

GSC FIELD APP – CREATING AND USING A TILE PACKAGE

WHAT IS A TILE PACKAGE?

- A tile package is a single, easy-to-share file that is created in ArcMap.
- Tile packages are used as a background map in the GSC Field App and can incorporate any standard datasets.
- Tile package datasets are not editable in the GSC Field App nor can you query TPK data.
- TPKs are only used as background
- TPK MXDs should only contain the layers needed as additional layers tend to inflate the size of the TPK.
- Even layers that are turned off can add to the TPK size.
- The goal is to keep the tile package as small as possible.

DATA THAT CAN BE USED IN TILE PACKAGE

- GanFeld data from previous years (as published and georeferenced raster maps)
- other legacy geology data
- digital elevation models and hillshades
- topography (toporama rasters or symbolized vectors)
- satellite imagery
- geophysical data

RECOMMENDATIONS

PROJECTION

TPK maps must be in WGS84, which is the same projection used in the GSC Field App.

To achieve that, only the data frame can be set in this projection, no need of actually projection original datasets in WGS 84. A projection on the fly is good enough.

LAYERS

- Create one TPK per layer
 - E.g. the symbolized vector topography can be one TPK, the legacy geology can be another.
 - You can display more than one TPK in the GSC Field App at the same time.
 - Adjust dataset transparency if necessary in ArcMap.
- Layer Properties → Display tab
- Download Toporama geo-referenced raster topo data from:
 - <http://atlas.gc.ca/toporama/en/index.html>
- Symbolized vector topography
 - Download CanVec vector topo data from:
 - <http://maps.canada.ca/czs/index-en.html>
 - Symbolize using the Symbology MXD (TopobaseSymbolizer_10_2.mxd)
 - <https://gcdocs.gc.ca/nrcanrncan/llisapi.dll?func=ll&objaction=overview&objid=9306050>
 - Geophysical raster data - <http://gdr.agg.nrcan.gc.ca>

SOFTWARE

Arc GIS Pro is recommended for processing time which can be a take a quarter or even less time then compared to Arc Map. It is also easier to set up; geoprocessing tool vs buried extension with a bunch of mandatory questions.

FOR MORE INFORMATION

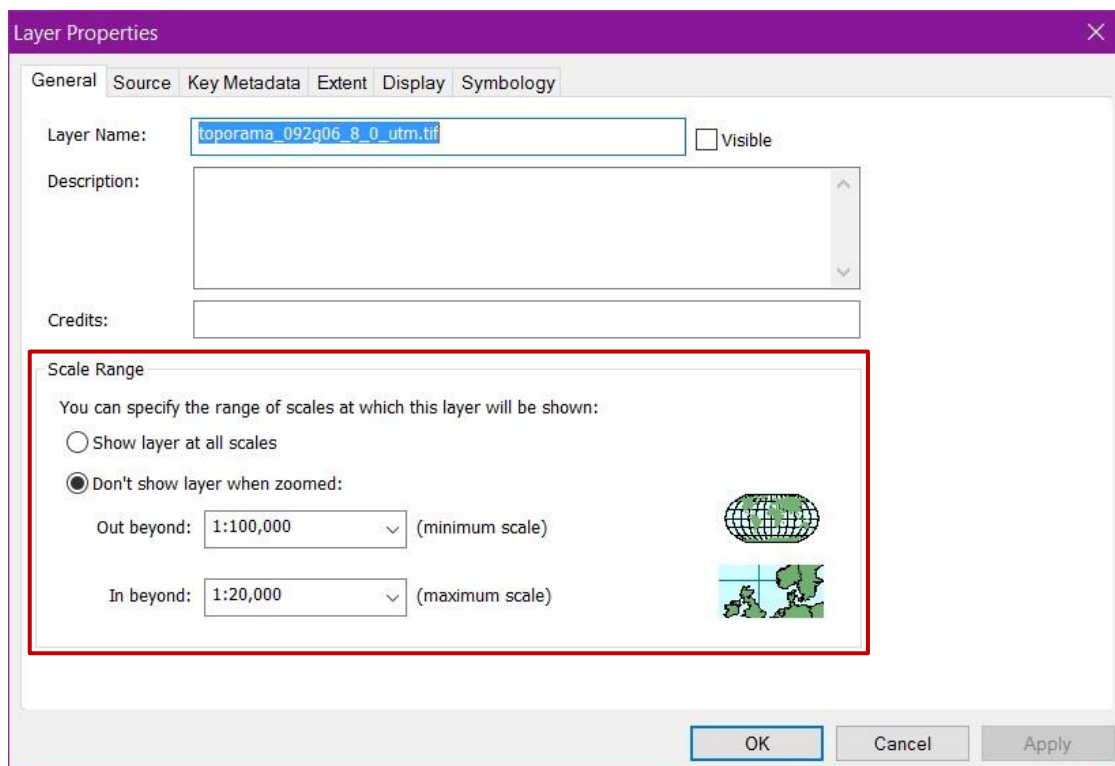
- Check out these ESRI websites for more information:
 - [About tile packages](#)
 - [Fundamentals for creating tile packages](#)
 - [How to create a tile package](#)
 - [Tips for creating tile packages](#)

