). It's hard to watch both views at once, but it turns out there's no need: only the zoomed view will be changed while you're dragging. When you release the mouse button to finish the burn, *then* the other view will change. You can see the full effect of one burn operation. If it isn't what you want, undo and try again.



**Figure 6-4.** Open a new view and zoom in. Use the zoomed view to burn.

Notice that the edges of the burned area in Figure 6-4, burned with the largest hard-edged brush, don't blend in very well with their surroundings. Sometimes this doesn't matter, while other times it does—it depends on the image.

If you burn with a large hard-edged brush and the edges are too harsh in the final image, try using a fuzzy brush and being more careful with your brushstrokes. It takes longer, but you'll get a better end result.

Don't forget that you can burn the same area twice if it's still too bright after one burn. Of course, you can also change the tool's *Exposure* setting if you want a stronger effect everywhere. Be cautious of too much burning, though: it can create flat gray areas that become quite conspicuous in the final image.

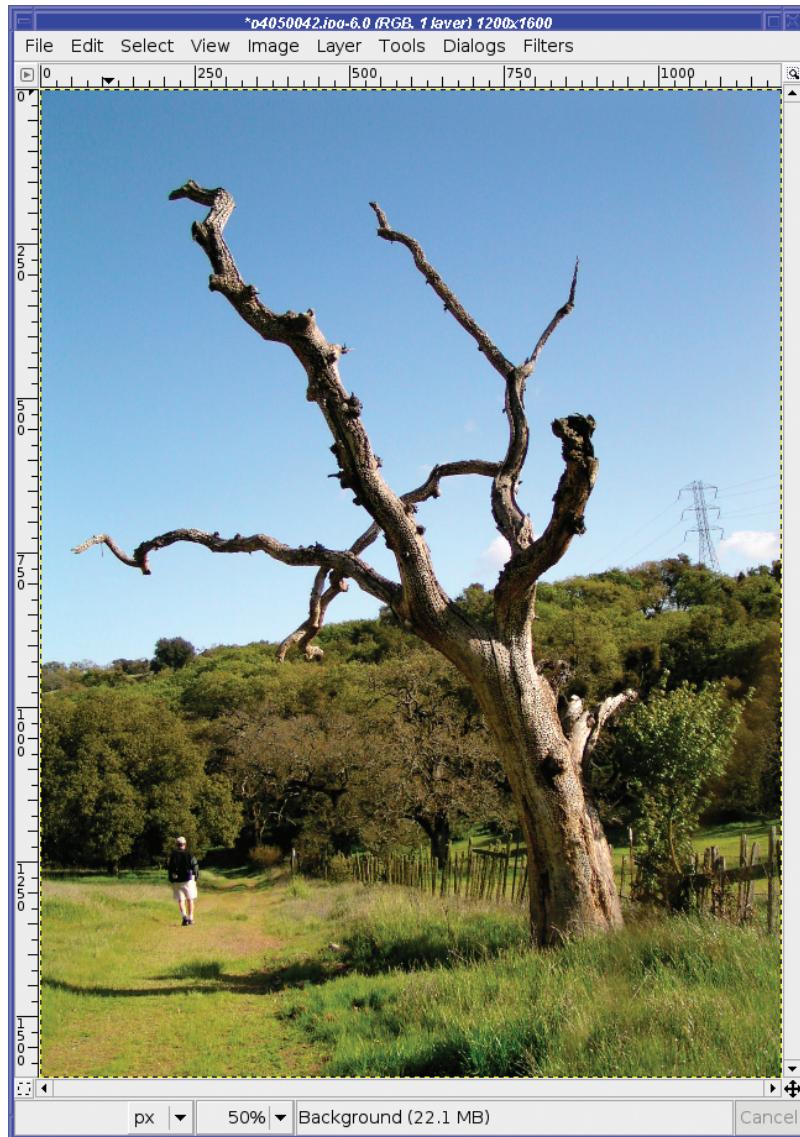
### DODGE/BURN AS A DRAWING TOOL

In the GIMP manual, the Dodge/Burn tool is considered a drawing tool because it uses a brush and lets you drag around the image. Although I find it most useful for touching up photographs, Dodge/Burn can come in handy in drawings too.

In particular, you can use it to make shadows along one side of an object you've drawn, for a more three-dimensional look. Remember drawing a dark line down the side of the tree trunk in Chapter 4 to give the trunk depth? You can do that, and better, with the Burn tool.

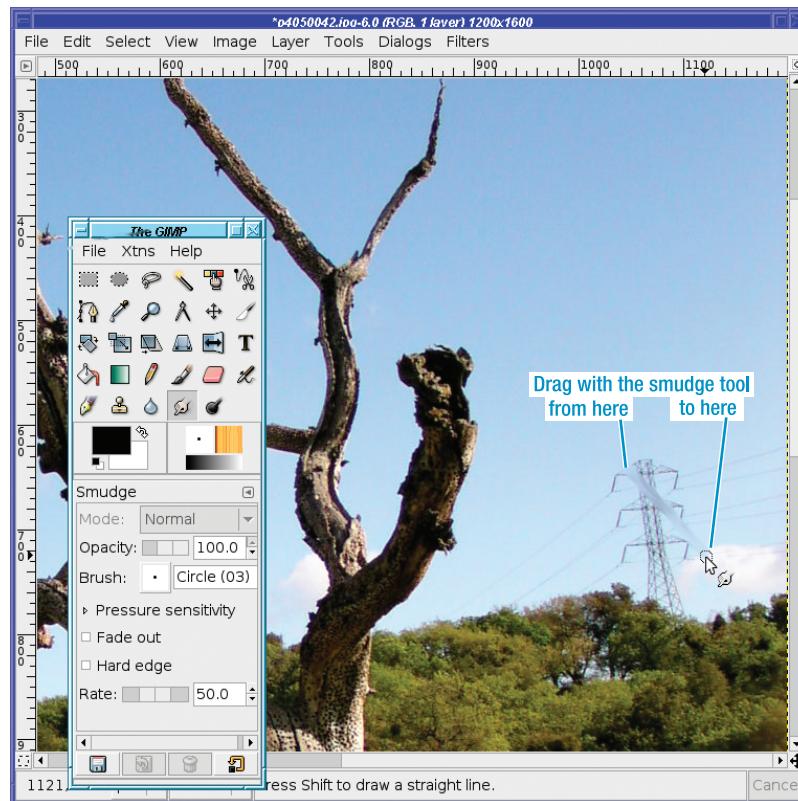
## Smudging Blemishes Away

Many images only need a bit of easy correction. For instance, consider Figure 6-5. The power pylon on the right spoils the tranquil image.



**Figure 6-5.** *Bucolic image spoiled by a power tower*

One way to get rid of simple problems like this is by using the Smudge tool. Its icon in the Toolbox is a finger smudging, and that's exactly what it looks like when you drag the Smudge tool across an image (Figure 6-6). If you ever made finger paintings in kindergarten, the Smudge tool should seem familiar.



**Figure 6-6.** *The Smudge tool*

Notice that the Smudge tool picks up color underneath it, and distributes those colors as you continue to drag.

For this reason, most of the time you'll want to use short strokes when you smudge. Work from the color you want to keep (in this case, the sky) and gradually replace the colors you don't want (the power tower). Drag the sky color in on top of the power tower, and when it starts to turn dark, stop dragging, go back, and start again in the sky. Usually a large brush works best on photographs, because it takes too long to smudge with a small brush. Sometimes you can start with a large hard-edged brush, and then clean up any problems with a smaller fuzzy brush.

Eventually, after many short strokes, the unwanted object is gone (Figure 6-7).



**Figure 6-7.** *The power tower is gone.*

After smudging an object out of a photograph, you may have residual color that you can't seem to get right. If you look closely at Figure 6-7, you may notice a faint darker area in the sky where the power tower used to be. It's very difficult to end up with completely smooth color using the Smudge tool. Often, it's "good enough," and the tool is very simple and fun to use. But if you want cleaner results, fear not! You'll learn several more accurate ways to paint out images.

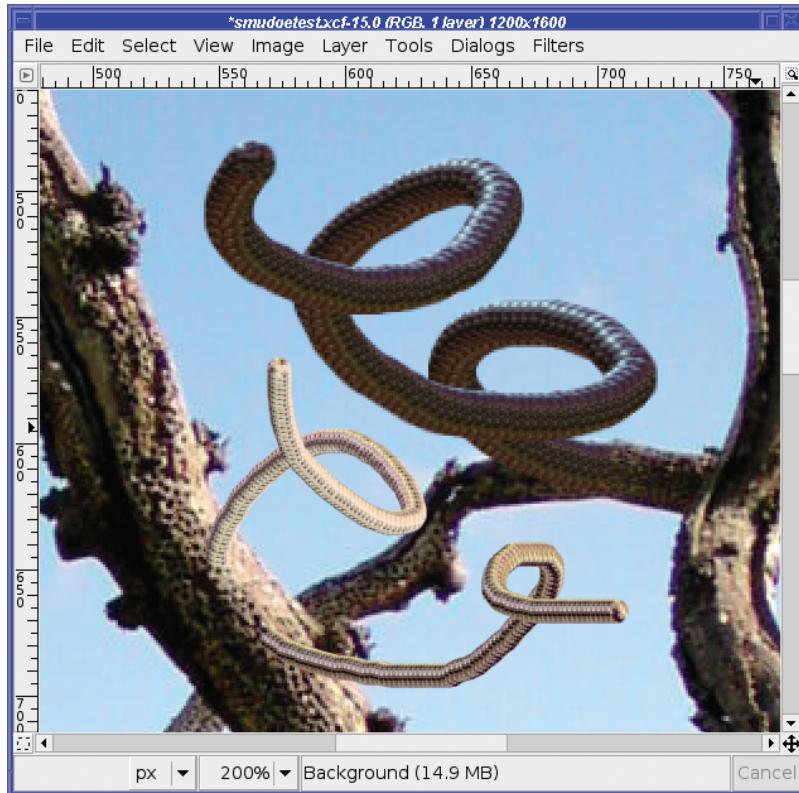
Smudge is useful in drawing as well as image touch-up. For instance, if you draw a white blob (by filling a rectangle or oval with white) and then smudge in small arcs, you can make new clouds (Figure 6-8). Smudging outward from the white area expands the size of the cloud; smudging inward from the sky into the growing cloud, adds some darker “shadow” highlights that can make a cloud look more realistic.



