



# Georeferencing Overview

University of Florida

Sarah Ellen Strickland

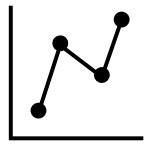
Adapted from slides created by Blaine Marchant,  
Grant Godden, and Charlotte Germain-Aubrey



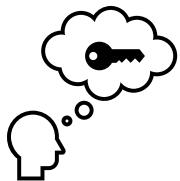
# Agenda



What is a georeference?



Why georeference?



Key Concepts



How do you georeference?

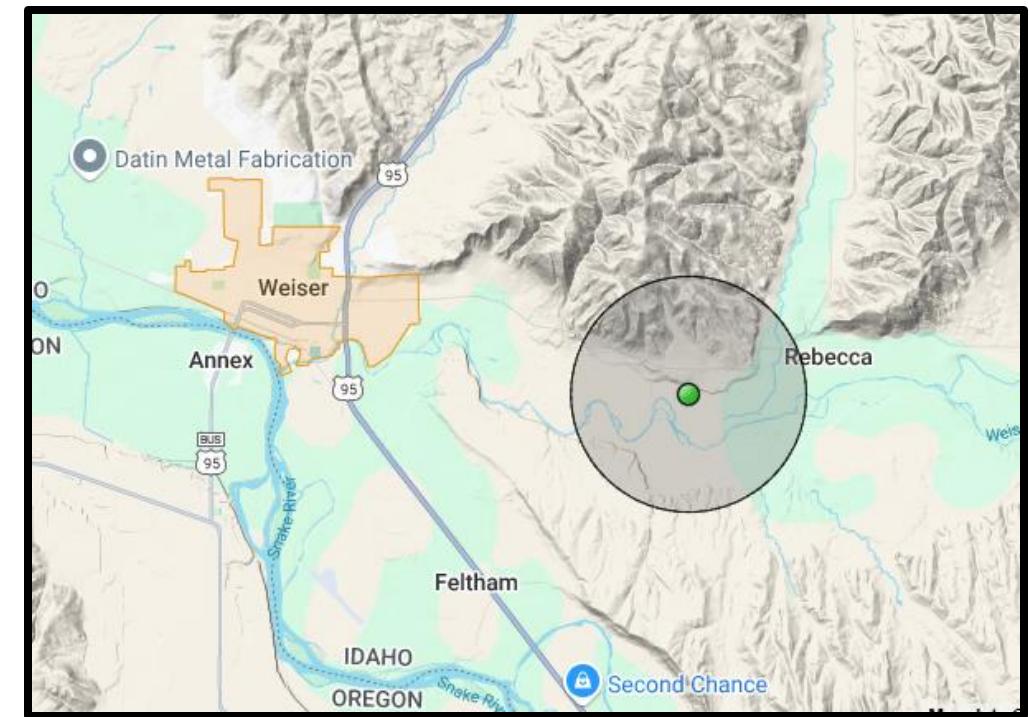
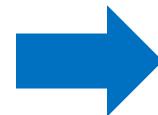
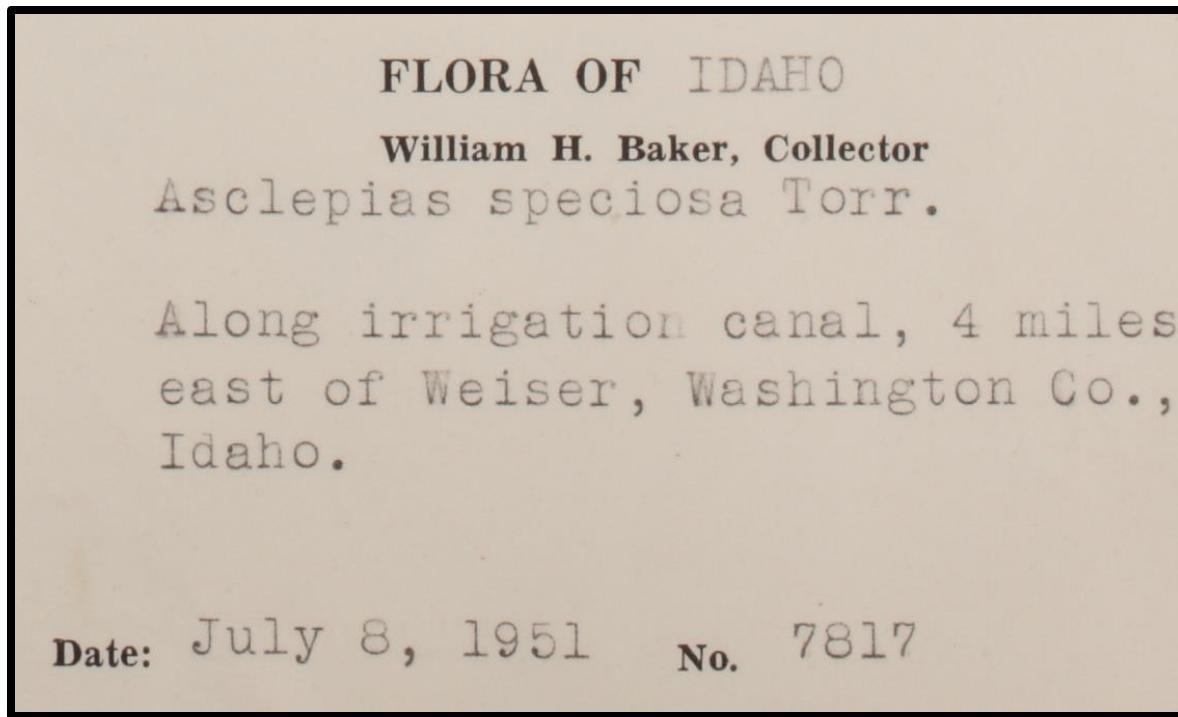
# What is georeferencing?



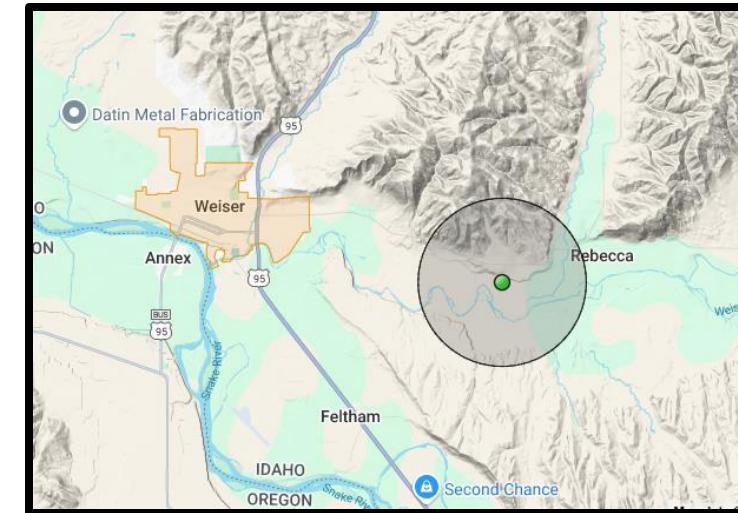
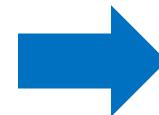
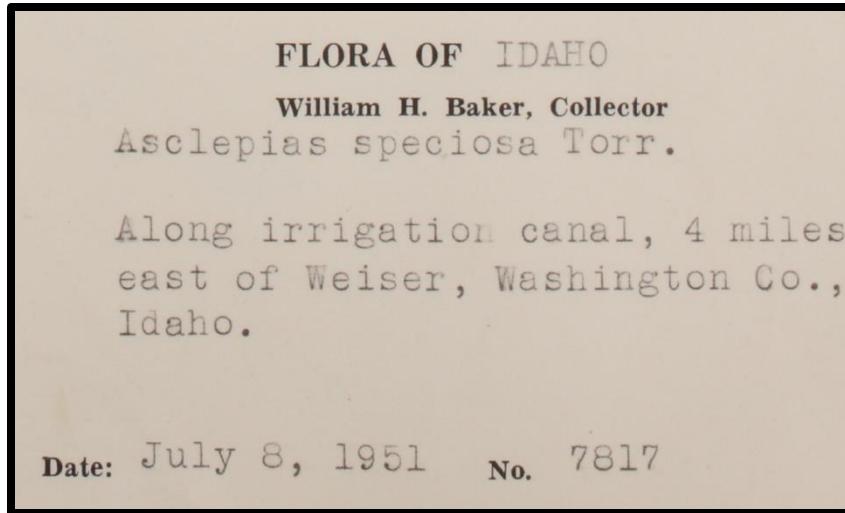
# What is georeferencing?



# What is georeferencing?



# What is georeferencing?



***Asclepias speciosa* Torr.**  
**Along irrigation canal, 4 miles east of Weiser, Washington Co., Idaho.**



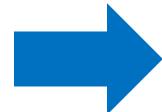
**44.23, -116.88**

**Uncertainty: 1956 m**

# What is a georeference?

*Asclepias speciosa* Torr.

Along irrigation canal, 4 miles east of  
Weiser, Washington Co., Idaho.



44.23, -116.88

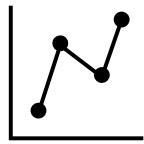
Uncertainty: 1956 m

A numerical description of a place that can be mapped

# Agenda



What is a georeference?



Why georeference?