HOW TO PREPARE DATA FOR A TPK

VISIBILITY SCALE

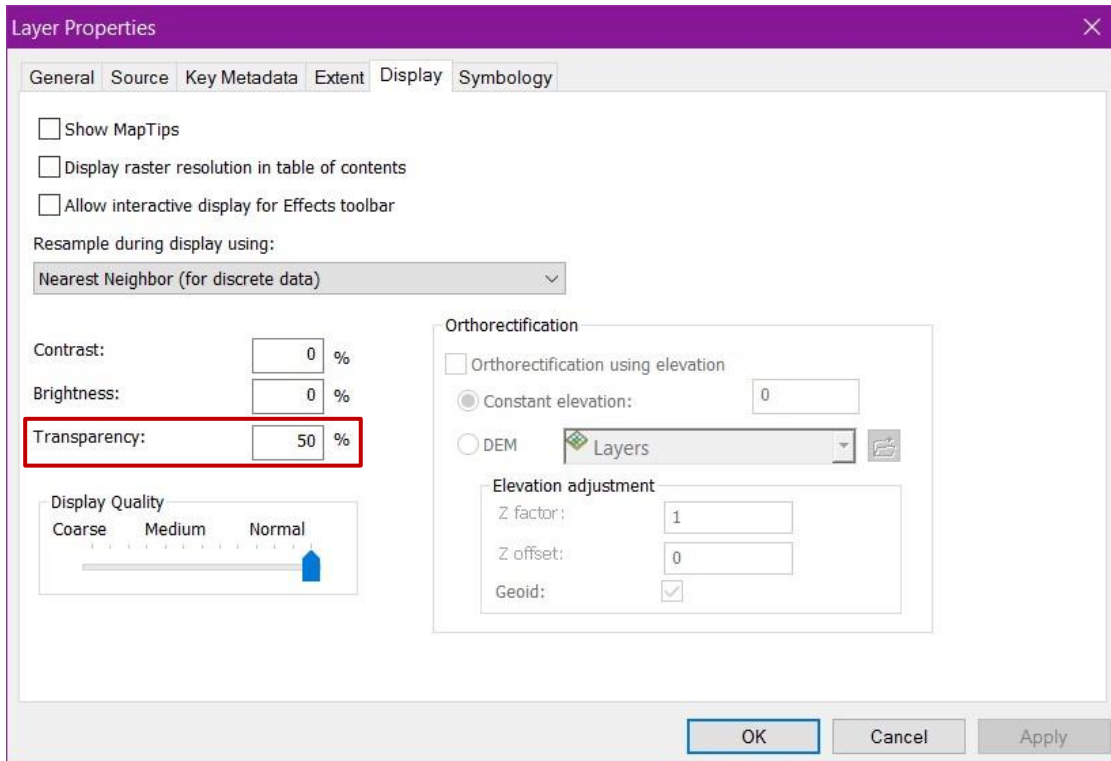
1. In Arc, load and symbolize the data sets you wish to use.
2. Open the properties of the layer for which you wish to set visibility scale.
3. Under the General tab, click on 'Don't show layer when zoomed:'
4. Set the Out beyond value to be the scale you wish to zoom in to make that layer appear.
5. Set the In beyond value to be the scale you wish to zoom in to make that layer disappear.

