

# SEILER

GEOSPATIAL

Field Maps Designer &  
Calculated Expressions



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# Field Maps – Recent Updates

Mobile Application – iOS/Android

## February – 2023

- Improving existing offline workflows
- Enhancing the form authoring and editing experience
- Introducing new settings for location sharing
- New support for iOS smart card authentication

## November - 2022

- Edit indoor features on floor-aware layers.
- View pop-ups configured in the new Map Viewer.
- Access online versions of downloaded maps.
- Use Indoor Positioning Systems (IPS) for location sharing and geofencing.
- Filter features on the map using layer filters.
- Snapping included as a position source for high-accuracy data collection.



# Field Maps – Recent Updates

Web Application/Designer – ArcGIS Online/Enterprise

## February - 2023 – ArcGIS Online

- The Field Maps web app has been named Field Maps Designer.
- Set dynamic form behavior with an improved expression experience.
- Reuse forms across maps by saving changes to the layer.
- Use a tile package from your organization as the offline basemap.
- Various bug fixes and improvements.
- All existing functionality is present

## March - 2023 – ArcGIS Enterprise

- Create a map and layers for data collection.
- Set up geofences to alert mobile workers or automatically enable location sharing when they enter or exit specific areas on the map.
- Control which features are used as geofences by adding filters.
- Add layer filters to filter features on the map.
- Set map behavior when collecting new features.
- Reference a tile package from your organization to use as the offline basemap.
- View contingent field groups configured in ArcGIS Pro and add them to your form.
- Control whether field values are preserved when they become hidden on the form.
- The **Content** page has been renamed the **Forms** page.
- View nested group layers on the **Forms** page.
- Various bug fixes and improvements.



# Field Maps Web Designer

## Smart Forms

### Field Maps Web Designer

- Create content
- Manage layers
- Create & edit domain values
- Change display names
- Configure form layouts
- Hide forms
- Utilize Arcade expressions
- Avoid re-publishing feature services or maps

The screenshot displays the 'Field Maps Web Designer' interface. On the left, a 'Tree Inventory' form is visible with fields for 'Tree ID', 'Species', 'Age', 'Tree Condition', 'Life Expectancy', 'Risk to Public', 'Pest Exposure', and 'Disease Exposure'. On the right, a 'List of values: Species' dialog is open, showing a table of 1101 values. The table has columns for 'Label' and 'Code'. Below the table, there is a '+ Add' button and a note: 'Drag and drop a CSV file or select from your device. Learn about the required CSV format.' The dialog has 'Cancel' and 'Done' buttons at the bottom right.

Label	Code
Abies Balsamea	AAB
Abies Bracteata	AAC
Abies Fraseri	AAD
Abies Lasiocarpa	AAE
Abies Magnifica	AAF
Abies Procera	AAG
Acer Macrophyllum	AAH
Acer Negundo	AAI
Acer Pensylvanicum	AAJ
Acer Rubrum	AAK
Acer Saccharinum	AAL
Acer Saccharum	AAM
Aesculus Californica	AAN
Agave Tree	AAO
Ahuhuete	AAP

# Web Designer – Publishing Content

## Overview

- Create Web Maps from scratch with the Field Maps Web App
- Z-enable database, and add GPS metadata fields for both points, lines, and polygons via toggle dials
- All layers will automatically have editing enabled
- Add and configure attribute fields with a drag and drop interface

Start by creating a layer

1. Create layers 2. Layer settings 3. Title and save

Layer name

Layer type

### Answer a few questions

1. Create layers 2. Layer settings 3. Title and save

Layer settings cannot be changed after the map is created

Will high-accuracy GPS receivers be used to collect data? ☐

If enabled, GPS metadata will be collected

Will 3D spaces be modeled or analyzed? ☐

If enabled, z-values will be collected

### Name and save your map

1. Create layers

Map title

Feature layer title

Folder



# Web Designer – Publishing Content

## Creating/Configuring Attributes

### Basic element types include:

- Barcode (*double, integer, or string field type*)
- Date/time (*date field type*)
- Numeric (*double or integer field type*)
- Single line or multiline text (*string field type*)