**Figure 6-8.** Smudging to make larger puffy clouds

The Smudge tool has the same *Opacity*, *Pressure sensitivity*, *Fade out*, and *Hard edge* options as the Dodge tool. In addition, it has a special option of its own: *Rate*.

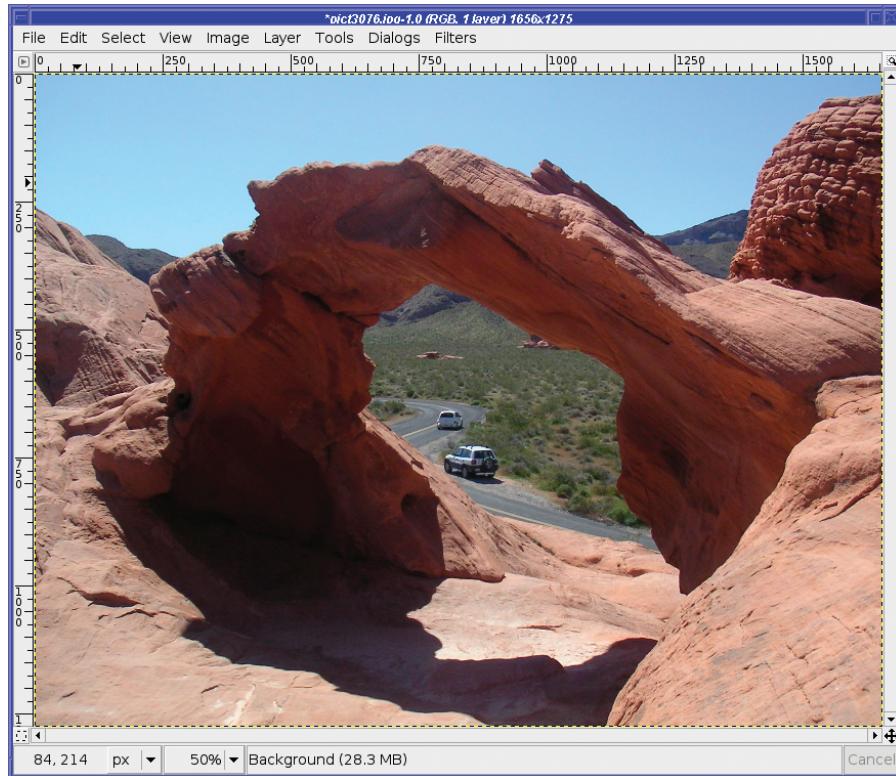
*Rate* controls the strength of the smudge effect. The default setting of 50% is good for most touch-up work. But you can get some interesting effects by increasing the rate. 100% isn't very useful for image touch-ups, but it gives a very strong smudge with a hard edge and no transparency that can be useful in drawing (Figure 6-9).



**Figure 6-9.** Strange effects from a smudge rate of 100% and a large hard-edged brush. The blue on top of the “tube” is just the sky from above the branch when starting the smudge.

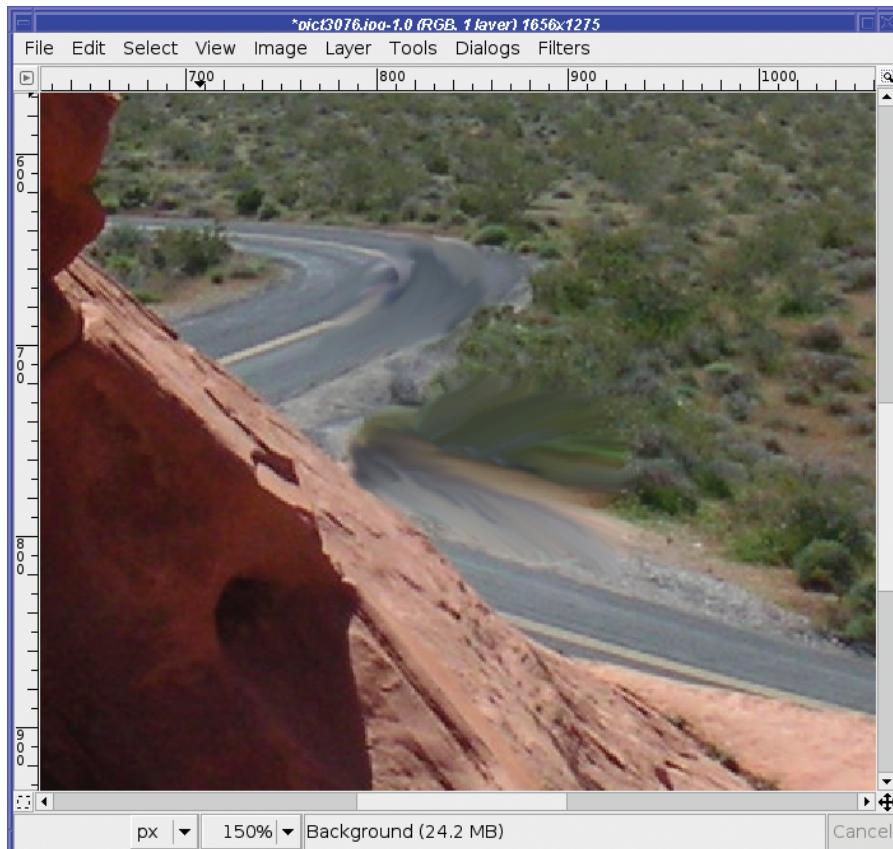
## The Clone Tool, For More Difficult Jobs

The Smudge tool is fun and easy, but if you've used it, you've probably already hit its limitations. It's hard to keep control of colors when you're smudging. More important, smudging smoothes out any textures that should be in the original. It's okay for clear blue skies and other very evenly colored areas, but it wouldn't work to remove an object on a more complicated background, like the cars in Figure 6-10.



**Figure 6-10.** I waited and waited for a clear moment, but the cars just kept coming!

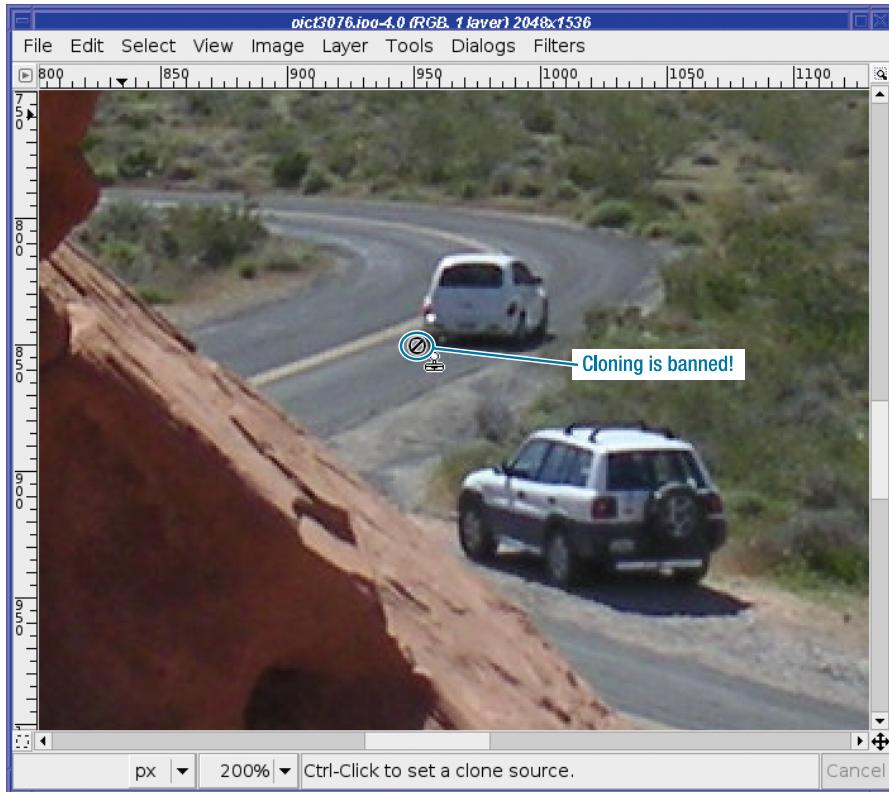
If you try to smudge objects out of areas like this, you'll just make a mess, like in Figure 6-11 (and give yourself a repetitive stress injury from pressing the mouse button too much). This inaccuracy is why finger painting never caught on in professional art circles, even though it was lots of fun to do in kindergarten.



**Figure 6-11.** Smudging just makes a mess.

The answer is the Clone tool. The Clone tool lets you duplicate a small area over and over, to paint an object out of a picture.

The first time you try to use it, you'll probably be frustrated. You click and drag, expecting patterns from nearby areas to be copied—just like with Smudge, only smarter. But nothing happens! The cursor shows a crossed-circle (Figure 6-12) saying "No"! Why won't it let you paint?



**Figure 6-12.** At first, GIMP won't let you clone!

## Setting the Clone Source

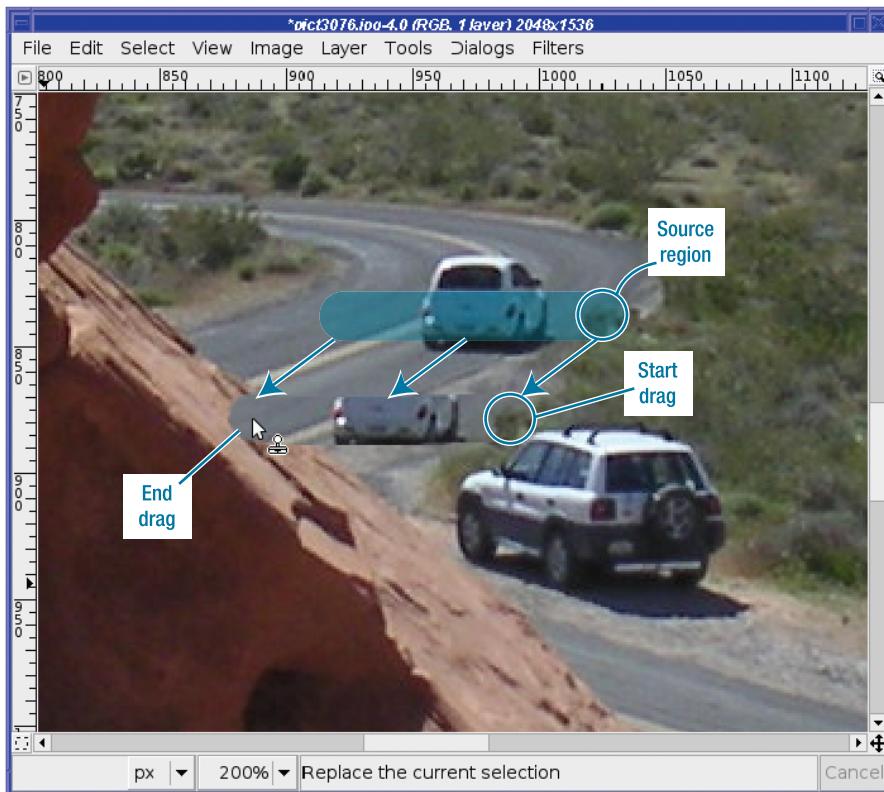
The key to the Clone tool is first selecting the region you want to clone by holding down the Control key while clicking. Once you've selected the region, you can duplicate it over and over by dragging, painting just as if you were using the Paintbrush tool.

