Hillshade igen

## Custom product generation with elevation data

Overview

Producing a product with igen

If you haven't done so already, follow the hillshade tutorial and output the hillshade.prj file. This tutorial demonstrates how to create a shaded relief map using a raster map and an elevation surface. This tutorial will demonstrate how to output a product from OSSIM and ImageLinker using **igen**.

igen is a command line application (image generator) that takes a text keyword list as its parameter, builds the described image chains, and outputs the specified output file. Within ImageLinker you can create and save spec files for later use with igen. You can edit the text file directly or under program control to modify the products. ImageLinker has a GUI that builds the spec file for you and calls igen to run it. Alternatively, you can just save the spec file for later use. Since igen is a command line utility, it provides a very powerful capability for scripted or program driven custom product generation.

So start up ImageLinker and follow the following steps:

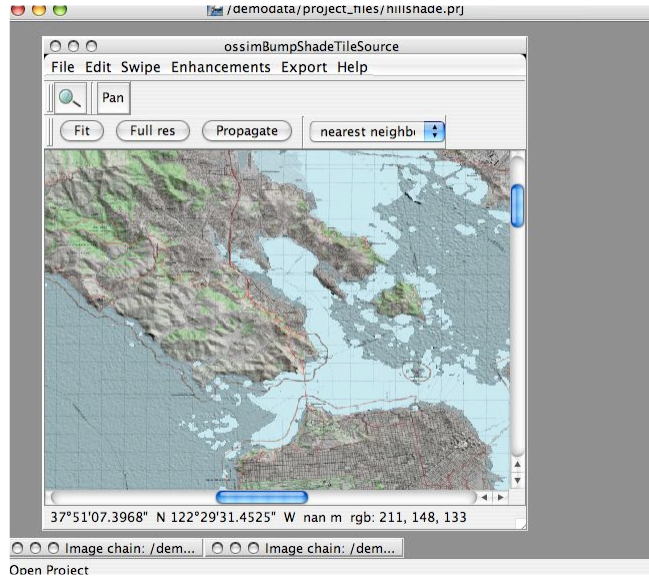## Open the previously saved hillshade.prj file
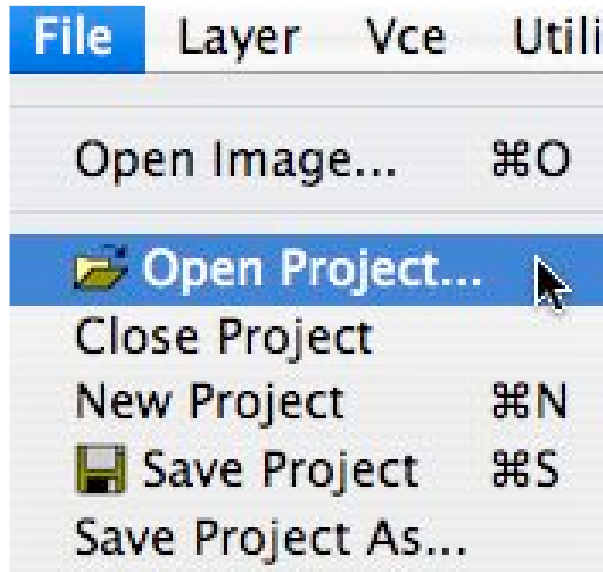
In the File Dialog box, navigate to and open the hillshade.prj project file. It will reload your previously saved hillshade session:
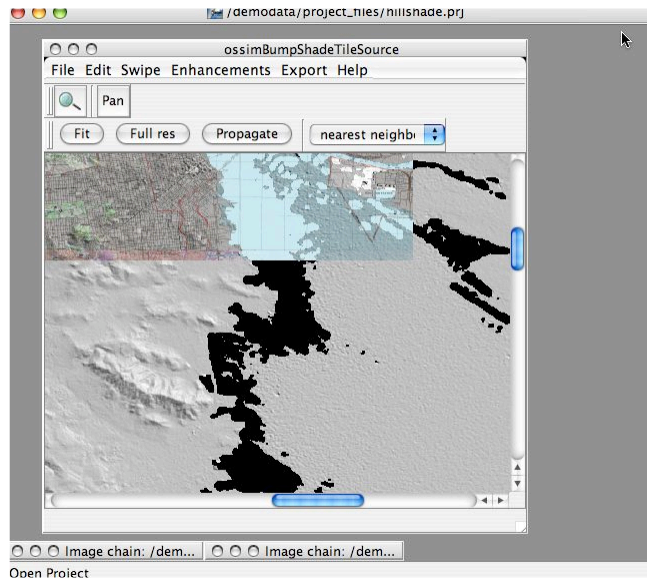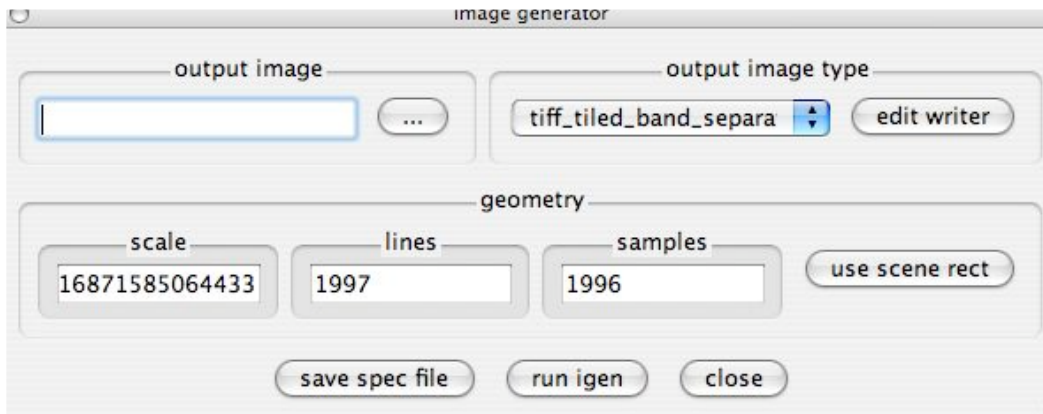