### Choice element types include:

- Combo box (*double, integer, or string field type*)
- Radio buttons (*double, integer, or string field type*)
- Switch (*double, integer, or string field type*)
- Accessible through the field maps web application

The screenshot displays the 'Form' configuration window for a feature class named 'Community Trees'. The 'Form' tab is active, showing a preview of a form with a 'Full Name' text field. The 'Properties' pane on the right shows the 'Formatting' section with 'Display name\*' set to 'Full Name', 'Field name\*' set to 'Full\_Name', 'Field type' set to 'String', and 'Input type' set to 'Text - Single line'. A blue arrow points from the 'Field name\*' field in the Properties pane to the 'Full Name' field in the form preview. Below the form preview, a 'List of values: City' dialog is open, showing a table with 430 values. The table has two columns: 'Label' and 'Code'. The first four rows are: Abbot (1), Acton (2), Addison (3), and Albion (4). A blue arrow points from the 'Load values from a csv' link in the dialog to the 'List of values: City' dialog. To the right of the 'List of values' dialog, a 'Form Elements' pane is visible, showing a list of form elements categorized into 'BASIC', 'CHOICE', and 'LAYOUT'. A blue arrow points from the 'Form Elements' pane to the 'Basic Elements' label. Another blue arrow points from the 'Form Elements' pane to the 'Choice Elements' label.

