

The Science of Where: Geospatial Analysis within the ArcGIS Platform

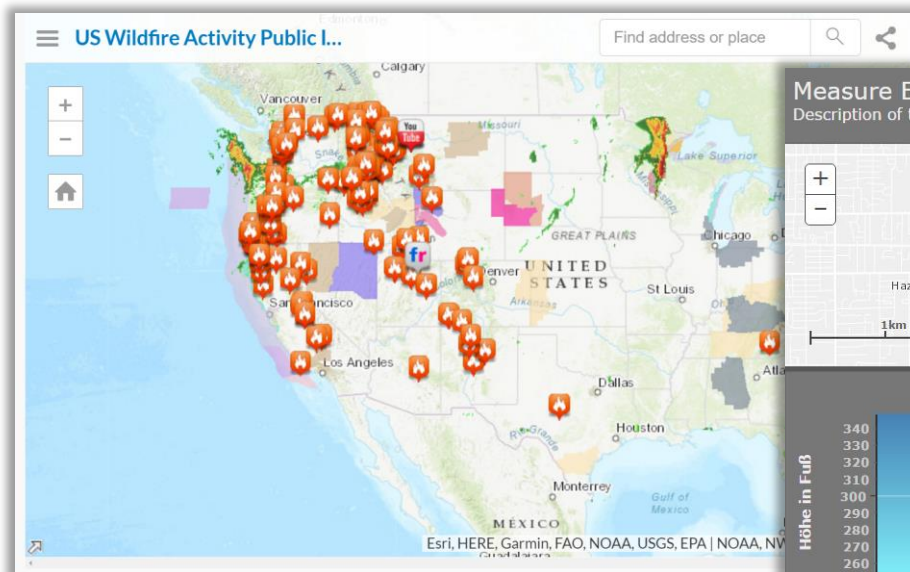
Johannes Fuchs

GeoDev Meetup - Going Places with Spatial Analysis

Munich, 27. September 2017



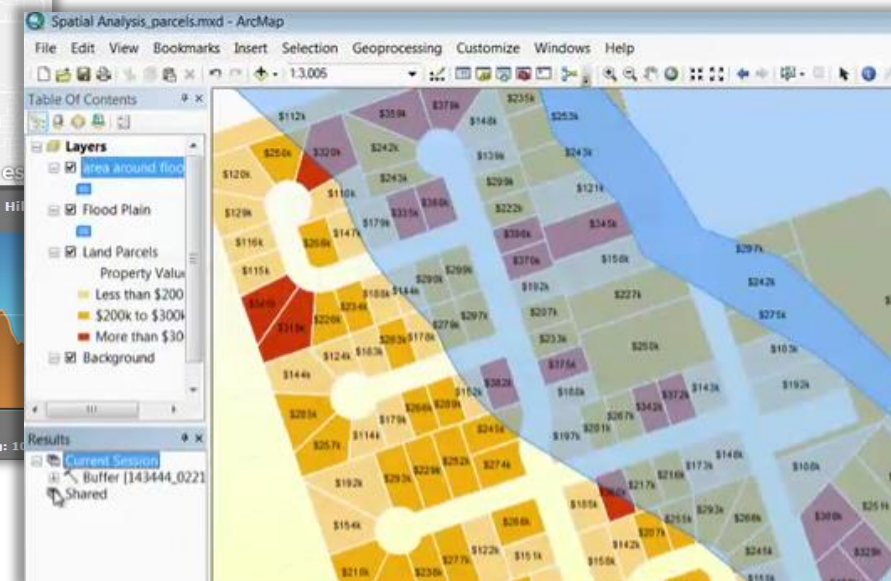
What is Spatial Analysis?



Understanding Where



Measuring Size, Shape and Distribution



Determining How Places Are Related

ArcGIS Pro - Oktoberfest - Theresienwiese

Project Map Insert Analysis View Edit Imagery Share

History Python ModelBuilder Environments Tools Ready To Use Tools Feature Analysis Raster Analysis Spatial Join Clip Intersect Union Buffer Network Analysis Geostatistical Wizard Raster Functions Function Editor Workbench

Geoprocessing

Contents

Select_closest Theresienwiese

Search

Drawing Order

- Oktoberfest_POI
- Oktoberfest_traffic
- Oktoberfest_natural
- position
- Oktoberfest_roads
- Selected_Features_as_Layer
- bufferResult_Python