Pan or use the scroll bars to move to the North/East (Upper/Left) to more interesting terrain.

Pan to the North East

Your view should be similar to that shown above. From the display window menus we will invoke the Image Generator dialog which is located under the Export menu.

Select **Export->Image Generator**

This dialog box allows the user to specify the name of the output file, the output image time, the output scale and footprint of the product. Behind the scenes, this dialog is actually producing a "spec" file. A spec file is a text file with a list of keyword/value parameters that allow igen to build

the image chains and produce the output product to the desired settings. The save spec file button at the bottom of the dialog allow the user to save the spec file specifying a file name. The run igen button creates a temporary spec file and submits it to the igen command line application to produce a product.
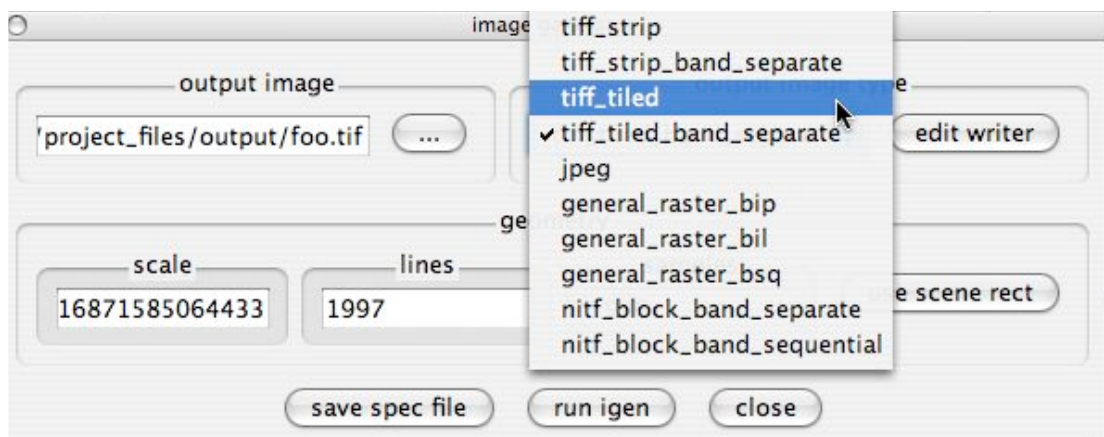
Next we will specify a filename for the project. Inside the igen dialog box locate the output image entry.
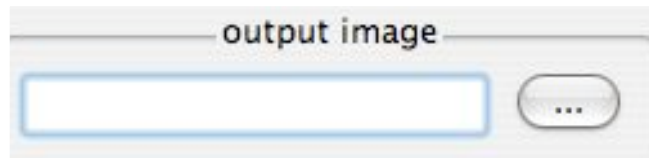

