Introduction to GIS with ArcGIS Pro

Symbolizing Layers: Fundamentals of Symbology

Session 7

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Lecture Outline

- Introduction & Recap (5 minutes)
- Fundamentals of Symbology (45 minutes)
- Guided Exercise & Q&A (10 minutes)

Week 3: Coordinate Systems

- **Class 5:** Understanding Coordinate Systems
- **Class 6:** Managing Projections and Transformations

Week 4: Symbolizing Layers

- **Class 7:** Fundamentals of Symbology
- **Class 8:** Applying Different Symbology Methods

Week 5: Controlling Feature Display and Selection

- **Class 9:** Selecting Features with Queries
- **Class 10:** Managing Feature Visibility
- **Milestone:** Assignment 1 (Data Creation and Mapping) will be assigned.

Recap of Season 5 & 6

- Geographic and Projected Coordinate Systems
- EPSG codes and WKID
- Different Coordinate Systems
- Work with coordinate systems
- Set & save coordinate system
- Coordinate transformation
- Project data to a new coordinate system

Fundamentals of Symbology

in ArcGIS Pro

Symbolization

Process of applying visual properties like shape, size, and color to map features to represent their attributes.

Regarded as the coding of map features to communicate meaning.

Encodes both the where and what components of features.

Shows difference (nominal), rank (ordinal), or some numeric measurement (interval or ratio).

Takes on a range of functions on a map but should be clear, concise, and easily understood by anyone reading your map.

https://pro.arcgis.com/en/pro-app/latest/help/mapping/layer-properties/symbolization.htm
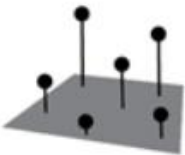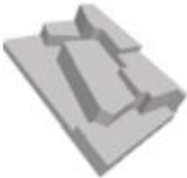
Symbology in ArcGIS Pro
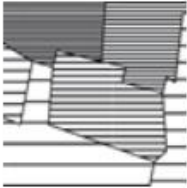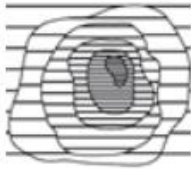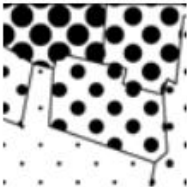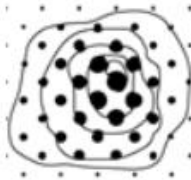
- You can access symbology settings by
  - right-clicking a layer in the contents pane and/or
  - choosing Symbology to open the Symbology pane
- Select from various primary symbologies, such as single symbol, unique values, or graduated colors, to customize data visualization.
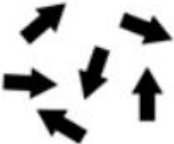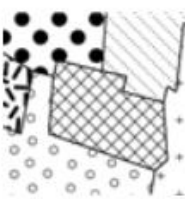
Symbology in ArcGIS Pro *cont…*
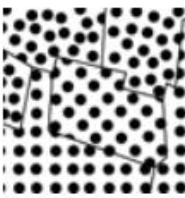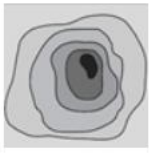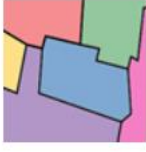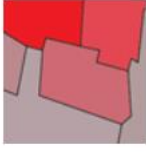
- Connect symbol properties to data fields for more advanced, attribute-driven symbology and control how symbols appear at different map scales.

Layer Symbology

- Visualization of spatial and attribute data based on
  - Color
  - Shape
  - Size
  - Categories

Visual variable	Point	Linear	Areal	2.5D	True 3D
Spacing					
Size					
Perspective height					Not possible

Visual variable	Point	Linear	Areal	2.5D	True 3D
Orientation				Not recommended	
Shape				Not recommended	
Arrangement				Not recommended	

https://pro.arcgis.com/en/pro-app/latest/help/mapping/layer-properties/symbolization.htm

Visual variable	Point	Linear	Areal	2.5D	True 3D
Value					
Hue					
Lightness					
Saturation					

https://pro.arcgis.com/en/pro-app/latest/help/mapping/layer-properties/symbolization.htm

Primary symbologies in ArcGIS Pro

Single symbol—Draw all features in a layer with a common symbol.

Unique values—Apply a different symbol to each category of features within the layer based on one or more fields.

Graduated colors—Show quantitative differences in feature values with a range of colors.

Graduated symbols—Show quantitative differences in feature values with varying symbol sizes.

Layer Symbology & Legend

Legend of a map is tied with layer symbology

Selected symbology can be displayed in the legend

Scale Dependencies

- View or hide a layer depending on the map scale.

Exercise

Exercise

1. Add some point, line and polygon feature class in a map.
2. Play with different symbology options in ArcGIS Pro.

Sample Shapefiles - City of Newcastle, Australia

https://classroom.google.com/c/NzkxNDA4MzgwOTE3/m/ODAzNjU5NTY0Mzc0/details

Preview for Season 7

Symbolizing Layers: Applying Different Symbology Methods

References

Symbolize feature layers in ArcGIS Pro

https://pro.arcgis.com/en/pro-app/latest/help/mapping/layer-properties/symbolize-feature-layers.htm