

2ND EDITION
COVERS GIMP 2.8

THE ARTIST'S GUIDE TO **GIMP**

creative techniques for photographers, artists, and designers | *michael j. hammel*



2.4 COLOR SWAP

Photographers are often asked to change the color of one or more elements in an image. How easy this process is depends entirely on how easy it is to isolate the objects that need updating.

This tutorial looks at two examples of color swap. The first is an image in which the color change doesn't require difficult selections. The second image requires a more delicate hand.



Successful color swaps are all a matter of good selections. This image is fairly easy to work with because the items we want to change are easy to isolate.



Color swapping is more complicated when the object you want to change is difficult to select. This project uses the Quick Mask to change the color of the vase.

A Simple Color Swap

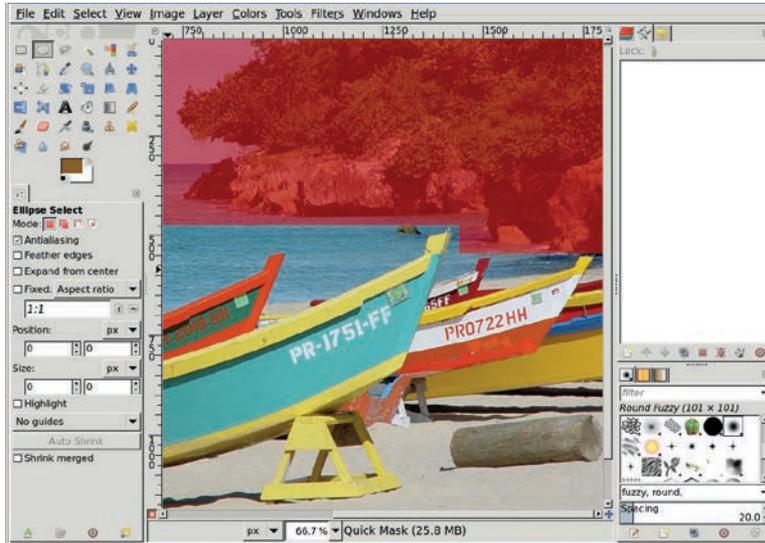
The first example is a collection of boats on a beach. There's a plethora of color here. Let's change the yellow trim on some of these boats to a light blue.

Isolating the Object

To change the color of only certain objects in an image, you'll need to isolate those objects from objects of a similar color elsewhere in the image. It's obvious that some of the boats are yellow. Yellow isn't so apparent in the rocks and trees in the background, but it's plentiful there too.

1. To isolate the boats, use the **Rectangle Select** tool to make a simple selection encompassing the majority of the boats.

2. Add smaller rectangular selections to squeeze in the highest prow without selecting the rocks around it. Here the unselected region is made darker so you can more easily see what's selected.



You don't need to isolate the yellow elements from their immediate surroundings; you just need to isolate the lower half of the image (shown here with the Quick Mask enabled). If you include the upper half of the image, the yellow in the trees and rocks will be also be changed to blue when you swap colors.

Choosing the Destination Color

1. Open the Hue-Saturation dialog (**Colors ▶ Hue-Saturation**). You can use this dialog to edit multiple channels, including the familiar red, green, and blue channels and their counterparts in the world of digital printing: cyan, magenta, and yellow.
2. Choose the yellow channel and adjust the **Hue**, **Lightness**, and **Saturation** sliders until a soft blue replaces the yellow.

This process works because the color to be replaced—yellow—is not a major part of the other colors contained within the selection. An exact selection isn't necessary to swap the color yellow with the