Click the ... button and navigate to where you would like to save the output product and **enter**
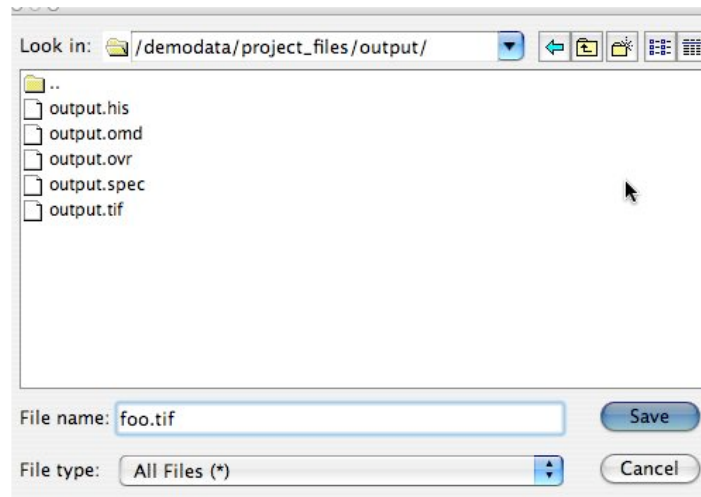
foo.tif as the File name. Press the **Save** button. Next, under the output image type section, use the pull down menu to **select tiled tiff** as the desired output format.

In the display window, click and drag to specify the area of interest you would like for your output product. Remember, you can use the pan and zoom capabilities of the display window to get to any area and scale that you desire. A selection rectangle identifies the current area of interest. Note that the dialog box has been updated to show the scale (meters per pixel) , lines, and sample of the current selection:
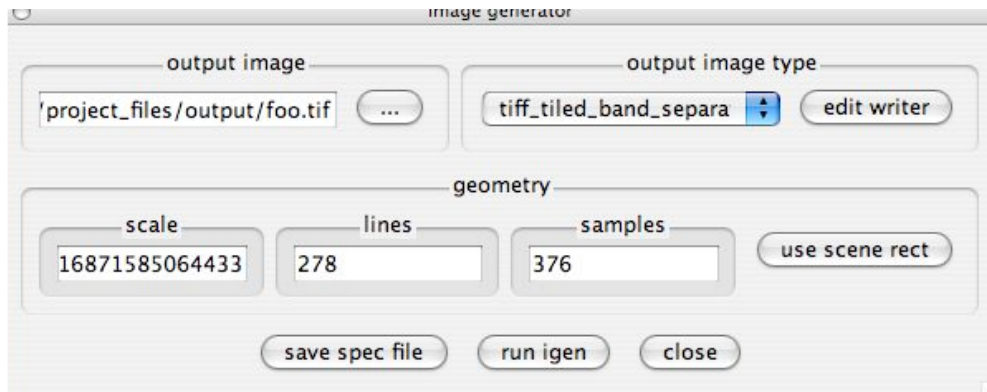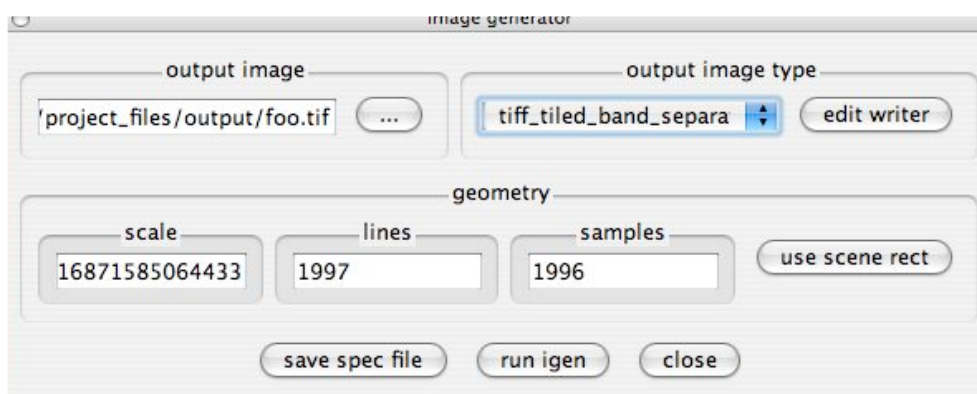