This is much more powerful than simply dragging whatever is nearby, like Smudge. You can even Control-click in one image, and then drag in another, cloning parts of the first image into the second.

But there's one other trick to using the Clone tool: it doesn't restrict itself to the pattern that was inside the brush outline when you Control-clicked. If you keep dragging, it will continue copying from the source image. This means the direction and length of your drag is very important.

For instance, suppose that you Control-click to choose a source region in the bushes just to the right of the lead car. Then move down a bit and drag along a line from right to left (Figure 6-13).

Getting the bush at the beginning of the dragged line was great, but you can see the drag got carried away. It went too far left in the original source region, grabbing the car, the center line, and a lot of road.



**Figure 6-13.** Selecting too much with the Clone tool

For that reason, choose a large source region if you can (though it's not always possible), and use fairly short strokes. Be careful not to drag too far.

Also, if you're trying to paint a specific object out of the picture, use direction to your advantage. For instance, if you clone from below the car, painting with downward strokes (starting at the top of the car and dragging down) will pick up more road, while if you drag upward you'll just copy the car onto itself.

In the case of the lead car, this technique doesn't work so well: the road ahead of the car is curving, while the road behind it is straight. The best bet is to take a source region from the road behind the car, about halfway between the car and foreground rock, and use very short strokes, being careful about the placement of the road's center line.

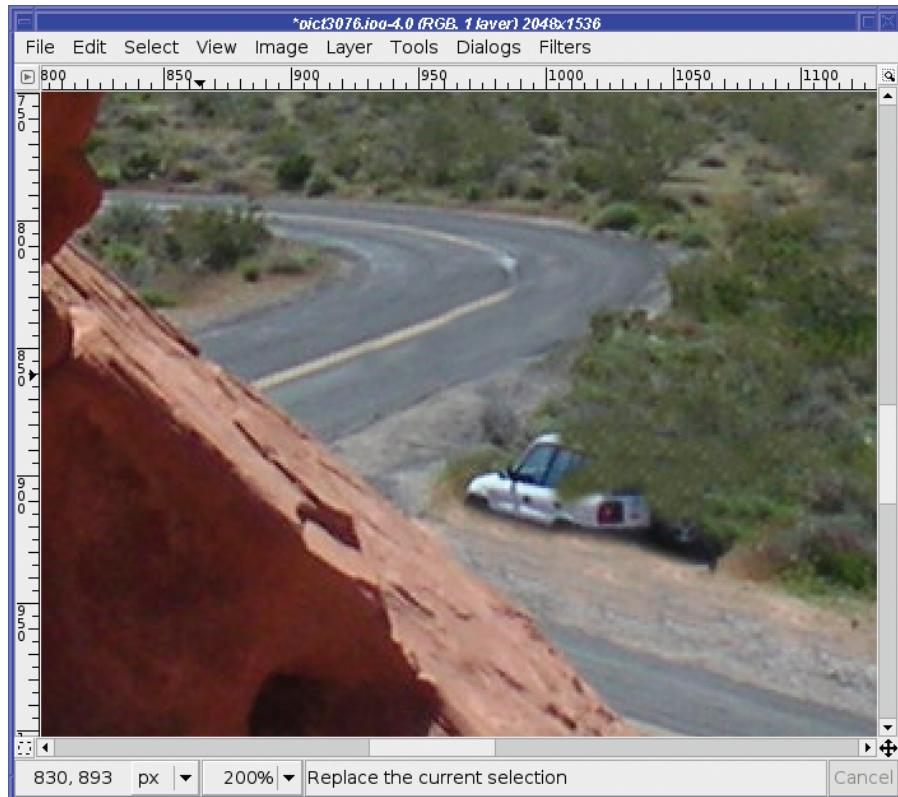
As with most touch-up techniques, a fuzzy brush usually works best, unless you're cloning near a sharp boundary like the edge of a rock or tree trunk against the sky.

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**Tip** When covering an area, particularly a long thin area like this one, using Shift-click is helpful. Remember drawing lines in Chapter 4? Click on a point, and then hold down the Shift key while clicking to draw a line to your next point.

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Change the source region whenever you need to. You'll probably need to grab from several different source areas (in this case, road, centerline, gray dirt, red dirt, and bushes, as in Figure 6-14).



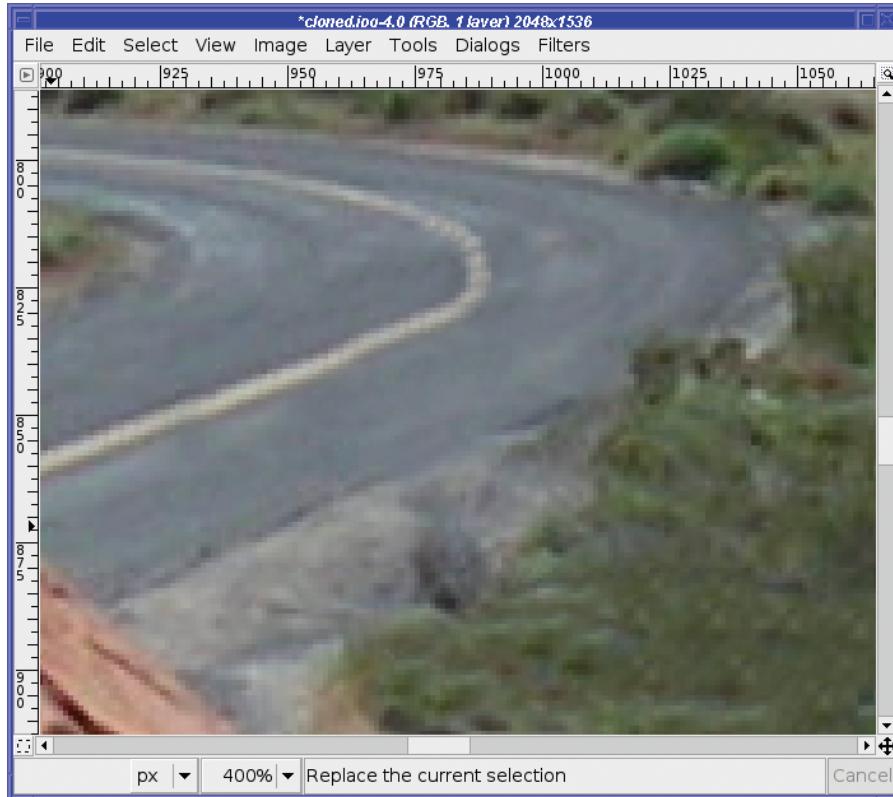
**Figure 6-14.** Cover the unwanted object(s), changing the source region as many times as you need to.

Finally, it's as cloned as it's going to get. But, as usual, it's not perfect.

## Fine-tuning a Clone Job

You may have noticed in Figure 6-14 that the centerline doesn't go around the bend. That's because the Clone tool copies regions at least as large as the brush. With a large brush, it will always copy a centerline that's pointing in the wrong direction. How can you fix that?

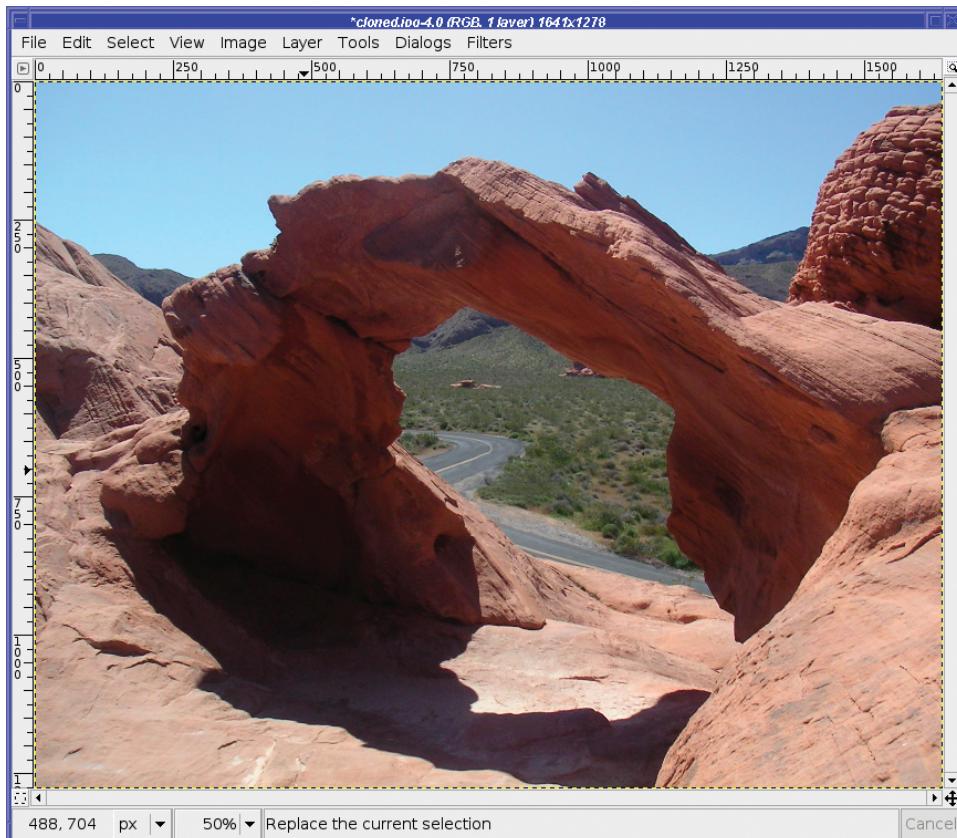
One way is to switch to a much smaller brush, Control-click on the centerline to use it as the source region, and then click repeatedly around the corner, making dots of centerline color (Figure 6-15).