Note: the Out beyond value is always larger than the In beyond value.



TRANSPARENCY

1. In Arc, load and symbolize the data sets you wish to use.
2. Open the properties of the layer for which you wish to set transparency.
3. Under the Display tab, set the Transparency value. (100%=fully transparent — 0%=fully opaque)
4. Set the Out beyond value to be the scale you wish to zoom in to make that layer appear.
5. Set the In beyond value to be the scale you wish to zoom in to make that layer disappear.

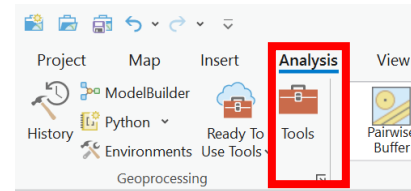
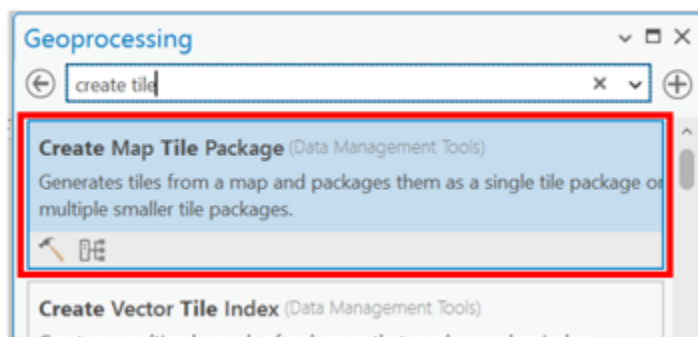


ARC GIS PRO

CREATING A TPK

To export data to a tile package:

1. In ArcGIS Pro, navigate to Analysis->Tools... to bring up the Geoprocessing menu.



2. Once you see the Geoprocessing menu, use the search field to search for 'create tile'. The Create Map Tile Package should appear at the top of the list. Please select it.

3. In the Tile Package tab, click on Save package to file and enter a descriptive name for the tile package.

Geoprocessing ⌵ □ ✕

⬅ **Create Map Tile Package** ⊕

Parameters Environments ?