Alternatively, you can press the use scene rect button to set the area of interest to be the bounds of
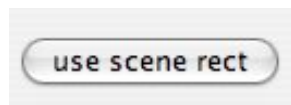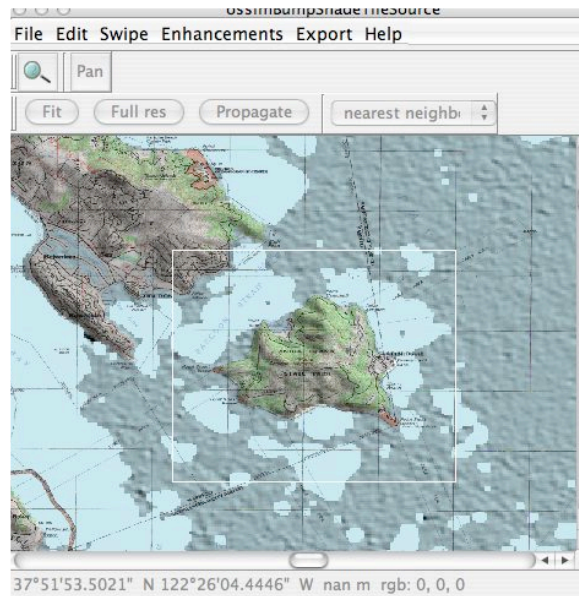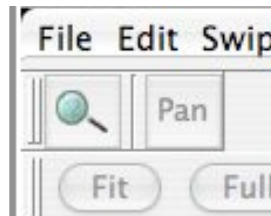

the valid image data.

 Press the use scene rect button and observe that the lines and samples have been updated in the dialog window.
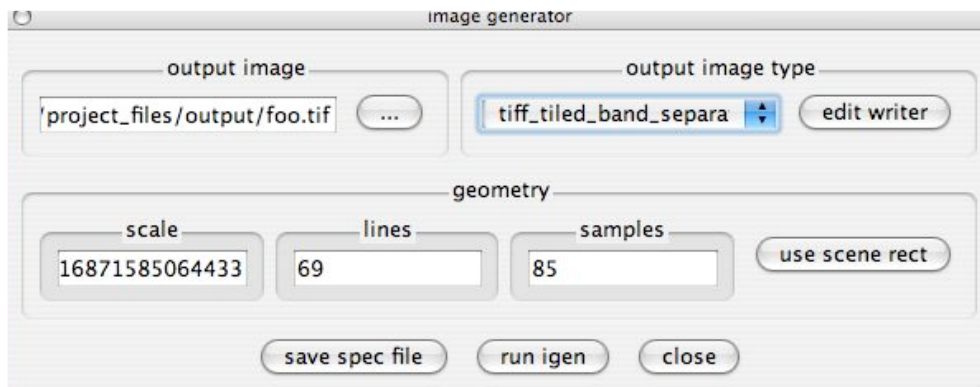

The geometry section can be edited to change any of these parameters.

Using the Pan and Zoom buttons, zoom in and pan to Angel Island (or another area of interest).

Click the Pan button and drag another selection window to redefine your product area. Notice that the dialog box has been updated to reflect the new scale and area of interest.