Field Properties

Basic Elements

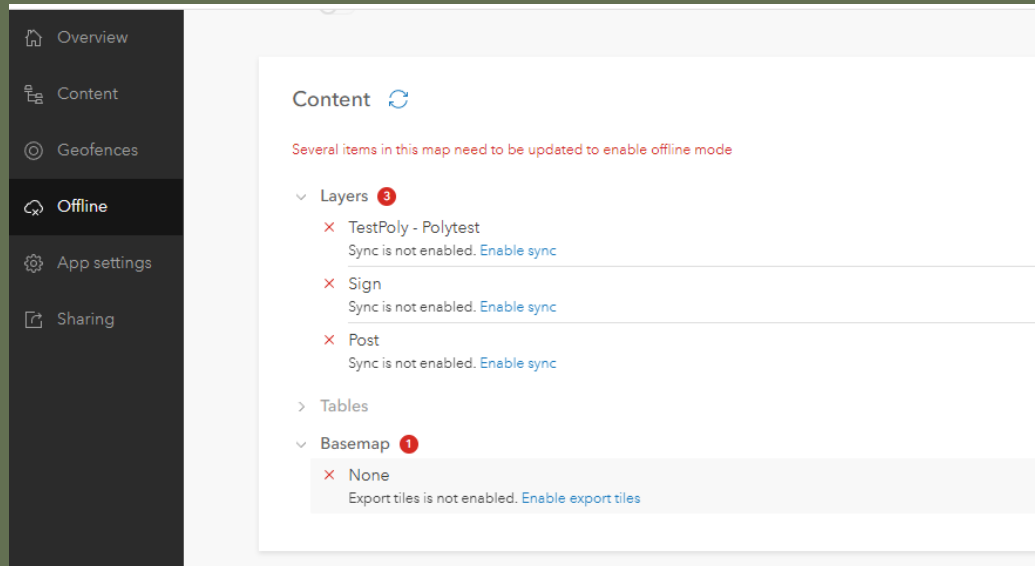
Choice Elements

Load values from a csv

# Web Designer – Publishing Content

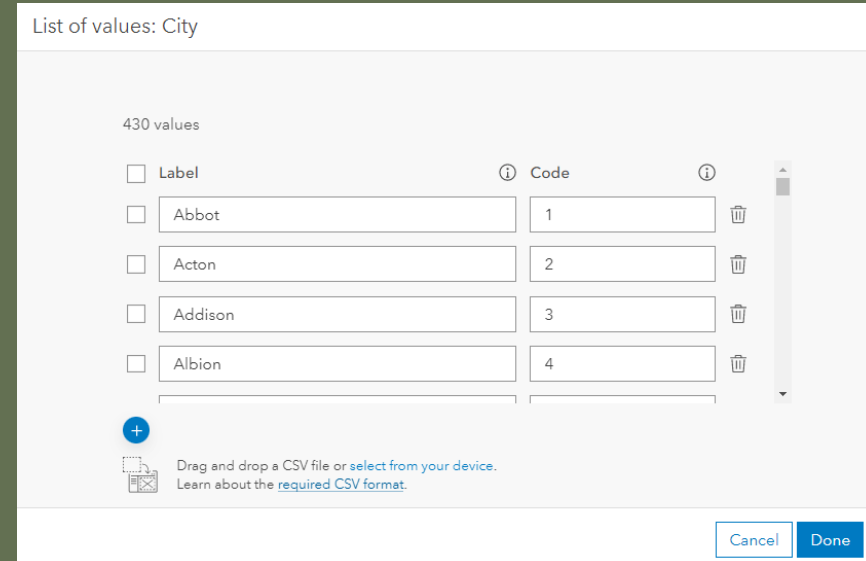
## Tips/Tricks – Field Maps Web App

### Enable sync on Feature Layers



The screenshot shows the 'Content' panel in the Web Designer interface. The left sidebar has tabs for Overview, Content, Geofences, Offline, App settings, and Sharing. The 'Content' tab is active, showing a 'Content' section with a refresh icon. A red message states: 'Several items in this map need to be updated to enable offline mode'. Below this, there are two sections: 'Layers' and 'Basemap'. The 'Layers' section has a red '3' icon and lists three items: 'TestPoly - Polytest', 'Sign', and 'Post'. Each item has a red 'X' icon and a message: 'Sync is not enabled. [Enable sync](#)'. The 'Basemap' section has a red '1' icon and lists one item: 'None'. It has a red 'X' icon and a message: 'Export tiles is not enabled. [Enable export tiles](#)'.

### Import domains from CSV



The screenshot shows the 'List of values: City' dialog. It displays a table with 430 values. The table has two columns: 'Label' and 'Code'. The 'Label' column contains the names of cities: Abbot, Acton, Addison, and Albion. The 'Code' column contains the corresponding codes: 1, 2, 3, and 4. Each row has a checkbox on the left and a trash icon on the right. Below the table, there is a blue plus icon and a text box that says: 'Drag and drop a CSV file or [select from your device](#). Learn about the [required CSV format](#).' At the bottom right, there are 'Cancel' and 'Done' buttons.



# Field Maps – Publishing Content

Demo



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## Creating Maps via Field Maps Web App

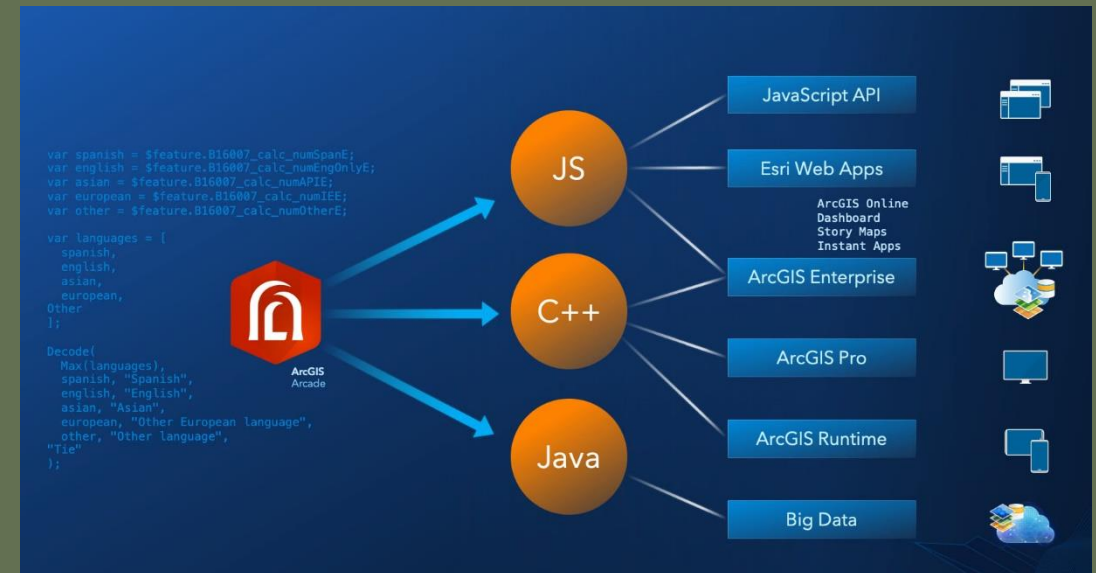
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# Field Maps – Calculated Expressions