**Figure 6-15.** Using one dot at a time to make the curve in the centerline

Use enough dots to fill in the line completely. Or, if you start feeling too dotty, use the Smudge tool (still with a small brush) to close the gaps between the dots.

Voilà! (Figure 6-16.) I don't know why I kept waiting for a gap between cars to take that photo. Getting rid of cars is easy!



**Figure 6-16.** Cars, gone!

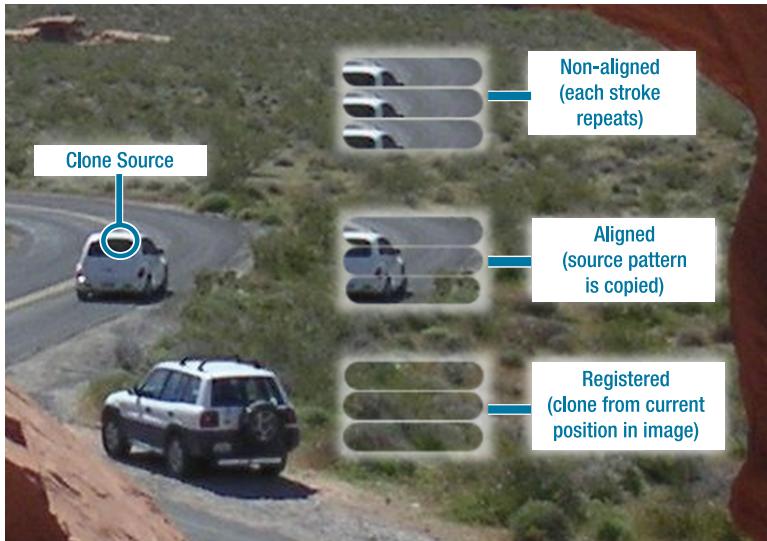
## Clone Tool Options

I haven't said much about the Clone tool's options (which were shown in Figure 6-12). That's because most of the time, you won't need to change anything.

The collection of settings should be familiar from other tools you've already used: *Mode*, *Opacity*, *Pressure Sensitivity*, *Fade out*, and *Hard edge*.

In addition, you can clone from one of GIMP's built-in patterns instead of from an image by changing the *Source*.

The only complicated option is *Alignment* (Figure 6-17). The default is *Non-aligned*: for each stroke you make, the pattern GIMP will paint begins at the source origin (the place where you Control-clicked) and proceeds from there.



**Figure 6-17.** Alignment modes in the *Clone* tool

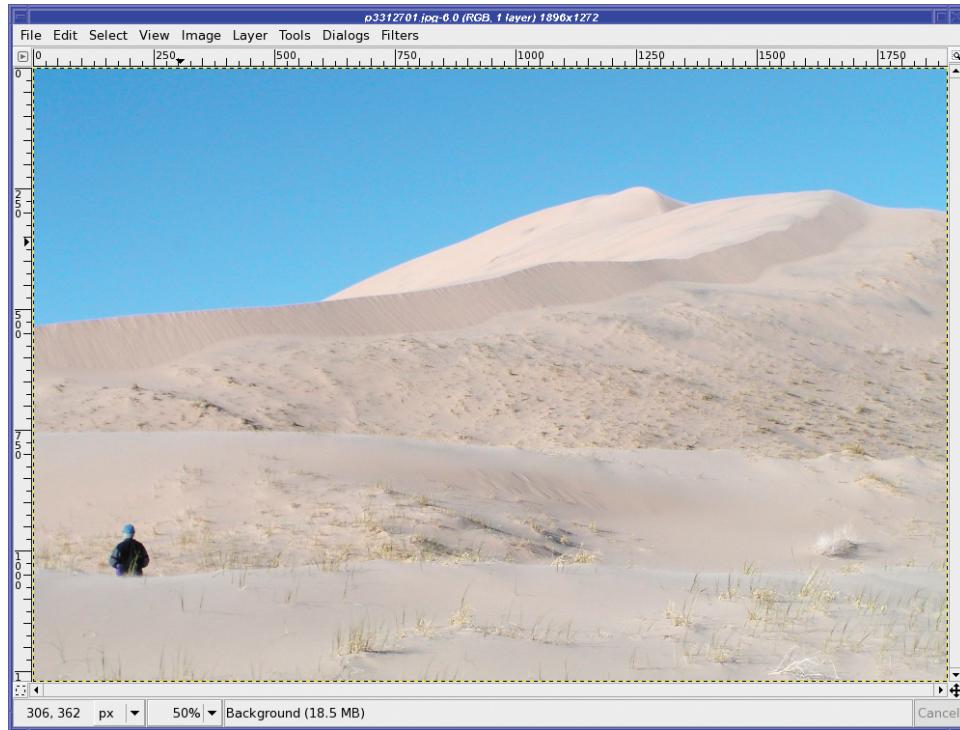
In *Aligned* mode, the first stroke you make after setting the source will begin from the source origin, just as in *Non-aligned* mode. But for subsequent strokes, GIMP will make each stroke relative to the last, so you can paint an exact copy of the source region as you keep making strokes.

In *Registered* mode, painting will clone from wherever you are painting, rather than from where you chose the source image. This is primarily useful for painting parts of one layer into another layer at the same position.

## Copying Small Regions

Cloning works great for filling in small areas, or for painting patterns. But there are times when it's easier to copy a pattern all at once, in a single block.

For instance, the dune view in Figure 6-18 would look better without the figure standing at the lower-left corner.



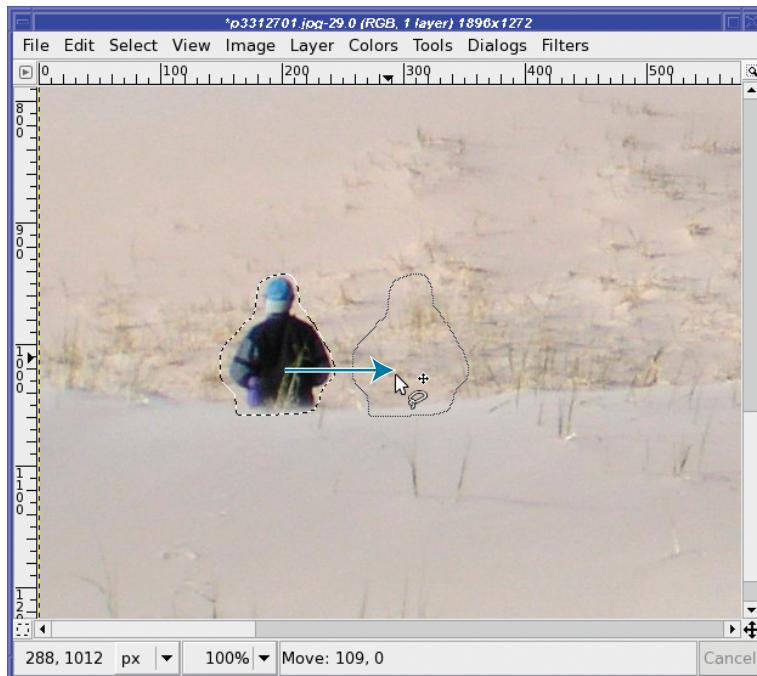
**Figure 6-18.** Dunes, with a person in the way

You could use the Clone tool to get rid of the person, but there's a faster way: copy a region shaped like the object you want to remove, and then paste it over the object.

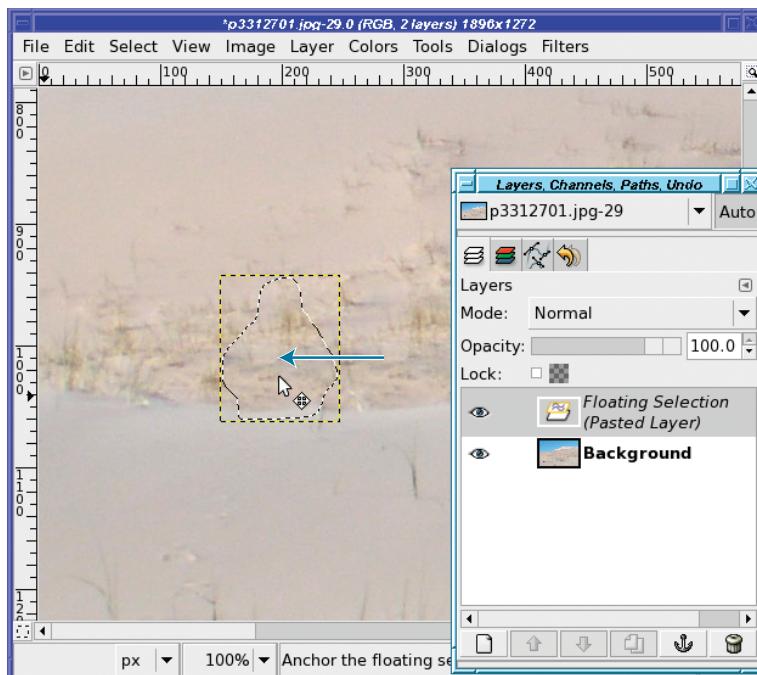
Start by making a selection around the object. The selection doesn't have to be perfect—just make sure it's big enough to cover the unwanted object completely. With some feathering, the Lasso tool is usually fine for this job.

Now move the selection boundary to the area you want to copy. You can use Alt-drag to move the selection boundary (use Shift-Alt-drag if your system uses Alt-drag for something else). Or use the Move tool with *Affect* set to *Transform Selection*, and then just drag from inside the selection.

With the selection boundary in the right place (Figure 6-19), you can copy and then paste. Move the pasted selection back on top of the object you're trying to remove, and then fine-tune its position with the arrow keys until everything meshes (Figure 6-20).



