

Creating USNG Mapbooks

This is a basic guide for creating a map book based on the U.S. National Grid (USNG), using Data Driven Pages in ArcMap. Data Driven Pages is a feature of ArcMap that was added at version 10.0, replacing the previous capabilities provided by the DS Mapbook extension. These instructions are based on specific USNG 1K polygon data and the associated field names and feature attributes.

Preparation

Download sample ArcMap map document1K and polygon shapefiles:

- NG1K.mxd - 1KM Maps (NG1K.mxd) use a Letter (8.5" x 11") size layout
- 1KM polygon shapefiles for your area of interest. These can be obtained from the USNG Center Website GIS Data Page (<http://usngcenter.org/portfolio-item/usng-gis-data/>)

Open NG1K.mxd in ArcMap (v.10 or greater). This map document has two data frames; one for the map itself, and one for the map index. The coordinate system on **both** data frames is set to UTM Zone 15N. The coordinate system of both must be changed to the UTM Zone corresponding to the USNG Grid Zone for the maps that are to be created.

Change the data source for layers named "1K Polygons" and "Identifier Layer" to the shapefile you just downloaded.

ArcMap Instructions For Making Maps

1. Add the Data Driven Pages toolbar (Customize > Toolbars > Data Driven Pages).

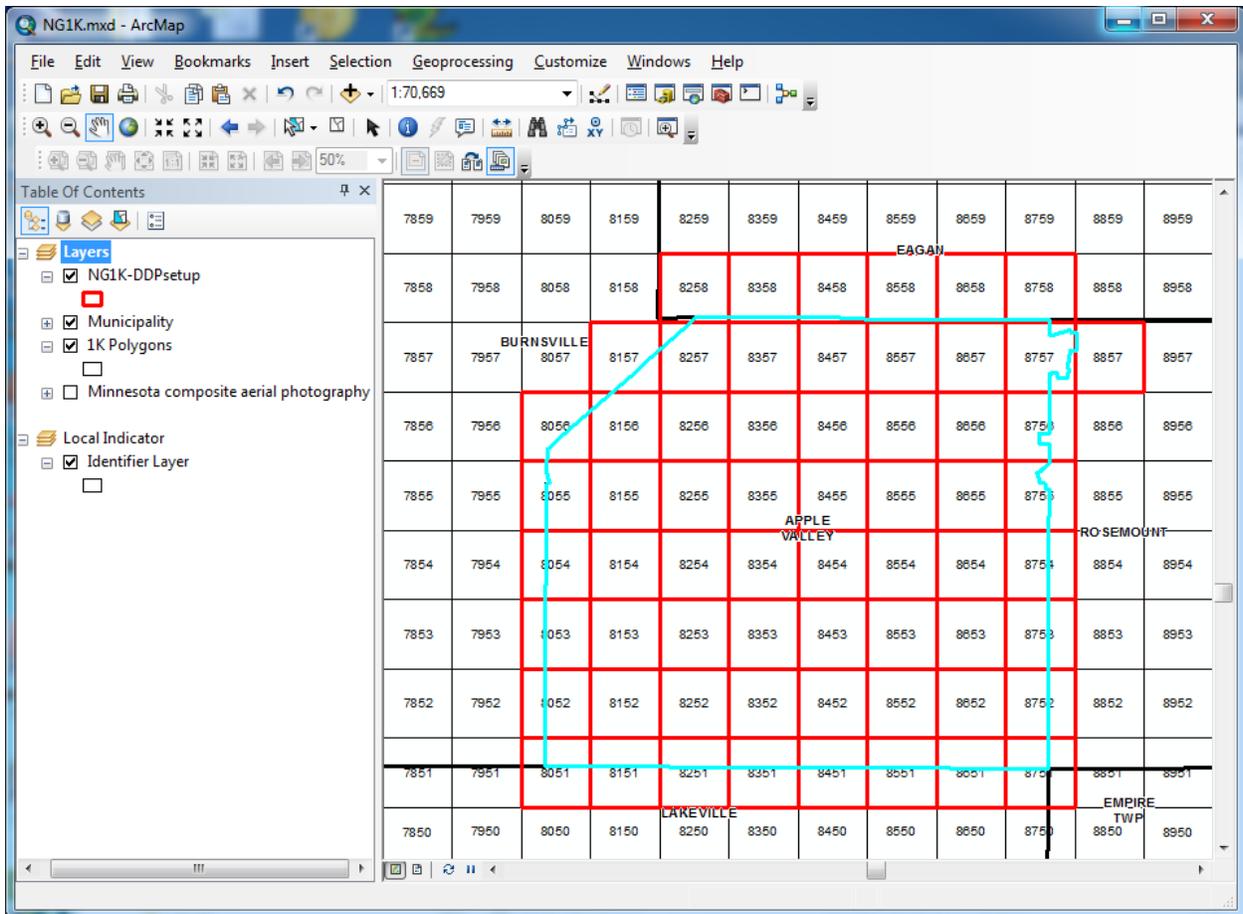
A new toolbar will be available in ArcMap. See Esri ArcMap online documentation or training for detailed background on the use of this toolbar.



