Labeling, Annotation, Editing, and Text Placement

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ESRI - Educational delivery instructors
Overview

• Labels and annotation defined
• Working with labels
• Converting labels to annotation
• Working with annotation
• Questions
Map has a variety of textual information

- **Descriptive**
  - Names, title, legend

- **Positional**
  - Grids, graticules

- **Analytical**
  - Charts, tables

- **Metadata**
  - Disclaimer, data source

- May or may not be feature-based
- Must plan for text placement and storage
Feature-based versus not feature-based

<table>
<thead>
<tr>
<th>ID</th>
<th>L-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RSV</td>
</tr>
<tr>
<td>2</td>
<td>RES</td>
</tr>
<tr>
<td>3</td>
<td>AGR</td>
</tr>
</tbody>
</table>

Feature-based

High seepage zone

Not feature-based
Feature-based text

- Can be based on

<table>
<thead>
<tr>
<th>R-Type</th>
<th>Pop-2001</th>
<th>OV70</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14,650</td>
<td>709</td>
</tr>
<tr>
<td>2</td>
<td>65,346</td>
<td>1201</td>
</tr>
<tr>
<td>1</td>
<td>37,562</td>
<td>503</td>
</tr>
</tbody>
</table>

Single attribute:
- 14,650
- 65,346

Multiple attributes:
- 14,650_709
- 65,346_1201
Labels or annotation

Labels
- Dynamic
- Managed as a group
- Stored in map document
- Linked to a feature
- Layer property

Annotation
- Static
- Managed individually
- Stored in map document or in GDB
- May or may not be linked to a feature
- Can be a graphic or a feature
Decision making for map labeling

**Labels**
- Not feature-based
- Feature-based

**Options**
- Standard Label Engine
- Maplex Label Engine

**Individual labels**
- Standard
- Map annotation group
- GDB annotation FC
- Coverage anno
- CAD anno
- GP Import tools
- Feature linked

**Bulk labels (dynamic)**
- Standard
- Map annotation group
- GDB annotation FC
- Coverage anno
- CAD anno
- GP Import tools
- Feature linked
Using the right tools and environment

- **Labels**
  - Standard Label Engine
  - Maplex Label Engine
  - Set bulk of label properties of layer

- **Map anno group**
  - Manage annotation groups
  - Data frame properties
  - Manage text as
  - Graphic elements

- **GDB anno FC**
  - Manage annotation as
  - Features in an edit session
Overview

- Labels and annotation defined
- **Working with labels**
- Converting labels to annotation
- Working with annotation
Label management – Layer Properties dialog box

Manage labels for ONE layer at a time
Label management – Labeling toolbar

- Label Priority Ranking
- Label Weight Ranking
- Label Manager
- Lock Labels
- View Unplaced Labels
- Pause Labeling
Label Manager

Label Field

Label Expressions

Symbols & Styles

Label Classes

Layers

Placement

Scale Range

Feature selection for label classes

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Label field

• Label using any attribute field
• Can label from joined tables
Symbols and styles

- Font, size, color
- Bold, underline, italic
- X/Y offset from the feature
- Vertical & horizontal alignment
- Uppercase, lowercase
- Shadow, halo, background fill
Standard point placement

Predefined scheme

Directly on point

Hierarchy of angles

Based on attribute field

Angles 45 and 225
Standard line placement

- **Orientation**
  - Horizontal
  - Parallel
  - Curved
  - Perpendicular

- **Position**
  - Above line
  - On the line
  - Below line
  - Define offset units
Standard polygon placement

- Horizontal
- Straight
- Try horizontal first, then straight
Maplex Label Engine

- Enhanced rule base for label placement
- Requires the Maplex extension
Scale range

• At what scale labels will display

Scale > 1:2,000,000

Scale < 1:2,000,000
Label classes

- Label features in the same layer differently
  - Define with SQL Query
  - Use existing feature symbol categories
Label Priority and Weight Ranking

- Objects with higher rankings or weights will not be over-written
Lock Labels

- Locks label size / position in current extent
  - Do not have to wait for labels to redraw
  - Zoom in on cluttered area, no label movement
  - Works with the Magnifier window

Original extent, labels locked

No label movement when zoomed out
Pause Labeling

• Suspends labels from drawing
View Unplaced Labels

- Draws labels that were not placed due to conflicts
- Can choose color for unplaced labels
Label expressions with VBScript or JScript