**Figure 6-19.** Move the selection boundary, not its contents.



**Figure 6-20.** Move the pasted selection back over the unwanted object. The selection and layer boundaries are shown.

You will probably want to turn off both the selection boundary (*View* ➤ *Show Selection*, or *Control+T*) and the layer boundary (*View* ➤ *Show Layer Boundary*) temporarily, in order to see the edges of the pasted layer better.

That's all there is to it! Quick and easy. If you need to clean up any details around the edges, the Smudge and Clone tools are good for making small corrections.

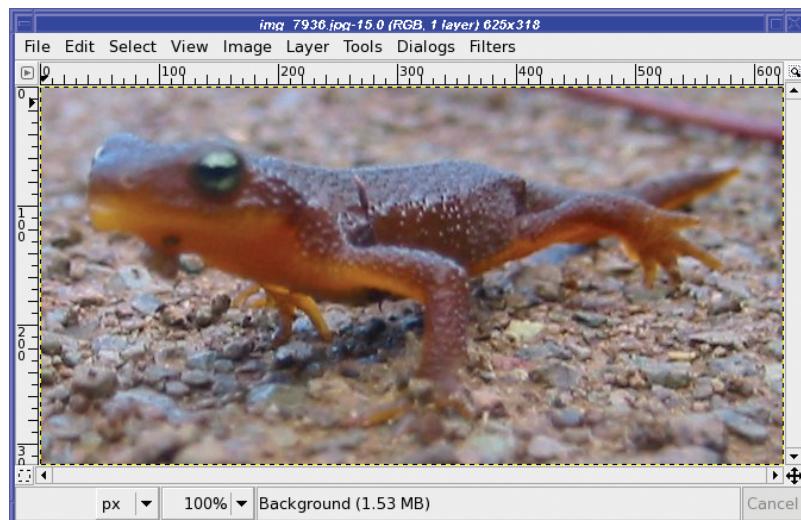
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**Tip** This technique also works well with “finger-in-front-of-the-lens” mistakes. Not that you’d ever do that!

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## Sharpening or Blurring Specific Regions: The Convolve Tool

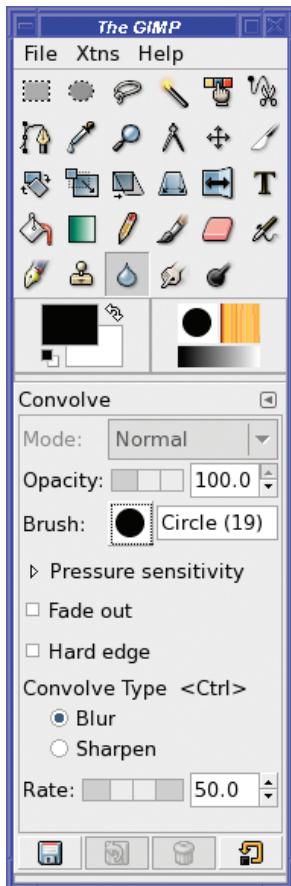
Don't you hate it when you take a picture of something, and it turns out the focus was on the wrong place in the photo (Figure 6-21)?



**Figure 6-21.** The focus is good on everything except the newt’s face!

You already know about Sharpen and Unsharp Mask from Chapter 2. But if you used those tools on an image like this, the parts that are already sharp would turn grainy. What you really need is something that can sharpen just the newt’s face.

That's a job for the Convolve tool (Figure 6-22), more commonly known as Blur or Sharpen.



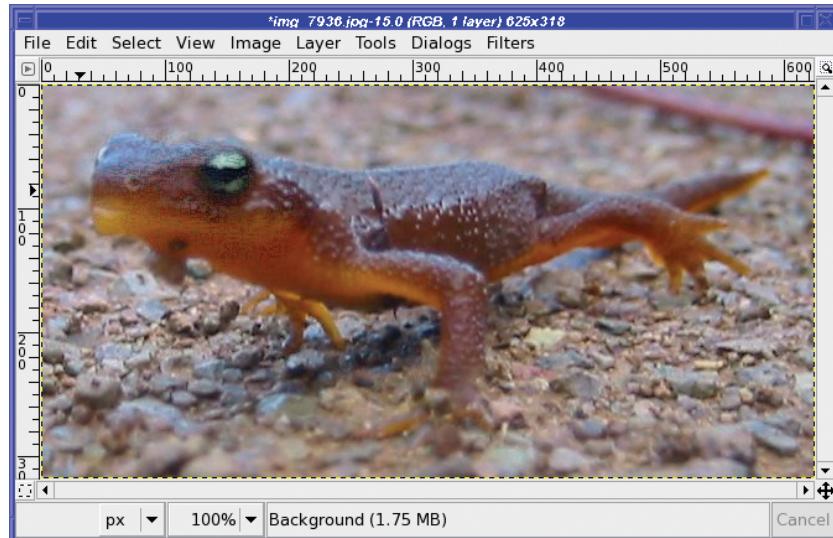
**Figure 6-22.** The Convolve (Sharpen/Blur) tool

The Convolve tool lets you blur or sharpen small regions of an image just by dragging over them. The more you go over an area, the more it will blur or sharpen.

The tool's options include the usual drawing and touch-up tool options, plus a switch for *Convolve Type* (this is where you choose between *Blur* or *Sharpen*). There's also a *Rate* slider to let you choose the strength of the effect. Since you can drag over the same area repeatedly, *Rate* doesn't matter as much as it does in some tools.

## Sharpening with the Convolve Tool

Dragging the Sharpen tool around the newt's head a little bit produces Figure 6-23.



**Figure 6-23.** The newt is much sharper now.

You may notice that the area around the head, and especially the eye, has become a bit grainy. That's what happens when you sharpen something too much (as you may remember from Chapter 2, with Unsharp Mask). If necessary, you can zoom way in and clean up some of that with the Smudge or Clone tools and a very fine brush. By the way, why "Convolve"? Why not just call it "Blur or Sharpen"?

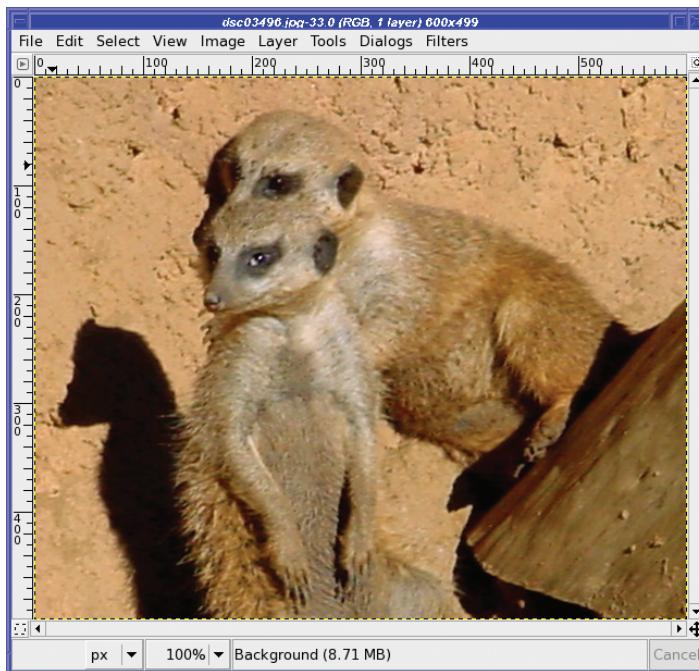
The name comes from *convolution*, the mathematical operation used to blur or sharpen an image.

## Blurring with the Convolve Tool

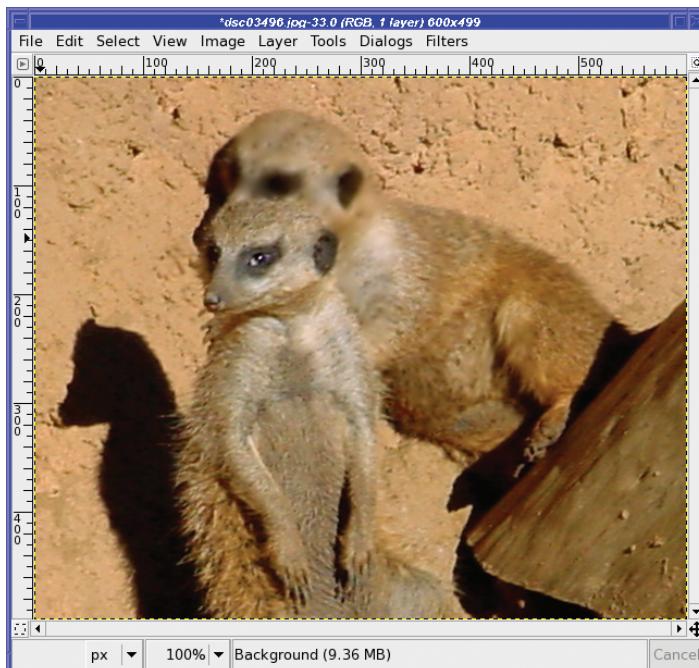
The flip side of the Convolve tool is Blur. Why would you ever want to make something more blurry?

One good reason to blur is to de-emphasize a distracting background, like the second meerkat in Figure 6-24.

A little judicious use of the Blur tool on the rear meerkat's face, and suddenly the front one stands out much more (Figure 6-25). As with Sharpen, you can drag back and forth over the area you want to blur until it's as blurry as you like. (This technique also works well for hiding license plates or other incriminating details.)



**Figure 6-24.** One meerkat tries to distract your eye from the other.

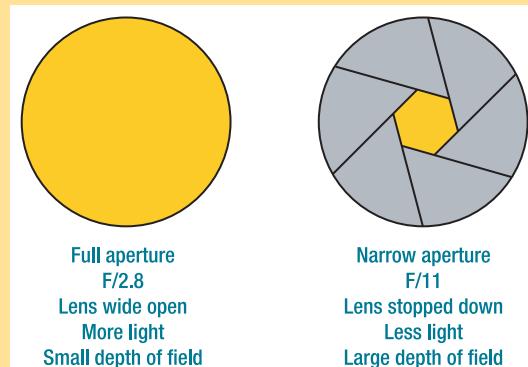


**Figure 6-25.** Now the meerkat in the foreground stands out.

## DEPTH OF FIELD

The visual property that makes closer objects stand out is related to an effect photographers call *depth of field*.