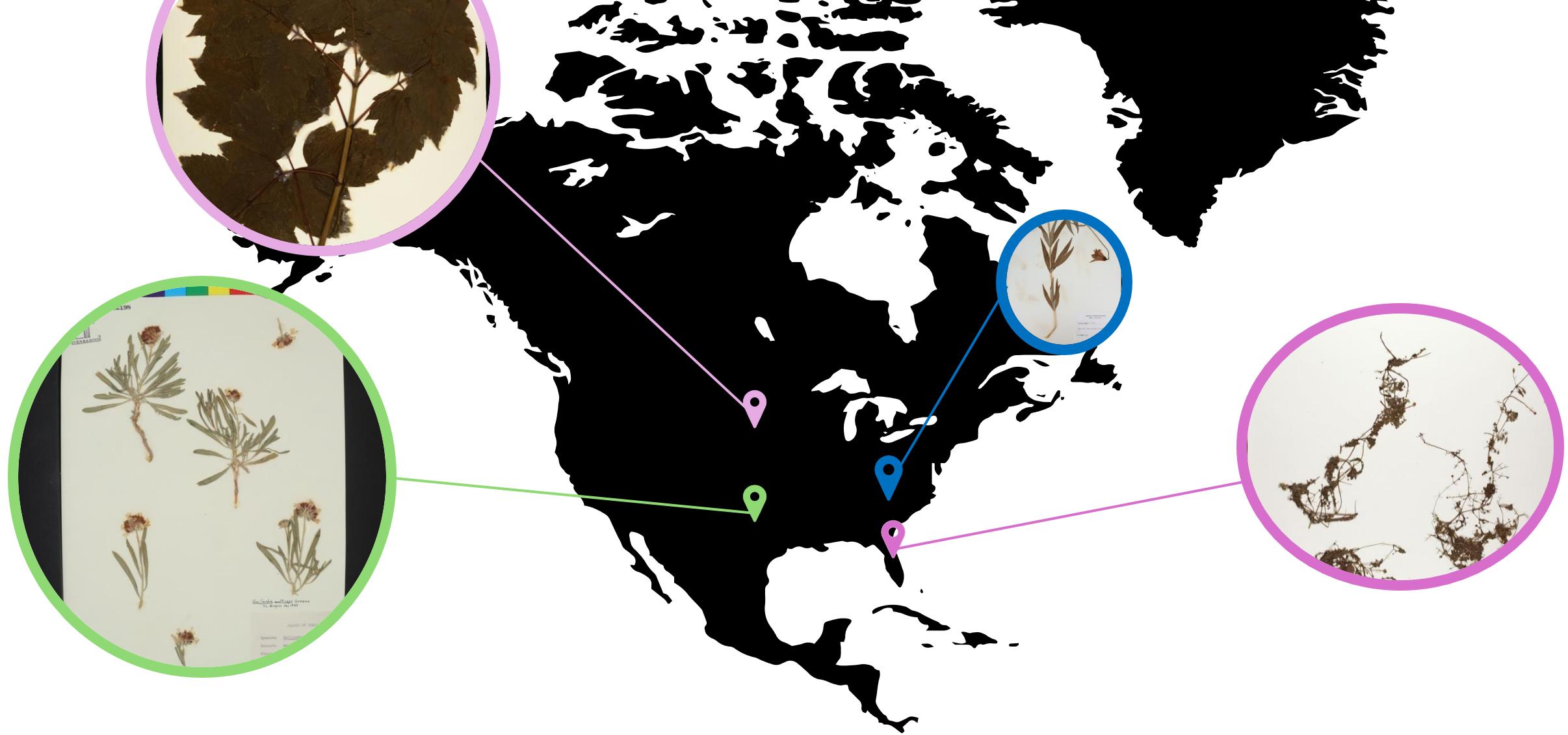
Key Concepts



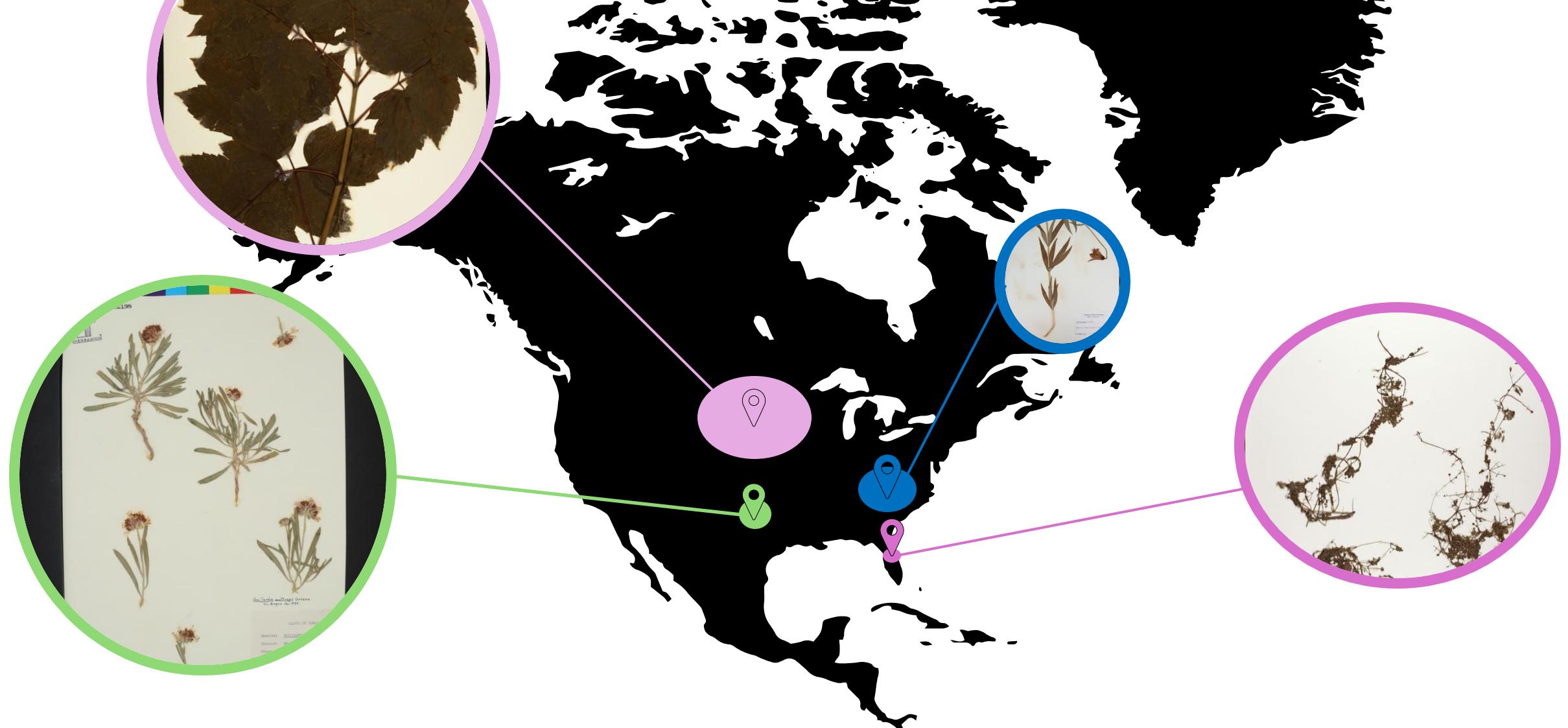
How do you georeference?

# More occurrence data





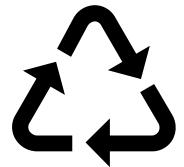
# More occurrence data



Add additional reliable data  
Filter by uncertainty

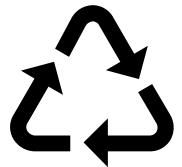
# Why georeference?

Findable   Accessible   Interoperable   Reusable



# Why georeference?

Findable      Accessible      Interoperable      Reusable



*Asclepias speciosa* Torr.

Along irrigation canal, 4 miles east of  
Weiser, Washington Co., Idaho.



Latitude: Longitude: Uncertainty (m):

44.23

-116.88

1956

# Agenda



What is a georeference?



Why georeference?

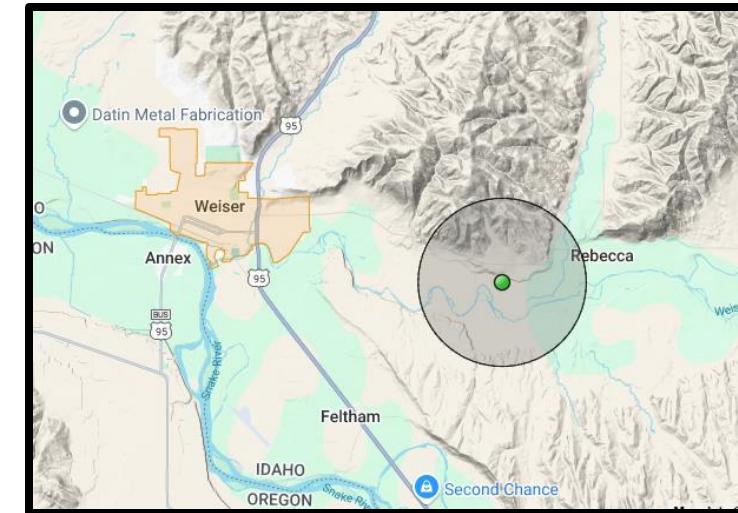
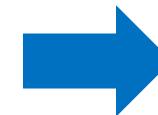
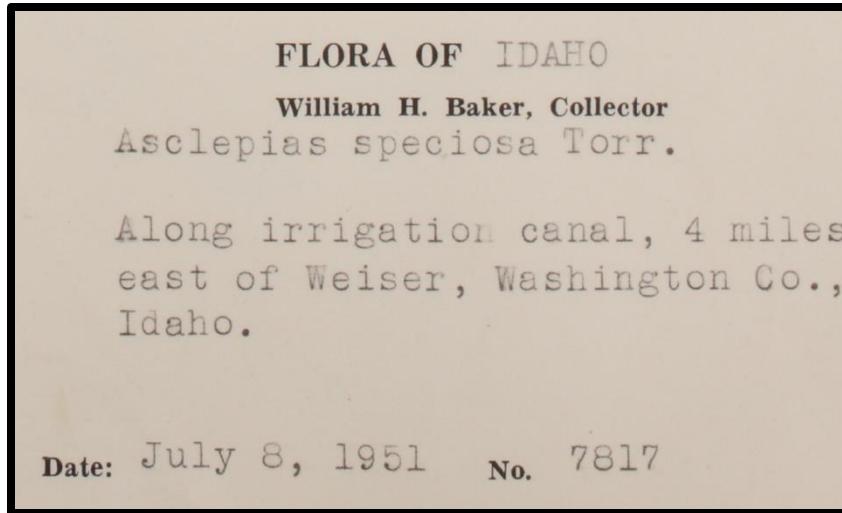


Key Concepts



How do you georeference?

# What is georeferencing?



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**Along irrigation canal, 4 miles east of Weiser, Washington Co., Idaho.**



**44.23, -116.88**

**Uncertainty: 1956 m**

A numerical description of a place that can be mapped

Coordinates



44.23, -116.88

Uncertainty



1956 m

# Coordinate Formats

36° 31' 21.4" N

114° 09' 50.6" W

Degrees minutes and seconds  
(DMS)

-36.524276,

-114.164055

Decimal degrees  
(DD)

36° 31.4566'N

114° 09.8433'W

Degrees and decimal minutes  
(DDM)

# Coordinate Formats

RESET VALUES

## Decimal Degrees (DD)

Latitude:

-36.524276 °

Longitude:

-114.164055 °

Latitude (-90 to 90) and longitude (-180 to 180).

Include up to 6 decimal places.

## Degrees Decimal Minutes (DDM)

Latitude:

36 ° 31.4566 '

S ▾

Longitude:

114 ° 9.8433 '

W ▾

Degrees (0 to 89, 0 to 179) as integers and minutes (0 to 59.9999)  
Include up to 4 decimal places.

## Degrees Minutes Seconds (DMS)

Latitude:

36 ° 31 ' 27.3936 "

S ▾

Longitude:

114 ° 9 ' 50.598 "

W ▾

Degrees (0 to 89, 0 to 179) and minutes (0 to 59) as integers and seconds (0 to 59.9999) up to 4 decimal places.

<https://applications.pgc.umn.edu/convert/>

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<https://applications.pgc.umn.edu/convert/>

Batch Degree Conversion: <https://blog.batchgeo.com/convert-latitude-longitude-to-decimals-excel/>

A numerical description of a place that can be mapped

Coordinates



44.23, -116.88

Uncertainty



1956 m

# Uncertainty

Every location has associated uncertainty

coordinateUncertaintyInMeters

There are MANY different sources

## Locality Description

Distance measurement  
precision

Direction measurement  
precision

## Point Location

Locality extent  
Coordinate Precision  
and  
GPS accuracy

## Mapping

Map scale and  
Coordinate Reference  
Systems

# Uncertainty in Locality Descriptions

“3 miles north of Palm Springs”

# Uncertainty in Locality Descriptions

**“3 miles north of Palm Springs”**

3.0 miles?

2.75 miles?

3.03 miles?

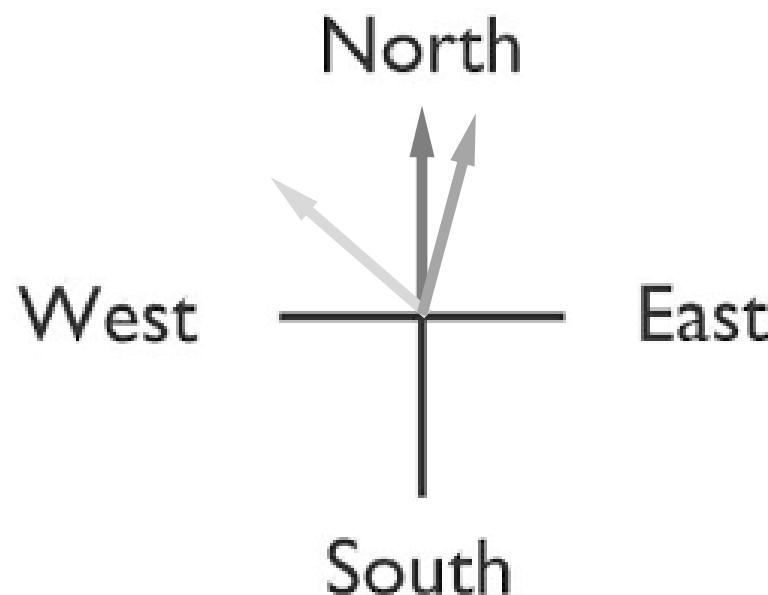
# Uncertainty in Locality Descriptions

“3 miles **north** of Palm Springs”

3.0 miles?

2.75 miles?

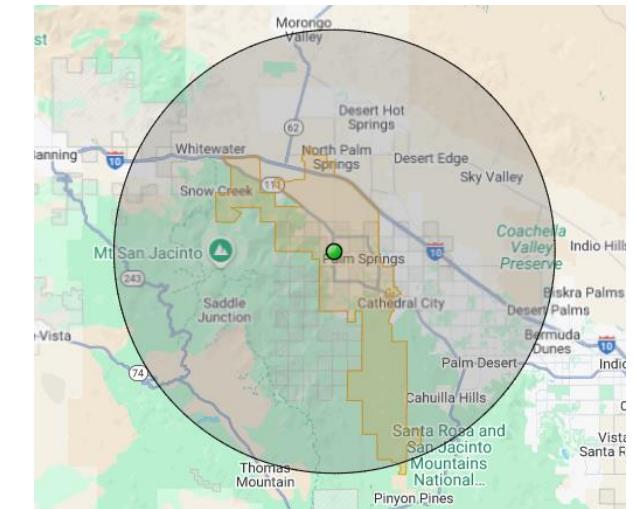
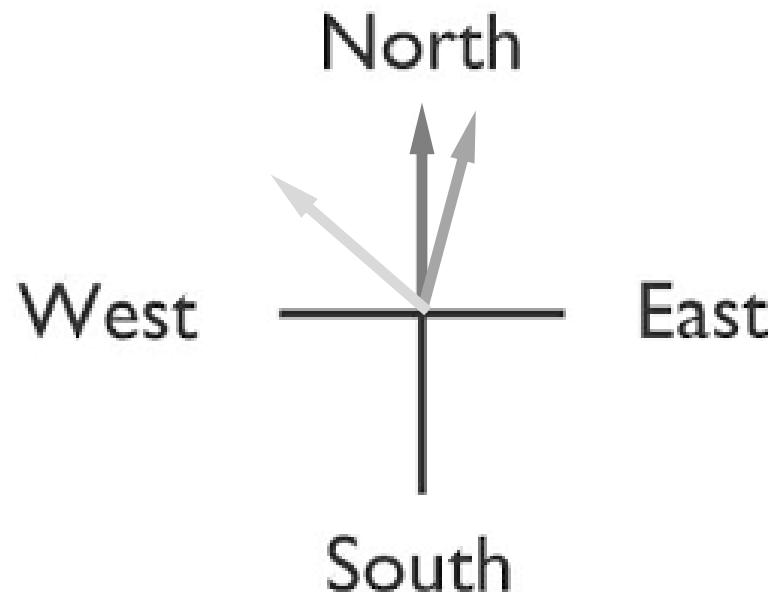
3.03 miles?



