Making and Printing Great Maps Using ArcView GIS

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Help you to best use these areas of ArcView GIS when making maps:

• Views and Symbology
• Layouts and Composition
• Printing and Publishing
Views and Symbology

- Buffers as cartographic effects
- Using the same theme twice
- Getting the message across with the right symbols
- Finding the right colors
Cartographic Effects with Buffers

• Border “Zones”
  - Buffer one ring inside your polygons
  - Turn off the outlines
  - Use a hatch pattern, or color just slightly lighter or darker than the source polygon’s fill

Water Features and Coastlines
  - Use several small rings inside water features or outside of land features
  - Ramp colors from coast until they fade into water
  - Tip: Too many rings may depict incorrect bathymetry
Using the same Theme Twice

- Lets you “sandwich” other themes between backgrounds, hatches, and outlines
- Create cased line symbols that don’t have ugly intersections
- Excellent for transparent hatch polygon overlays (Unique Values with no outlines) depicting phenomenon crossing boundaries
- Show bivariate thematic displays
Point Symbols

- Geometric & Icons
  - Qualitative
  - Quantitative

- Pictorial
  - “Picture” images
  - Qualitative
    - Minimal Quantitative
Fill Symbols

• Turning Outlines off
  - Use for thematic map if polygon values are more important than exact boundaries, e.g., when using polygons as a background context for the data your map focuses on
  - Reduces conflict with labels, points and linear features
  - Draws faster—useful for IMS maps
Contrast Creates Hierarchy

Use line weight, shading, grids, color and text to create depth.
Color by the numbers

- **Hue (H)** - what we mean by ‘Color’
  - Qualitative classification
    - Polychromatic or many hues ~color scheme
  - Quantitative classification
    - Monochromatic (low number of classes)
    - Dichromatic (Show distribution, e.g., Std. Deviation)
    - Polychromatic (high number of classes or unique values)

- **Value (V)** - the amount of black

- **Saturation (S)** - how much of a color
Color

- Clarify & delineate features
- More design possibilities
- Increased visual impact
- Clarify facts
**Color Ramp Tips**

- Use the “Ctrl” button for smooth ramps
- Rules of thumb for color selection
  - use the same Hue and change the value to show quantity
  - use the similar value and saturation with varied Hues to show categories
  - Use low Saturation for background information
Layouts and Composition

• Getting the scale right
• Working with graphics
Scale a key issue

- Plan Map size & map extent
- Using a “reference” scale
  - Usually the scale of your printed map
  - Set using the Legend Editor for features
  - Create all labels at this scale
  - Working at the reference scale and using the named extents sample extension
    - Once you find the extent you want to make your map with, save it using the Named Extents...
Maintaining a Viewframe’s Scale

- **Pre-defined Scale**
  - Use the User-Defined option
  - Viewframe extent nudger extension
- **Pre-defined location**
  - Use the Automatic option
- **Smooth transition from screen to paper**
  - Use the Preserve View Scale option

*Show how to set the viewframe for each way and the effect, especially changes in the view.*
Managing Graphics

- Aligning and Distributing graphics
  - Important to the perception of a high quality presentation

- Group, ungroup and simplify
  - Allows you to work with completed parts of your map as a whole, or to get at the most basic components when necessary

- Custom Neatlines and Legends
  - Distinguishes the map from others produce in ArcView or other products.

- Show simple examples the tools

- Show how to load the extension and a layout full of cool examples
Printing and Publishing Maps
Getting what you expect

- Map-specific considerations
- Printer-specific considerations
- System-specific considerations
- Printer drivers
  - PostScript
  - Native drivers
  - ArcPress
On the Map

• Color
  - Depending on printer, certain colors (bright blue or green) print darker on screen
  - Use colors your printer (ink) can support
  - Know what colors work well on your printer

• Raster data
  - Don’t overload printer with data it can’t handle
  - Use “Output Resolution” in Layout’s page properties to reduce #pixels sent to printer
How’s your printer?

- Paper Quality - You get what you pay for
- Print Quality Mode - Don’t saturate cheap paper with “Best” inking mode
- Margins - Check printer manual for non-letter size paper
- Printer Calibration - Is the black ink offset a bit?
- Age of Printer/drivers - Good enough?
What’s in the System?

- Where is your output processed prior to printing?
  - In your computer’s memory
  - In a Spool file
  - In your printer’s memory
- Obtain more, better, or dedicated printing resources
Printer Drivers

• If you have a Postscript card, use ArcView’s Enhanced PostScript driver
  – Every reproducible bug reported for this driver since its release has been fixed

• Native Printer Drivers
  – use most current & experiment with settings

• ArcPress
  – When all else fails / not enough memory
Postscript

- Highest quality
- Robust handling of complex cartographic output
  - Efficient image compression
  - Mix opaque with transparent raster and vector data
  - Very high text quality
Native Printer Drivers

- Often most efficient means of printing
- Driver updates - check often!
- Manufacturer’s drivers (versus the generic Microsoft drivers) provide a wide variety of output manipulation options
  - Coated media settings
  - Color Correction
  - Error Diffusion
  - Microweave to reduce banding
ArcPress

• Use ArcPress
  - if you don’t have a PostScript Printer
  - Output is too large (Maps are often complex and data-rich and require lots of resources to print)
  - Not enough memory

• Color and ArcPress
  - Often ArcPress produces a significantly darker result, especially when maps contain imagery
    • C =55, M =55, Y =55, K =100 (Check out the ArcPress Island to see the difference)
    • Use the Image Legend Editor to lighten the image
Publishing

- Color Proofing: work with your publisher to get the results you want.
- Line Weights: Sometimes the publisher can tweak things like ‘trapping’ settings and get better results. Usually very thin lines cause problems, you can thicken your lines to get the map to work.
- Media: when publishing a map, you have a wider array of paper types available. Educate yourself so you’ll get what you want.
- Plan ahead. Give yourself 4-6 weeks at a minimum. Unless you’re very good and very lucky you cannot publish fast.