

Working With Spatial Data

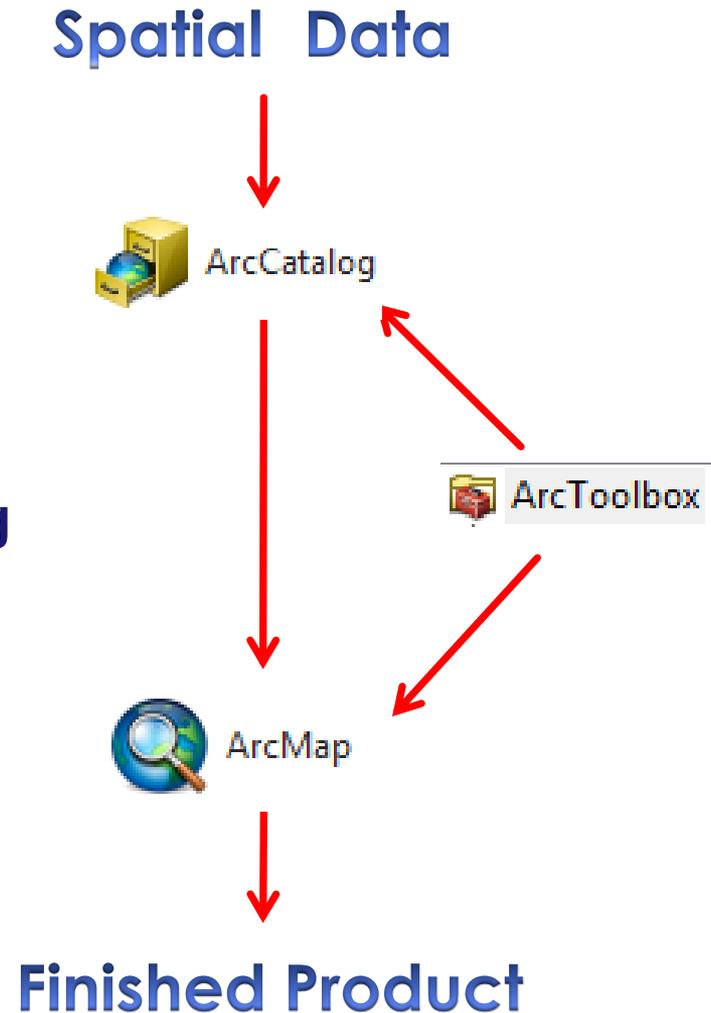
GIS I: Organizing Principles

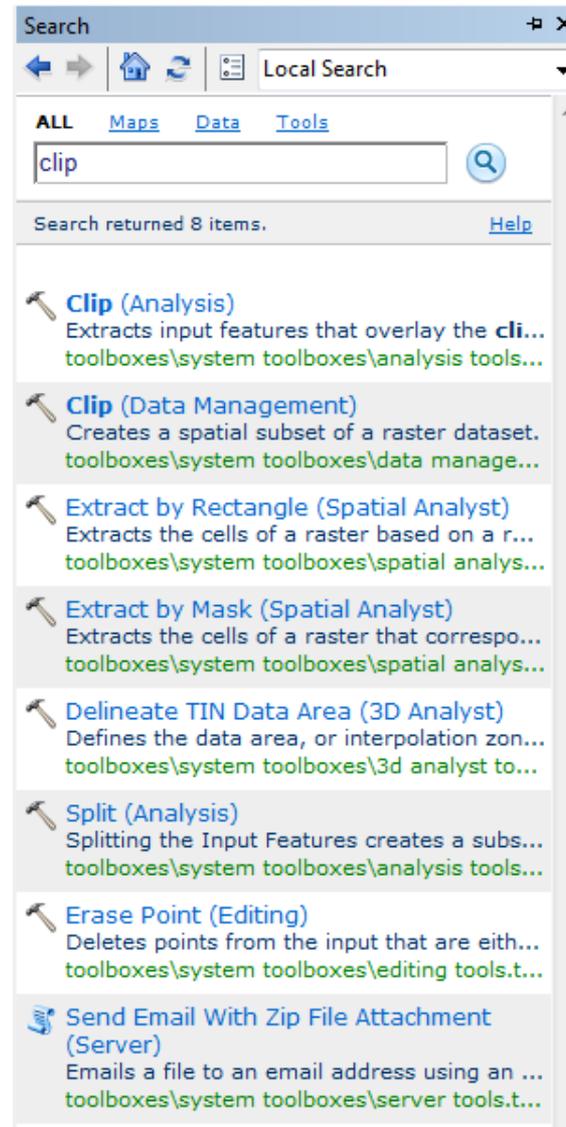
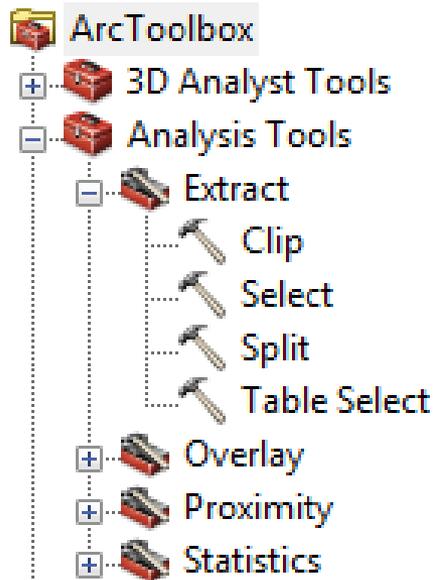