# Uncertainty in Locality Descriptions

“3 miles north of Palm Springs”

3.0 miles?  
2.75 miles?  
3.03 miles?



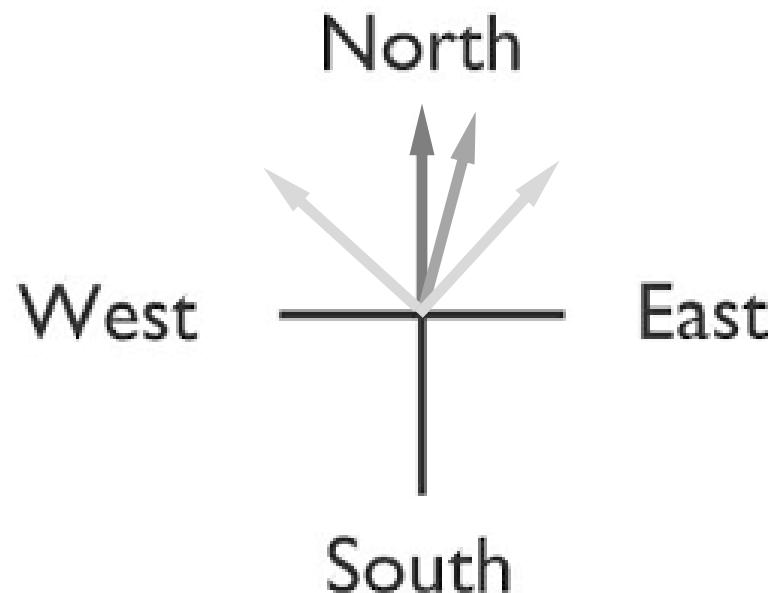
# Uncertainty in Locality Descriptions

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3.0 miles?

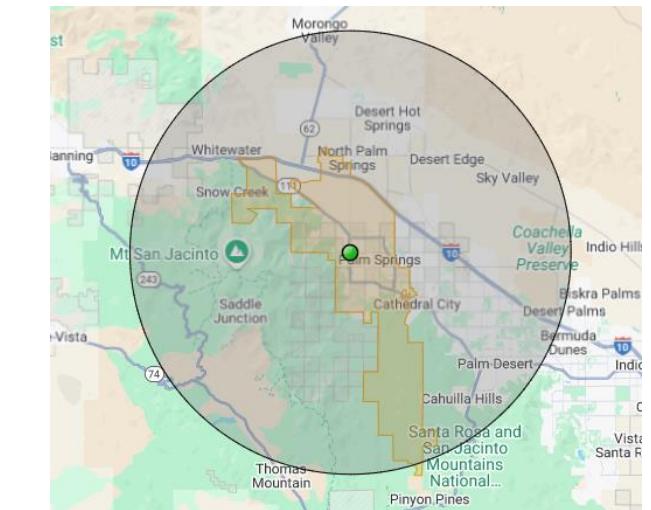
2.75 miles?

3.03 miles?



Convert the decimal -> fraction,  
Uncertainty = 1/denominator

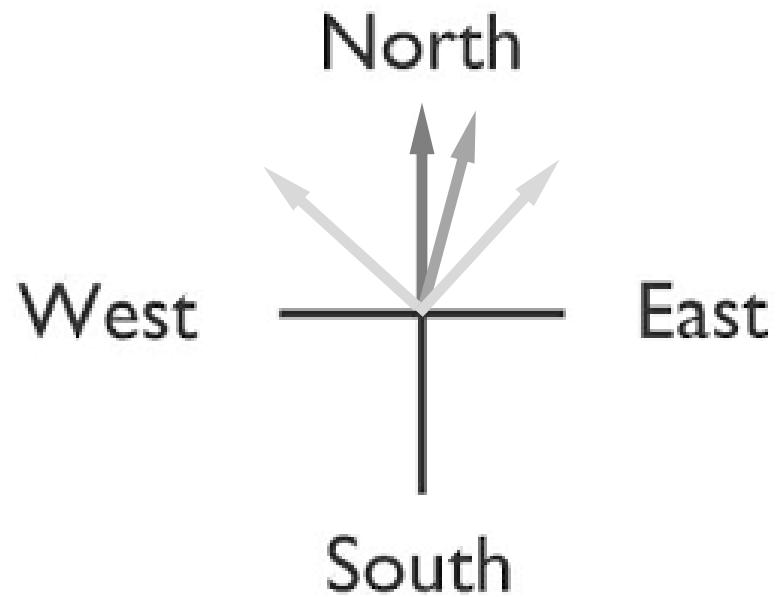
45 degrees either direction from  
given cardinal direction



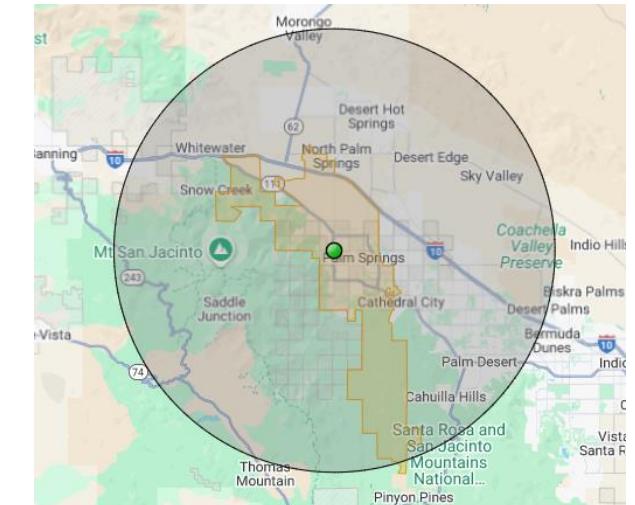
Distance from center point to  
furthest part of polygon

# Uncertainty in Locality Descriptions

3.0 miles?  
2.75 miles?  
3.03 miles?



[MaNIS/HerpNet/ORNIS Georeferencing Guidelines](#)



# Uncertainty

## Locality Description

Distance measurement  
precision

Direction measurement  
precision

## Point Location

Locality extent  
Coordinate Precision  
and  
GPS accuracy

## Mapping

Map scale and  
Coordinate Reference  
Systems





Palm Springs Convention Center

A satellite map of Palm Springs, California, showing the city's urban sprawl and surrounding desert landscape. A red marker indicates the location of the Palm Springs Convention Center, which is situated in the central business district. The map also shows major roads, including Highway 111, and various landmarks such as the Palm Springs Air Museum and the Coachella Valley Desert Museum.

Palm Springs Convention Center

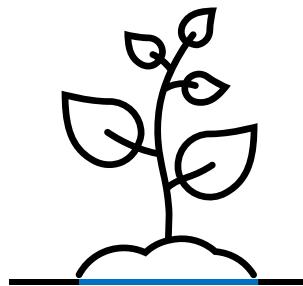






# Locality Extent

The spatial extent of a place



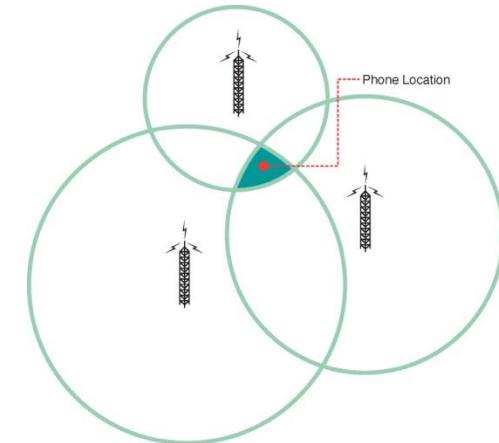
# Coordinate Precision

Decimal Places	Decimal Degrees	Distance	Concept
0	1.0	111 km	Can identify a Country or large Region from another
1	0.1	11.1 km	Can identify a large city from a neighbouring large city
2	0.01	1.11 km	Can identify a small village from the next
3	0.001	111 m	Can separate one neighbourhood or street from another
4	0.0001	11.1 m	Can identify an individual street or parcel of land.
5	0.00001	1.11 m	Capacity to distinguish one tree from another.
6	0.000001	11.1 cm	Measuring approximately 4 inches wide. Used for structural design & surveyance in engineering.
7	0.0000001	1.11 cm	Used for precision geographic surveying, representing the practical limit of the use of GPS.
8	0.00000001	1.11 mm	Conceptually the width of a paper clip. Can be used for charting volcanic movements & tectonic plate shifts.
9	0.000000001	111µm	Representative of the width of a strand of thread, now in the range of microscopy.

<https://blis.com/precision-matters-critical-importance-decimal-places-five-lowest-go/>

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## GPS accuracy



# Uncertainty

## Locality Description

Distance measurement  
precision

Direction measurement  
precision

## Point Location

Locality extent  
Coordinate Precision  
and  
GPS accuracy

## Map Comparisons

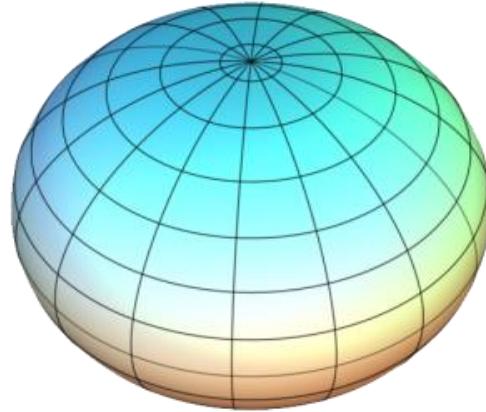
Map scale and  
Coordinate Reference  
Systems

Vox



# Geodetic Datums

Model of the Earth describing the size, shape, origin, and orientation of a coordinate system for mapping Earth's surface



**WGS84**

Default for Google Maps – very common today

**Others:** NAD27, NAD83

# WGS84

# Geodetic Datums

Coordinate Conversion Utility

input coordinates

enter comma-delimited coordinates, for example:  
38 15 30.1, -81 25 15.2 --lat, lon as deg min sec  
38.123456, -81.123456 --lat, lon as decimal degrees  
500000, 4100000 --UTM as east, north  
1987654.32, 364123.45 --WV state plane as east, north

Lat/Lon WGS 1984

Convert

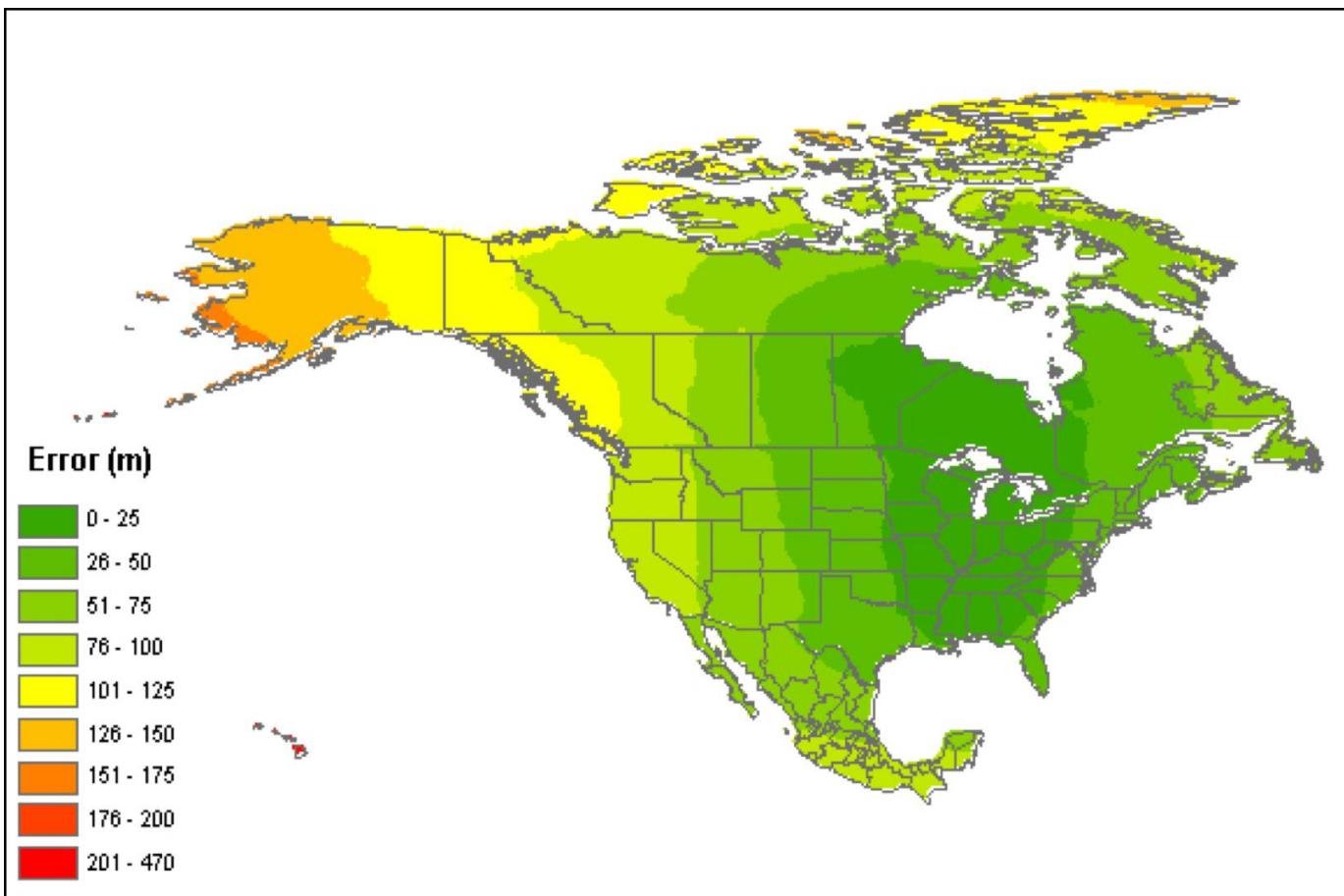
output coordinates

Lat/Lon NAD83

Others:  
NAD27, NAD83

<https://tagis.dep.wv.gov/convert/>

# Error assuming NAD27 vs NAD83 or WGS84



<https://georeferencing.org/docs/GeorefGuide.html>

# Coordinate Precision (revisited)

Uncertainty based on coordinate precision  
using the WGS84 reference ellipsoid

Precision	0 degrees Latitude	30 degrees Latitude	60 degrees Latitude	85 degrees Latitude
1.0 degrees	156904 m	146962 m	124605 m	112109 m
0.1 degrees	15691 m	14697 m	12461 m	11211 m
0.01 degrees	1570 m	1470 m	1247 m	1122 m
0.001 degrees	157 m	147 m	125 m	113 m
0.0001 degrees	16 m	15 m	13 m	12 m
0.00001 degrees	2 m	2 m	2 m	2 m
1.0 minutes	2615 m	2450 m	2077 m	1869 m
0.1 minutes	262 m	245 m	208 m	187 m
0.01 minutes	27 m	25 m	21 m	19 m
0.001 minutes	3 m	3 m	3 m	2 m
1.0 seconds	44 m	41 m	35 m	32 m
0.1 seconds	5 m	5 m	4 m	4 m
0.01 seconds	1 m	1 m	1 m	1 m

# Agenda



What is a georeference?