Click in the scale text field and change the value to 10 (meters per pixel). Note that the lines and sample remain the same and the area of interest (footprint) rectangle has correspondingly reduced on the display.
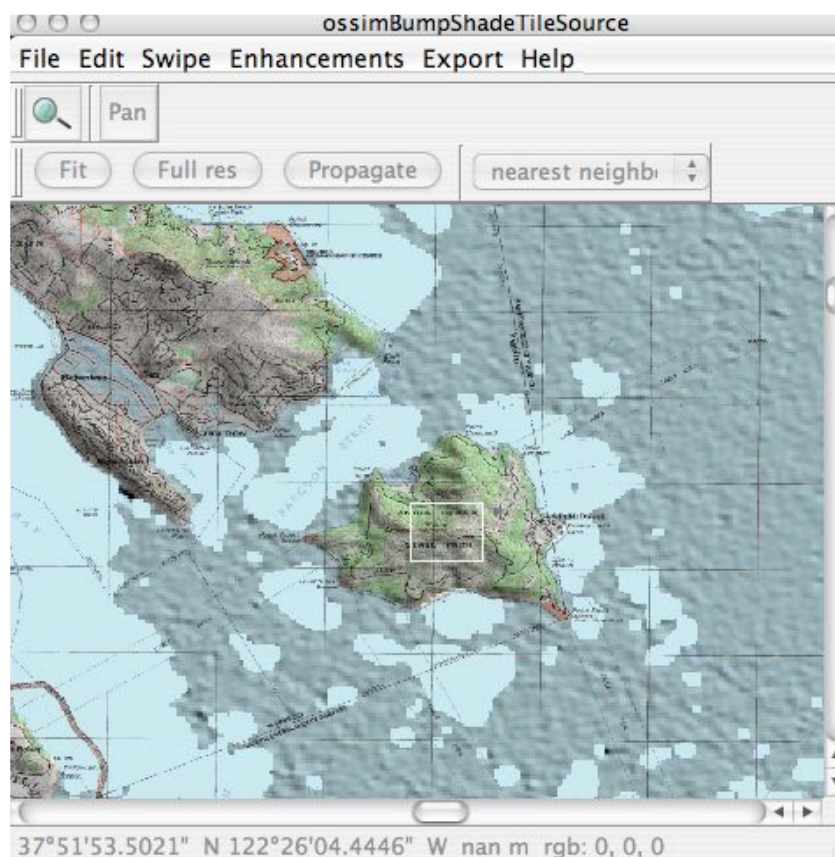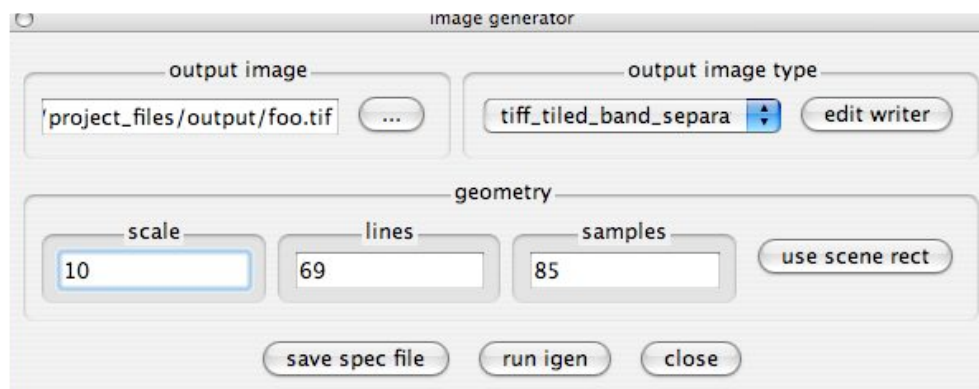
Now lets make the product and the corresponding footprint larger by increasing the lines and samples in the dialog box. **Enter 256 in each of the lines and samples text fields**

You will see we are still at 10m resolution and the footprint has grown so that 256 lines and 256 samples will be output at the desired resolution.

We have now defined the product that we would like to output. We could simply press the igen button and produce it at this point, but lets first save a spec file for future use. Press the **save spec** file button and save the file as angelIslandHillshade.spec
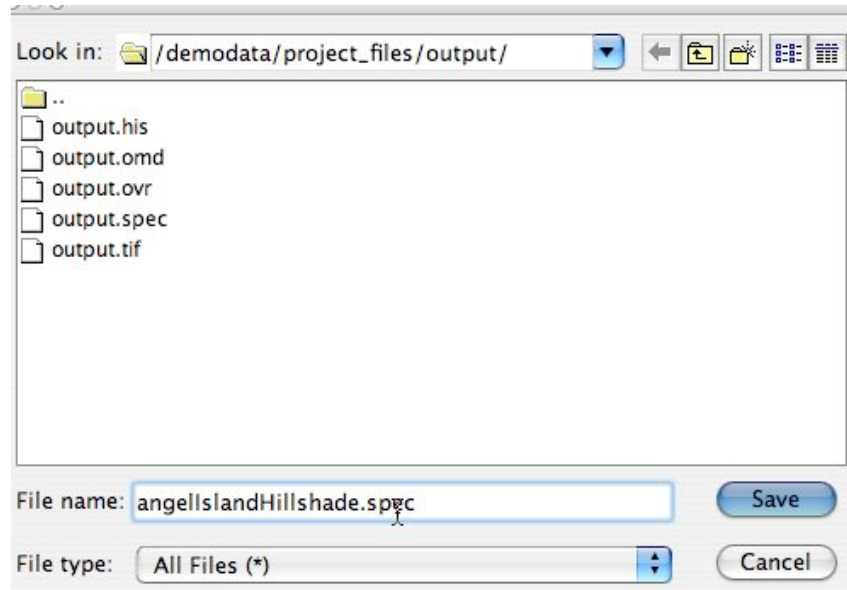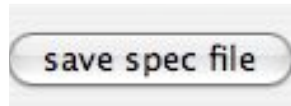

We are now ready to produce our product, but first, lets demonstrate changing output projection for the product.

