A6 (no critique)

L7

Post-Processing I

vector formats, maps in Inkscape, basic topologies, using grids, workflow development

GEP 299/680
Adam Jessup
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Has anyone exported their maps as SVGs and opened in Inkscape this semester?

Sources:

Vector export formats

- EMF
- EPS
- AI
- PDF
- SVG

Sources: https://bit.ly/2ApfLds

Vector export formats (most commonly used)

- EMF
- EPS
- AI
- PDF
- SVG

Sources: https://bit.ly/2ApfLds

Vector export formats matrix

Format	Name	Description
EMF	Enhanced Meta File (Windows)	EMF files are native Windows graphics files that can contain a mixture of vector and raster data. They are useful for embedding in Windows documents because the vector portions of the EMF can be resized without loss of quality. However, since EMF does not support font embedding and is exclusively a Windows format, it is not commonly used as an interchange format between users.
EPS	Encapsulated Postscript	EPS files use the PostScript page description language to describe vector and raster objects. PostScript is the publishing industry standard for high-end graphics files, cartography, and printing. EPS files can be edited in many drawing applications or placed as a graphic in most page layout applications. EPS files exported from ArcMap support embedding of fonts so that users who do not have Esri fonts installed can still view the proper symbology. EPS exports from ArcMap can define colors in CMYK or RGB values.
AI	Adobe Illustrator	AI files are an excellent format for postprocessing in Adobe Illustrator as well as an interchange format for publishing. The ArcMap AI format preserves most layers from the ArcMap table of contents. However, the Adobe Illustrator file format that ArcMap writes does not support font embedding, so users that do not have the Esri fonts installed may not be able to view AI files with the proper symbology. AI exports from ArcMap can define colors in CMYK or RGB values.
PDF	Portable Document Format	PDF files are designed to be consistently viewable and printable across different platforms. They are commonly used for distributing documents on the web, and the format is now an official ISO standard for document interchange. ArcMap PDFs are editable in many graphics applications and retain map georeference information, annotation, labeling, and feature attribute data. PDF exports from ArcMap support embedding of fonts and thus can display symbology correctly even if the user does not have Esri fonts installed. PDF exports from ArcMap can define colors in CMYK or RGB values.
SVG	Scalable Vector Graphics	SVG is an XML-based file format that has been specifically designed for viewing on the web. SVG can contain both vector and raster information. Some web browsers may require a plug-in to view SVG files; older browsers may not be able to view SVG files at all. SVG supports font embedding, so users who do not have the Esri fonts installed can still view ArcMap SVG exports with proper symbology. ArcMap can also produce compressed SVG files. The file extension changes to *.svgz when this option is enabled.

Vector export formats

- EMF
- EPS
- AI
- PDF
- SVG

Use these formats if your map requires further styling/processing in a third-party vector editor (e.g. Inkscape, Illustrator, etc.)

Best for **polygon/point** data, not suitable for raster

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Other options for vector formats (ArcMap)

The **Picture Symbol** drop-down list allows you to select the method used to render picture marker symbols

- Choose the Vectorize layers with bitmap markers/fills option to convert the raster markers/fills to polygons
- This will *prevent* rasterization of the map, at the expense of some details of the bitmap marker/fill–the option to rasterize marker symbols is also available

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Other options for vector formats (ArcMap)

The **Convert Markers To Polygons** option controls whether marker symbols that are based on font characters will be exported as text or as polygons

- Check this option if you plan to view the output on a machine that does not have the appropriate fonts installed, but you cannot embed the fonts due to licensing or file format restrictions (AI cannot embed fonts)
- On PDF or EPS exports, use the Embed All Document Fonts option instead*

*Note that having this option enabled effectively disables the Embed All Document Fonts option for font-based marker symbols in formats that support embedding

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Image export formats

- BMP
- JPEG
- PNG
- TIFF
- GIF

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Image export formats (most commonly used)