Input Map
 📁

☒ Package for ArcGIS Online | Bing Maps | Google Maps

Output File
 📁

Tiling Format
 ⌵

Minimum Level Of Detail
 ⌵

Maximum Level Of Detail
 ⌵

Summary

Tags

Extent ⌵

Package type
 ⌵

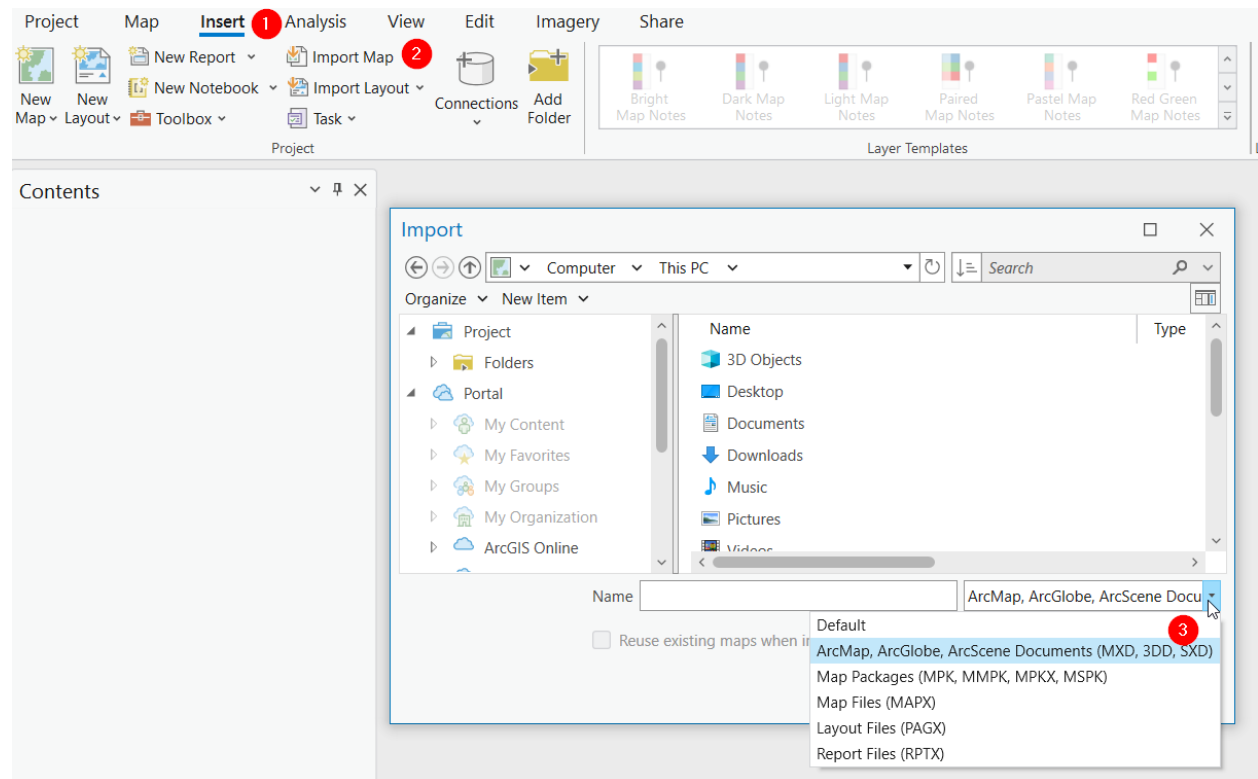
Area of Interest
 📁 ✎

▶ Run ⌵

4. For “Input Map”, select the map that you have already set up, in our case, using the Canadian Imagery Hybrid provided by ESRI.
5. Ensure that “Package for ArcGIS Online | Bing Maps | Google Maps” is checked.
6. Set an Output File name using the .tpk extension.
7. The Tiling format should match the format of the imagery. Canadian Imagery Hybrid is 8-bit, so that is appropriate for this task.
8. Set the min and max level of detail based on the resulting scale. Including unneeded levels of detail will result in the dramatic expansion of the TPK file size. Fewer levels will result in a smaller file and run faster but may not have the high resolution required for the work.
9. Summary and Tags are very useful to have in the file but are often considered to be optional metadata. We recommend adding them.
10. Lastly, if the file is to be used in the GSC Field App then ensure that you set the Package Type to .tpk.

IMPORTING MXD INTO ARC PRO

In order to import in Arc Pro an old map document from Arc Map desktop suite, go in the Insert tab, click on import Map button then you'll be presented with a browse menu in which you can selected desire .mxd to import.