Geoprocessing

Find Tools

Favorites | Toolboxes | Portal

- 3D Analyst Tools
- Analysis Tools
 - Extract
 - Overlay
 - Pairwise Overlay
 - Proximity
 - Buffer
 - Create Thiessen Polygons
 - Generate Near Table
 - Graphic Buffer
 - Multiple Ring Buffer
 - Near
 - Polygon Neighbors
 - Statistics
- Aviation Tools
- Cartographic Tools

1:8'239 11.5530131°E 48.1284674°N Selected Features: 0

Python

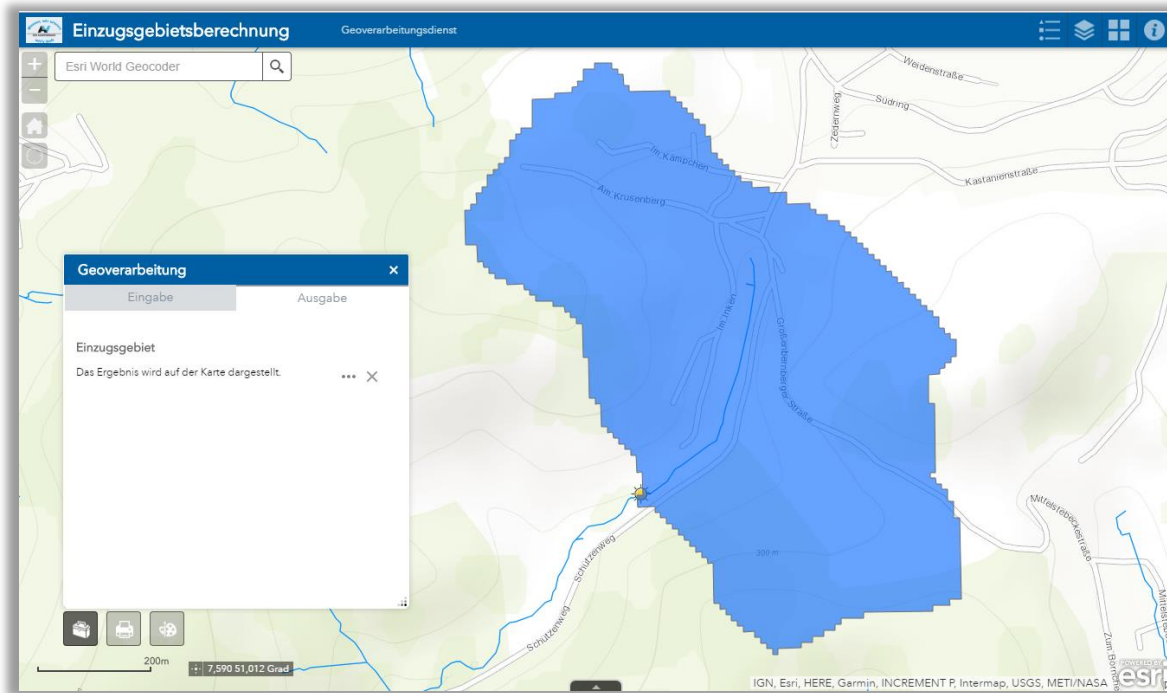
```
import arcpy
arcpy.env.workspace = "D:/Jahr_2017/20170927_GeoDev_Meetup_Munich/Oktoberfest/Oktoberfest.gdb"
arcpy.Buffer_analysis("position", "D:/Jahr_2017/20170927_GeoDev_Meetup_Munich/Oktoberfest/Oktoberfest.gdb/bufferResult_Python", "100 Meter")
```

A long-exposure photograph of a light trail in a field at night. The light trail is a long, horizontal, multi-colored streak of light, primarily yellow and white, with some green and blue at the ends. It appears to be a light trail from a moving light source, possibly a firefly or a small light, captured over a long period. The background shows a dark, stormy sky with blue and white clouds, and a large, leafy tree on the right side. The foreground is a field of dry grass and some small plants.