- **Stack labels**
  - `Replace([NAME], " ", vbNewLine)`

- **Round numbers**
  - `Round([AREA], 1)`

- **Change case**
  - `UCase([STREET])`

- **Label multiple field values**
  - `[CITY] & ", " & [CNTRY]`
Overview

• Labels and annotation defined
• Working with labels
• Converting labels to annotation
• Working with annotation
Decision making for annotation

- **GDB annotation FC**
  - Standard
  - Feature linked

- **Map annotation group**

Options for storing annotation:
- In a database
- In the map

Table:

<table>
<thead>
<tr>
<th>Feature Layer</th>
<th>Feature Linked</th>
<th>Append</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Annotation storage - In the map

- As a graphic inside the map document
  - Use in a single map document
  - Stored as graphics

Data Frame Properties dialog box
Annotation storage - In a database

• Advantages
  – Use in multiple map documents
  – Use for variable-depth masking
  – Store additional feature attributes
  – Display in ArcMap TOC
  – Layer properties – can set
    • Transparency
    • Draw order
Controlling the conversion to annotation

- **Filter options**
  - Create Annotation For
    - All features
    - Features in current extent
    - Selected features

- **Set appropriate reference scale**
  - Plan for multiple map scales
    - Reference Scale
      - 1:6,000
Annotation classes

• Within GDB each
  • **Label class** converts to an **annotation class**
  • No need for multiple annotation FCs
  • Define separate, independent properties
Unplaced annotation

GDB annotation FC

Map annotation group

Stored in the anno FC

Stored in the map
Editing annotation

• Better control over individual text elements

Want 3 lines (not 4 lines)

Want to move up

Want to vertically align
Overview

• Labels and annotation defined
• Working with labels
• Converting labels to annotation
• Working with annotation
Use the correct toolbar

- Create new annotation
- Edit existing annotation
Annotation toolbar

- Central location for creating and editing annotation
- Integrated with feature editing environment
  - Use snapping, select by attribute, etc.

![Annotation toolbar interface with options for editing, construction type, text, and symbols.](image-url)
Edit Annotation Tool

• Move annotation

• Modify symbology and attribute values
  – Right-click selected annotation and click Attributes
Edit annotation and attributes

Properties stored in table

Domains
Creating new annotation

1. Select construction type:
   - Horizontal
   - Straight
   - Curved
   - Leader Line
   - Follow Feature

2. Choose symbol:
   - Large cities
   - Small cities

3. Type in text:
   - Baton Rouge

4. Options for text placement:
   - Text placement

5. Can add more symbols in ArcCatalog

Type in text or use text from label field
(hover over feature and press W)
Summary

• Labels
  – Label field, symbols and styles, placement, customize, scale range, label classes, priority, weight

• Convert to annotation
  – Manage text individually
  – Store annotation in the geodatabase

• Annotation
  – Create new, edit existing
  – Manage as a feature class
Questions?
Thank you for attending!
How do I get a copy of this workshop?

• Workshop **slides**
  – Distributed with Conference Proceedings CD
  – Mailed in about 3 weeks

• Workshop **audio** and **video** recordings
  – Sold on a DVD
  – Visit the Sound of Knowledge booths
    • Grand Lobby
    • Foyer outside room 6A
ESRI cartography resources at ESRI UC

• The **Map Gallery**
  See the cartographic work of your colleagues on display
  – Time: Monday, 3:30 p.m.–8:00 p.m.
    Tuesday & Wednesday, 8:00 a.m.–6:00 p.m.
    Thursday, 8:00 a.m.–3:15 p.m.
  – Location: *Sails Pavilion* and vicinity

• The **Map Critique Station** (*New!*)
  Get your map critiqued by professional cartographers
  – Time: Monday, 4:00 p.m.–8:00 p.m.
    Tuesday & Wednesday, 9:00 a.m.–6:00 p.m.
    Thursday, 9:00 a.m.–1:00 p.m.
  – Location: *Sails Pavilion*

• **Cartography Special Interest Group** Meeting
  Share mapping experiences with other cartographers
  – Time: Thursday, 11:45 a.m.–1:15 p.m.
  – Location: *Room 24 C*
More cartography resources at ESRI UC

- Getting to Know Symbols and Styles in ArcGIS (session 115)
- Labeling, Annotation, Editing, & Text Placement (session 132)
- Map Compilation & Page Layout—Tips and Tricks (session 141)
- Maplex for ArcGIS—An Introduction (session 142)
- Advanced Annotation—Tips and Tricks (session 9)
- Advanced Cartography in ArcGIS (session 13)
- Lessons Learned in Cartographic Data Modeling (session 134)
- Mapping the Results of Your Geographic Analysis—Tips and Tricks (session 143)
- Using Map Projections and Coordinate Systems (session 192)

