GIS Tips & Tricks

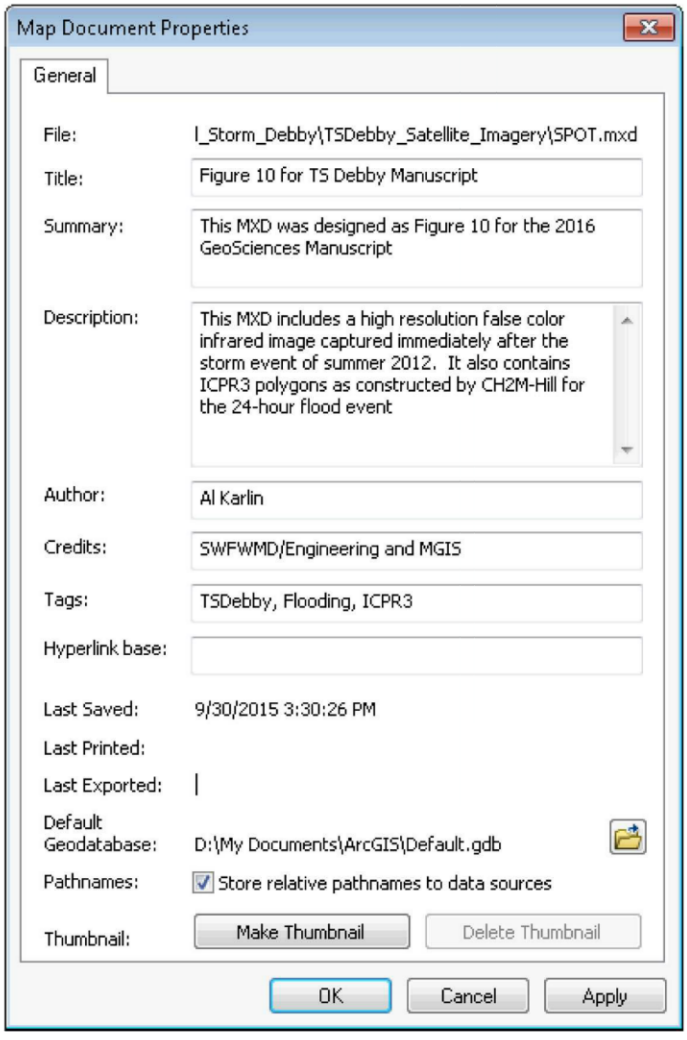
By Al Karlin, Ph.D.,CMS, GISP

Welcome to the inaugural column of what, I hope becomes, a semi-monthly feature. The purpose of the "GIS Tips and Tricks" is to highlight some of the common GIS functions that many users may have either forgotten, never used, or just plain never new existed. The column is rooted in a few 15 minute GeoBytes and instructional videos that we use at the Southwest Florida Water Management District to help new GIS users. I will be expanding the scope of these tips to include tips for some common GIS softwares, focusing on the Esri ArcGIS suite, but also including tips for GlobalMapper, and, on occasion, QuantumGIS. While my intent is not to make this a "Help Forum", if readers have a particular problem or are searching for a "GIS Trick", I welcome suggestions for future "Tips and Tricks" and I can always ask around my Mapping and GIS Section for new tricks and tips. For now, I'll start with basic GIS functions that we use on an everyday basis.