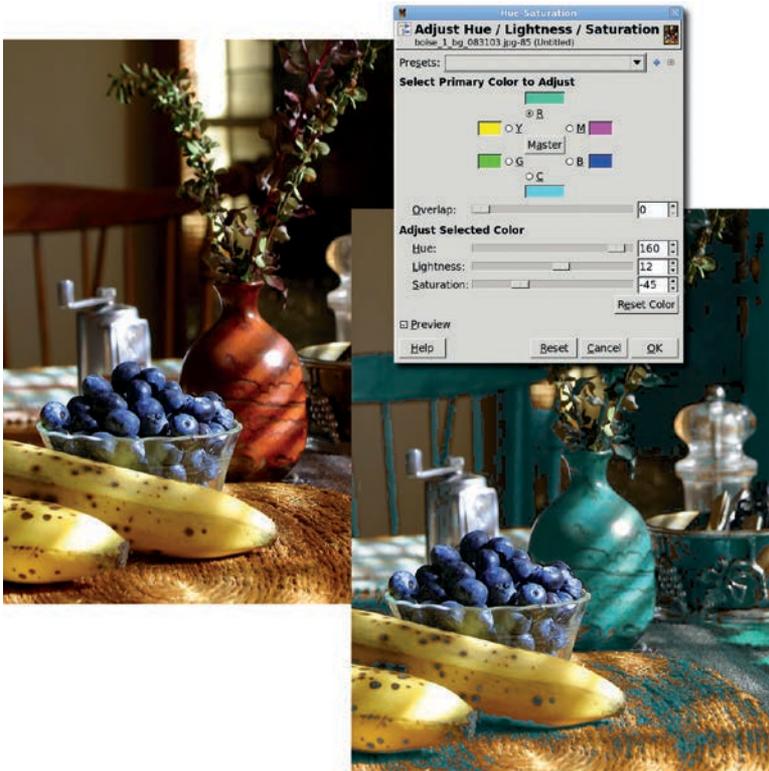
color blue. The only places that might be problematic are the log and sand on the beach. Brown contains some yellow, so after the Hue-Saturation changes are applied, the log and sand have a blue tint. This is easily fixed by removing the log from the selection using any of the selection tools, including the Quick Mask. The sawhorse on the beach near the middle of the picture also has heavy yellow content and needs to be handled in a similar manner (unless you want it painted blue as well). Keeping the sand out of the selection requires a more complex process, such as the one in the following tutorial.



Use the Hue-Saturation tool to swap yellow with blue.

A More Complex Color Swap

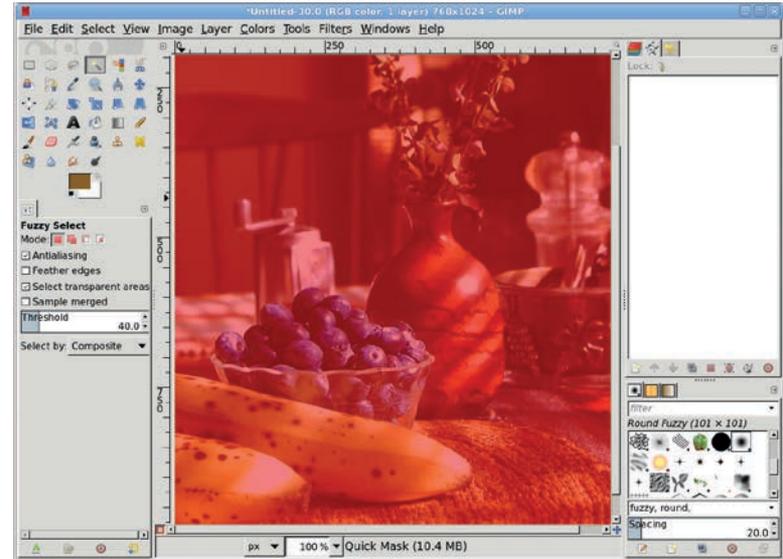
The same trick doesn't work on the next image. Let's say you want to change the color of the vase to a shade of yellow. The problem is that although the vase's reddish-brown color contains a lot of red, red also appears throughout the rest of the image. In fact, if you made the same change to this image's red channel, you'd change the color of the background chair, the berries, and the table.



The previous technique doesn't work here because the color you want to change appears throughout the entire image.

Creating a Complex Selection

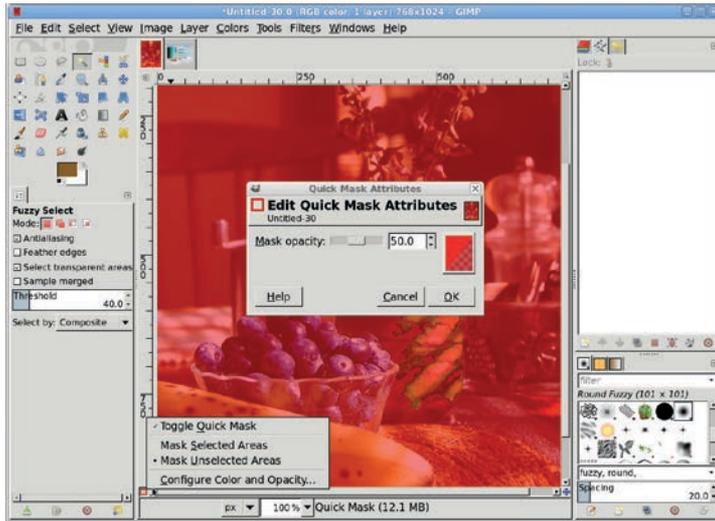
1. This image requires a complex selection. Start by using the **Fuzzy Select** tool with the Threshold set to **40**. Clicking the middle right part of the vase creates an initial selection.
2. To finish off the selection, use the **Quick Mask** and some soft-edged brushes. The problem with using the default Quick Mask in this situation is that it uses a red tint to highlight what isn't selected, but we're trying to select objects that have lots of red in them. This makes the selections created with the Fuzzy Select tool difficult to see when converted to the Quick Mask.