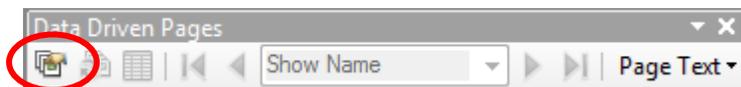
2. A polygon layer is required to use Data Driven Pages and to create the map index for adjoining maps.

- Select the USNG polygons for which map pages are desired from the layer "1K Polygons"
- Add them as a new layer (either by exporting them or creating a new layer from the selected features (example: "NG1K-DDPsetup" or "1K Polygons selection"). This can be done in a variety of ways. One convenient way is to use the "Select by Location" method using a municipal boundary to select all map pages for a city.

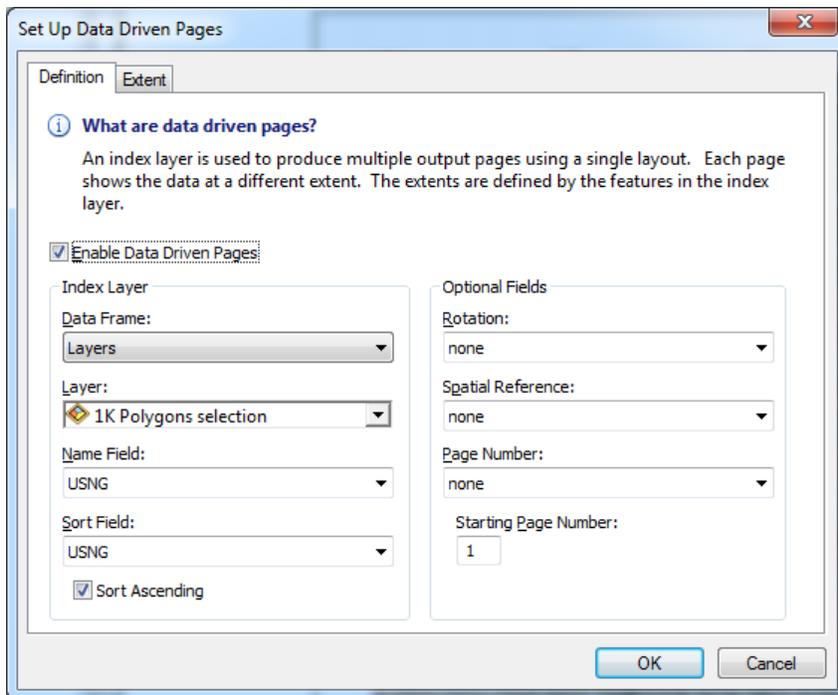
3. Set the map scale to 1:6000.



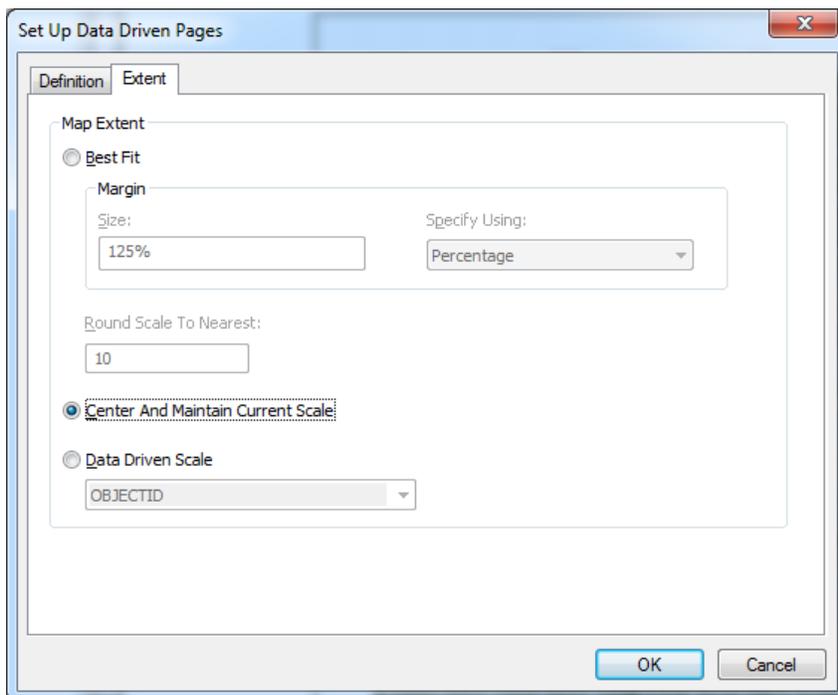
4. Click on the Data Driven Pages Setup button on the Data Driven Pages toolbar.



In the Set Up Data Driven Pages dialog, on the Definition tab, check Enable Data Driven Pages and set the various parameters as shown in the example below:



On the Extent tab, choose “Center and Maintain Current Scale” and click “OK”.



When you click “OK”, the pages are defined and ready for exporting.