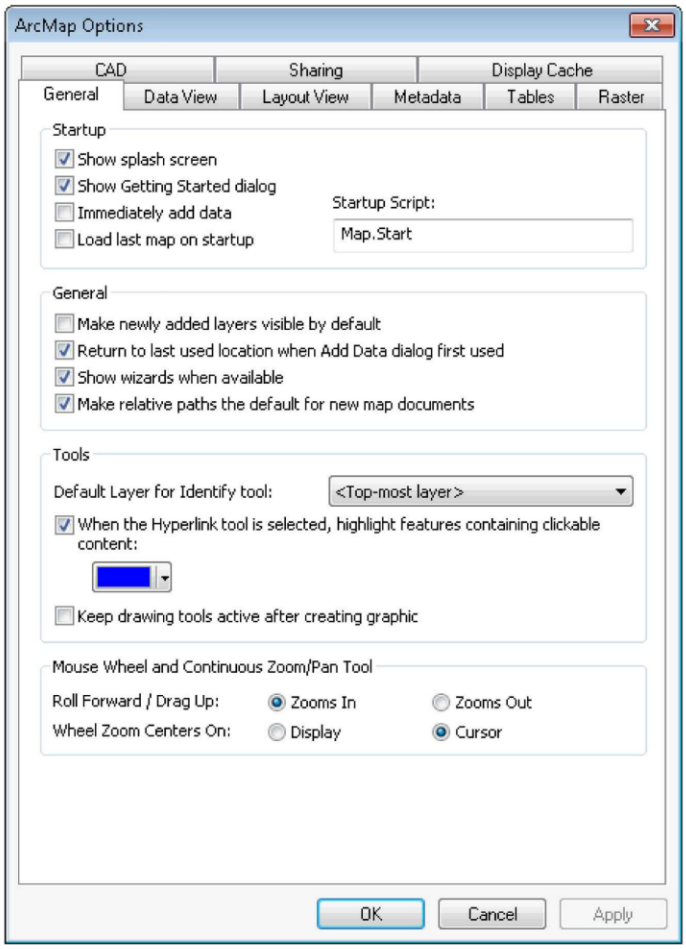
Feedback that I received on one of the short GeoBytes that I offered in 2015 indicated some were not aware of Esri Map Packages. Although this functionality has been part of ArcMap since 2010, I only recently began making widespread use of it for sharing complete maps. I found this to be an ideal vehicle for students in my GIS classes to send me their work and for people around the SWFWMD to share data without going through the ArcServer environment. The Map Package contains a copy of all of the actual data along with how the student/user symbolized the data, as well as, the Layout view for the map, as they wanted it to be produced. The package is compressed and very portable between computers, and it forces the student/user to construct some simple metadata before the package is created. Map Packages can be shared as e-mail attachments, FTP files, and even uploaded to ArcGIS.com. Of course, there are several Esri Resources and Esri-related Blogs on making and sharing Map Packages, and I advise a reader to simply "google" Esri Map Package to find these resources. There is also an Esri Web-based training course (cost $32 USD) for those seeking additional detail.

Steps to Constructing and Exporting a Map Package

STEP 1 — Construct an MXD. Add and symbolize the data exactly as you want it to appear. I recommend working in a single directory for this process. Make a Sub-Directory (I like to call it \GISDATA) and place copies of all of the vector data and image data into this directory. When you make your MXD, be sure to use the File | Map Document Properties tab and check the "Pathnames: Store relative pathnames to data sources" checkbox. (This is also a good time to add some metadata to your MXD; just fill in the fields on the screen and these data fill be attached to your MXD.) Save your MXD to the parent folder.

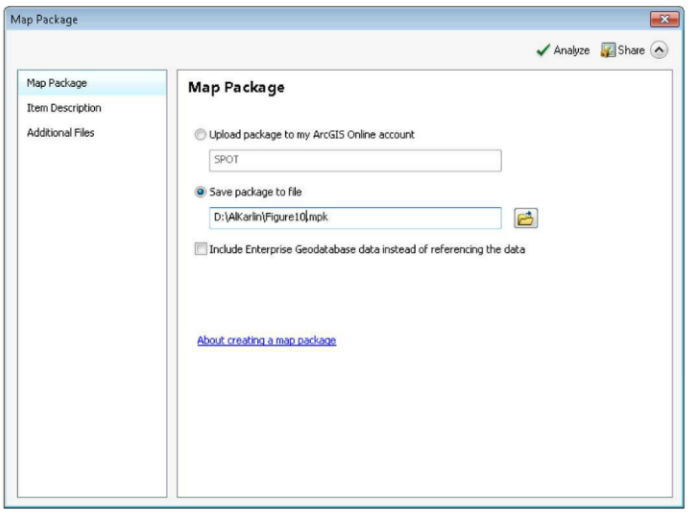


EXTRA TRICK: You can make relative pathnames the default by going to Customize | ArcMap Options; on the General Tab, check the "Make relative paths the default for new map documents" checkbox. A good practice is to check (File | Map Document Properties) and add metadata to your MXD.