## Arcade

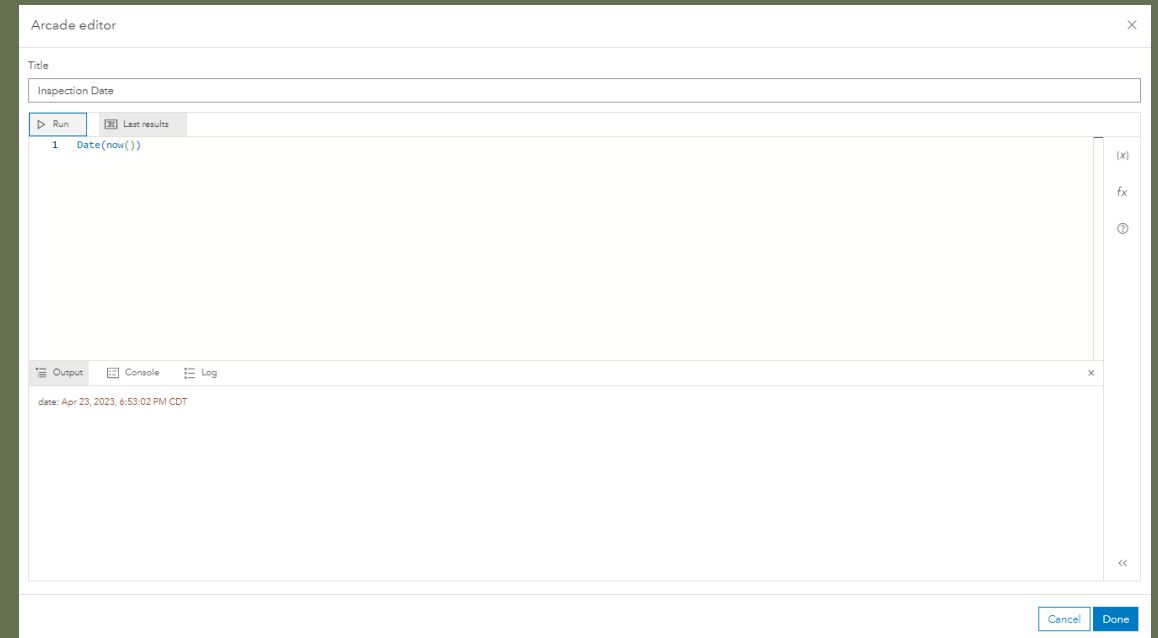
- ArcGIS Arcade is a portable, lightweight, and secure expression language written for use in ArcGIS that can perform mathematical calculations, manipulate text, and evaluate logical statements
- Users through the ArcGIS Platform including: ArcGIS Pro, Online, Field Maps, Dashboards, and Instant apps
- Enables on the fly calculation while in the field, and an increased level of customization not seen before within the ArcGIS Platform
- Many automated task can be executed with only 1-2 lines of Arcade