Why georeference?

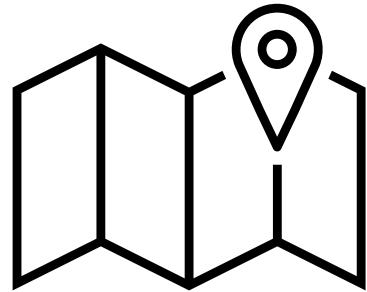


Key Concepts

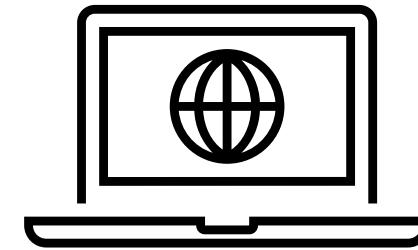


How do you georeference?

# How do you georeference?



Manual  
Georeferencing



Georeferencing  
Calculators



## Manual Georeferencing

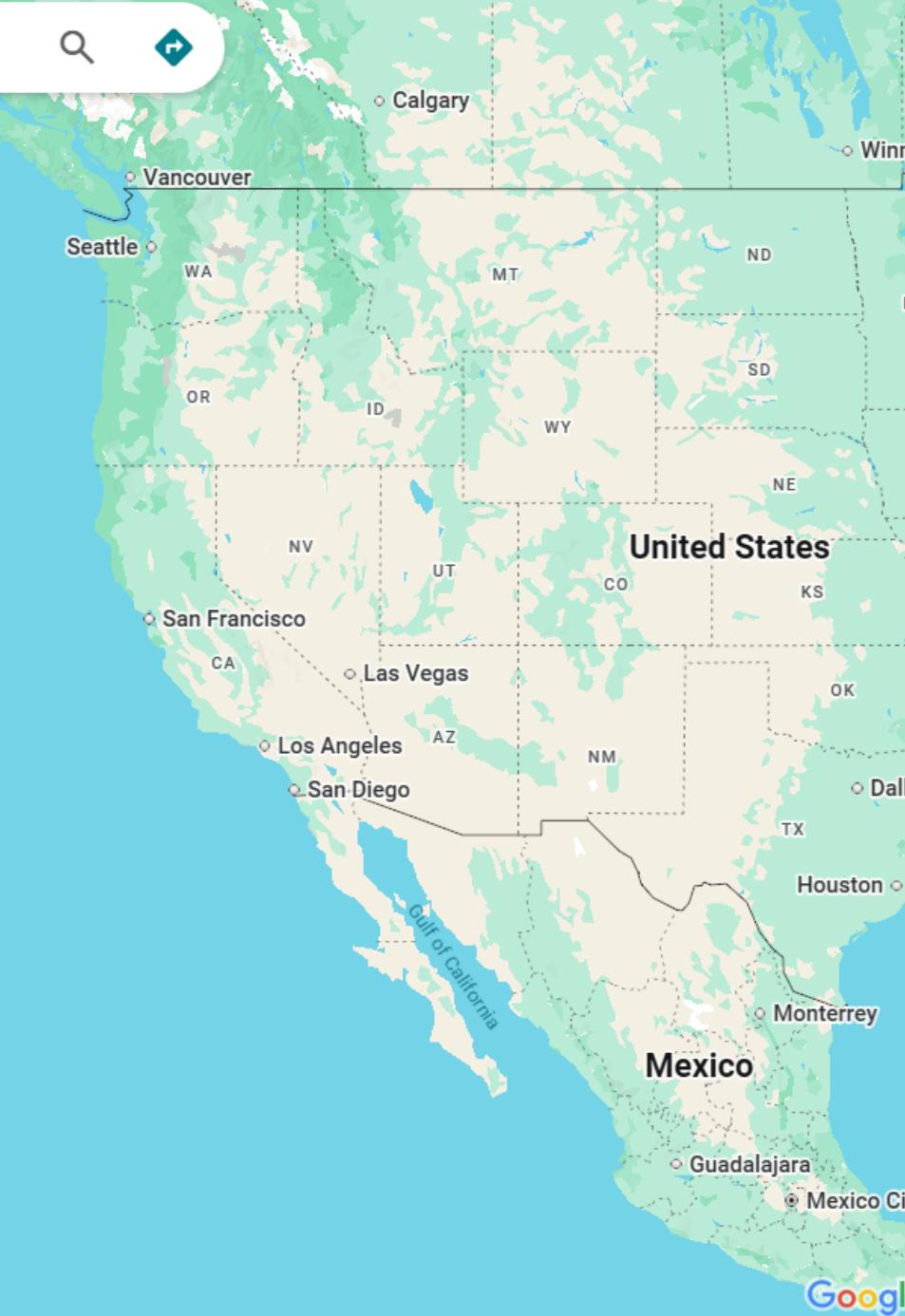
# Google Maps



Search Google Maps



Layers

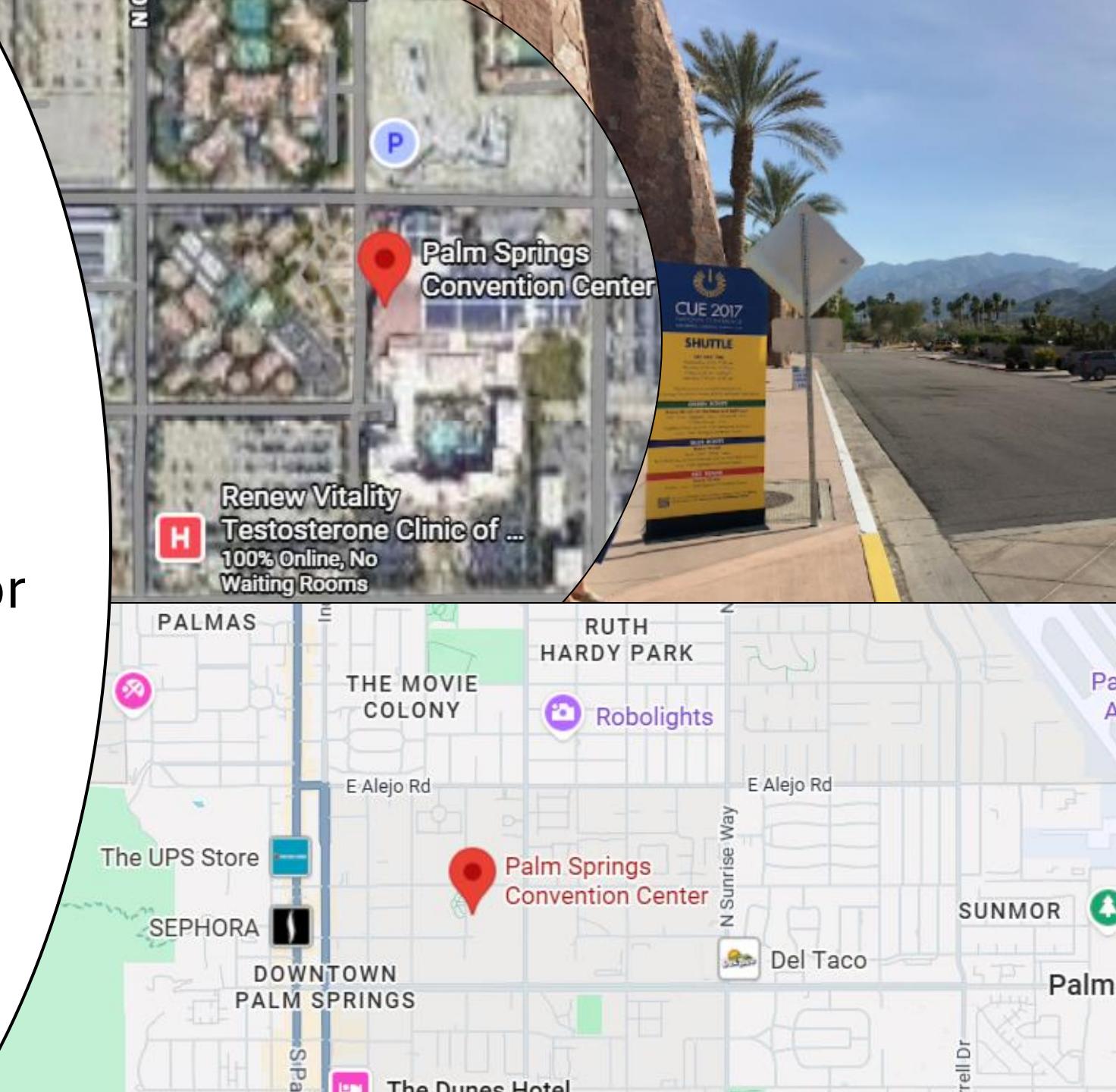


# Google Maps

Easily searchable

Directions for traveling by car, bike, public transportation, or foot

Map views: map, satellite, terrain, Google Street View



# GmapGIS

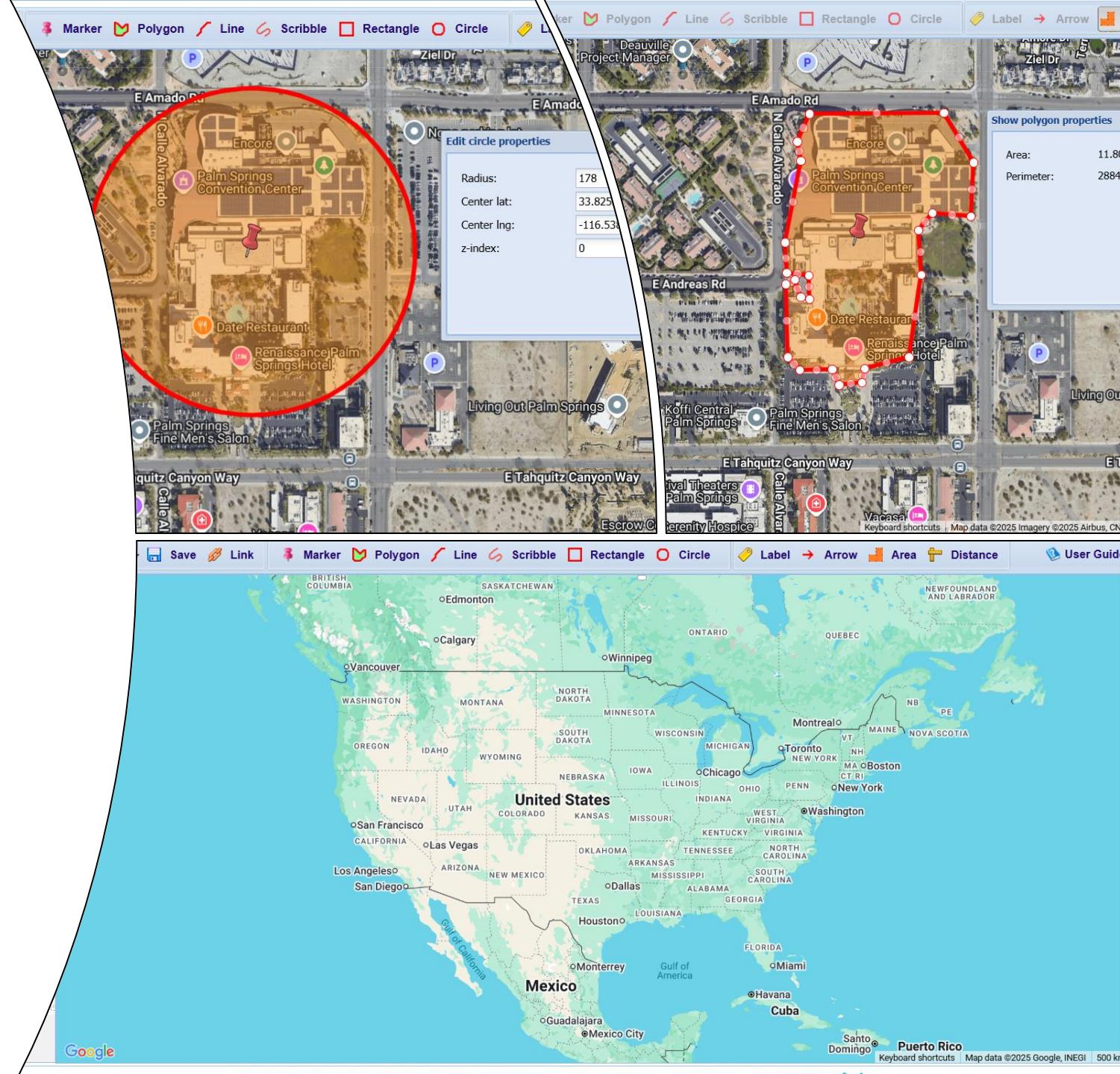


# GmapGIS

Google Map Layers

Zoom to Coordinates

Easy to draw/measure  
uncertainty



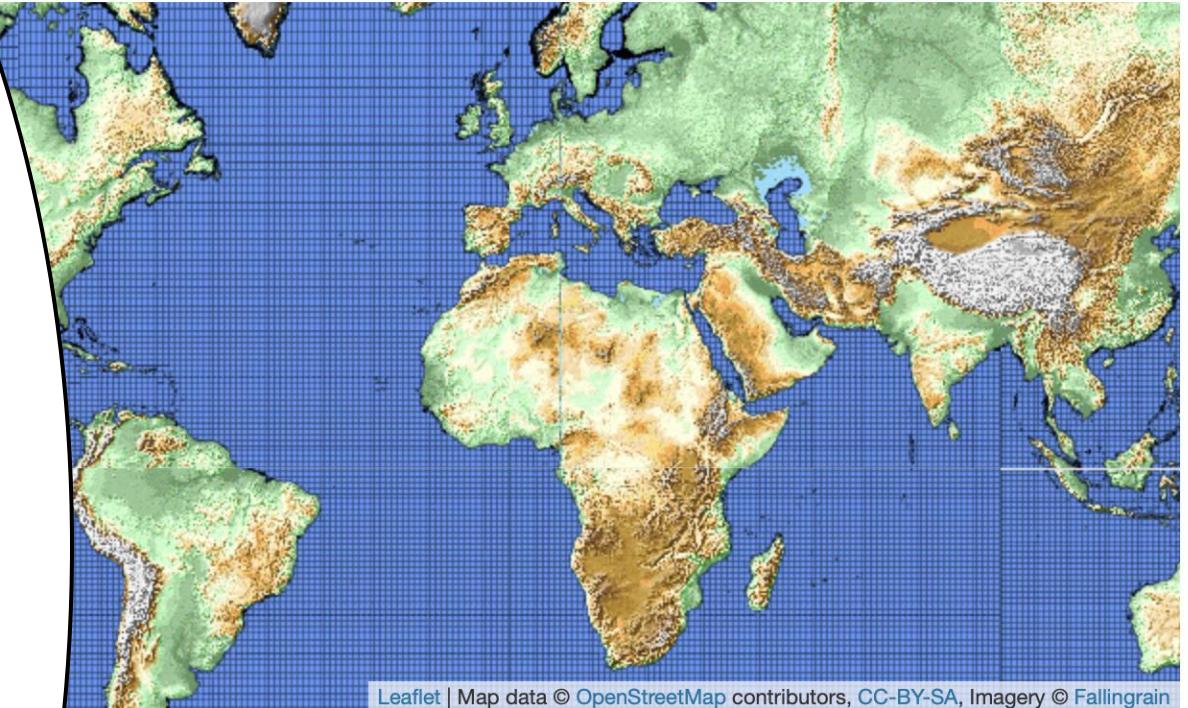
# Falling Rain

<https://www.fallingrain.com/world/>

Worldwide gazetteer for cities  
and towns

Great for **hard-to-find localities,  
especially outside US**

World Gazetteer Version 2.3



[Cartier Islands](#)

a  
man Islands  
igaria  
urundi

[AC Antigua & Barbuda](#)  
[AG Algeria](#)  
[AM Armenia](#)  
[AR Argentina](#)  
[AU Austria](#)  
[AY Antarctica](#)  
[BC Botswana](#)  
[BF Bahamas, The](#)  
[BK Bosnia & Herzegovina](#)  
[BN Benin](#)  
[BR Brazil](#)  
[BV Bouvet Island](#)  
[CA Canada](#)

# Getty Thesaurus of Geographic Names (TGN)

<http://bit.ly/Getty-TGN>

Useful for **alternative** and old names

Degrees-minutes, not coordinates

The screenshot shows a web browser window displaying the Getty Thesaurus of Geographic Names (TGN) website. The title bar reads "Directory of Cities and Towns in World". The main page header says "Research" and "Getty Thesaurus of Geographic Names® Online Full Record Display". Below the header, there are links for "Home", "Tools", "Thesaurus of Geographic Names", "Full Record Display", "Help", "Vernacular Display", and "English Display". The main content area displays a record for "Amsterdam".  
**Record Type:** administrative  
**URI:** <http://vocab.getty.edu/page/tgn/2132511>  
**Labels:** dam (deserted settlement)  
located in Paint Township.  
**Preferred Labels:** dam (preferred, C, V)  
Amsterdam (C, V)  
**Geographical Position:**

- Id (facet)
- North and Central America (continent) (P)
- .... United States (nation) (P)
- ..... Ohio (state) (P)
- ..... Ross (county) (P)
- ..... Amsterdam (deserted settlement) (P)

  
**Types:**

- deserted settlement (preferred, C)
- Inhabited place (H)

  
**Sources and Contributors:**

- Amsterdam..... [VP Preferred]