OSSIM is map projection independent. Sources can can be in different projections and resolutions and output in a different projection and resolution. OSSIM takes care of all of the necessary transformations for you. Simply go to the Edit->View Menu, use the pull down menu to **select the ossimUTM projection** and set the **zone to 10.**

Press the **Apply** and **Close** buttons and the display will reproject to the new map projection.
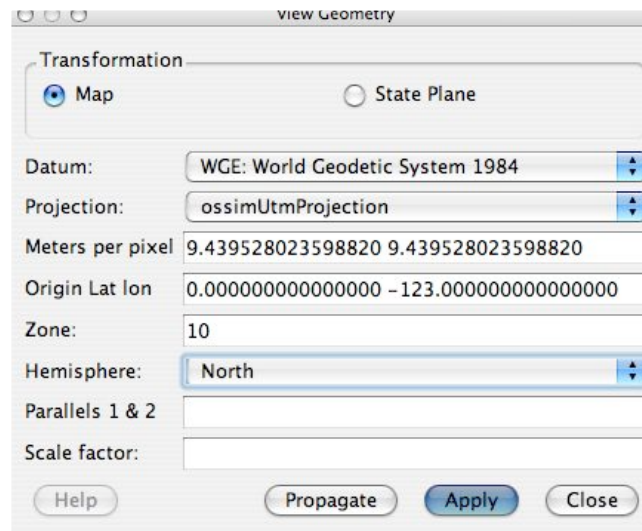

Press the **run igen** button and the product will be produced where you specified. A progress bar will indicate production of the product.

Load the Product

Minimize your ossimBumpShadeTileSource Display and Maximize your sanfran_map.tif display. You might have to press the fit button to orient the view. Your display should look like this:
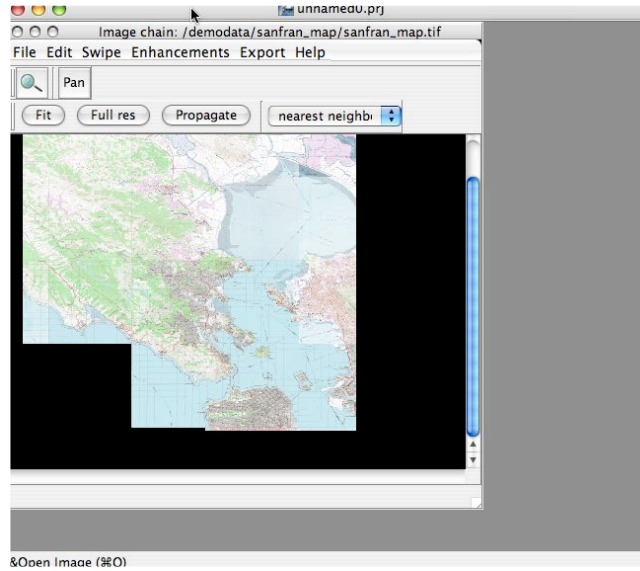
Next **File->Open** the product we just produced navigate to the output directory you specified and load the foo.tif file. You can Edit->View the new display and see that it is in the specified projection and resolution. The scale will be slightly modified for a 256 by 256 product.
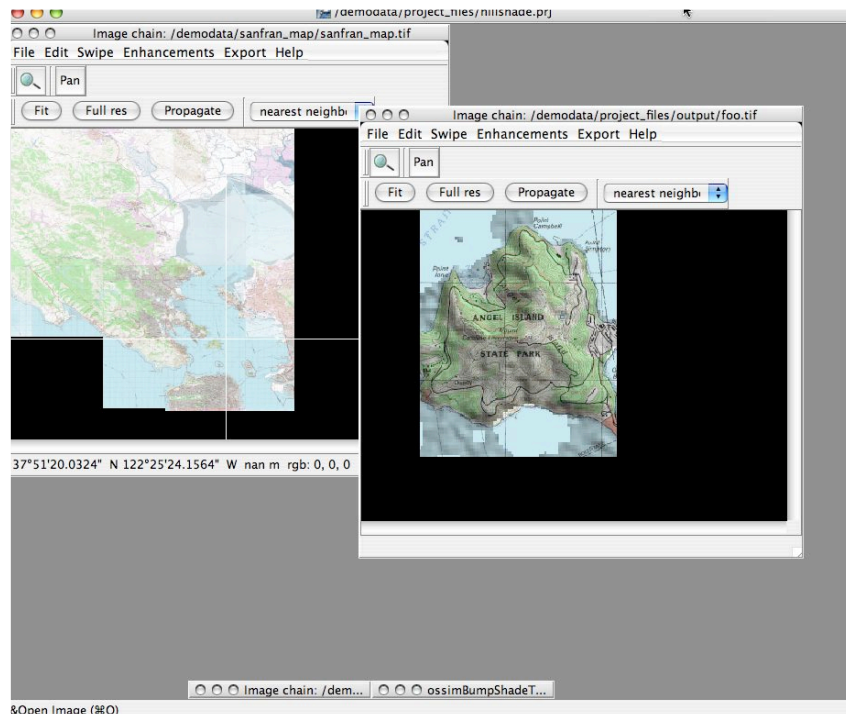
Press the **Propagate** button on the hillshaded display. Then **Swipe->Add** from the hillshade layer and add the sanfran_map layer. You can now swipe the displays even though the source files are in different resolutions and projections.