- **ArcGIS workflow**
- **Intro to ArcToolbox**
- **Coordinate systems**
- **Folder connections**

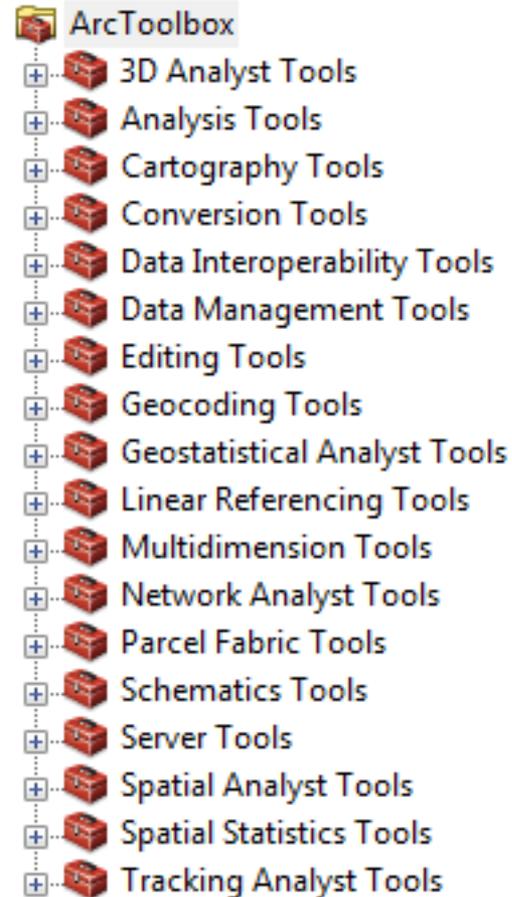
- **Exploring ArcToolbox**
- **Basic geoprocessing**
- **Working with and understanding coordinate systems**

- **ArcMap**
 - Display
 - Cartography
 - Analysis/geoprocessing
- **ArcCatalog**
 - Data management
 - Limited analysis/geoprocessing
- **ArcToolbox**
 - Tools for data manipulation





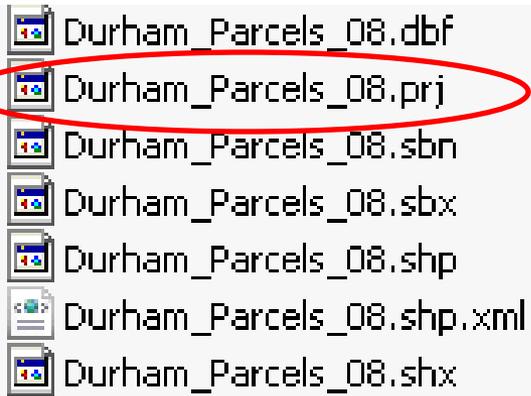
- Proximity
- Overlay
- Statistics
- Conversion
- Data management



- **Spatial data must be referenced in space**
- **Geographic Coordinate Systems**
 - Units in latitude and longitude coordinates
 - Attempts to recreate a 3D model of earth
- **Projected Coordinate Systems**
 - Units in standard distances (feet, meters, etc)
 - Attempts to flatten a 3D model to a 2D area