The default Quick Mask is red, making it difficult to see the reddish selections.

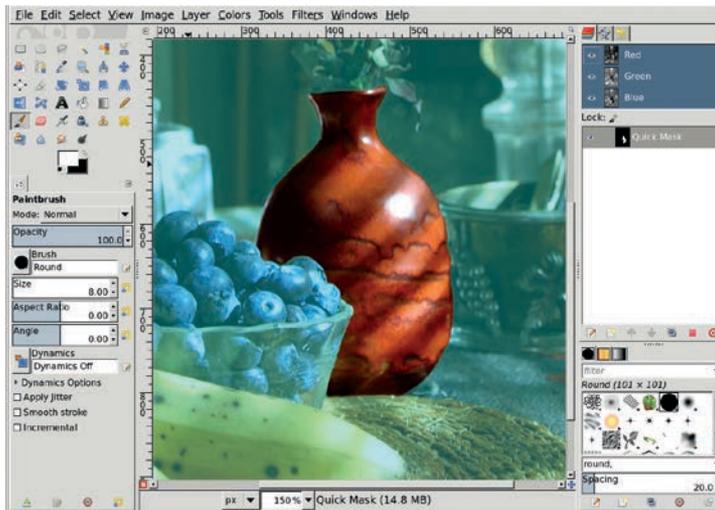
Changing the Quick Mask Color

1. This problem is easily fixed. Right-click the **Quick Mask** button in the lower-left corner of the canvas window. A menu opens.
2. Keeping the right mouse button held down, drag to the bottom of the menu to select **Configure Color and Opacity**.
3. In the Quick Mask Attributes dialog, click the preview window (it shows the color and transparency of the mask) to open the Edit Quick Mask Color dialog.
4. Here you can change the RGB values used for the Quick Mask as well as the opacity for the mask (by adjusting the A slider below the B slider). Choose a color for the Quick Mask that contrasts with the colors in the object to be selected. A higher opacity value makes it easier to see what's been selected but also makes it harder to see what needs to be selected. Here I've chosen a cyan mask with an opacity of 70 percent instead of the default 50 percent. The result is that the selected parts of the vase are much easier to see, while the parts of the vase that need to be selected are still visible.



Change the Quick Mask color in the Quick Mask Attributes window.

- When you're satisfied with the mask color, click **OK** in the dialogs to close them.

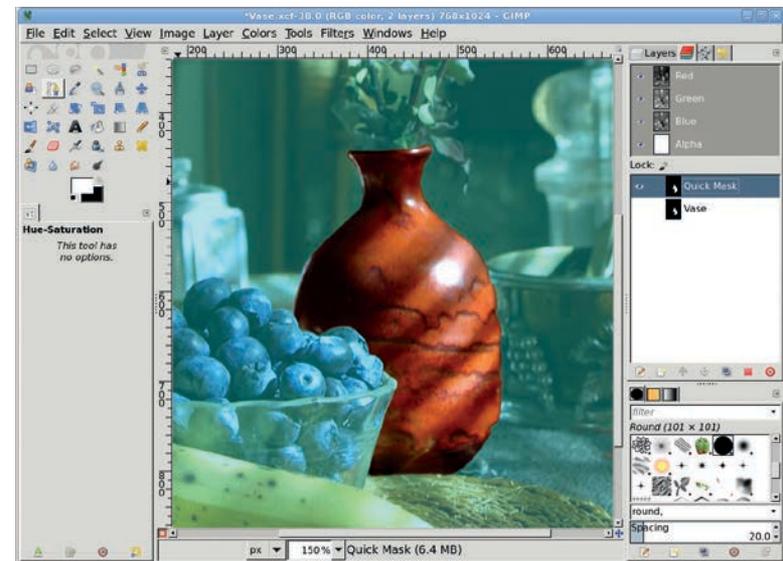


Cyan is a high-contrast color for this image, which makes working with the Quick Mask much easier.