Some cameras let you control the *aperture* of the lens, or how wide open it is. The *F-stop* is related to the aperture: the bigger the F-stop, the smaller the aperture. At an F-stop of F/2.8, a lens is fairly wide open, whereas at F/11, most of the opening has been closed off, as shown in the figure.



*Large aperture (small F-stop number) means that more light is coming through the lens, but the depth of field will be smaller.*

The curious “division” notation used, F/number, is actually somewhat descriptive. It’s the result of dividing the focal distance of the lens by the current aperture diameter.

A wide open lens lets in a lot of light, so you can take photos in dimly lit rooms or with fast shutter speeds; but the larger the aperture of the lens, the smaller is its depth of field.

Depth of field is the range of distances that are in focus. If your subject is a person five feet away from the camera, the photo might actually have good focus for everything from three feet away to the mountains in the distance (“infinity”—a large depth of field). Alternately, if the depth of field is very small, perhaps only the range from 4'11" to 5'3" away will be in focus—the person’s nose may be in focus while his ears might not be!

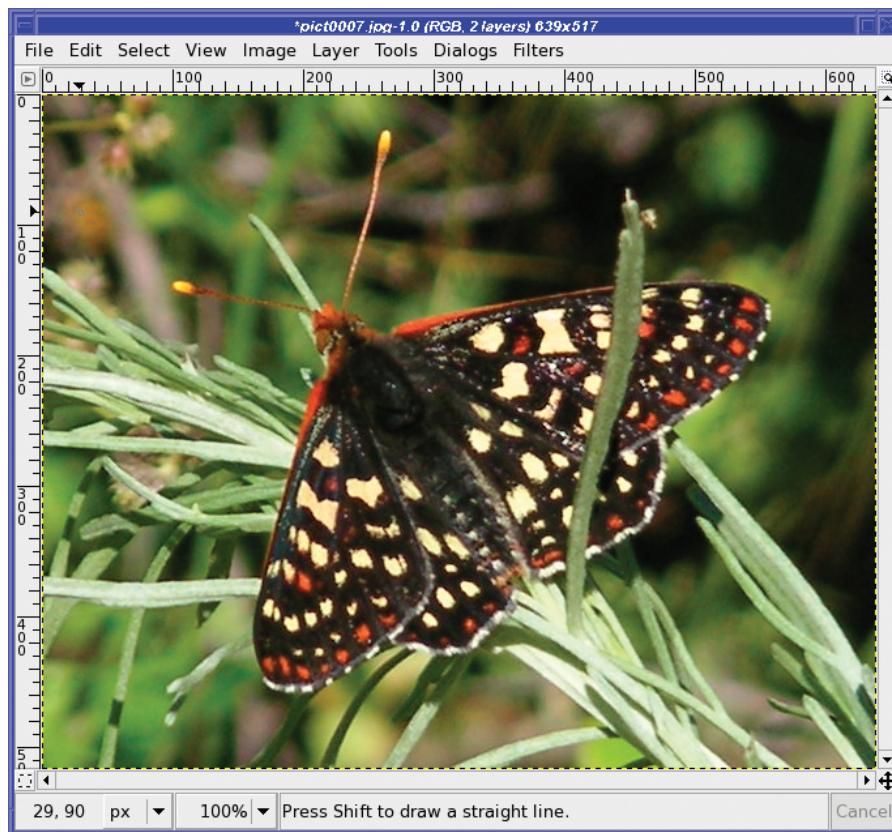
Wouldn’t having everything in focus be a good thing? In fact, it’s often useful to have a shallow depth of field. If your subject is the only object in focus, then the eye is naturally drawn to that subject and away from the rest of the photograph.

Looking back at the meerkats, the original Figure 6-24 shows a large depth of field: both meerkats are in sharp focus. The modified Figure 6-25 simulates the effect of a shallow depth of field: only one meerkat is in focus, and the other one is blurry.

One problem: the photo now looks somewhat strange, because the background meerkat is fuzzy while the wall behind him is sharp. In the section “Blurring Backgrounds with Gaussian Blur,” you’ll see a better way of simulating a shallow depth of field over a wider area.

## Blurring Backgrounds with Gaussian Blur

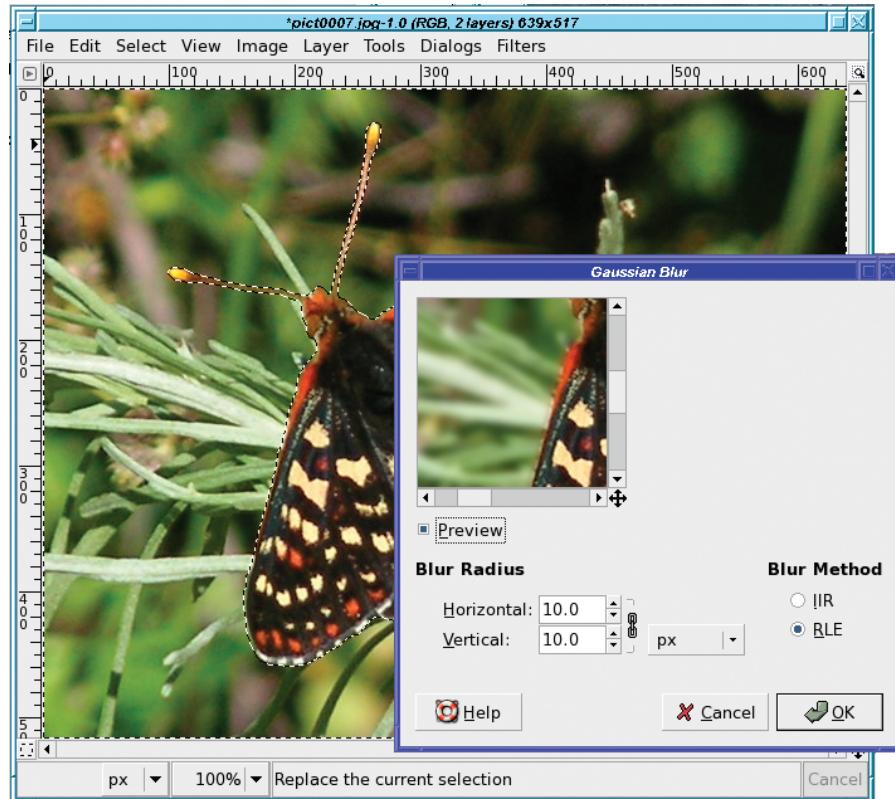
The Blur mode of the Convolve tool was an easy way to make part of a subject stand out. But what if too much of the background is busy and confusing, as in Figure 6-26? You could run the Blur tool over and over the background, but that gets tiresome. There's an easier way.



**Figure 6-26.** I want to blur the branches on which the butterfly sits.

First, select the background (everything but the butterfly) using any combination of the techniques from Chapter 5, such as Paths, QuickMask, or Intelligent Scissors.

Then bring up the Blur filter: *Filters > Blur > Gaussian Blur...* (Figure 6-27).



**Figure 6-27.** The Gaussian Blur filter

Gaussian Blur can use either of two Blur methods: *IIR* and *RLE*. It really doesn't matter which one you use. They produce the same results, but switching to *RLE* may be slightly faster for images that are computer-generated or have large areas that are all the same color. *IIR*, the default, is faster for photographs.

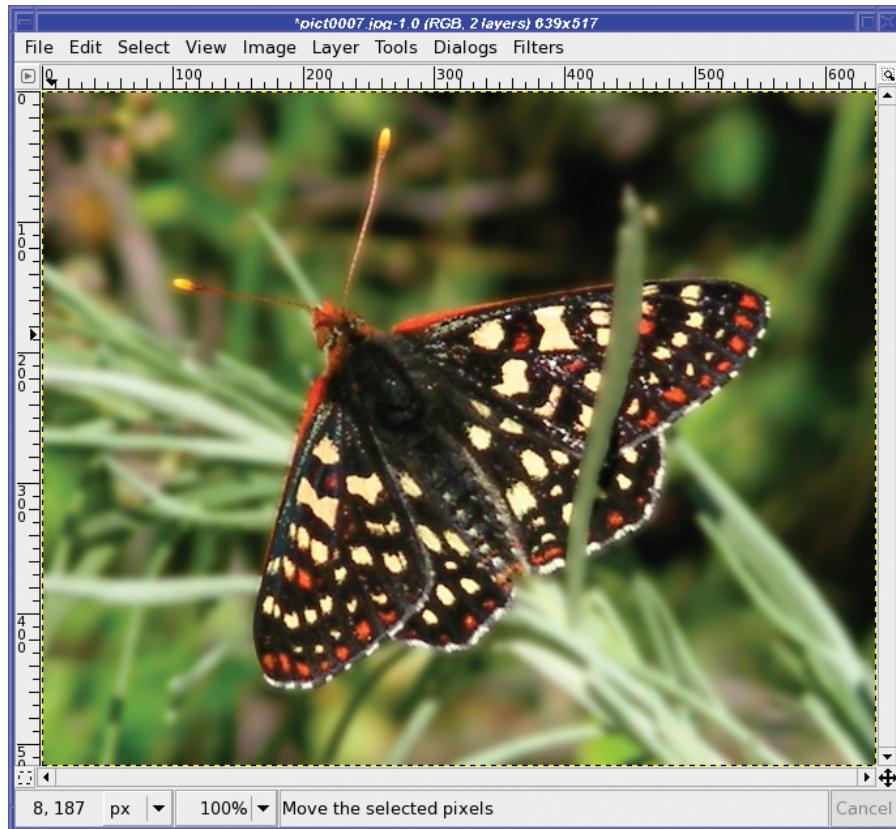
Adjust the *Blur Radius* (which controls the amount of blur) while watching the preview. Make sure the *Preview* button is checked (it should be, by default). You can scroll around in the preview window if you need to.

As with most effects, the right amount of blur depends on how large (in pixels) your image is, as well as how strong you want the effect to be. Sometimes blurring too much can create an unrealistic, dreamy effect. This could be either good or bad, depending on your goal.

Usually you'll want to keep the *Horizontal* and *Vertical* numbers the same (they're linked together by default), but if you ever need them to be different, you can unlink them.

**Tip** Sometimes that tiny preview window is annoying and you want a bigger one. With Blur it's particularly obvious, since it's hard to tell the overall effect of blurring the background from viewing only a small piece of an image. GIMP *can* increase preview size, but it takes some fiddling. See the section on "gtkrc" in Chapter 12 to learn how to change preview size.

