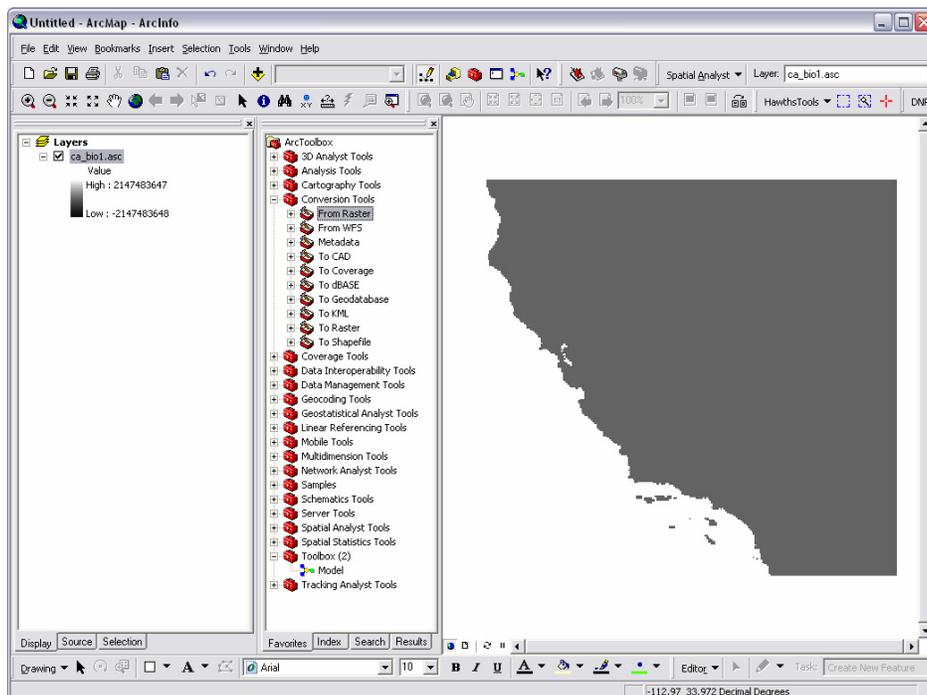
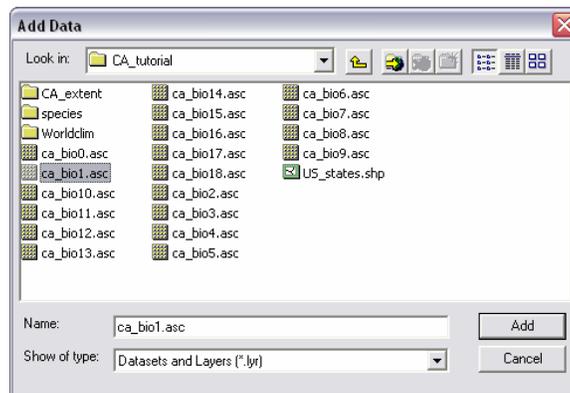


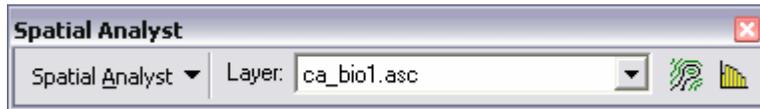
Creating a mask layer: How to create a mask in ArcMap for use in Maxent

It is often desirable to use a mask layer with Maxent so that the analysis is limited only to your area of interest. The mask file will contain “1” values in pixels that you want to include, and “0” values in pixels that you do not want to include. In this example, we will create a raster mask using the state boundary of California, based on the extent and resolution of our climate data that has already been formatted.

1. Load one of your formatted climate layers into arcmap. In this example, click the Add Data button, and choose CA_bio1.asc. This file has already been clipped to the maximum extent including California. We will use this file as a guide for the extent and cell size of our mask..



2. Make sure that the Spatial Analyst Extension is checked on: **Tools > Extensions**, and access the Spatial Analyst toolbar through **View > Toolbars > Spatial Analyst**.