# Field Maps – Calculated Expressions

## Overview

- Automatically calculate and populate attributes. This will not only save time but minimize data entry error
- New form calculation profile added to ArcGIS Web App
- Calculated expressions can use feature attributes, geometry, values from other layers and tables in the map, as well as account information for the signed-in user to dynamically populate values
- Added via the Field Maps Web Designer



# Field Maps –Conditional Visibility

## Overview

- Allows users to customize which forms appear based on conditional logic
- Can be configured via Arcade or no-code wizard
- The wizard allows access to all forms in the given layers
- Support single and multiple conditional statements
- Conditional visibility statements streamlines data collection and removes clutter for the end user

The screenshot displays the 'Expression builder' dialog box. It features a 'Title' field at the top. Below it is a 'New expression' input field. The 'Expression' section contains a list of fields: 'OBJECTID', 'Is', and an empty field, each with a dropdown arrow. A blue '+ Add condition' link is positioned below the list. To the right, the 'Arcade syntax preview' section shows the expression: `$feature["OBJECTID"] ==`. At the bottom right of the preview area, there is a note: 'Advanced scripting features available in Arcade editor.' and a 'Launch Arcade editor' button. The dialog box has 'Cancel' and 'Done' buttons at the bottom.

# Field Maps – Calculated Expressions

## Use Cases

### Populate repetitive fields automatically

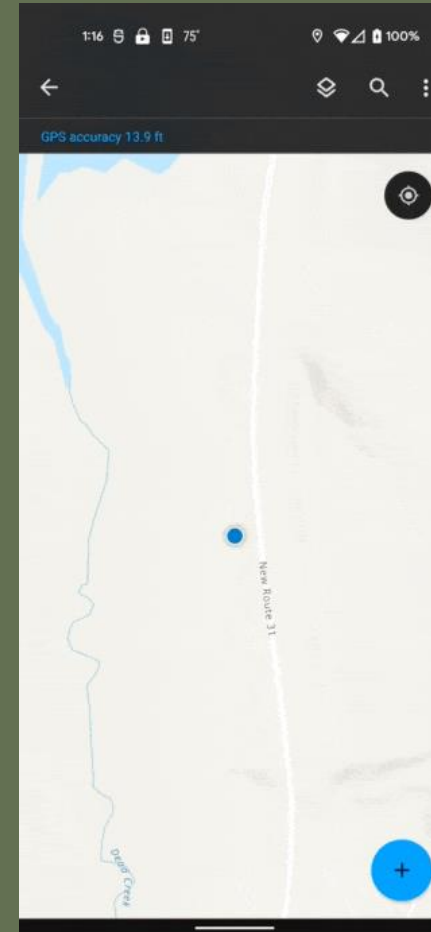
- Date, Time, Names, email addresses, Assessment IDs, etc..
- Populate repetitive fields automatically

### Calculate Geometries

- MSL, Planer Length/Area, Geodetic Length/Area, Store Geometries as an Attribute, etc..

### Data Management

- Calculate values from another field, fetch related records, extract data from underlying layers, generate cost estimates, assessment reports, etc..