Painting the Selection

You learned in Section 1.4 that using the Quick Mask is the most effective way to select oddly shaped objects. Here's a chance to try it out.

- Zoom in on the vase by pressing the + key.
- Draw straight lines in the Quick Mask with the **Paintbrush** tool's small, hard-edged brushes by clicking at one endpoint of the line, holding down the **SHIFT** key, and then clicking at the other end of the line. When painting (or drawing) with the Quick Mask, you must paint with black or white. Set the foreground color to white to paint over what should be included in the selection, and set the foreground color to black to paint over what shouldn't be in the selection. When you're finished, click the **Quick Mask** button again to convert the mask to a selection.



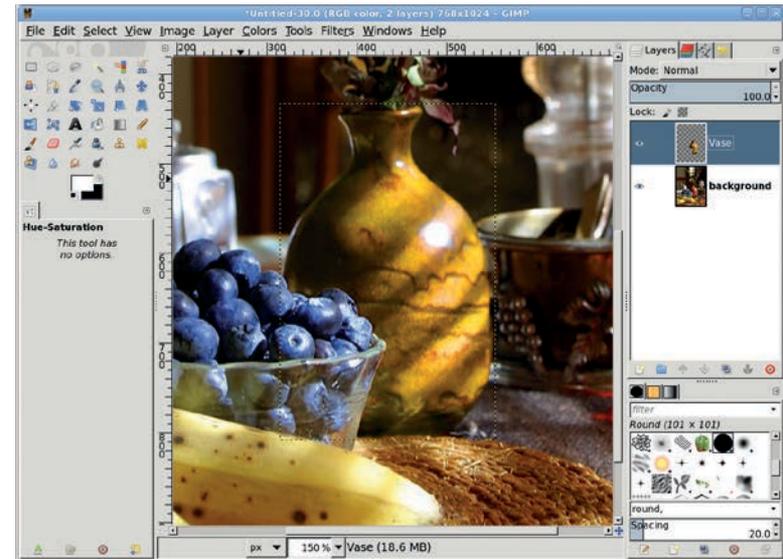
Select the vase by painting carefully in the Quick Mask. Remember that whatever you paint with white in the mask will be included when you convert the Quick Mask to a selection.

- Grow the selection by **1 pixel** (**Select ▶ Grow**), and then feather it by **2 pixels** (**Select ▶ Feather**). Save the selection to a channel (**Select ▶ Save to Channel**) in case you later decide to undo your color change and edit the selection again.

Working in a Duplicate Layer

Working in a duplicate layer saves you the headache of making mistakes in the original layer. If you don't like your changes in the duplicate layer, just try again.

- After saving your selection, click the original layer in the Layers dialog to make it active again.
- Copy the selection and paste it as a new layer (**Layer ▶ To New Layer**). Name this layer *Vase* and make sure it's active.
- At this point you could use the Colorize tool (**Colors ▶ Colorize**) to change the color of the vase, but the vase has varying shades of red and yellow in it, and the Colorize tool will completely wash out those variations. Instead, use the Hue-Saturation tool again. Open the Hue-Saturation dialog (**Colors ▶ Hue-Saturation**).
- Choose the red channel and move the Hue slider to the right to change the red content of the vase to a more yellow color. Then click the yellow channel and do the same. Be sure to make both changes before clicking **OK**. The results will be much greener if you adjust the red channel first, click **OK**, reopen the dialog, and then adjust the yellow channel.
- Deselect all (**Select ▶ None**) when all color changes are completed.



The vase's color can be changed using the Hue-Saturation tool once the color has been isolated with the Quick Mask selection.

Further Exploration

Swapping the color of objects in stock photos is a very common practice. Objects that have colors not found in the rest of the image are the easiest to change, as we saw with the image of boats on a beach. Changing the color of a vase or shirt or some other oddly shaped subject requires complex selections created using the Fuzzy Select tool, the Quick Mask, and other GIMP selection tools. These selections are more difficult but not impossible.

Mastery of the Quick Mask tool will help in the next tutorial, in which you'll use a set of complex selections to add depth to a photograph.