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Image export formats matrix

Format	Name	Description
BMP	Microsoft Windows bitmap	BMP files are simple, native Windows raster images. BMPs can store pixel data at several bit depths and can be compressed using the lossless RLE method. BMP images are typically much larger than formats such as JPEG or PNG.
JPEG	Joint Photographic Experts Group	JPEG files are compressed image files. They support 24-bit color and have been a popular choice for use on the web because JPEG file size is often substantially smaller than many other image formats. However, the JPEG compression algorithm is lossy and is not recommended for most map images, as line drawings and text or iconic graphics become blurred by compression artifacts. Thus, PNG is usually a superior format for map images. JPEGs exported from the data view in ArcMap can be generated with an accompanying world file for use as georeferenced raster data.
PNG	Portable Network Graphics	PNG is a versatile raster format that can be displayed in web browsers and inserted into other documents. It supports 24-bit color and uses a lossless compression. For maps, PNG is often the best raster format, since the lossless compression keeps text and line work legible by preventing the compression artifacts that can occur in JPEG format. PNG files also have the ability to define a transparent color; part of the image can be displayed as transparent in a web browser, allowing backgrounds, images, or colors to show through. PNGs exported from the data view in ArcMap can be generated with an accompanying world file for use as georeferenced raster data.
TIFF	Tagged Image File Format	TIFF files are the best choice for importing into image editing applications and are also a common GIS raster data format. However, they cannot be natively viewed by a web browser. ArcMap TIFFs exported from the data view also support georeferencing information in GeoTIFF tags or in a separate world file for use as raster data.
GIF	Graphic Interchange Format	GIF files are a legacy raster format for use on the web. GIFs cannot contain more than 256 colors (8 bits per pixel), which, along with optional lossless RLE or LZW compression, makes them smaller than other file formats. Like PNG, GIF files also have the ability to define a transparent color. GIFs exported from data view in ArcMap can be generated with an accompanying world file for use as georeferenced raster data.

Image export formats

- BMP
- JPEG
- PNG
- TIFF
- GIF

Use these formats if you're map needs no further processing/styling (i.e. it's 'flat', or more/less finished)

Best for **raster** data

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Other options for image formats (ArcMap)

The **Color Mode** option sets the bit depth of the exported raster

The **Compression** option sets the compression method used to encode the image

- Some image viewing programs may not support all compression types supported by an image format, so if you experience problems opening the exported image file, changing compression types can sometimes eliminate the problem

The **Background Color** option sets the color used as the background in the exported image

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Other options for image formats (ArcMap)

PNG and GIF support transparency

They have a **Transparent Color** option, which selects the color in the map that will be marked as transparent

- If you want to make only the background of the map image transparent, set Background Color and Transparent Color to the same color

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Output Image Quality (ArcMap)

Output Image Quality controls the amount of raster resampling

- If your map does not contain raster data or vector layers with transparency, setting the output image quality will not impact the output quality of your map

For vector export formats, you can control output image quality to help balance image quality with file size and processing time

- The default output image quality setting is Best (1:1)

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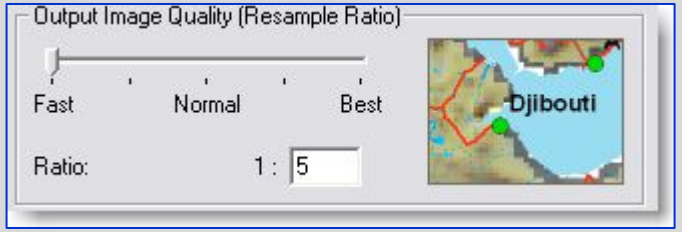
Output Image Quality (ArcMap)

The Output Image Quality control determines the effective resolution of raster content on output

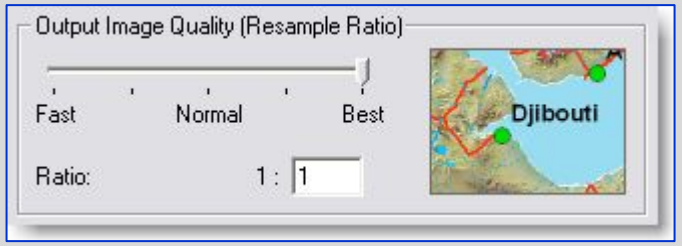
For instance, if the output image quality ratio is set to 1:2 and the output resolution is set to 300 dpi, the raster content will be output at approximately 150 dpi



When Output Image Quality is set to **Fast**, the preview image is highly pixelated

When the Output Image Quality slider is set to **Best** (i.e., a ratio of 1:1), no resampling will occur. By default, Output Image Quality is set to Normal.

- You may need to experiment by exporting or printing a small map at several Output Image Quality settings to determine the best setting for your map contents



When Output Image Quality is set to **Best**, the image is of much higher quality

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In class Inkscape tutorial

Everyone follows along at their computers

Helpful tutorials for A7...

Creating Points

- Creating a point feature by clicking the map (ArcMap)
- Create point and multipoint features (ArcMap)
- Creating a new vector dataset (QGIS)

Creating Routes

- Use GoogleMaps to make a route shapefile

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For next week...

No assignments due! Work continues on the **Personal Geographies** project (A7 due 11.06)

Readings

- Patterson
- Monmonier

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