Summary

This completes review of how to create a product from within ImageLinker. The igen application is called with a spec file containing a description for building the product. ImageLinker provides a GUI dialog to assist in the generation of the necessary files and the running of igen. Alternatively, you can run igen from the command line. With the example spec file that you created in this tutorial you can create a product by entering the following on a command line:

igen angelIslandHillshade.spec

It is possible to edit the spec file and carefully adjust the parameters.
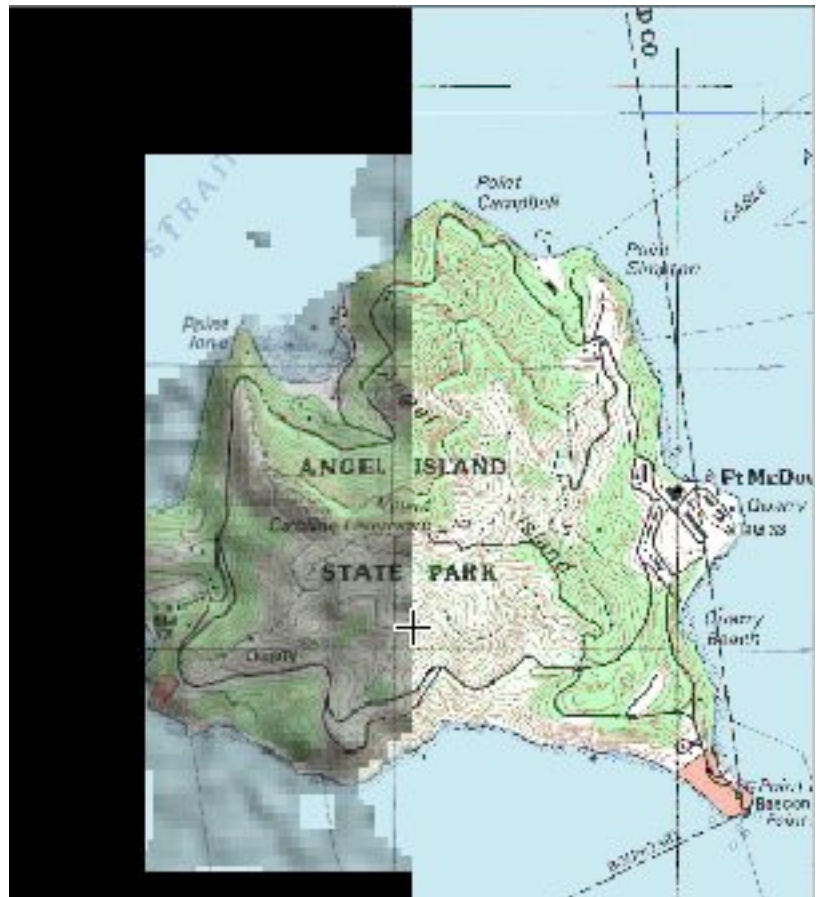
Version	Date	Comments	Editor
1.0	22 May 2005	Initial writeup	Mark Lucas
1.1	25 May 2005	Removed confusing wording	Mark Lucas

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