# Field Maps – Calculated Expressions

Demo



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## Calculated Expressions

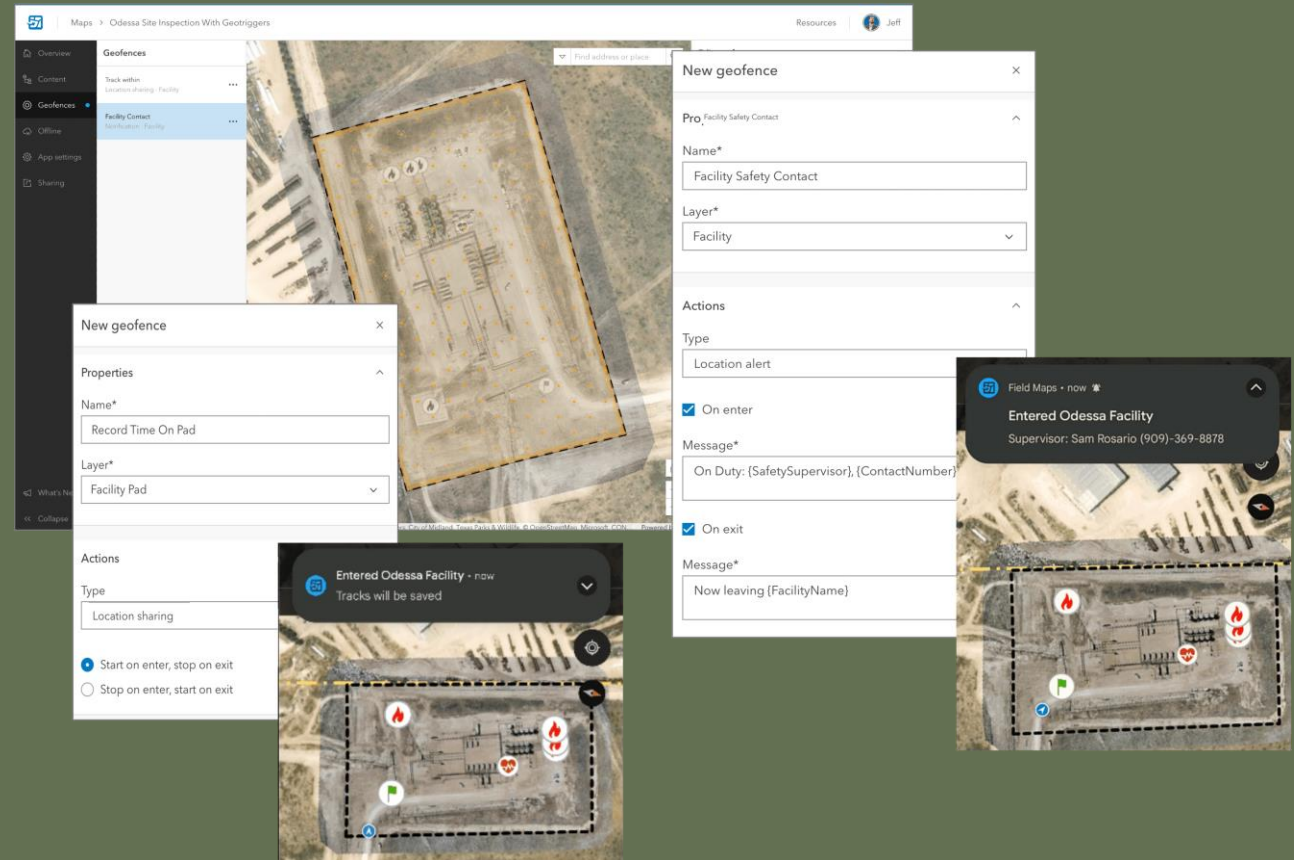
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# Field Maps – Geofencing

## Overview

- Powered by ESRI's new ArcGIS Geotriggers capabilities, which monitors user defined conditions in real-time.
- Geofences can be added to any Web Map via the Field Maps Web App.
- Geofences work in the foreground or background of the device and can be used online or offline.
- The user can control which features are used as Geofences by applying layers filters