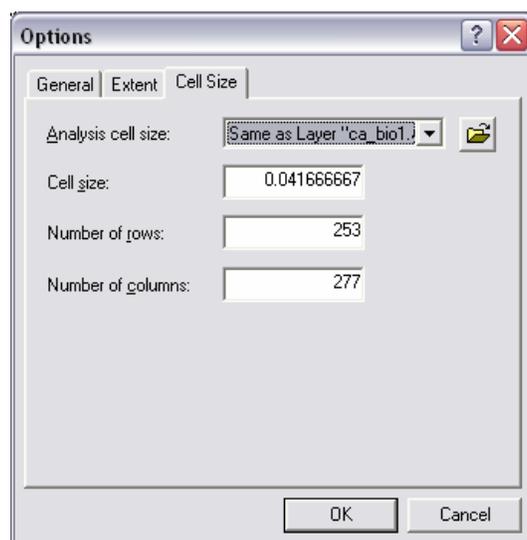


3. In the Spatial Analyst drop down menu, choose Options. Here you can set the Extent and Cell size for all Spatial Analyst processes to match another file.

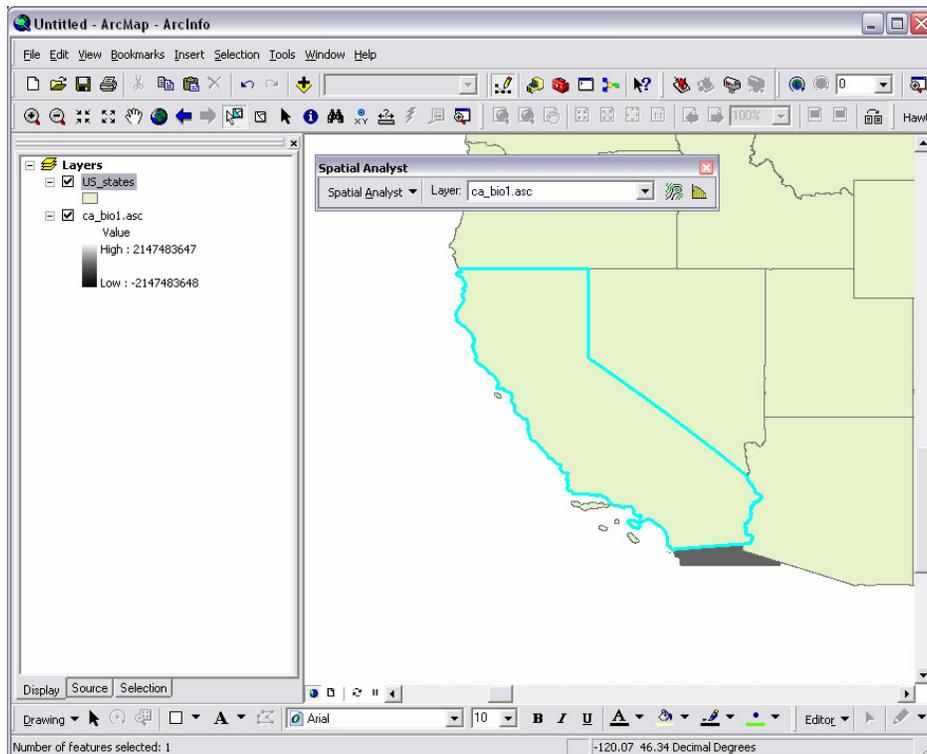
4. In the Extent tab, choose **Same as Layer “ca_bio1.asc”** as the **Analysis Extent**.



