



ILLUSTRATION & IMAGE EDITING

Gimp Selection tools

Michael J Hammel compares the upcoming Foreground Selection tool with the venerable Quick Mask.

**LAST
TIME**

From a wormhole in deep space (well, *LXF73*), I showed you how to create animated fractals. If you missed the issue, call 0870 8374773 or +44 1858 438795.



The open source world lives by its own clock, and the *Gimp* project is no exception. Word has spread recently of the imminent release of the latest *Gimp* version, 2.4. While it's never clear if such a release truly is imminent, one thing is certain: whenever it does get here, *Gimp* 2.4 will be sporting a fancy new Foreground Selection in its toolbox, among other new features.

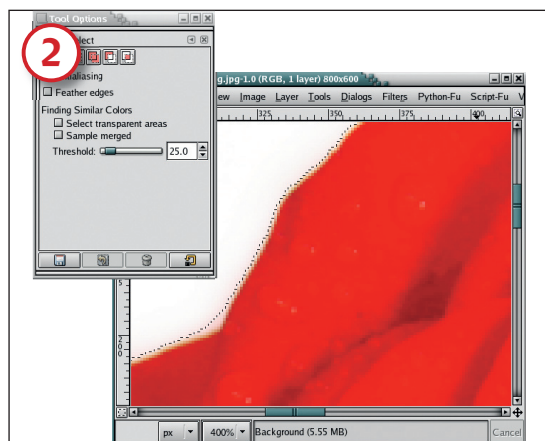
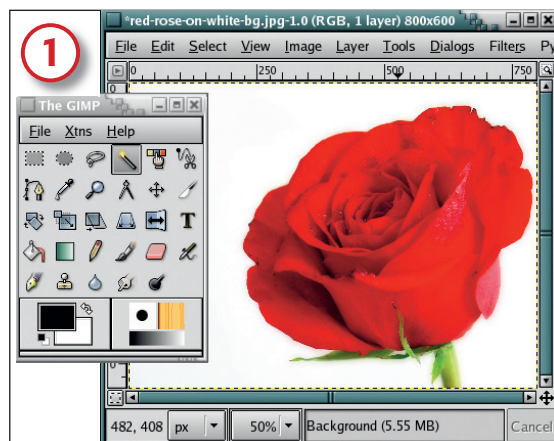
This tool is an integrated version of the relatively new SIOX plugin for *Gimp* 2.2. The SIOX (Simple Interactive Object Extraction) project aims to provide software that makes it easy to isolate objects in images from their surroundings. *Gimp* already has several tools that can handle this common task. The Scissors tool, for example, was originally developed for just this purpose. While Scissors performs relatively well, it is anything but a fast selection. A large number of control points have to be set for complex images, and editing the control points is not particularly easy. Nevertheless, with enough patience and practice the end result can be a selection that is extremely accurate.

Another *Gimp* tool we can use for this kind of selection is the Quick Mask. The only limit to the accuracy of the selection you can get with this tool is your ability to paint an accurate outline. Quick Masks are far easier to use than the Scissor tool because it's possible to switch back and forth between the mask and the selection, allowing you to easily refine the selection. In general it's far easier to paint an outline than accurately place a large set of control points.

So with multiple existing tools for foreground selection why do we need another? Well, the *Gimp* developers are always searching for ways to improve the application. The question you have to ask, of course, is whether the Foreground Selection tool is just such an improvement. In this month's tutorial I'm going to try to answer that question. I'll be comparing the ease of use of the Foreground Selection tool and the Quick Mask and evaluating the accuracy of selections made with them in combination with other *Gimp* selection tools on a set of sample images. Follow me through the steps: you'll learn valuable selection techniques along the way!

PART 1 – AN EASY SELECTION FROM A PLAIN BACKGROUND

We'll use this image of a rose on a plain background to compare the Foreground Select tool with *Gimp* 2.2's Fuzzy Select tool.