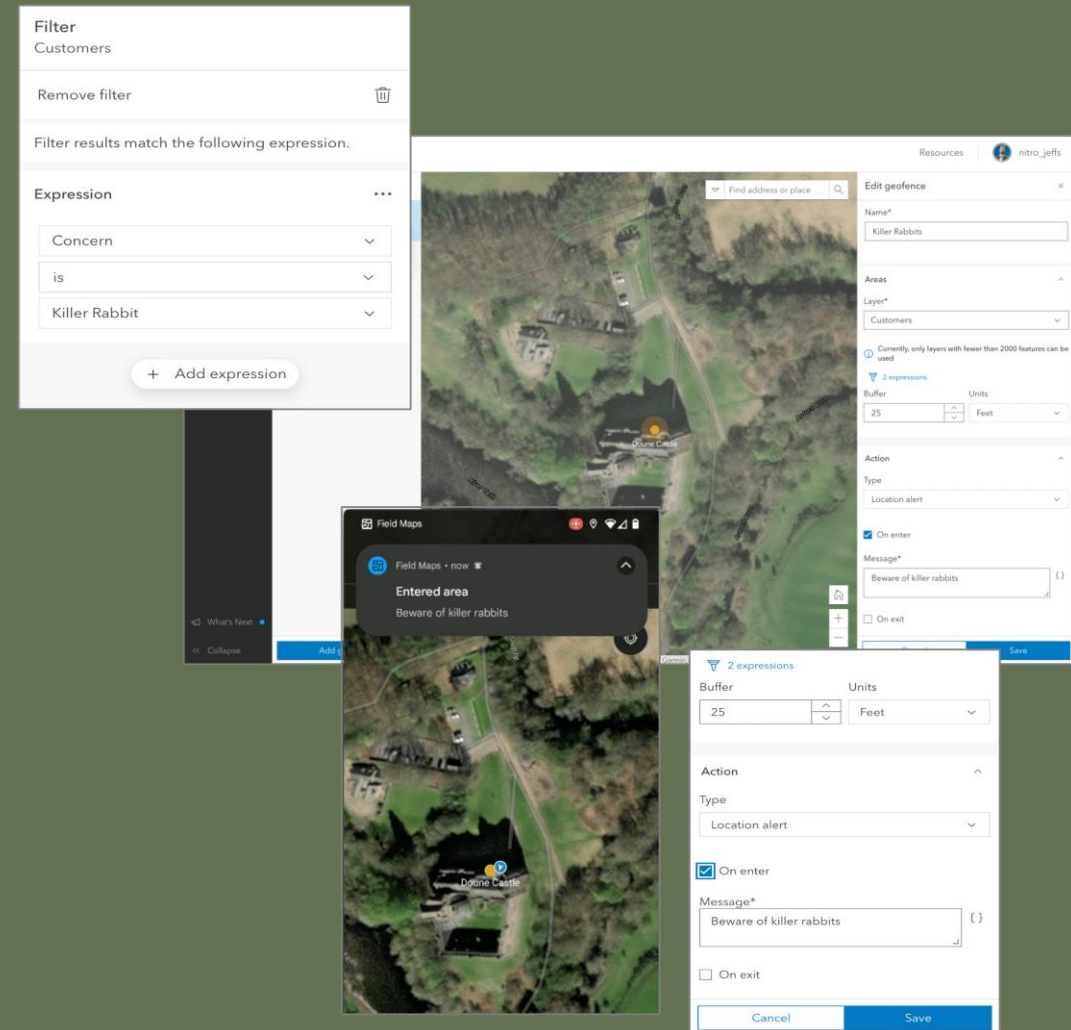
# Field Maps – Geofencing Actions

## Location Alerts

- Location alert actions send location-based messages to the mobile user in the form of a local notification.
  - Alerts occur upon entering and exiting a Geofenced area