- ..... USGS, GNIS Digital Gazetteer (1994) GNIS39054403

# Georeferencing Calculators





1 Data Entry & Preparation

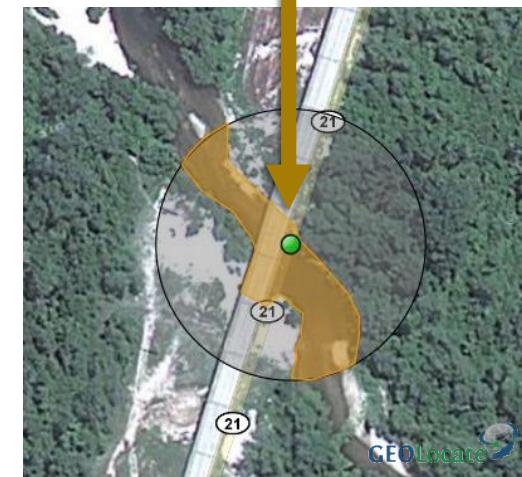
2 Automated Processing

3 Manual Verification

*pushepatapa creek, trib. to pearl river, 7.8 miles north of bogalusa at hwy 21; Washington; LA; USA*

*Georeferencing Algorithm*

*Visualize, verify & adjust output coordinates & uncertainties*



*latitude: 30.88797  
longitude: -89.83601*

*uncertainty radius: 48m*

*uncertainty polygon: 30.88823,-89.83641, 30.88815,-89.83634, 30.88808,-89.83622 ...*

# Single Reference Workflow

[Home](#) | [Web Application](#) | [Collaborative Georeferencing](#) | [Developer Resources](#) | [Education & Outreach](#) | [Support and Contacts](#)

## Web Based Clients

The following based web clients are available to allow you to georeference data directly from your web browser:



Standard Client

Simply type in your locality description and get back georeferenced results. Start here if you are new to GEOLocate.



Batch (File Based) Client

Allows you to upload a .csv file and batch process it. ([file formatting instructions](#))



Collaborative Georeferencing Client

Utilizes the collaborative georeferencing framework. Ideal for largescale multi-institution projects. ([https link](#))

Note: if you use the secure SSL (HTTPS) link, please make sure your browser is configured to allow mixed content, or you may see a blank map. Here are SSL configuration instructions for various browsers: in [English](#) and in [Spanish](#) (special thanks to David Draper for the Spanish translation).

### Embeddable client

- A streamlined web client for the purpose of embedding in other web applications.  
[Sample link](#) demonstrating use this client.  
[Documentation link](#) on how to craft URLs for this client.

### Other Clients:

- [Arctos](#)
- [Specify](#)
- [Symbiota](#)
- [Tropicos](#)

Know of any other web based clients using GEOLocate? [Let us know](#) and we will be happy to list them.



## GEOLocate Web Application



2000 km  
1000 mi

Google

Off map.

Map data ©2025 Terms

Workbench

Results

Georeference    Options |  Draw polygon  Place marker  Measure

Locality String: Palm Springs Conference Center

Country: United States of America

latitude:

longitude:

uncertainty:

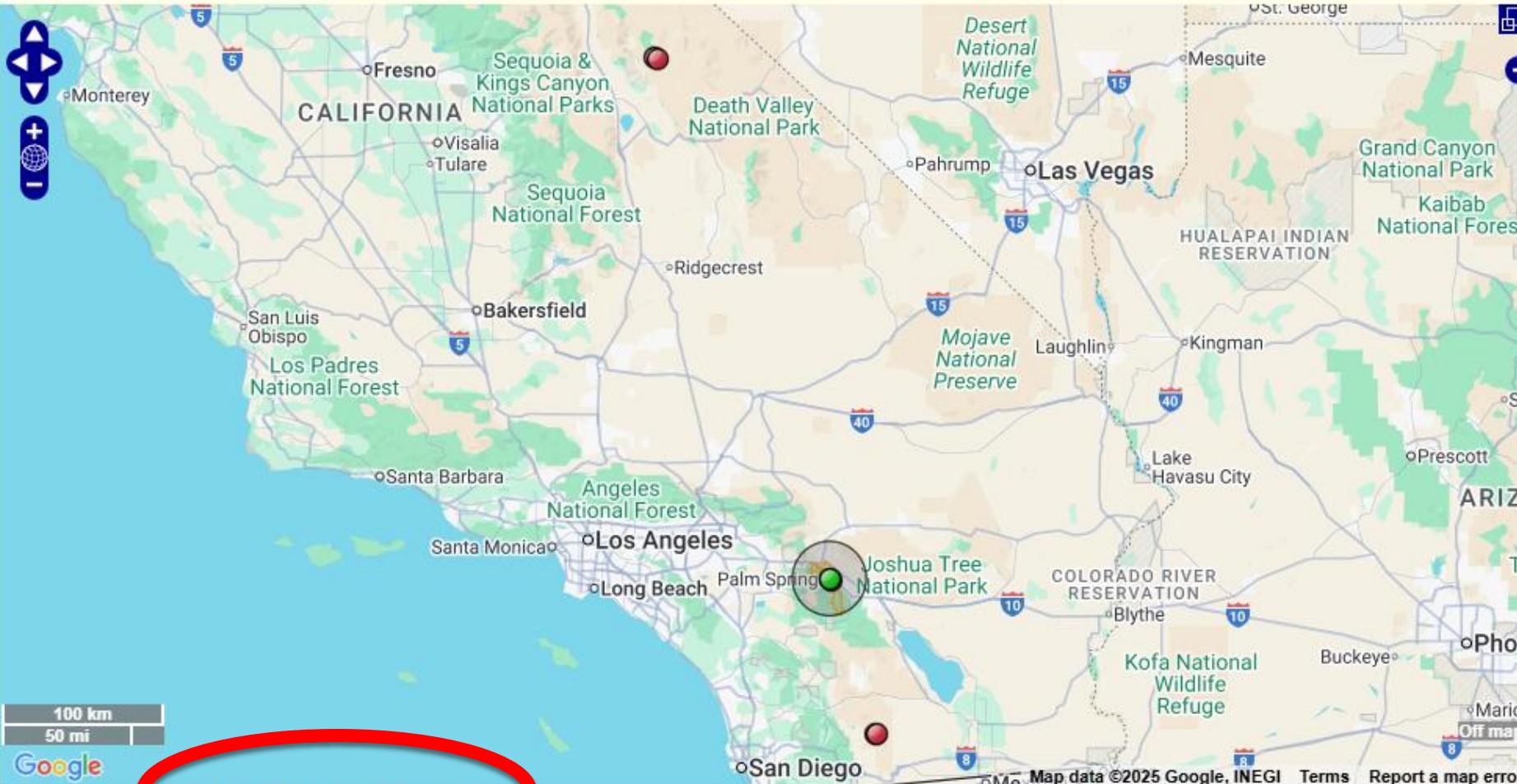
polygon

State: California

County:



## GEOLocate Web Application



Workbench    **6 possible locations found**

Place marker  Measure

Locality String:

Country:

State:

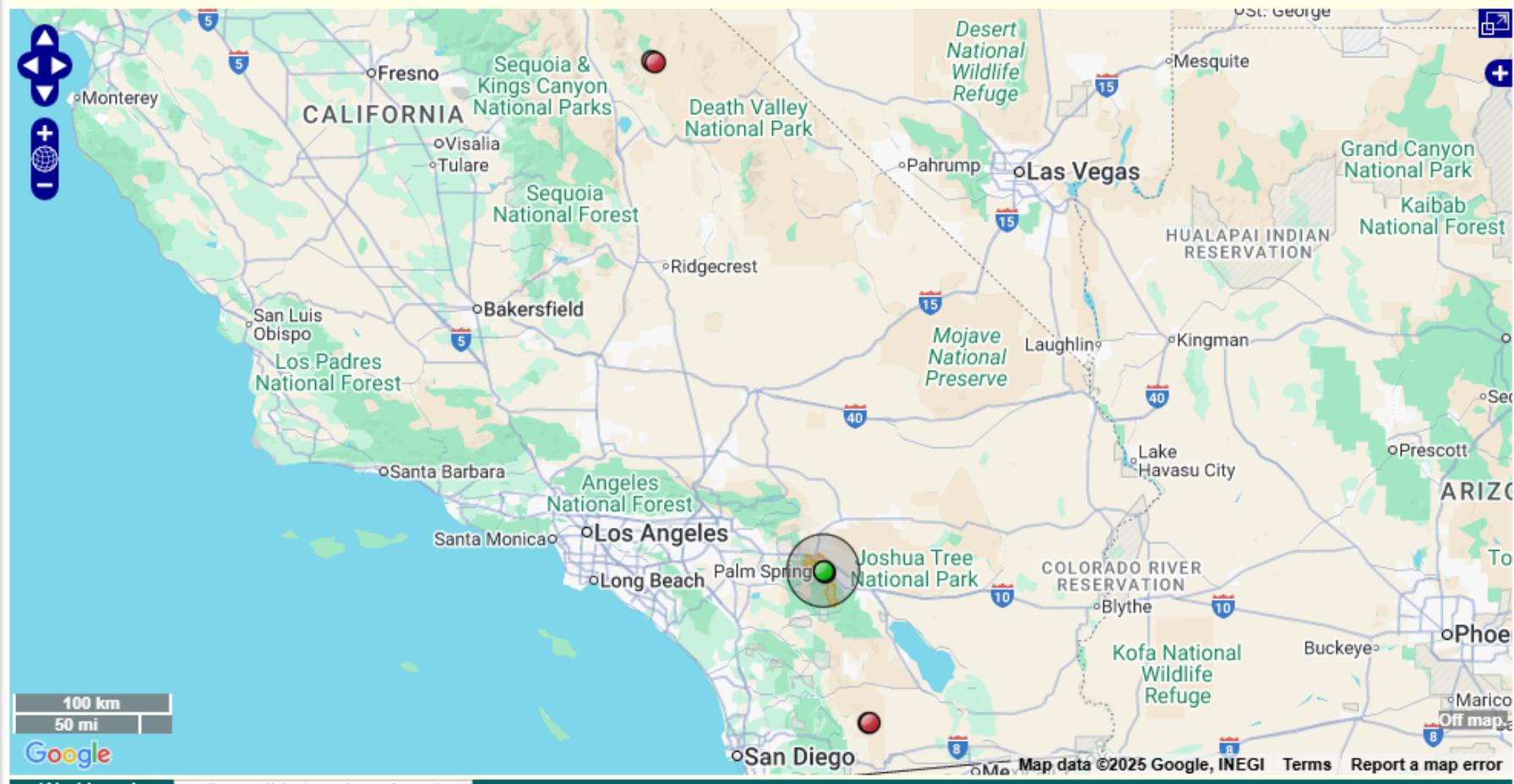
County:

latitude: 33.830296    longitude: -116.545292    uncertainty: 24010 m    polygon

33.830296   -116.545292   24010  
33.8880160149, -116.675348944, 33.8879420149, -116.671143944, 33.8879410149,  
-116.671060944, 33.8878960149, -116.667112944, 33.8918310149, -116.667088944



## GEOLocate Web Application



## Workbench

6 possible locations found

- lat: 33.830296, lon: -116.545292, pattern: PALM SPRINGS, error polygon: 33.8880160149,-116.675348944..., uncertainty: 24010 m, precision: Low (44)
- lat: 33.8167, lon: -116.5333, pattern: PALM SPRINGS, error polygon: Unavailable, uncertainty: Unavailable, precision: Low (42)
- lat: 36.813057, lon: -117.766016, pattern: PALM SPRING, error polygon: Unavailable, uncertainty: Unavailable, precision: Low (28)
- lat: 32.919991, lon: -116.218074, pattern: PALM SPRING, error polygon: Unavailable, uncertainty: Unavailable, precision: Low (28)
- lat: 32.9167, lon: -116.2167, pattern: PALM SPRING, error polygon: Unavailable, uncertainty: Unavailable, precision: Low (28)
- lat: 36.8, lon: -117.75, pattern: PALM SPRING, error polygon: Unavailable, uncertainty: Unavailable, precision: Low (28)

[Remove Secondary Points](#)



**Georeferencing options**

Engine:  
Primary: GEOLocate  
Secondary: None

GEOLocate options  
 Match Water Body |  Detect Hwy/River Crossing |  Do Uncertainty  
 Do Error Polygon |  Displace Polygon |  Restrict to Lowest Adm. Unit  
Language: English

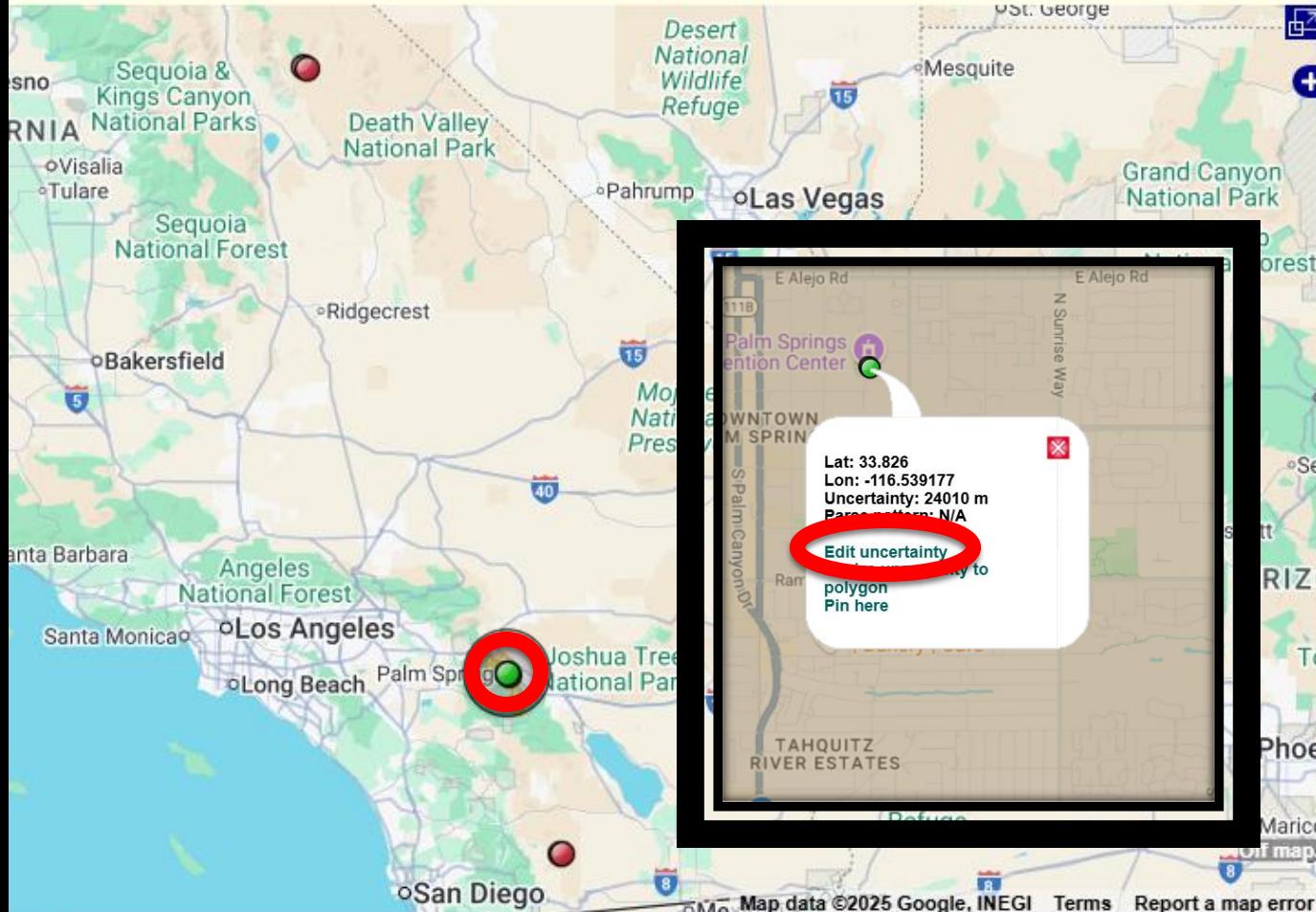
Measure tool options  
 include segment distances  
 include direct distance

Elevation options  
 Enable  
 GEBCO 2023 [ice surface elevation; land & sea; global coverage; 15 arc-second resolution]  
 SRTM Version 003 [land; -60 to 60 degrees latitude; 1 arc-second resolution]  
 ASTER GDEM Version 003 [land; -83 to 83 degrees latitude; 1 arc-second resolution]  
\* Note: this is an experimental feature.

Result box delimitation:  TSV  CSV  
Polygon Representation:  GLC  WKT

CLOSE

33.8880160149, -116.675348944, 33.8879420149  
-116.671060944, 33.8878960149, -116.667112944



**Workbench** 0 possible locations found

Georeference Options Clear Polygon Draw polygon Place marker Measure

Locality String: Palm Springs Conference Center

Country: United States of America

State: California

County:

latitude: 33.830296  longitude: -116.545292  uncertainty: 24010 m  polygon

33.830296 -116.545292 24010  
33.8880160149, -116.675348944, 33.8879420149, -116.671143944, 33.8879410149,  
-116.671060944, 33.8878960149, -116.667112944, 33.8918310149, -116.667088944



Imagery ©2025 Airbus, CNES / Airbus, Maxar Technologies | [Terms](#) | [Report a map error](#)

## Workbench

6 possible locations found

    Draw polygon  Place marker  MeasureLocality String: 

Country:

State:

County:

 latitude: 33.824966  longitude: -116.538254  uncertainty: 218 m  polygon

33.824966 -116.538254 218  
33.8880160149, -116.675348944, 33.8879420149, -116.671143944, 33.8879410149,  
-116.671060944, 33.8878960149, -116.667112944, 33.8918310149, -116.667088944

## GEOLocate Web Application



Workbench    **6 possible locations found**

Georeference     Options     Clear Polygon     Draw polygon     Place marker     Measure

Locality String: **Palm Springs Conference Center**

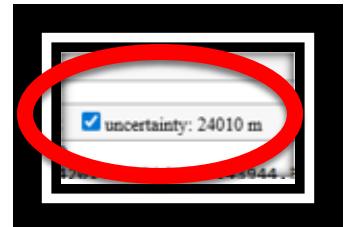
Country: **United States of America**

State: **United States of America**

County:

latitude: 33.824966     longitude: -116.53821     uncertainty: 218 m     polygon

33.824966    -116.538254    218  
33.8880160149, -116.675348944, 33.88794261, -116.671443944, 33.8879410149,  
-116.671060944, 33.8878960149, -116.667112944, 33.8918310149, -116.667088944



# Batch Workflow

[Home](#) | [Web Application](#) | [Collaborative Georeferencing](#) | [Developer Resources](#) | [Education & Outreach](#) | [Support and Contacts](#)

## Web Based Clients

The following based web clients are available to allow you to georeference data directly from your web browser:



Standard Client

Simply type in your locality description and get back georeferenced results. Start here if you are new to GEOLocate.



Batch (File Based) Client

Allows you to upload a CSV file and batch process it. (file formatting instructions)



Collaborative Georeferencing Client

Utilizes the collaborative georeferencing framework. Ideal for large-scale multi-institution projects. ([https link](https://georeference.org))

Note: if you use the secure SSL (HTTPS) link, please make sure your browser is configured to allow mixed content, or you may see a blank map. Here are SSL configuration instructions for various browsers: in [English](#) and in [Spanish](#) (special thanks to David Draper for the Spanish translation).

### Embeddable client

- A streamlined web client for the purpose of embedding in other web applications.  
[Sample link](#) demonstrating use this client.  
[Documentation link](#) on how to craft URLs for this client.

### Other Clients:

- [Arctos](#)
- [Specify](#)
- [Symbiota](#)
- [Tropicos](#)

Know of any other web based clients using GEOLocate? [Let us know](#) and we will be happy to list them.