5. Next, choose **Same as Layer “ca_bio1.asc”** as the **Analysis cell size**. Then click **OK**.



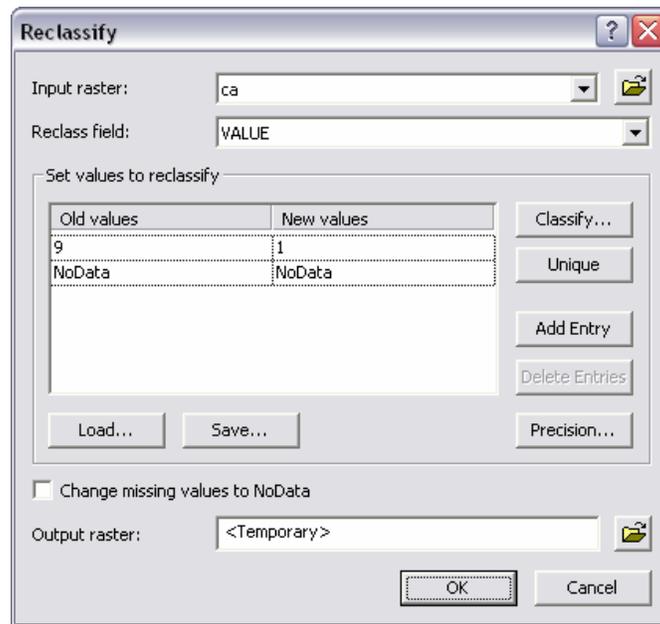
6. Now, we can add a vector shapefile to the project that can be used to determine the state boundary. In this example, click the **Add Data** button, and choose **US_states.shp**. Then use the select Features tool to select California. This should highlight the state in blue.



7. Next, in the Spatial Analyst drop down menu, choose **Convert > Features to Raster**. Choose a directory to save the new Grid file. Because we have already defined the extent and cell size the output file will match the other files identically, and only California will be output as it is the only feature selected.

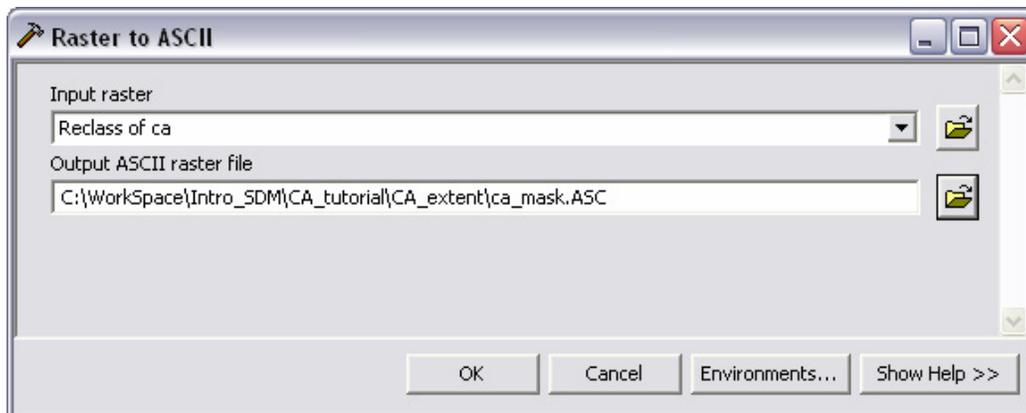


8. The resulting file is nearly complete, however the cell number has been set to “9” which is California’s object ID. In order to change this value to “1” go to Reclassify in the Spatial Analyst drop down menu.



9. The setup should be ready to go as is, you can see that the old value “9” will be replaced by the new value “1” with this function. Click **OK** to run, the resulting file is a temporary grid called Reclass of ca.

10. Lastly, in order for this file to be read in maxent, it must be converted to an ascii grid. Open ArcToolbox, and choose Conversion Tools > From Raster > Raster to ASCII. Enter the input file “Reclass of ca” using the drop down menu, and choose an output directory and name. Be sure to use the .asc extension so that maxent knows it is a grid file.



This output file will result in a mask that can be used to limit the area of interest in a maxent analysis. Be sure that this file is located in the same directory as your other climate data files.

RS/GIS Quick Start Guides

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