## Location Sharing

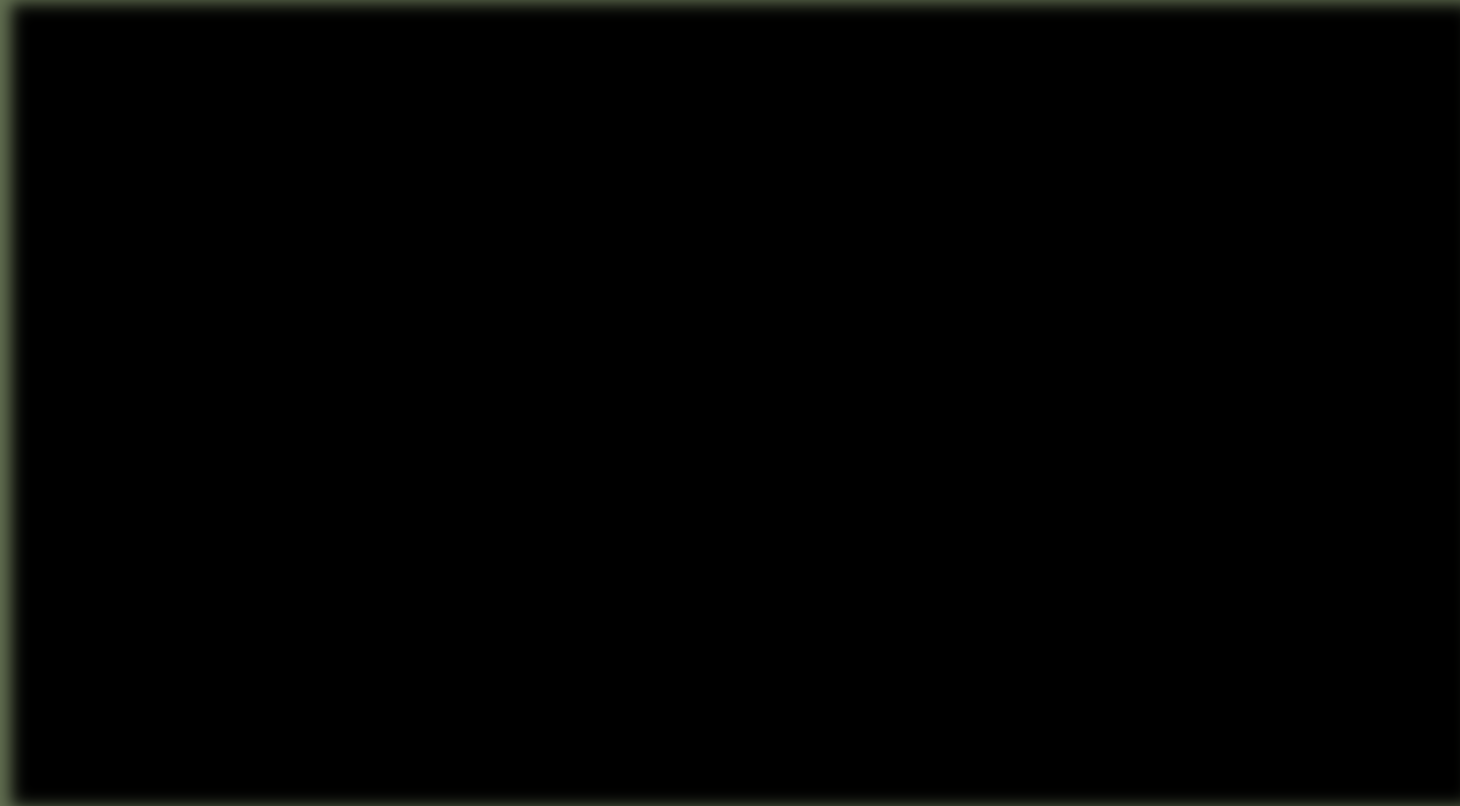
- Automatically starts/stops recording locational data based on the mobile user's location.
  - Location sharing must be enabled, and mobile users must have a location sharing license





# Field Maps – Geofencing

Demo





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**Thank You!**  
**Questions?**

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# Seiler Geospatial– Resources

**Arcade:** [Common Expressions](#), [Function Reference](#)

**Geofencing:** [Intro to Geofencing](#), [Creating Geofence](#)

**Field Maps:** [What's New](#), [Looking Ahead](#)

**Maps Smart Forms:**

<https://storymaps.arcgis.com/stories/6dd272bd377045b99b21dee1fc855f4a>

**Pavement:**

<https://storymaps.arcgis.com/stories/0953ec08213445e28e4ec472066d13b5>

<https://storymaps.arcgis.com/stories/e087396b1e504a8caab7f501646d68ad>



# Seiler Geospatial– Contact Info

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