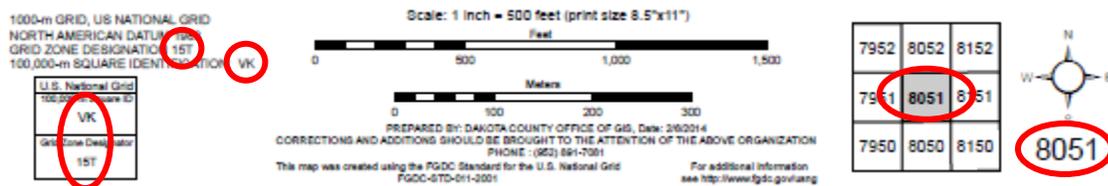
5. Add other layers you wish to include in your maps

- Add detail data to the “Layers” data frame (main map frame)

- Add overview data to the “Local Indicator” data frame (index / overview map)
- Adjust symbolization and labeling.
- You will likely want to turn off the layers you used for Data Driven Pages (e.g. “1K Polygons”, “1K Polygons selection”)

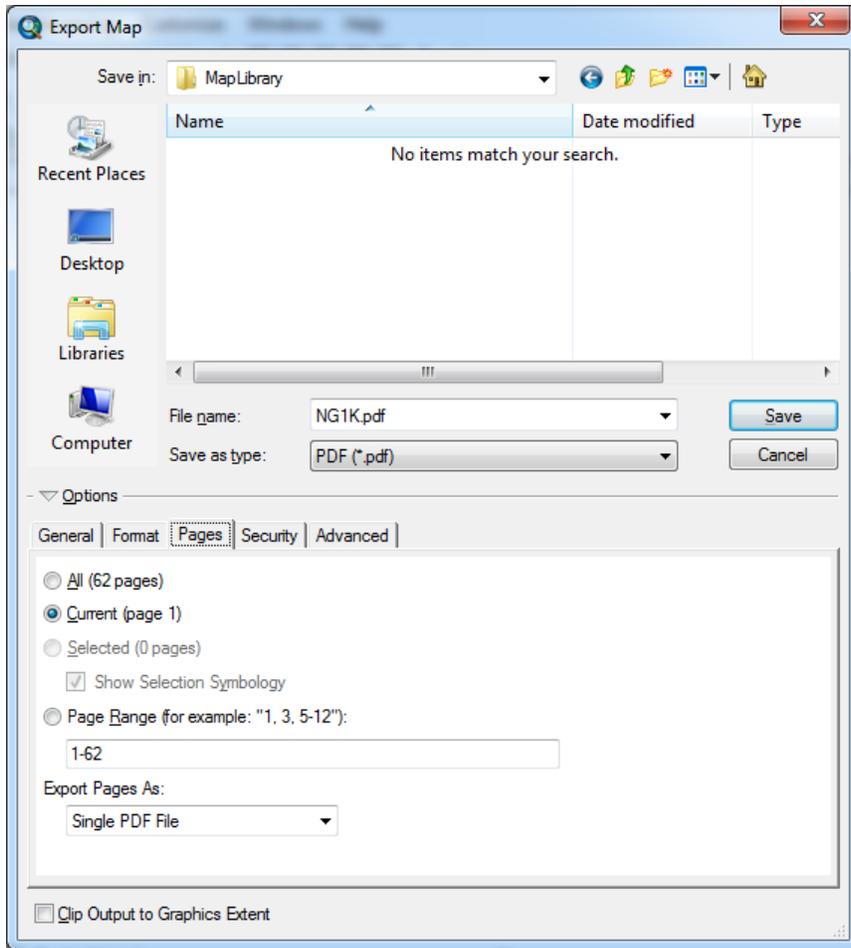
6. Review the maps and make final adjustments to the map layout and marginalia.

- Ensure the “Layers” data frame is active, set the map scale to 1:6000 and switch to the layout view.
- Use the navigation tools on the Data Driven Pages toolbar to move the first page, next page, previous page, or last page. Note various dynamic text, which is based on attributes of the USNG polygon data set including; the map page number and the current page number centered in the map index (Eastings+Northings), the Grid Zone (GRID1MIL) and 100,000m (GRID100K) identifiers in the grid zone designation box and embedded in the corresponding USNG text.



- Change the contact information on the bottom of the map to something appropriate for your organization.

7. Export the maps pages to PDF files. Ensure the “Layers” data frame is active and the map scale is set to 6000. Use “File” > “Export Map” to initiate the export process.



With Data Driven Pages active, the “Pages” tab will provide additional options for selecting the pages to export and an option to export to a single PDF file or multiple PDF files (one for each page). Note that the dialog defaults to exporting only the current page.

Exporting to a single PDF file is an easy option for creating map books. However, exporting to multiple PDF files provides greater flexibility by creating a library of map pages named using the full USNG designation as the filename. When using this option, the specified file name becomes the root file name (prefix), which is followed by the USNG page name. Note that if the file name is blank, an underscore character (“_”) will be used as the prefix by default.