## GEOLocate Web Application



Workbench

Results

Select File or load an existing file using a retrieval code:

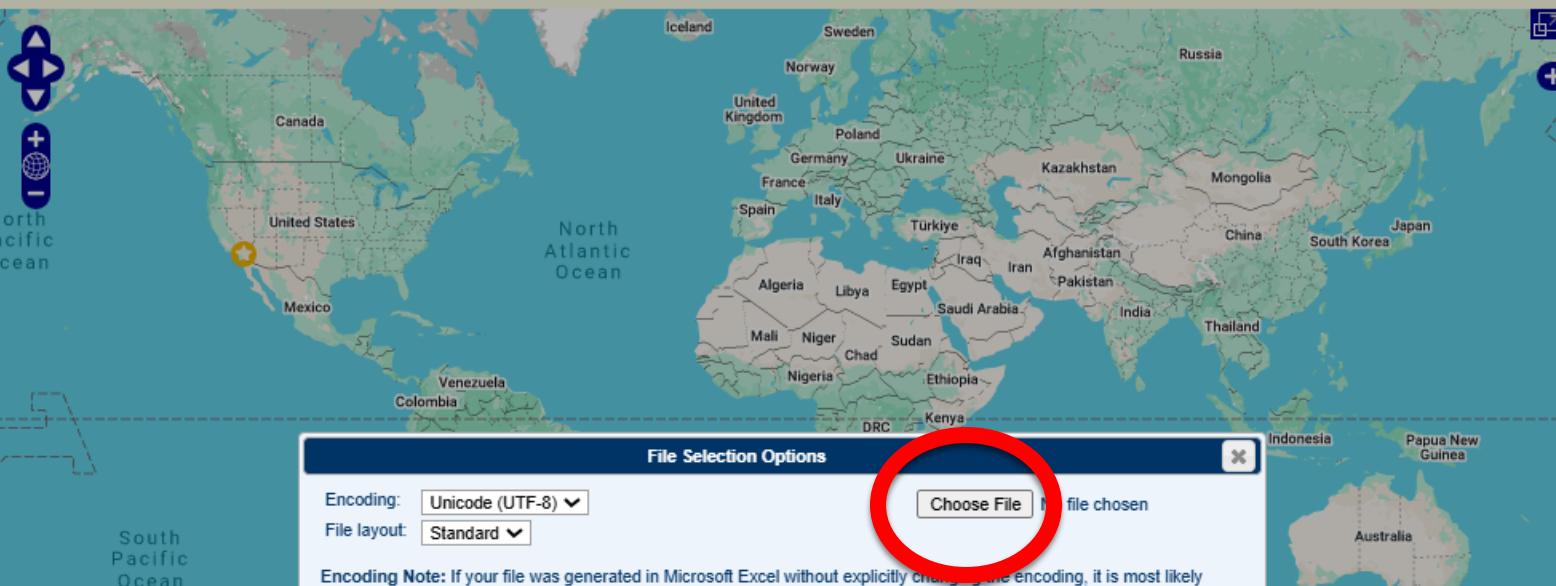
 Load

Off map.

Map data ©2025 | Terms



## GEOLocate Web Application

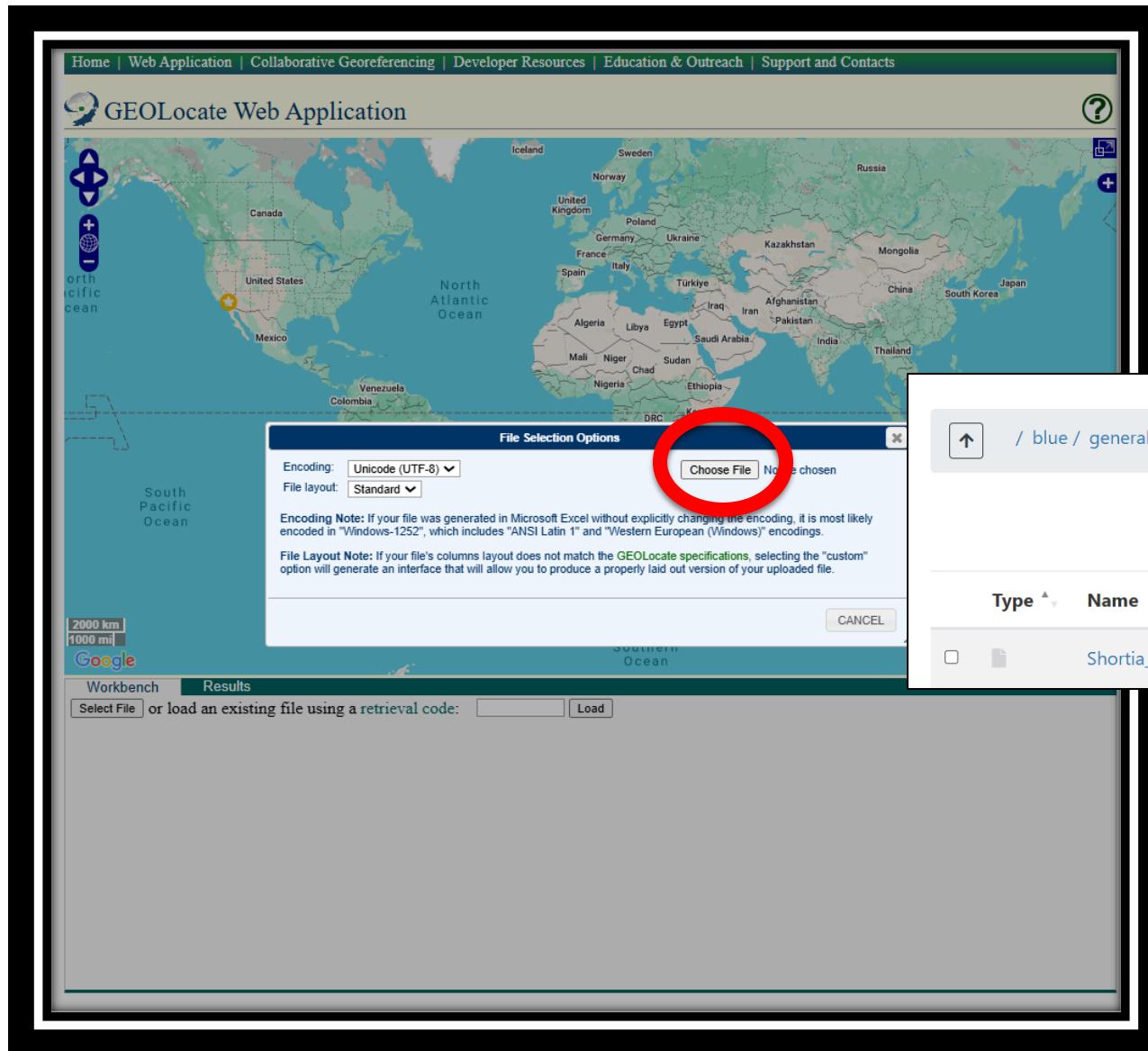


Off map.

Map data ©2025 | Terms

Workbench      Results

Select File or load an existing file using a retrieval code:



/ blue / general_workshop / se.strickland / Botany2025 / data / 03_georeferencing /						<input type="button" value="Change directory"/>	<input type="button" value="Copy path"/>	
						<input checked="" type="checkbox"/> Show Owner/Mode	<input type="checkbox"/> Show Dotfiles	Filter:
Showing 1 rows - 0 rows selected								
Type	Name	Size	Modified at	Owner	Mode			
<input type="checkbox"/>	Shortia_galacifolia_Needing_GeoRef_2025_06_27.csv	128 KB	7/25/2025 1:51:46 PM	se.strickland	644	<input type="button" value="..."/>	<input type="button" value="More options"/>	



## GEOLocate Web Application



No location found.



Workbench

No location found

Show 8 entries

 Draw polygon Place marker Measure

locality string	country	state	county	latitude	longitude	correction status
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	NA	NA	
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	NA	NA	
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	NA	NA	
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	NA	NA	
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	NA	NA	
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	NA	NA	
locality: Fuller Tract, upland woods to ravines., occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	NA	NA	
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	NA	NA	

Search:

File management

Shortia\_galacifolia\_Needing\_GeoRef\_2...

Showing 1 to 8 of 561 entries



# GEOLocate Web Application



No location found.



Map data ©2025 | Terms

Workbench    No location found

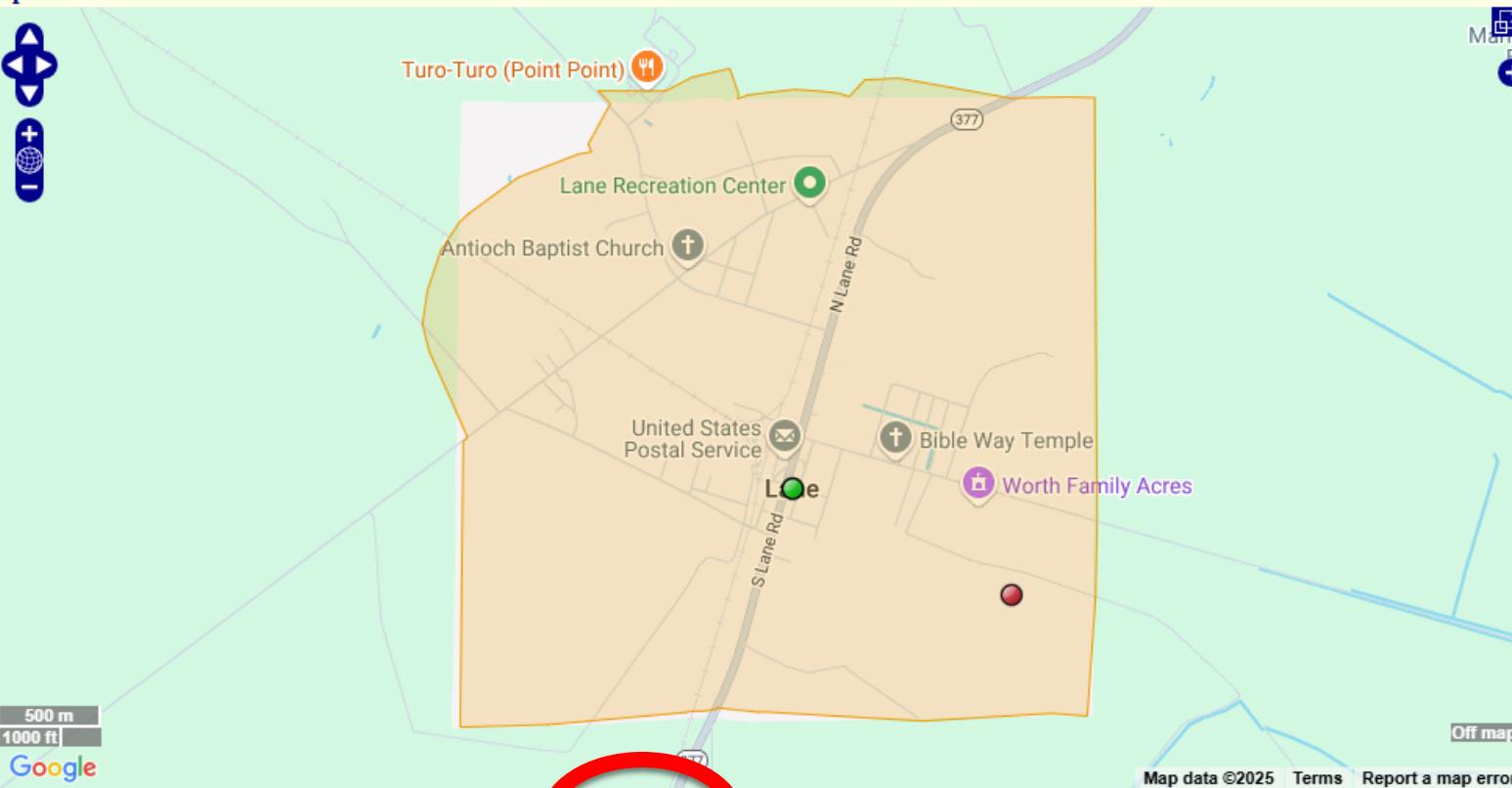
Show 8 entries    [Page Georeference](#) [Georeference](#) [Options](#) [Correct](#)     Draw polygon  Place marker  Measure

locality string	country	state	county	latitude	longitude	correction status
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	-26.5	16.4	no
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	34.7667	-83.0833	no
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	35.35	-82.35	no
locality: Fuller Tract, upland woods to ravines., occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	37.635654	-82.652656	no
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	34.7667	-83.0833	no

Search:  File management: Shortia\_galacifolia\_Needing\_GeoRef\_2... Showing 1 to 8 of 561 entries [◀](#) [▶](#)

 GEO Locate Web Application

2 possible locations found.



Workbench    2 possible locations found

Show 8 entries    Page Georeference    Georeference    Options    Connect    Clear Polygon    Draw polygon    Place marker    Measure

locality string	country	state	county	latitude	longitude	correction status
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	-26.5	16.4	no
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	34.7667	-83.0833	no
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	35.35	-82.35	no
locality: Fuller Tract, upland woods to ravines., occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	37.635654	-82.652656	no
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	34.7667	-83.0833	no

Search:    File management    Shortia\_galacifolia\_Needing\_GeoRef\_2...    Showing 1 to 8 of 561 entries



## GEOLocate Web Application



2 possible locations found.