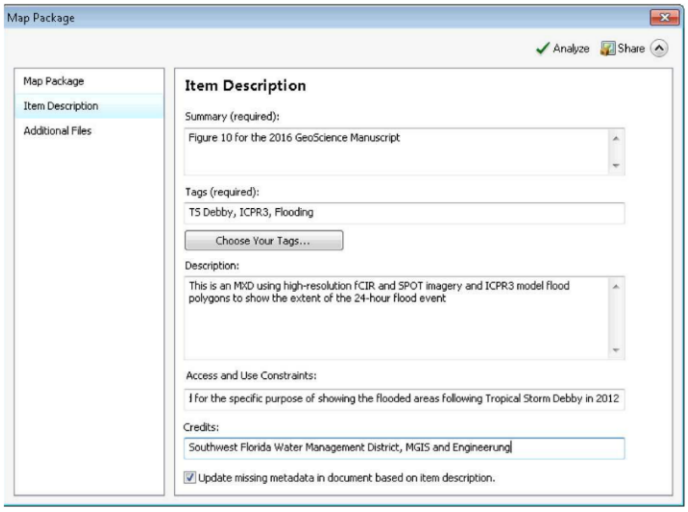
STEP 2 — START THE MAP PACKAGE DIALOG

In ArcMap, use the File | Share As | Map Package option; this will start the dialog boxes. There are several options of where to publish your map package. For my purposes, I instruct students/users to choose the "Save package to file" option and use the folder icon to direct the output to a specific folder and filename of your choice.



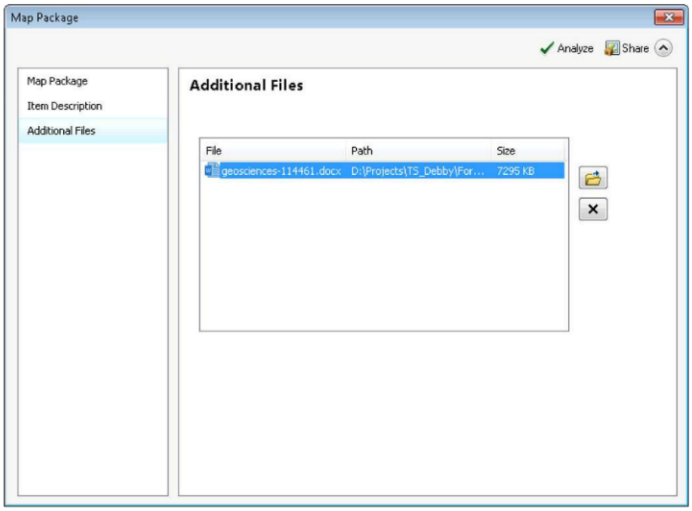
STEP 3 – ENTER THE ITEM DESCRIPTIONS (REQUIRED)