**More
Geoprocessing
Service Samples**



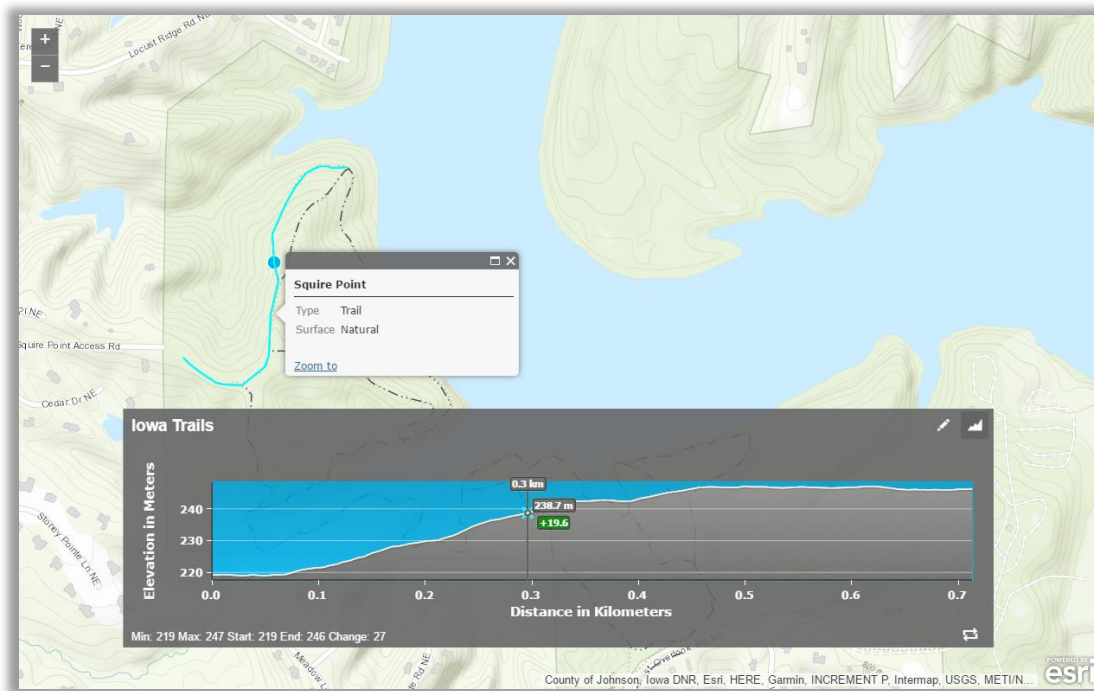
Watershed Task: Calculate Individual Catchment Areas: Custom GP-Service embedded in Web AppBuilder GP-Widget





Web App Template Elevation Profile:

Ready-to-use Profile GP-Service to Calculate Elevation Profiles





ArcGIS API for JavaScript Sandbox Samples: 'Message in a Bottle' based on a Particle Tracking GP-Service