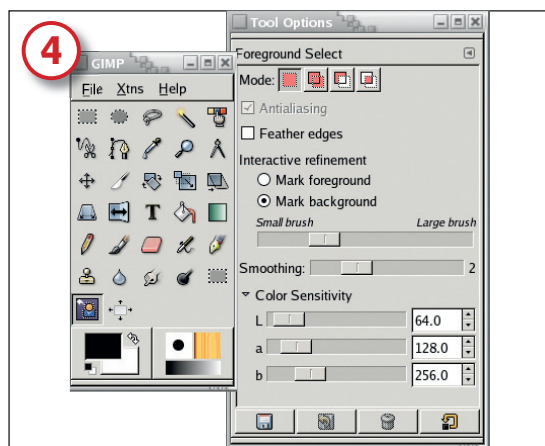
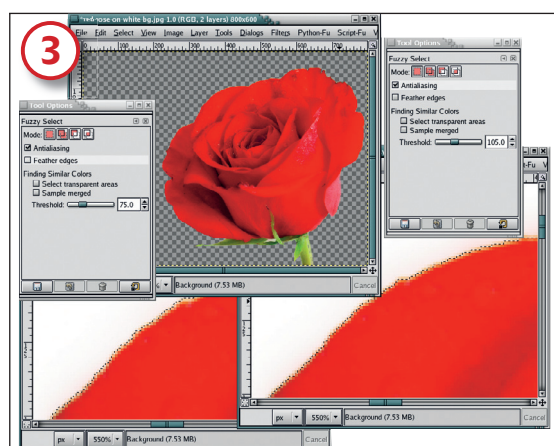


How the Fuzzy Select tool works

The Fuzzy Select tool (the one that looks like a magic wand) selects pixels that are adjacent to one another and that fall within a specified range. The selection will be contiguous – perfect for isolating an object from the background as long as the background is a nearly solid colour.

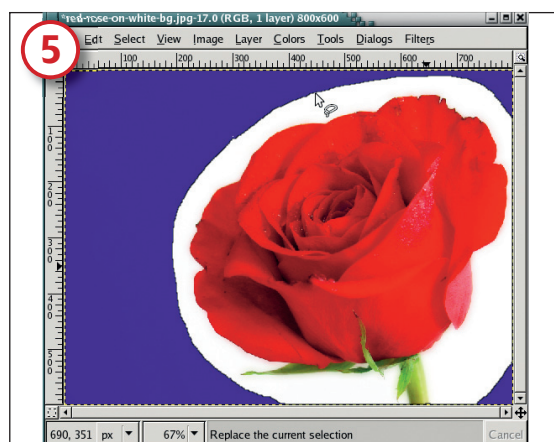
Fuzzy select tool options

The Threshold option in the Tool Options box allows a pre-selection refinement. The higher the threshold value, the wider the selection. For the sample image here, the threshold was set to 25.0; then I clicked in the white region of the image. This produced a decent, but less than ideal, selection.



Increasing the threshold

To get a better fit around the rose, I undid the selection (Ctrl+Z) and increased the threshold to 75.0. Then I clicked again in the white and examined the results. One last try with 105.0 got the best selection – rather trial and error! To get just the rose I still need to invert the selection (Select > Invert).



How Foreground Selection works

The Foreground Selection tool in *Gimp* 2.4 uses a human shape outlined with dots for its Toolbox icon. In the Tool Options dialog there are two features of prime interest: the Mark Foreground/Background toggle buttons and the brush size slider.

Make an initial selection

When creating a selection with the Foreground Selection tool, you first draw a freehand selection around your foreground object in the canvas window. The mouse pointer will look just like the pointer used by the Free Select tool. Click and drag a rough outline around the object – you can drag outside the canvas if necessary.

QUICK TIPS

■ With Quick Mask, get used to popping between the mask and the selection repeatedly to refine the selection. No other selection tool makes such refinements so simple, not even the new Foreground Selection tool.

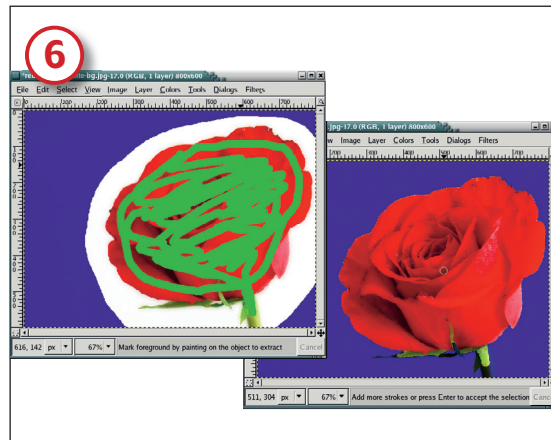
■ Use a single undo (Ctrl+Z) to back out of a selection so you can refine the Tool Options and try again. This works for all selections except Quick Mask (which doesn't need Tool Options for refinement) and the new Foreground Selection.