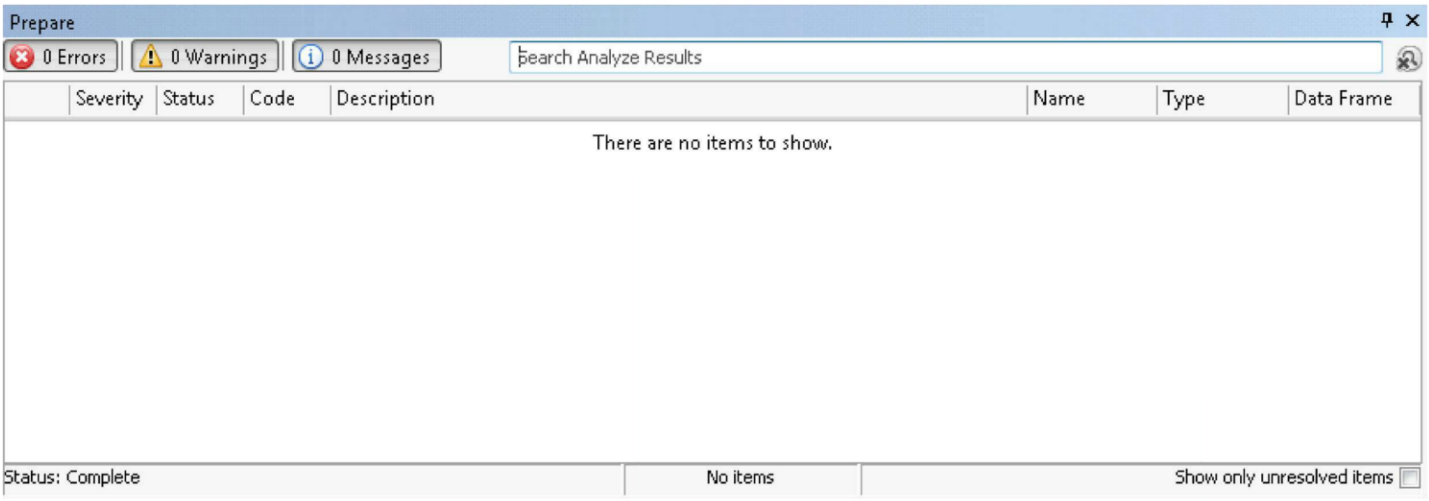
Enter all required fields for the Item Descriptions. Note that checkbox on the bottom of the dialog will use the information that you input here to populate the MDX's metadata (if you did not input those data previously.)



STEP 4 – ADD ADDITIONAL FILES INTO THE MAP PACKAGE (OPTIONAL)

At this point, you can add other files to your map package. If you want to add Excel spreadsheets, or Word documents, this is the time. (In the example, I added a Word file to the Map Package.)



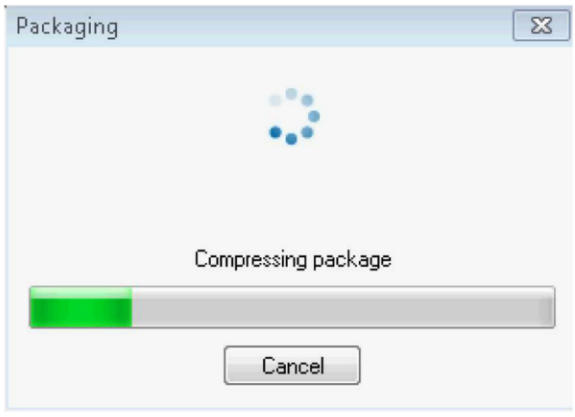


STEP 5 – ANALYZE AND PUBLISH THE MAP PACKAGE

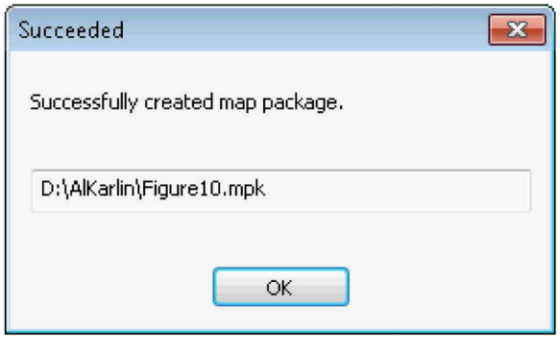
From the Map Package menu bar, click the "Analyze" option. It will produce a report of any errors, warnings and messages. If it detects "errors", you will need to repair them before publishing the package. The most common error results from incomplete metadata, or from broken links in the Table of Contents. Your goal is to get a report as the one below.

Once you yet a "clean" report, it is just a matter of clicking on the "Share" icon to publish the Map Package. If you made any changes to the MXD as a result of the Analyze step, you will need to save the MXD before publishing it.

ArcGIS will present splash screens to let you know what it is doing.



When the compression is complete, you will get another message telling you of your success.



The Map Package can now be sent to other users. To open your Map Package, all the user needs to do is have ArcGIS installed on their computer and double-click on the .MPK file. The action will start ArcMap and open the Map Package/MXD.

Congratulations on your map package.

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