

Open "HeatMap\_June2014.mxd" → in May\_2014\_Cleanup folder

Bring in processed rasters from Erik

Raw\_TIFFs\_w\_wrlld\_file\_no\_alpha\_from\_Erik\_5\_29\_14

Need to clip these individually

Use the clip tool – search for this:

"Clip (Data Management)"

In Raster toolset

Input Raster = TIF from Erik (e.g. "10\_BW\_TIF.tif")

Output Extent = the polygon from "Clipped\_Vshed\_SHP\_2014"

This is the thing being clipped to

(e.g. "10\_Clippped\_Vshed\_shp")

Yellow triangle ! -- don't worry

Check ON "Use Input Features for Clipping ..."

Output Raster Dataset = "Clipped\_Vshed\_Raster\_Georef\_2014"

File name e.g. = "Clip\_10"

**IMPT:** Add ".tif" to the end of the file name in the Output Raster Dataset field.

Next, we need to "Add One" to the clipped files.

Open Raster Calculator

Drag in Clipped file (e.g. "Clip\_10")

Then do "+1"

Click on "+"

Click on "1"

Save in folder: "Preparing\_for\_Heat\_Map\_Inputs" > "Clipped\_TIFs\_Plus\_One"

Filename e.g. = "10\_Plus1"

Then, we have to change the Null Values to Zero

Open Raster Calculator

Double click "Con"

Double click "IsNull"

Double click the Plus One Vshed file

Then insert a "0" , then a ",", and then double click the Vshed file again.

**IMPT:** When you enter the Plus One Vshed file to enter it, you have to go into the equation field and take out the group layer prefix (e.g. "Vsheds Plus One\")

Remember to keep the quotation marks

The formula will look like this:

`Con(IsNull("5_plus1"),0,"5_plus1")`

Output Raster goes to the folder: "Null\_Value\_to\_Zero"

File name e.g. = "10\_nullzero"

When all viewsheds have gone through this entire process, next we create the extent polygon.  
This enables raster calculator to process rasters that don't overlap.

In ArcMap or Arc Catalog

Right click on folder "Preparing\_for\_Heat\_Map\_Inputs"

Click on "new" → shapefile

In "Create new shape file" window

Name the file "Total\_Extent"

Change feature type to polygon

Then click "Edit" → "Select" → "Geographic Coordinate system" → North America → NAD 1983.prj

Then click "ok"

This will create an empty shapefile.

From here you can draw a rectangle (or any shape) that will go into this shapefile that you just created.

The rectangle has to cover the entire extent of all the raster viewsheds so that can all be referenced to the rectangle in the "processing environments"

Bring the shapefile "Total Extent" into Arc Map.

Right click on it in ArcMap TOC

Edit features → start editing

"Create features" window will appear

Click "Total Extent" file at top

"Construction Tools" will appear at the bottom

Click the "rectangle" button

Draw the rectangle

Click one corner, click another corner, then draw.

3 clicks total.

Click on "Editor"

Click "Save edits"

Click "Stop Editing"

If the null zero function does not work for any image (i.e. if it shows up with two layers "1" and "256" only), then we need to RECLASSIFY

Open tool "Reclassify (Spatial Analyst)"

In Reclassify box

Input raster → the file you're concerned with

Reclass field → Value

Reclassification

When "Old Value" = 1-256, change the "New Values" to 0

Output raster → wherever you want to save it and call it

At this point all viewsheds have value=1 where there is viewshed, and value=0 where there is no viewshed.

Now we do the final heat map with raster calculator.

In ArcMap window  
    Geoprocessing Tab at top  
        Environments  
            Processing Extent  
                Extent  
                    "Same as layer Total Extent"  
            Raster Analysis  
                Cell size  
                    Same as layer "{pick one with the smallest cell size}"

Enter this formula for ALL nullzero files:  
Con(IsNull("7\_nullzero"),0,"7\_nullzero") + Con(IsNull("8\_nullzero"),0,"8\_nullzero") ... ETC ...

Then in Raster Calculator, go to "Environments" to make sure all the selections are the same as the "environments" settings above in the "Geoprocessing" tab at the top

Once formula and environments are set, **must add file extension .tif**

Until the final Heat map:  
    Output Raster > save in folder "Test\_Heat\_Maps\_June2014"  
        File name = "HeatMap\_X"

Once you have generated this output, use the reclassify tool again to change all unwanted values to 0, so there aren't so many irrelevant ones.

Change colors

For the Heat Map color scheme, see the file "colorscheme final.psd". This is in the folder Maps > Interactive Map > Heat Map\_Color scheme files. Use the bottom row.

Then bring into the .MXD file "Relation\_Map"  
Set to "Bookmark\_II", and it should fit.