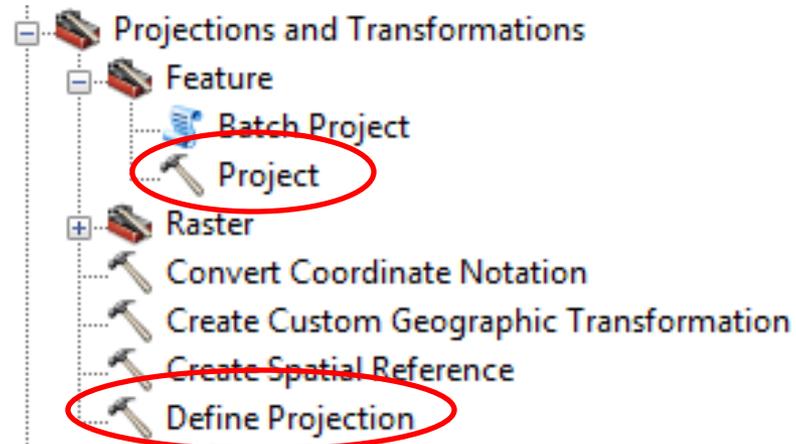


- Projected data will have a .prj file



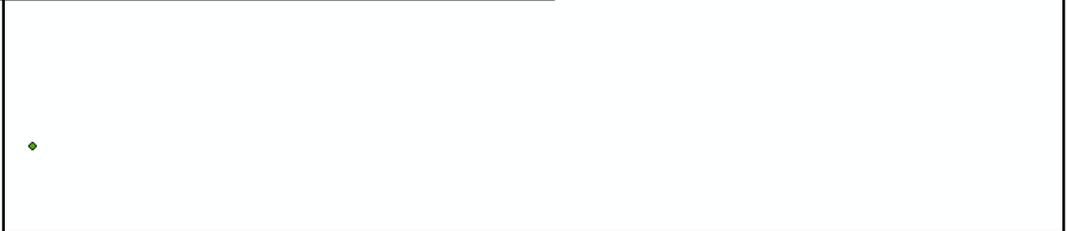
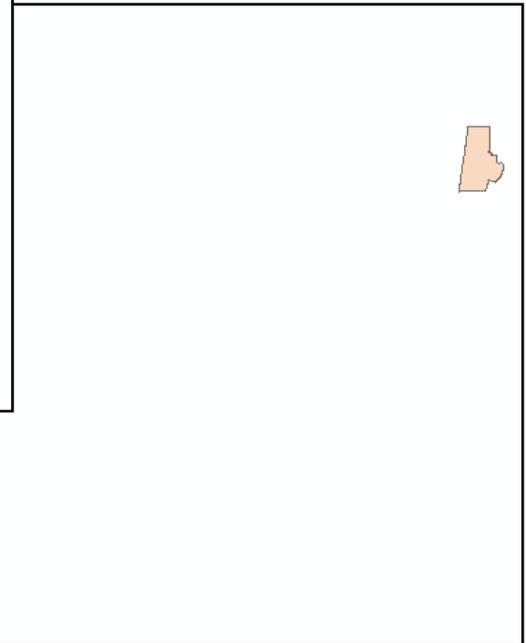
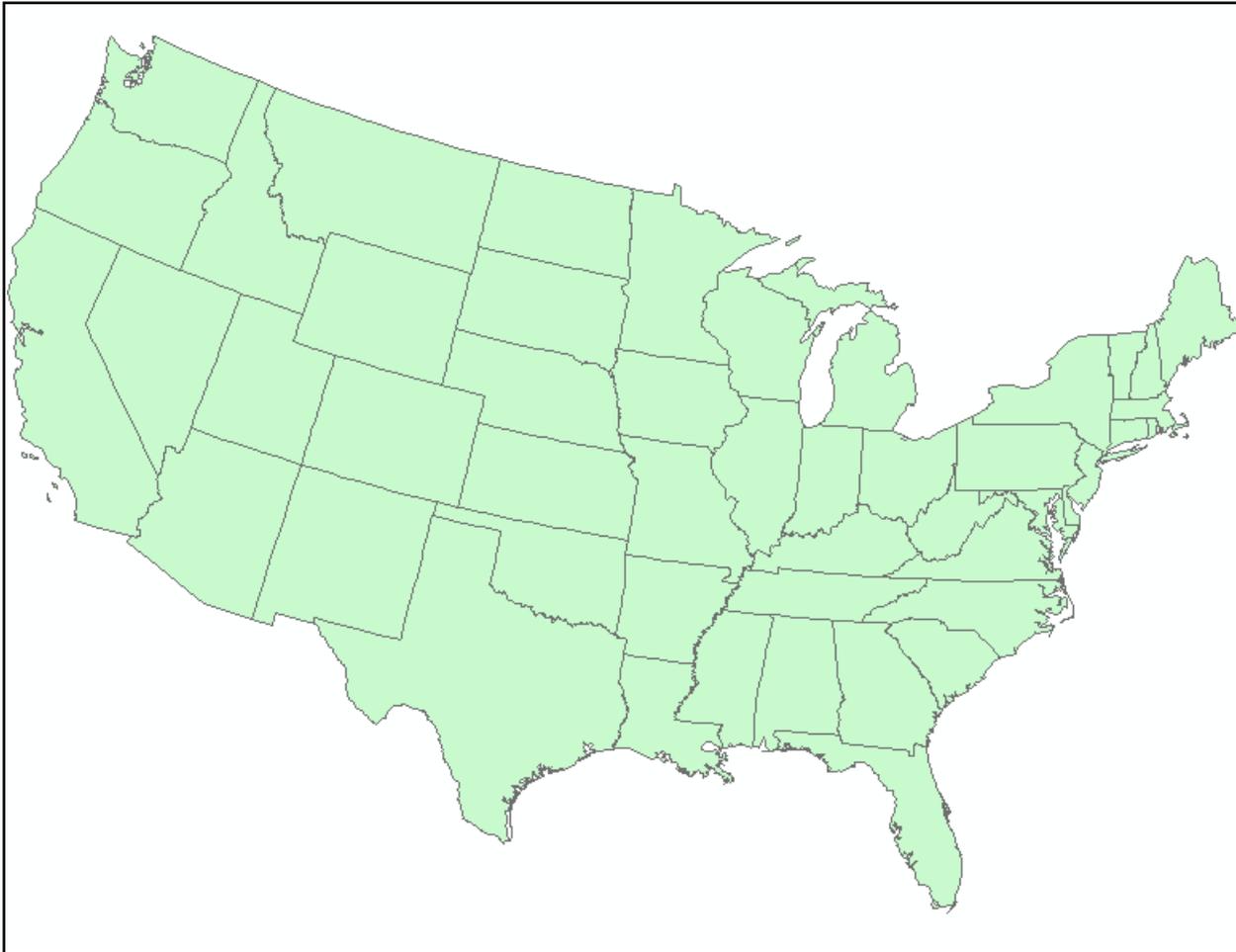
- Two different ways to change projection