When you're happy with the blur amount, click OK (Figure 6-28). You'll probably want to toggle the selection off temporarily (*View* ▶ *Show Selection*) or eliminate it completely (*Select* ▶ *None*) to see the effect. Make sure you don't have any halos around the selected object!

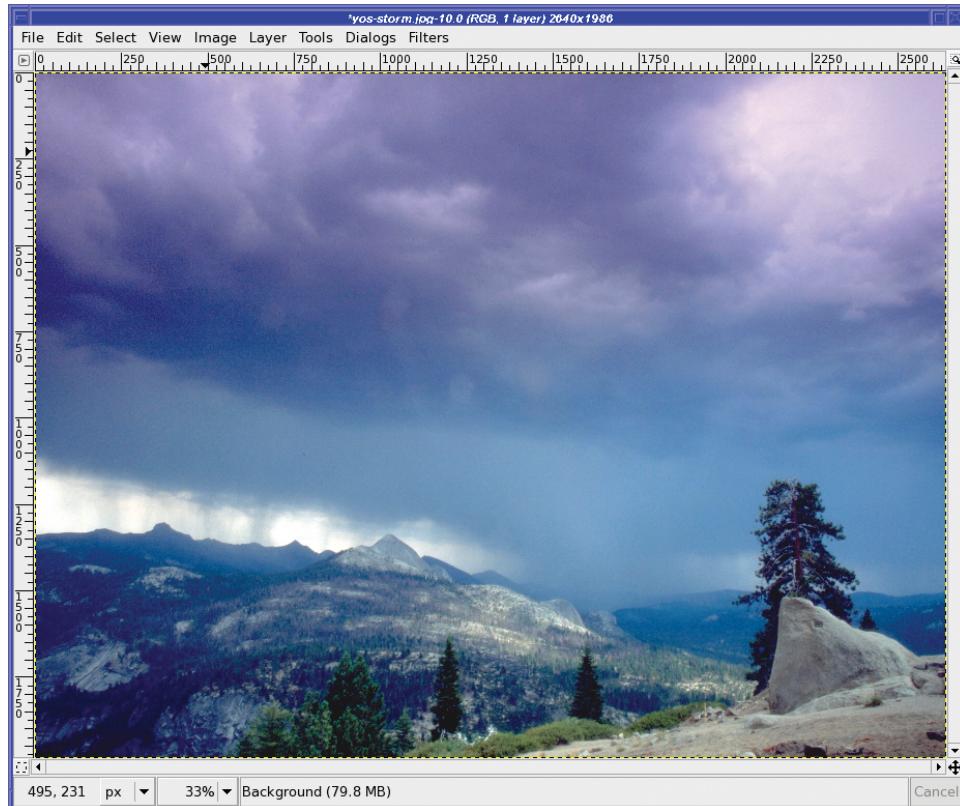


**Figure 6-28.** The butterfly stands out more when the grass is blurred.

## Correcting Color Balance

Cameras don't always record the same colors your eye sees. Photographs taken indoors under incandescent lights often come out looking yellow (though some cameras have settings to compensate for this effect). Fluorescent lights can turn photos blue. Long exposures can have strange effects as well, especially with film cameras.

For instance, Figure 6-29 was a relatively long exposure on color slide film. Although it was a beautiful storm (I was trying to capture lightning, but didn't manage it), the clouds were just ordinary gray, not the purple shade that showed up in the slide.



**Figure 6-29.** Long exposures can create strange color casts, such as this purple sky.

To be honest, I rather like the purple sky in this photograph. But what if I wanted to make the colors more normal?

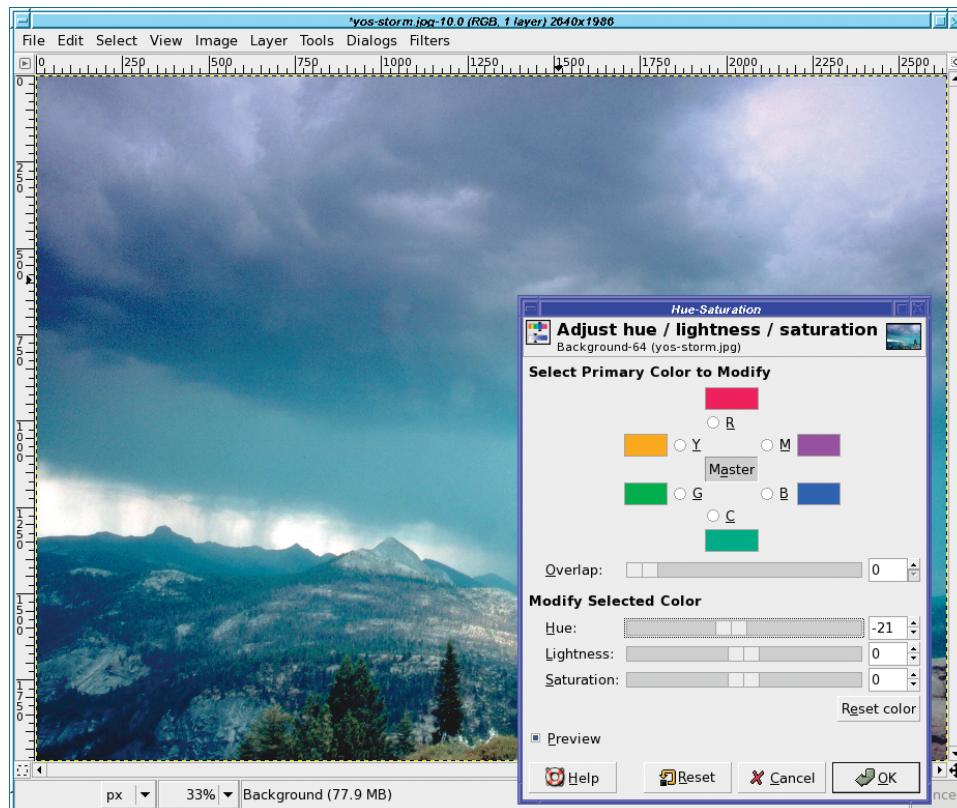
## Hue-Saturation

The GIMP has several ways of adjusting color balance. The simplest is *Colors > Hue-Saturation...* (in versions prior to 2.4, find the *Colors* menu inside *Layer*).

You'll learn about the various color models in detail in Chapter 8. For now, all you need to know is that *Hue* represents the color of a pixel: whether it's red, green, blue, or some other shade. *Saturation* is how strong the color is: whether it's intense and bright, or "washed out" and pale. *Value* (shown as *Lightness* in the dialog) is how bright or dark the color is. For correcting color casts, *Hue* is the only slider you need.

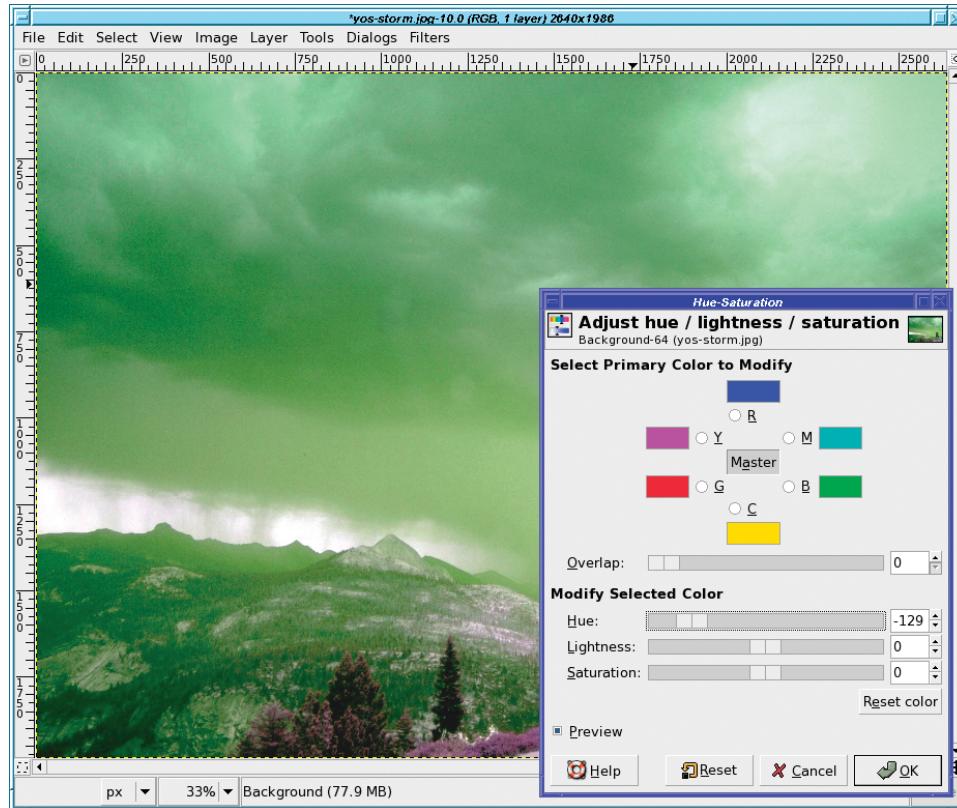
You can get an idea of which Hue values represent which color by bringing up the color selector (click on the foreground or background color swatch in GIMP's Toolbox window). Slide the S and V sliders all the way to the right, and look at the colors in the H (Hue) slider.

The effect of adjusting the Hue slider slightly to the left shows up well in Figure 6-30. A subtle change can help eliminate a color cast in a photo.



**Figure 6-30.** A small Hue shift fixes the magenta sky.

However, you usually have to be very sparing with the Hue slider. Move it more than a trifling distance, and you'll have huge color changes in your image, as Figure 6-31 shows.