ARC MAP

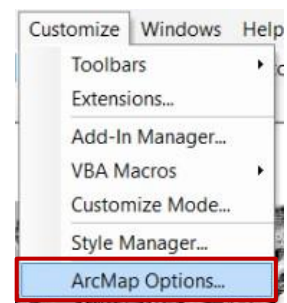
CREATING A TPK

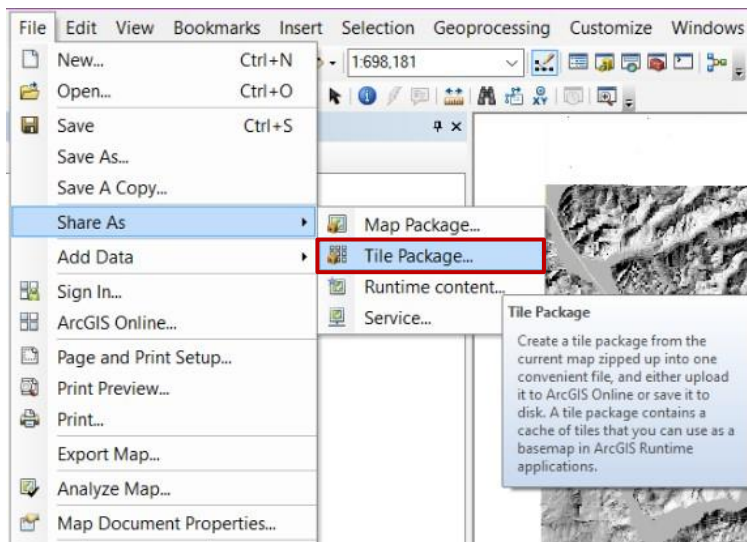
To create a TPK, I must first enable the use of the tile package tool.

1. In ArcMap, navigate to Customize->ArcMap Options.
2. Click on the Sharing tab and ensure that the Enable ArcGIS Runtime Tools is checked.

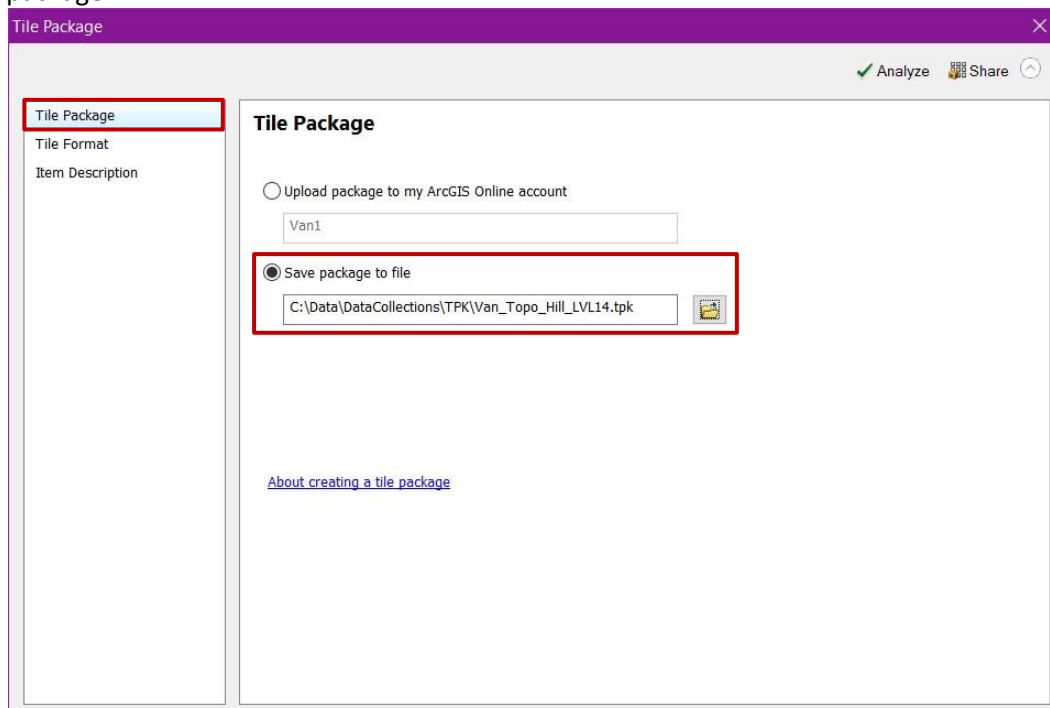
To export data to a tile package:

1. In ArcMap, navigate to File->Share As->Tile Package...





2. In the Tile Package tab, click on Save package to file and enter a descriptive name for the tile package.



3. Navigate to the Tile Format tab.
4. Use the default ArcGIS Online/Bing Maps/Google Maps Tiling Scheme option.
5. The tile format should match the bit sampling of the data you are using. In other words, if you are using an 8-bit raster, use PNG8.
6. The Levels of Detail relate directly to how long it takes the TPK to generate. We recommend you use a setting of 15 to get a relatively small file that has a good level of detail.

Tile Package

✓ Analyze Share

Tile Package

Tile Format

Item Description

Tile Format

Tiling Scheme: ArcGIS Online / Bing Maps / Google Maps

Tile Format: PNG8

Approximate Cache Size: 7 Mb

Levels of Detail

Choose the number of levels to create for this tile package. All levels up to and including the selected level will be generated.

Highest Level of Detail: 15 of 20

Level: 14

Scale: 1:36,111.90

Town

7. Navigate to the Item Description tab
8. Enter the basic required metadata for the TPK. Use commas to separate the tags from each other.

Tile Package

✓ Analyze Share

Tile Package

Tile Format

Item Description

Item Description

Summary (required):
Toporama and hillshade

Tags (required):
Toporama, hillshade, Vancouver, 092G06

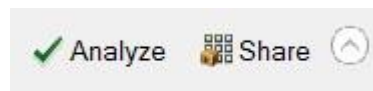
Choose Your Tags...

Description:
The Toporama (50% transparency) and hillshade for Vancouver, West Vancouver and North Vancouver (NTS 092G06).

Access and Use Constraints:

Credits:

9. Click on the Analyze button in the upper right-hand corner to see if everything is looking good. We might find that a raster does not have pyramids built or that some of our layers are in the wrong projection. The issues are rated in terms of severity.

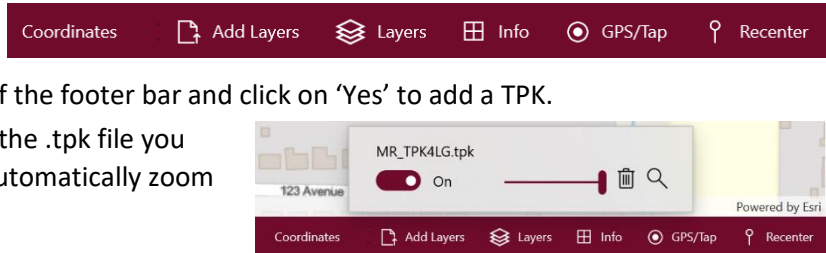


10. Once we are happy with the analysis, click on the Share button and let it process. You will see that the first 5 or 6 levels complete quickly, but the last few levels will take the majority of the processing time.

HOW TO USE A TPK IN THE GSC FIELD APP

LOADING A TILE PACKAGE

1. In the GSC Field App, click on the Add Layers button on the lower-right corner of the footer bar and click on 'Yes' to add a TPK.
2. Navigate to the location of the .tpk file you wish to add. The App will automatically zoom in on your location.



ADJUSTING THE DRAW ORDER OF TILE PACKAGES

1. By default, the Topo TPK will draw on top of the Canada TPK since it is the most recently added. Change the draw order of the TPKs by clicking on the Layers button and dragging the Canada TPK to the top.

TURNING OFF TILE PACKAGES

2. Turn off a tile package by clicking on the Layers button and clicking on the switch for the layer you wish to turn off.

REMOVING TILE PACKAGES

3. Remove a tile package by clicking on the Layers button and clicking on the trash can for the layer you wish to turn off. Click 'Yes' to confirm TPK removal.