- Define Projection tool
- Project tool

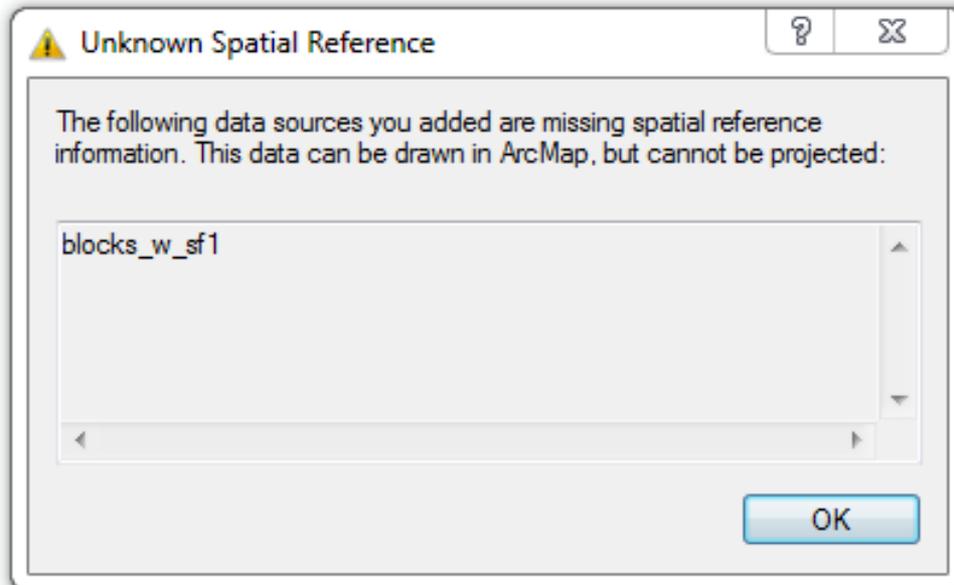


- Both the data frame you are working in and your spatial data have a coordinate system
- If these coordinate systems are different, spatial misalignment will occur





- If the data frame coordinate system is not set, ArcMap will use the spatial reference information from the first file added
- Additional data will be reprojected “on-the-fly” to match the data frame coordinate system only if it is already spatial referenced
- Data that is not spatial referenced will NOT be projected “on-the-fly”



Folder Connections