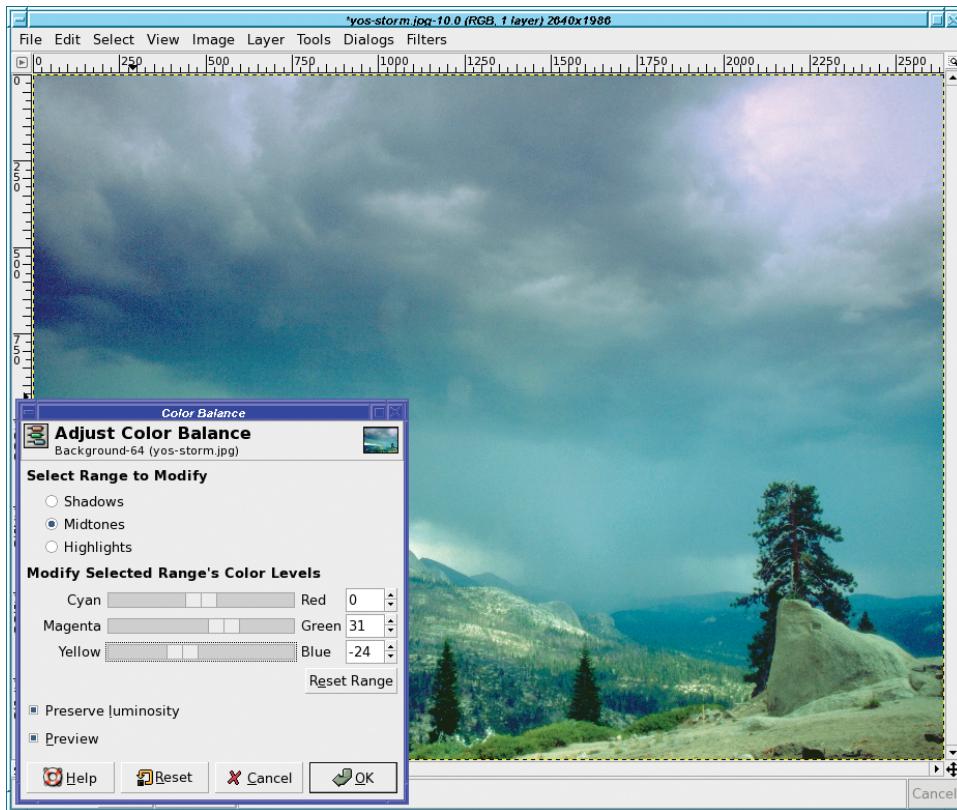
**Figure 6-31.** Sliding the Hue slightly to the left eliminates a lot of the magenta sky.

## Color Balance

**Layers > Colors > Color Balance** is another tool for correcting color problems in photographs.

Choose to modify *Shadows*, *Midtones*, or *Highlights*, then slide the sliders in the direction you want to go: in this case, away from Magenta (toward Green) and away from Blue (toward Yellow). Figure 6-32 shows the result.

**Caution** A serious limitation of the Color Balance tool is the need to choose *Shadows*, *Midtones*, or *Highlights*. You must choose one, not a combination, and it's not always obvious which is best. In this case, *Highlights* seemed like the obvious choice, because the strongest magenta cast was in the brightest part of the clouds. Wrong! Choosing *Highlights* created a grainy texture in that region, whereas choosing *Midtones* gave nearly the same color balance but without the unwanted texture. When in doubt, use *Midtones*.



**Figure 6-32.** Using the Color Balance tool

## Using Curves or Levels for Balancing Colors

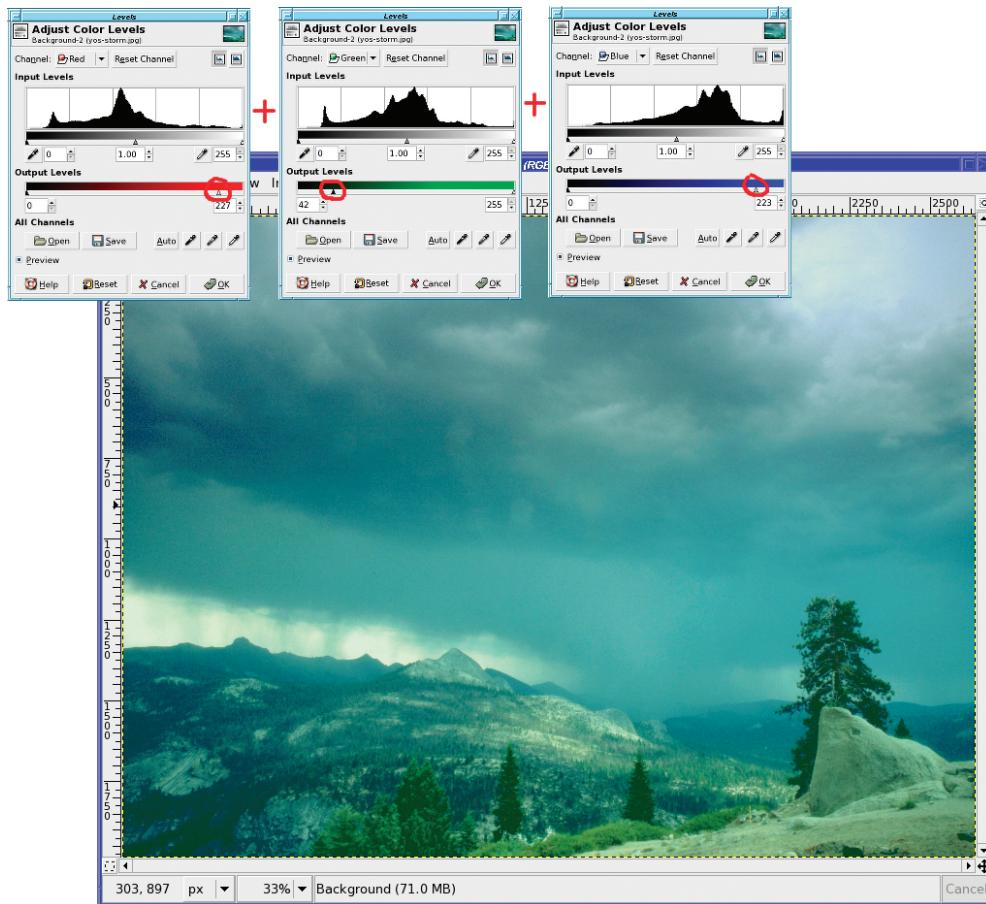
You've already used the Levels and Curves tools for adjusting brightness and contrast. But they're also powerful tools for adjusting color.

The key is the *Channel* menu at the top of the Levels and Curves tools. By default, it's set to *Value*, meaning that the tool will adjust the brightness of the image. But you can also adjust levels or curves of the individual color channels: *Red*, *Green*, or *Blue*.

You can even adjust the transparency, or *Alpha*, channel. However, that is a more advanced technique and isn't generally useful for photographs.

### Levels

Adjust each of the colors independently. Using the Levels tool, I decreased the red and blue highlights, and increased the green shadows (Figure 6-33).

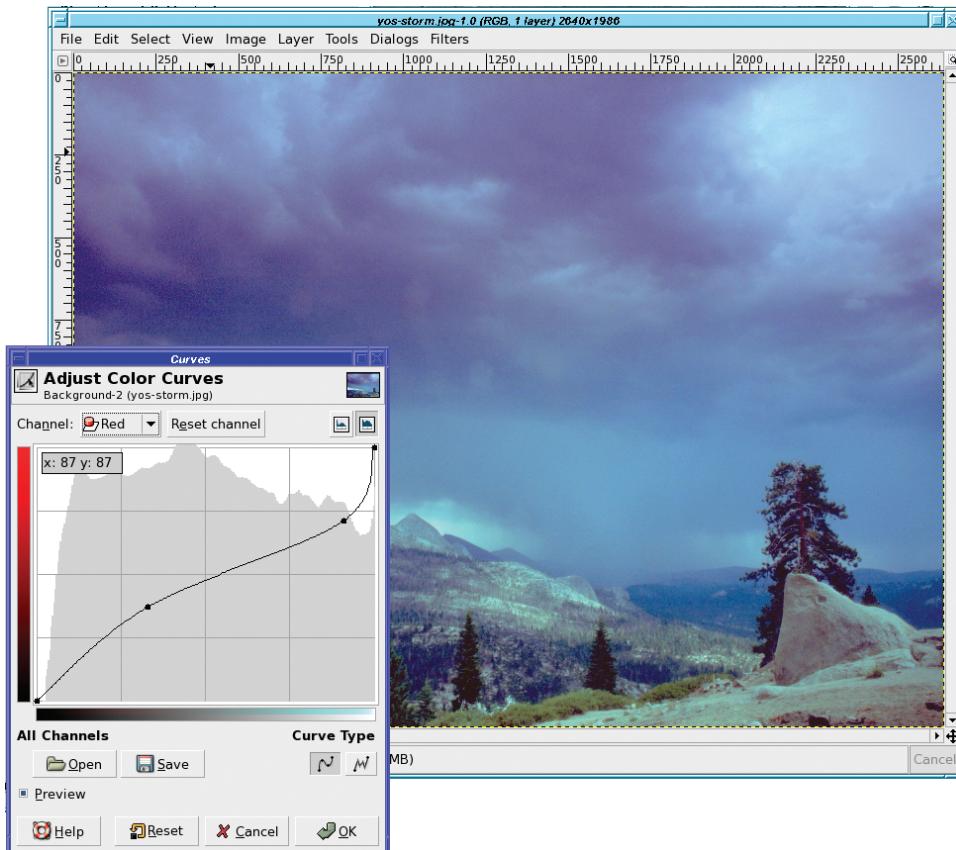


**Figure 6-33.** Using Levels to adjust color balance

## Curves

Curves is even better. It lets you control the amount of each color at each point in the curve.

Figure 6-34 shows the effect of a curve that reduces the amount of red in the brightest areas of the picture, while keeping red the same or even increasing it slightly in darker areas. This gets rid of the red in the clouds without making the rest of the photo blue, a trick that was difficult with Levels. I didn't need to change the other two color channels; making a curve on the red channel was enough.



**Figure 6-34.** The right curve can make color adjustment easier, even if you adjust only one color channel.

## Summary

By now you should have a fairly good collection of tools for touching up any problems you might see in your photos.

You can dim bright highlights, and enhance areas that are too dark. You can sharpen or blur specific points, or large regions of an image. You know how to paint unwanted objects out of a photograph or copy patterns from another part of the image (or even from a different image). If a photograph has an odd color cast, you've seen several ways to correct it.

These techniques can keep you busy for quite a while, especially if you have a large collection of photographs that could use some minor touch-up work of one sort or another.

But this is only a tiny sample of the toys the GIMP has to offer! In the next chapter, let's explore some of the other filters, plug-ins, and tools buried within the GIMP.

