Topics

• Introducing ArcGIS Online Spatial Analysis

• ArcGIS Online Spatial Analysis Workflow

• Demos and examples
  • Using ArcGIS Online Analysis to Solve Problems

• Wrap up

• Q&A
Introduction
ArcGIS Online Spatial Analysis
What is it?

• Integrate analytics into ArcGIS Online for your organization's workflows
  - Everything runs in the cloud using ArcGIS Online
  - Ready to use content

• Use analysis tools to quickly, easily, and intuitively:
  - Discover relationships, patterns, and trends in data
  - Find bet best locations and routes
  - Gain value from your location data to make the best decisions
ArcGIS Online Spatial Analysis
What is the value?

- Embracing Web GIS
- New and better ways to perform spatial analysis
  - Solutions based
  - Content and services
  - Easy and Intuitive
ArcGIS Online Spatial Analysis
What do you need?

- ArcGIS Online Organizational account
- Level 2 user
- Role privileges:
  - Create items
  - Publish hosted features
  - Premium Content
  - Network Analysis
  - Spatial Analysis
  - GeoEnrichment
  - Demographics
  - Elevation Analysis
- Credits
ArcGIS Online Spatial Analysis Tools
Common analysis workflows
ArcGIS Online Spatial Analysis
Release update

• Incremental release with each ArcGIS Online quarterly update

• New in 2016:
  - Join Features
  - Find Outliers
  - Better sharing experience with network analysis results
  - Performance improvements in Geoenrichment service

• New in 2017
  - Rerun analysis workflows
  - Find Centroid
  - Automatically generate bins for aggregation workflows

• New in 2018
  - Higher resolution data available for hydrology and elevation analysis services
  - Updated data for GeoEnrichment service
ArcGIS Online Analysis Workflow
ArcGIS Online Analysis Workflow

Prepare data → Add to map → Perform analysis → Review results → Rerun analysis
Assemble data

- Evaluate analysis needs
- Search local and online resources
- Create, publish, and filter data

Supported data types
- Feature service
- Map service with feature layers
- ArcGIS Online Map Notes
- ArcGIS Online Route layers
- Comma-separated values (CSV) file (.csv)
- GPS exchange format file (.gpx)
- Shapefile (.zip)
- GeoRSS web feed
- WFS layers
Update map

- Bring data into ArcGIS Online map viewer
- Optionally
  - Set symbology, map display extent, and bookmarks
  - Save map

Living Atlas Analysis Layers and custom analysis layers do not need to be added to map
Analyze data

- Open Analysis tools
- Determine appropriate tool(s)
Analyze data

- Determine appropriate tool(s)
- Apply parameters
Use and review results

- Added to web map
- Published as hosted feature services within the organization
- Configure results layer – pop-ups, symbology
- Share the results
Adding Analysis to Web Apps using Web AppBuilder for ArcGIS

<table>
<thead>
<tr>
<th>Name</th>
<th>Settings</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Points</td>
<td><img src="image" alt="Settings" /> <img src="image" alt="Usage" /></td>
<td>Aggregate points into polygons where the points are located.</td>
</tr>
<tr>
<td>Calculate Density</td>
<td><img src="image" alt="Settings" /> <img src="image" alt="Usage" /></td>
<td>Create a density map from point or line features by spreading known quantities of some phenomena (represented as attributes of the points or lines) across the map.</td>
</tr>
<tr>
<td>Choose Best Facilities</td>
<td><img src="image" alt="Settings" /> <img src="image" alt="Usage" /></td>
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</table>

- **The tool display name:** Aggregate Points
- **Settings:**
  - Show help links in the widget
  - Show option to use the current map extent
  - Display Show credits option
  - Save the result in user’s account
  - Show ready to use layers from ArcGIS Online Living Atlas of the world
- **Usage:**
  - Allow to export results

Review results
Adding Analysis to Web Apps using Web AppBuilder for ArcGIS

Create Buffers

1. Choose layer containing features to buffer
   - State park

2. Enter buffer size
   - Distance: 3 Miles

Options

3. Result layer name
   - State ParkBuffer

Save result in UC2017

Use current map extent

Run Analysis

Messages
Create Buffers submitted.
Executing
Succeeded.

Outputs
State ParkBuffer

Note: Feature and table outputs are added in the map as operational layers.

Back  Home
Rerun analysis

- Analysis can be rerun from a result layer
- All the previous parameters will be honored
- The tool can be rerun with the same parameters, or the parameters can be updated
Demos: Using Online Analysis to Solve Problems
Environmental assessment and suitability analysis
Demonstration review

1. Add current data
   - Protected Areas
   - Wind Farm Sites

2. Perform analysis (Protected Areas)
   - Create Centroids
     - Protected Area Centroids

3. Perform analysis (Protected Area Centroids)
   - Create Viewshed
     - Wind Farm Viewshed

4. Perform analysis (Wind Farm Sites, Protected Areas, Wind Farm Viewshed)
   - Find Existing Locations
     - Wind Farms - Passed Review

5. Review results
Analyzing violent crime
Demonstration review

Add current data → Analysis Boundary → Find Hot Spots → Violent Crime Hot Spots

Perform analysis → Violent Crime 2014 → Find Hot Spots → Liquor Vendors

Perform analysis → Liquor Vendors

Perform analysis → Overlay Layers → Intersection of Violent Crime and Liquor Vendors

Review results
Summarize data using custom generated bins
Demo Scenario

Aggregate Ebola Cases in West Africa
Demonstration review

Add data → Ebola Cases

Perform analysis → Aggregate Points

Aggregate Points → Which areas have more cases?

Which areas have more cases? → Review results

Generate Bins on the fly
Summarize house sales per zip code
Determine what is the average sales price per zip code in the area?
Demonstration review

Add data → List of houses sold (.csv table)

Perform analysis → Join Features

US Zip codes (Living Atlas Analysis Layer)

Review results → Home sales summarized by zip
Predict Lava Flow
Demo Scenario

Which way the lava coming from the fissures will flow?
How many people will be impacted?
Demonstration review

Add data ➔ Volcanic Fissures

Perform analysis ➔ Trace Downstream ➔ Trace the Lava’s Path

Perform analysis ➔ Create Buffers ➔ 0.5 miles buffer from Lava Path

Perform analysis ➔ Enrich Layer ➔ Affected Population & Households
Wrap up
Summary

• Spatial analysis adds valuable insight by providing hosted tools that work with your data in your ArcGIS Online organization

• Performing spatial analysis online is easy and intuitive

• Use ArcGIS Online spatial analysis to discover geographic relationships, patterns, and trends
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2. Select the session you attended.
3. Scroll down to find the feedback section.
4. Complete answers and select “Submit.”
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