ArcGIS API for JavaScript Sandbox

HTML OUTPUT DESCRIPTION DOWNLOAD SHARE REFRESH

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta http-equiv="Content-Type" content="text/html; charset
   =utf-8">
5
6   <meta name="viewport" content="initial-scale=1, maximum-scale
   =1,user-scalable=no">
7   <title>ArcGIS Geoprocessing and ArcGIS Server JavaScript API
   </title>
8   <link rel="stylesheet" href="https://js.arcgis.com/3.21/dijit
   /themes/claro/claro.css">
9   <link rel="stylesheet" href="https://js.arcgis.com/3.21/esri
   /css/esri.css" />
10 <style>
11   html, body { height: 100%; width: 100%; margin: 0; padding:
   0; }
12 </style>
13
14 <script>var dojoConfig = { parseOnLoad: true };</script>
15 <script src="https://js.arcgis.com/3.21/"></script>
16 <script>
17   dojo.require("esri.map");
18   dojo.require("esri.tasks.gp");
19   dojo.require("esri.toolbars.draw");
20   dojo.require("dijit.layout.BorderContainer");
21   dojo.require("dijit.layout.ContentPane");
22
```

1. Enter the number of days to track:
100

2. Click the **Execute** button.

3. Click the map to specify the start point.

* Note that the start season is spring.

Keyboard shortcuts: Ctrl + Enter Refresh Output

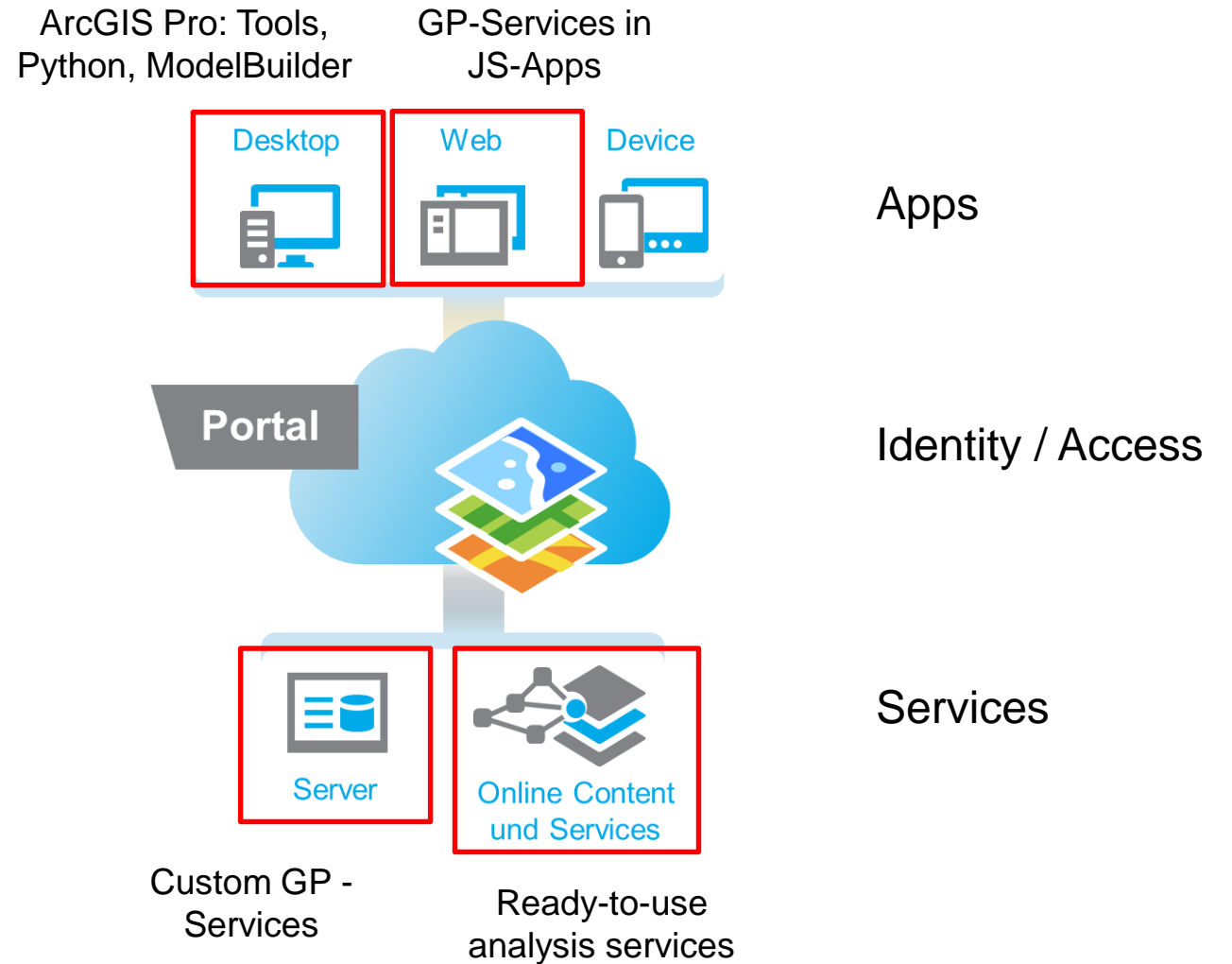
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More Sandbox Samples, for example

- Point in Polygon: https://developers.arcgis.com/javascript/3/sandbox/sandbox.html?sample=util_relation
- Viewshed Analysis: https://developers.arcgis.com/javascript/3/sandbox/sandbox.html?sample=gp_viewshed

ArcGIS Platform

ArcGIS enables everybody to easily discover, use, make, share maps
– **and especially perform analysis** –
from any device, anywhere, anytime.





Some additional Ressources

- + Spatial Analytics Landing Page: <http://www.esri.com/products/arcgis-capabilities/spatial-analysis>
- + What is Geoprocessing?: <http://pro.arcgis.com/en/pro-app/help/analysis/geoprocessing/basics/what-is-geoprocessing-.htm>
- + ArcGIS Blog Spatial Analysis Techniques: <https://blogs.esri.com/esri/arcgis/2017/09/18/spatial-analysis-techniques/>
- + ArcGIS Blog Spatial Analyst: <https://blogs.esri.com/esri/arcgis/2017/09/18/spatial-analysis-techniques/>
- + The ArcGIS REST API: <https://developers.arcgis.com/documentation/core-concepts/rest-api/>
- + ArcGIS REST API Spatial Analysis Service: <https://developers.arcgis.com/rest/analysis/api-reference/getting-started.htm>
- + ArcGIS API for Python: <https://developers.arcgis.com/python/>
- + Harness the power of maps to tell your storySample ,Optimizing Home Delivery with Location Services': <http://esribizteam.maps.arcgis.com/apps/MapJournal/index.html?appid=c81dfbf908d84eb89ec52351415c4dea>
- + ...