- Check your UC agenda for updates and other cartography sessions
ESRI cartography resources after ESRI UC

• Instructor-led training
  – Cartography with ArcGIS
    • August 11–13 in San Antonio, TX
    • August 20–22 in Seattle, WA
    • September 24–26 in Redlands, CA
  – Working with Cartographic Representations
    • August 14–15 in San Antonio, TX
    • August 21–22 in Chesterbrook, PA

• Instructor-led virtual classroom training
  – Advanced Techniques for Labels and Annotation
    • September 23–25, 1:30 p.m.–4:30 p.m. PST, online

• Check www.esri.com/training for schedule updates
Technology trends in GIS—cartography

ESRI’s vision for cartography and map production is to enable you to perform complex database-driven workflow processes within the same ArcGIS software environment that includes:

- A central enterprise database
- Support for multiple cartographic representations

Showcase

Product Manager, ESRI

Listen or download:

MP3 (1:24 | 3.35-MB)

Managing Cartography

—Clint Brown, Director of ArcGIS Product Management, ESRI
GIS for map, chart, and data production

www.esri.com/industries/map-chart-dataproduction/index.html

ESRI GIS is used in the map, chart, and data production community including national mapping agencies and commercial cartographic publishers. ESRI GIS helps these organizations perform topographic, cartographic, and data management activities.

Case Studies
- Bureau of Land Management [MP3-22:09] Podcast by Jeff Nighbert
Cartography discussion forum

Welcome to the Cartography Industry Discussion Forums.

This is a forum for you to share your mapping challenges, and for us and others to offer solutions. Please post your questions and comments, and look for suggestions and solutions from other users as well.

Quick Links

- Search
  Search through forum messages.

Cartography Discussion Conference (7 forums)

Post new question Login Required
Choose forum topic to post within
Jump to a Forum

www.esri.com/forums
ESRI Mapping Center

Welcome to Mapping Center

Mapping Center is about the use of ArcGIS in the graphic delivery of geographic information. Its goal is to help you make great looking maps by using the same cartographic concepts that professional cartographers use.

Current News Feeds

Does every map need a north arrow and scale bar?

I had an interesting email conversation this morning with one of my mentors, and the subject revolved around whether all maps need a scale bar and north arrow. He was trained in the "old school" of cartography, as he admits. His cartography teacher once
Cartography Special Interest Group

Meeting on Thursday
11:45 a.m. - 1:15 p.m.
Room 24 C

http://www.esri.com/industries/map-chart-dataproduction/user-community/user-community.html

The Cartography Special Interest Group (SIG) provides a way to share and discuss cartography issues with primary focuses are to
- Strengthen relationships between ESRI product teams and the cartographic user community.
Cartography courses

- Instructor-led training
  - Cartography with ArcGIS (3 days)
  - Working with Cartographic Representations (2 days)
  - Cartography with PLTS Map Production System—Atlas (2 days)

- Self-study Virtual Campus Web courses
  - Cartographic Design Using ArcGIS 9
  - Introduction to Map Production System—Atlas
  - Making Better Map Layouts with ArcGIS
  - ArcGIS Annotation: Tips and Tricks
  - Creating and Editing Labels and Annotation
  - The 15-Minute Map: Creating a Basic Map in ArcMap

- Instructor-led virtual classroom training
  - Advanced Techniques for Labels and Annotation

www.esri.com/training
ESRI Press books on cartography

• Designing Better Maps—A Guide for GIS Users
• Designed Maps—A Sourcebook for GIS Users
• Cartographic Relief Presentation
• Designing Geodatabases
  – Chapter 8—Cartography and the Basemap
• GIS Tutorial
  – GIS Tutorial 2—Map Design
  – GIS Tutorial 3—GIS Outputs
• ESRI Map Books
GIS training and education survey

• Your feedback helps us improve ESRI training
  – For what job tasks do you use ESRI software?
  – What training topics would help you succeed?
  – What training formats would you be interested in attending?

• Visit the Training and Education island
  – Complete our online survey and receive a code for a free one-module Web course
Get a free 45-minute hands-on lesson at the Hands-On Learning Center

Topics include:
• **Getting Started with Animation**
• **Creating A Map in ArcGIS**
• **Introduction to Spatial Analyst**
• and more

Location: ESRI Showcase