GIS Tips & Tricks

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Visualizing Two Raster Layers Simultaneously is Just A Swipe Away

The Esri GIS suite, both ArcGIS Desktop and ArcGIS Pro have a variety of incredible tools available to the user community. Most of the power-GIS users look for those specialized geoprocessing tools and Python code snipets to make their lives easier. Some are more obvious, while others may be hidden features, that when discovered will make a world of difference to everyday life for both a casual user and to someone who is a daily software user.

This month's tip highlights the ArcMap (Desktop and Pro) Effects Toolbar, but similar tools are also available in Global Mapper (the Image Swipe Tool) and in QGIS (Map Swipe), although not quite as tightly bundled as in ArcMap. The Effects Toolbar offers someone working with ArcMap the ability to toggle between two different layers without switching them on or off. The SWIPE tool provides the functionality of being able to compare the two layers by letting the user "swipe" across their map, either horizontally (left to right) or vertically (top to bottom) in order to reveal the layer underneath the "swipe" layer. One benefit is that the "swipe layer" can be either a vector or raster layer.

Once the ArcGIS Effects Toolbar (Figure 1) is activated (in ArcGIS Desktop open the Customize | Toolbars and scroll down to "Effects") and a layer is loaded into the tool using the dropdown arrow, you will see that the Effects Toolbar has four "bundled" tools, including (from left to right) a contrast (black/white circle), brightness (sun icon), a transparency slider(-see-through map icon), and a basemap dim slider (dimmed out icon). The bundled tools activate depending on the type (raster/vector/basemap) loaded. The SWIPE tool (highlighted in Figure 1) is activated regardless of the layer type.

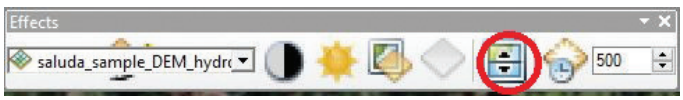

Figure 1. The Effects Toolbar in ArcGIS Desktop.

One of the many ways that we use the tool on an everyday basis is when using orthoimagery to provide spatial context to an area while trying to understand the area's complex topography. With this tool, both digital ortho-imagery and a Digital Elevation Model (DEM) raster can be visualized to slide across each other, either vertically or horizontally, on the map under the control of the user.

In the example below, we are trying to understand the placement of a USGS National Hydrography Dataset (NHD) flowline relative to a recent ortho-image and a lidar-derived DEM. The NHD flowline is symbolized as a thick blue line (topmost layer), followed by the ortho-imagery (from ArcGIS On-line), the lidar-derived 1m DEM (set to 45% transparency) and a 5X exaggerated Hillshaded version of that DEM.

Using the SWIPE function of the toolbar is very easy, just

1. Select and load the ortho-image into the toolbar with the Drop-down arrow (Figure 2),

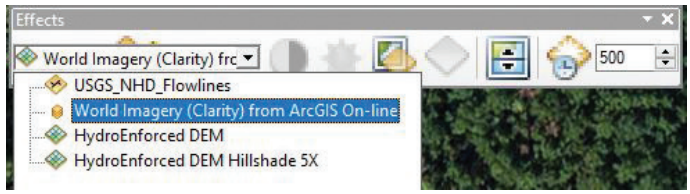

Figure 2. Loading a raster layer into the Effects Toolbar

2. Select (click on) on the SWIPE tool on the toolbar (Figure 3),

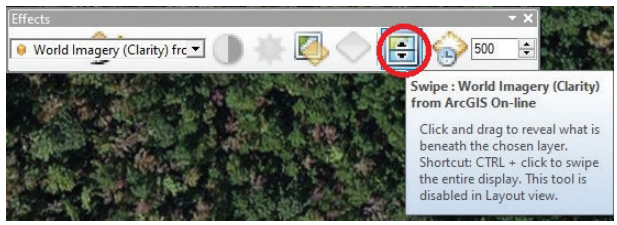

Figure 3. Selecting the SWIPE tool on the Effects Toolbar

3. Left-click, hold and drag the mouse on the ArcGIS canvas, either horizontally or vertically

And the ortho-image will reveal the hillshaded-DEM as you move the mouse.

The workflow in ArcGIS Pro is, of course, "Ribbon"-based rather than toolbar- based as in ArcGIS Desktop, but the

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Figure 4. Swiping from left to right the ortho-image layer (loaded into the Effects Toolbar) to reveal the DEM

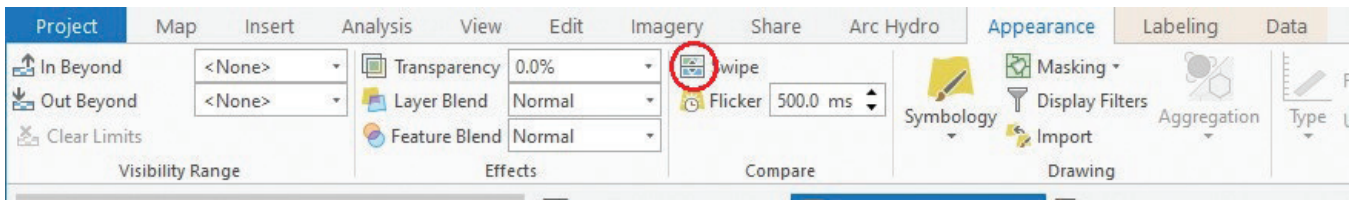

Figure 5. The ArcGIS Pro Ribbon showing the Swipe tool on the "Appearance Tab".

same tools are bundled, and a similar work can be easily followed. Instead of loading a layer into a toolbar, simply position/order the layers in the Contents panel, select (left-click on) the layer that you want to SWIPE. Then use the Appearance Tab on the ribbon (Figure 5) to activate the SWIPE tool and swipe away!

It is really that easy.

Send your questions, comments, and tips to GISTT@ASPRS.org.

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