■ Foreground Select will immediately update your selection when you release the mouse button after painting in the image. Don't release the mouse button until you've covered a good part of the coloured areas you want in the selection. You can paint more than once to refine the selection.

■ It's not obvious, but once you're done painting to isolate your foreground object, hit the Enter key while the mouse is over the canvas. That will convert the blue area to a real selection.



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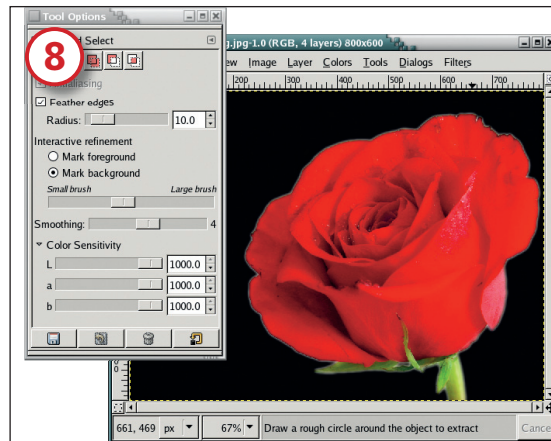
Refine the selection

The Mark Foreground toggle is set by default, and I'll leave it as it is. The brush must be small enough to paint through the rose stem at the bottom of the image. To make the next step more obvious I've changed the foreground colour to green. Now I can paint through the rose and its stem in the canvas.



Second try with Mark Background

I've failed to grab the whole stem of the rose! However, I tried to select the foreground directly with Foreground Select while I selected the background first with the Fuzzy Select tool. In my second attempt I changed to Mark Background after making the initial Free Select, then painted only in the white areas.



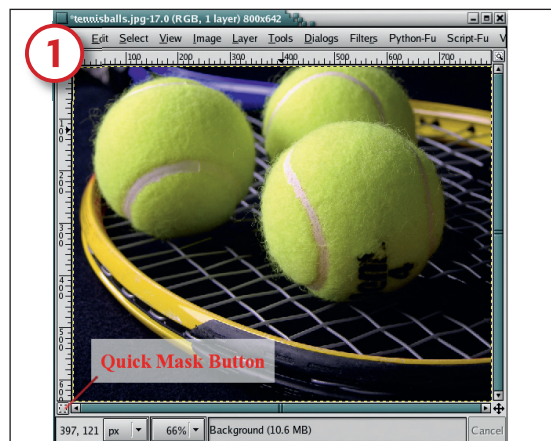
Adjusting sensitivity

I knew the results should have been better, so I tried again, with a freehand selection and Mark Background. Then I turned the Feather option on. I also pushed the three Sensitivity sliders all the way to the right. As you can see, the results are much better. I could have made an even better selection by shrinking the selection by 1 or 2 pixels before cutting and pasting.

The results are perhaps not what I might consider good for this particular image. What should have been a quick and dirty process for Foreground Select produced a poor selection until I modified the Sensitivity settings. For the simple case of removing an object from a solid coloured background, Fuzzy Select proved a faster and more accurate option.

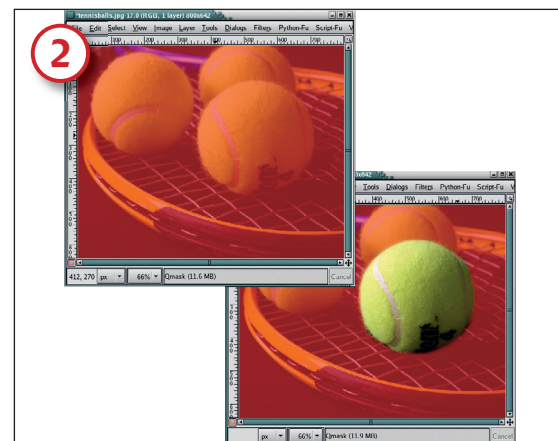
PART 2 – SELECTING AN IMAGE FROM A BUSY BACKGROUND

Fuzzy Select worked best with a simple task, but how do the tools compare when they're asked to handle a more complex image?