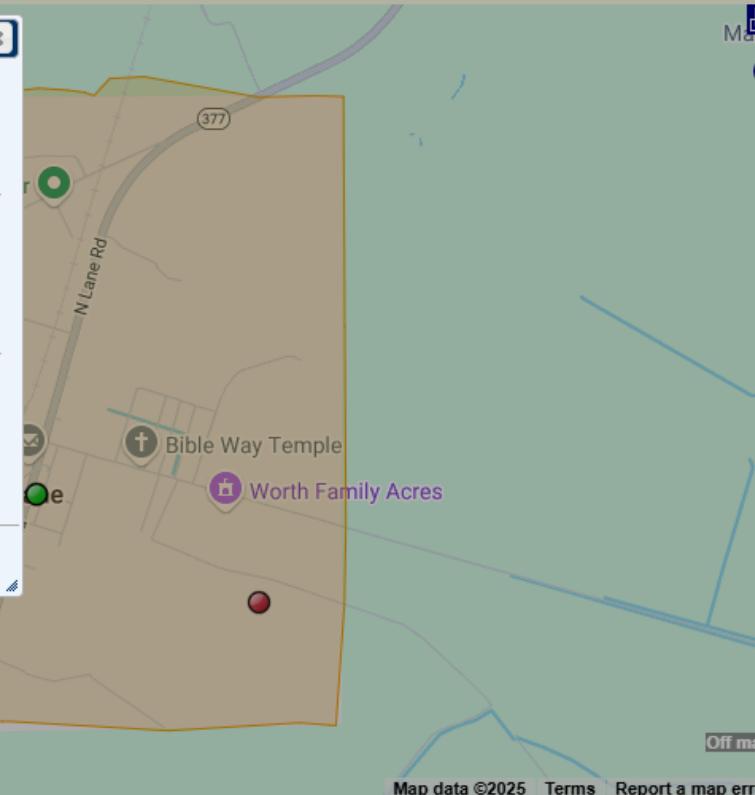


Map

Br

+

## Georeferencing options



CLOSE

Check/uncheck a column to hide/show it in the records view table.

<input type="checkbox"/> locality string	<input type="checkbox"/> country	<input type="checkbox"/> state	<input type="checkbox"/> county	<input type="checkbox"/> latitude		
<input type="checkbox"/> longitude	<input type="checkbox"/> correction status	<input type="checkbox"/> precision	<input type="checkbox"/> error polygon	<input type="checkbox"/> multiple results		
<input type="checkbox"/> ID	<input type="checkbox"/> name	<input type="checkbox"/> basis				
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	-26.5	16.4	no
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	34.7667	-83.0833	no
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	35.35	-82.35	no
locality: Fuller Tract, upland woods to ravines., occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	37.635654	-82.652656	no
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	34.7667	-83.0833	no

Workbench    2 possible locations found

Show 8 entries    Page Georeference    Georeference    Options    Correct    Clear Polygon     Draw polygon     Place marker     Measure

locality string    country    state    county    latitude    longitude    correction status

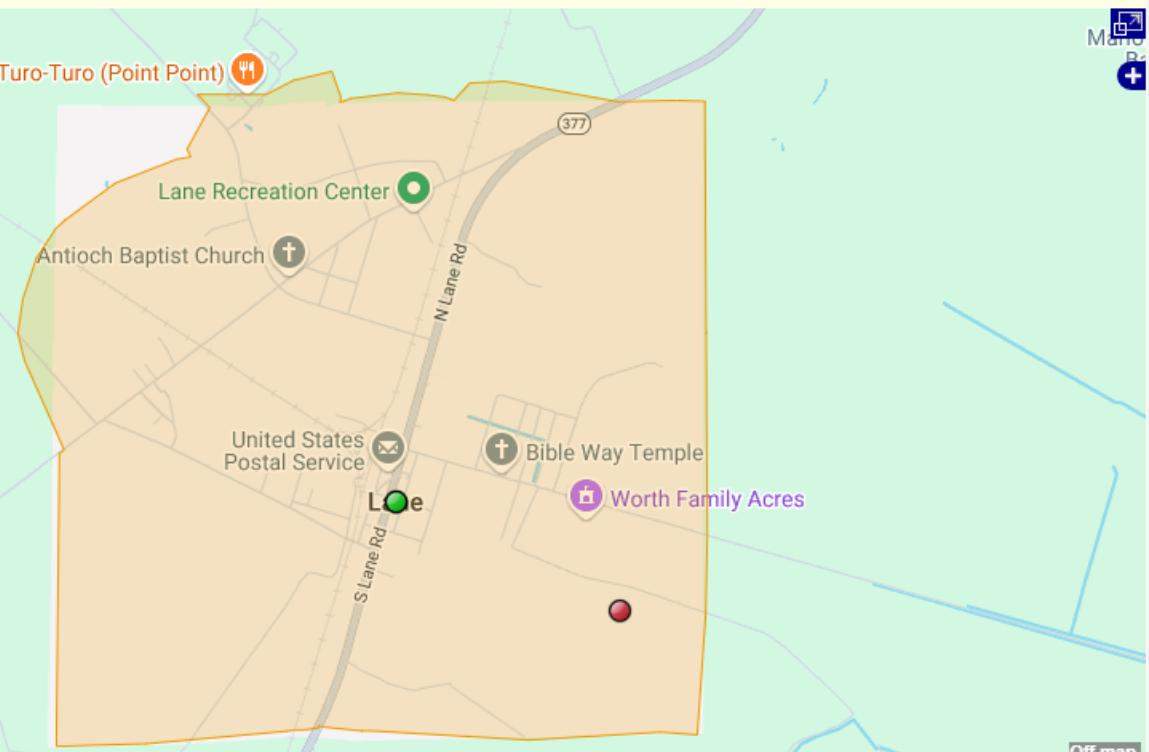
Search:    File management    Shortia\_galacifolia\_Needing\_GeoRef\_2...

Showing 1 to 8 of 561 entries

# GEOLocate Web Application



2 possible locations found.



## Workbench 2 possible locations found

Show 8 entries

[Page Georeference](#)[Georeference](#)[Options](#)[Correct](#)[Circular Polygon](#)[Draw polygon](#)[Place marker](#)[Measure](#)

locality string	country	state	county	latitude	longitude	correction status
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	yes
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	-26.5	16.4	no
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	34.7667	-83.0833	no
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	35.35	-82.35	no
locality: Fuller Tract, upland woods to ravine. occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	37.635654	-82.652656	no
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	34.7667	-83.0833	no

Search:

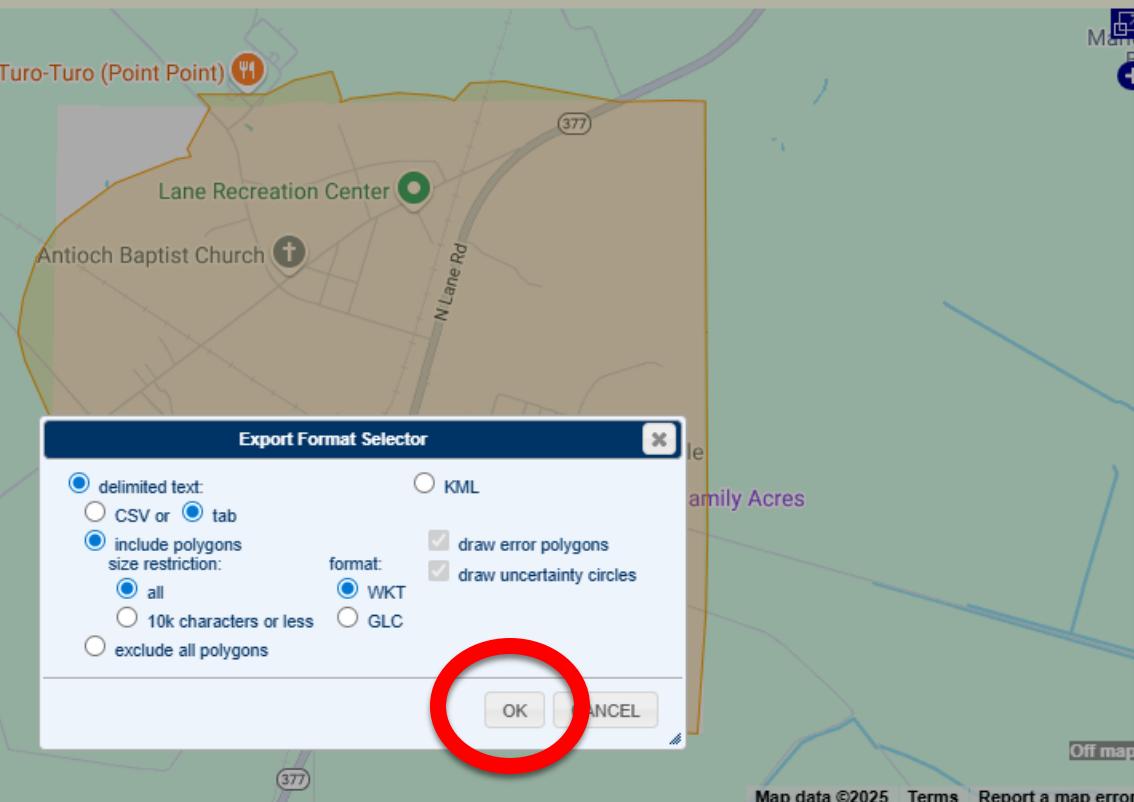
File management

Shortia\_galacifolia\_Needing\_GeoRef\_2...

Showing 1 to 8 of 561 entries

 GEOLOCATE Web Application

2 possible locations found.



## Workbench    2 possible locations found

Show 8 entries

[Page Georeference](#) [Georeference](#) [Options](#) [Correct](#) [Clear Polygon](#)[Draw polygon](#) [Place marker](#) [Measure](#)

locality string	country	state	county	latitude	longitude	correction status
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	yes
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: 710 Dive Buddy Lane, 0.3 km off of main road, I	United States of America	South Carolina	Oconee	33.521555	-79.878685	no
locality: NA, occurrenceRemarks: Confirmed by AL State Botanist. State record fo	NA	NA	NA	-26.5	16.4	no
locality: NA, occurrenceRemarks: Oconee Bells. 300+ clone continually spreading	United States of America	South Carolina	Oconee	34.7667	-83.0833	no
locality: NA, occurrenceRemarks: Leaves evergreen; stoloniferous. Petals clear w	United States of America	North Carolina	McDowell	35.35	-82.35	no
locality: Fuller Tract, upland woods to ravines., occurrenceRemarks: Persistent	United States of America	Kentucky	Powell	37.635654	-82.652656	no
locality: NA, occurrenceRemarks: Common Name: "Oconee Bells"; Flowers white, ver	United States of America	South Carolina	Pickens	34.7667	-83.0833	no

Search:

File management

Shortia\_galacifolia\_Needing\_GeoRef\_2...

Showing 1 to 8 of 561 entries

Select File

or load an existing file using a retrieval code:

98F80FA1

Load

Export

# Other Resources

## Georeferencing Quick Reference Guide

### GEOREFERENCING QUICK REFERENCE GUIDE

Version: 2012-10-08

John Wieczorek, David Bloom, Heather Constable, Janet Fang, Michelle Koo, Carol Spencer, Kristina Yamamoto

This is a practical guide for georeferencing using the point-radius method [1–2], using the Georeferencing Calculator [4, 5], maps, gazetteers, and other resources. Geocodes and spatial boundaries for places can be found. This guide follows “Georeferencing for Dummies” [6], and explains the recommended calculations and localities encountered in the georeferencing process.

Georeferences using the methods in this guide will be maximally informative as possible about and during the georeferencing process. The following fields defined in the Darwin Core standard [7]. For a discussion and recommendations, see the Darwin Core Project wiki [8].

Darwin Core Georeferencing terms:

- **decimalLatitude**, **decimalLongitude**, **geodeticDatum** – the coordinates provide the reference for the center of the point-radius of the georeference.
- **coordinateUncertaintyInMeters** – The horizontal distance (in meters) from the **decimalLatitude** and **decimalLongitude** describing the smallest area in which the whole of the Location. Leave the value empty if the uncertainty is unknown, cannot

<https://docs.gbif.org/georeferencing-quick-reference-guide/1.0/en/>

## Georeferencing Quick Reference Guide

Paula F. Zermoglio, Arthur D. Chapman, John R. Wieczorek, María Celeste Luna,  
David A. Bloom

Version 7adb86d, 2021-02-01 17:30:10 UTC

# Other Resources



<https://www.idigbio.org/wiki/index.php/Georeferencing>

# Practice

UF Apps ▾ Files ▾ Jobs ▾ Clusters ▾ Interactive Apps ▾ My Interactive Sessions

Welcome to the G

You are accessing a University of Florida information system and agree to



UF Apps ▾ Files ▾ Jobs ▾ Clusters ▾ Interactive Apps ▾ My Interactive Sessions

Help Logged in as sestrickland Log Out

Open in Terminal + New File New Directory Upload Download Copy/Move Delete

Home Directory /blue/general\_workshop/ Change directory

Show Owner/Mode Show Dotfiles Filter: Showing 36 rows - 0 rows selected

Type	Name	Size	Modified at	Owner	Mode
📁	dsoltis	-	7/22/2025 5:46:43 PM	dsoltis	750
📁	elizabethwhite1	-	7/23/2025 2:09:32 PM	elizabethwhite1	755
📁	fernandez.se	-	7/23/2025 12:52:54 PM	fernandez.se	755
📁	guest.100230	-	7/22/2025 5:12:51 PM	guest.100230	700
📁	guest.100231	-	7/22/2025 5:12:51 PM	guest.100231	700
📁	guest.100232	-	7/22/2025 5:14:01 PM	guest.100232	700

/ blue / general\_workshop / se.strickland / Botany2025 / data / 03\_georeferencing / Change directory Copy path

Show Owner/Mode Show Dotfiles Filter: Showing 1 rows - 0 rows selected

Type	Name	Size	Modified at	Owner	Mode
📄	Shortia_galacifolia_Needing_GeoRef_2025_06_27.csv	128 KB	7/25/2025 1:51:46 PM	se.strickland	644

View Edit Rename Download Delete

OnDemand version: 2.0.32