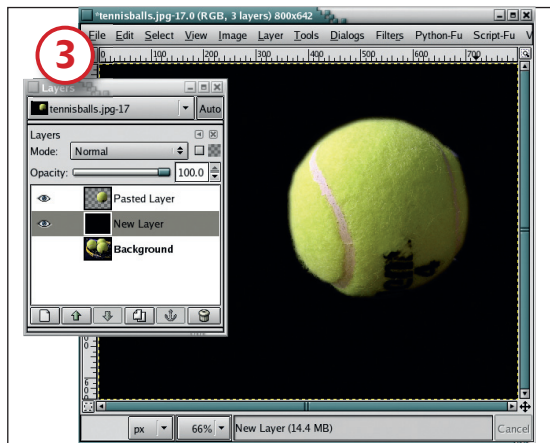
Pick Quick Mask

There is more going on in this image, but the balls should be easy to cut out. The Fuzzy Select tool won't work very well here because the balls are adjacent and are too closely matched in colour with each other as well as with the racket. The Quick Mask from the 2.2 set of tools is a better choice.



Paint your selection

Click on the Quick Mask button. Your image gets a red tint and the button turns red. The red area is the region that will *not* be selected. Use the Paintbrush to paint out the region you want to become a selection. Set the Foreground colour to white before you start – type D (reset default colours) and X (invert colours).



Paste into a new layer

Evaluate the selection by copying and pasting it into a new layer. Adding a black background offers high contrast to see the outline of the ball. To edit the selection, get the selection back using the pasted layer (Layer > Alpha To Selection), return to the original layer and click on Quick Mask, then paint away.

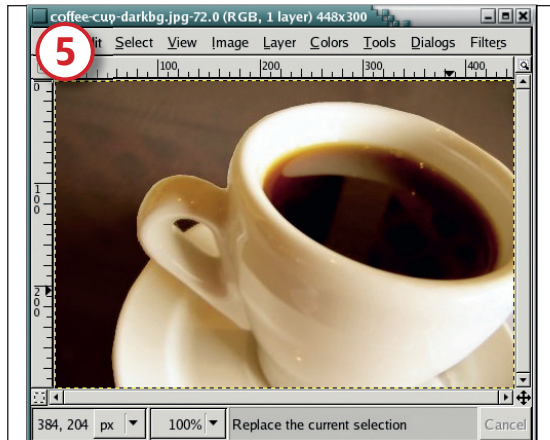


Trying out SIOX

The Foreground Select tool in *Gimp* 2.4 fared slightly better but nearly always picked up parts of the image that were unwanted. This image shows four different passes with the tool. The last one picked up more of the fuzz surrounding the ball, something that would be next to impossible to do with Quick Mask.

CREDIT TO...

Images used in this tutorial are from BigStockPhoto.com and the free collection at PDPPhoto.org.



Playing with images

I played with a few more images and found one where I felt the new Foreground Selection tool did particularly well. However, when you use Mark Foreground, the SIOX team say the colours of the background pixels should not be in the foreground. This may present problems when selecting the coffee inside the cup.



Foreground selection

Once again, a freehand selection is drawn around the foreground object. I dragged outside the canvas at the bottom and back into the canvas in the upper right. I then painted using a large brush and a smoothing factor of four. Only a small piece of the background was also selected in the lower left.



Clean up the selection

Switch to Mark Background and paint a line over any unwanted pieces of background to remove it. Quick Mask could help smooth the rim of the cup just as quickly.

Summing up

So how do the tools, new and old, compare? In its current form, the Foreground Selection tool doesn't make foreground object extraction that much easier than the existing selection tools. Having more than one tool for this kind of task certainly helps though – not all images are the same and some tools work better than others depending on the image content. So the addition of Foreground Selection certainly doesn't hurt, either.

Don't get me wrong here, I actually feel that Foreground Selection shows a lot of promise, and when I found an image that allowed the tool to play to its strengths – a coffee cup – I had a selection done in less than a minute. But it isn't all that clear what the best way to use it is. It won't get perfect selections but it can get very good ones. Tweaking the tool options will help. And consider that the Foreground Selection tool is likely to be a little different by the time the official 2.4 release hits the streets (I used the 2.3.4 developers' release of *Gimp*), so take all of the critique of this new tool with a pinch of salt. **LXF**

NEXT MONTH

I've finally placed an order for the Aiptek 1200U drawing tablet. Barring a lost shipment, I'll let you know how it works with *Gimp*.