Georeferencing Training

MAY 28, 2020
What is Georeferencing?

Georeferencing is the process of assigning coordinates to a locality.

Cleaning and sorting data before georeferencing is a useful first step for supervisors.

If coordinates are present on the label, include “coordinates recorded at time of collection” in Georeference Remarks.

Example:
SIM0013218 near Philadelphia
MARY1029805 Lancaster
GeoLocate

- Map layers
- Measuring
- Editing “Options” to help your search
  Ex. do error polygon, match water body, etc.
- Always include Uncertainty
  Adjust larger or smaller if needed
Record-by-record vs. Batch Georeferencing

Batch Georeferencing is a valuable tool for georeferencing multiple records at once within one collection.

Note: Batch Georeferencing will not display records with no locality string.
GeoLocate

Use the GeoLocate tool in Zymbiota to georeference input locality (from labd) and look at output.

Single Output Locality Detected
- Determine if the output locality is correct.
- Output Locality Correct
  - Success! Accept coordinates and uncertainty and move the record to Stage 2.
  - Output Locality Incorrect
    - It is possible that the output locality is incorrect.
    - Success! Accept coordinates and uncertainty and move the record to Stage 2.

No Output Locality Detected
- GeoLocate unsuccessful
- None Correct
  - It is possible that none are correct.

Multiple Output Localities Detected
- Do not assume the green dot is correct! Use GeoReferencing Resources and toggle between map layers to check the county and surrounding areas to determine which dot (if any) is the correct location.
- One Output Locality Correct
  - Success! Click the dot corresponding to the correct coordinates to make it green. Accept coordinates and uncertainty and move the record to Stage 2.

Edit Locality String
- In GeoLocate, edit the locality string. This will not change your records, but may help determine the correct point.

Single Output Locality Detected
- Determine if the output locality is correct.
- Output Locality Correct
  - Success! Accept coordinates and uncertainty and move the record to Stage 2.
  - Output Locality Incorrect
    - It is possible that the output locality is still incorrect.

No Output Locality Detected
- GeoLocate unsuccessful
- None Correct
  - It is possible that none are correct.

Multiple Output Localities Detected
- Determine which dot (if any) is correct.
- One Output Locality Correct
  - Success! Click the dot corresponding to the correct coordinates to make it green. Accept coordinates and uncertainty and move the record to Stage 2.

Edit Locality String again or flag as Expert Required & go to next record.
GeoLocate detects one or multiple points

- Check whether the point(s) is correct
  - Zoom out to see if it’s in the correct county
  - Toggle between map layers – the place name might show up on the map in some layers but not others
  - You may need to uncheck “match water body” to prevent the point from being mistakenly offset.

Example

TAWES0000651 Purse State Pk (multiple points, edit to uncheck match water body, find the correct point, utilize map layers)
MARY1028291 Along the Potomac River, Cabin John
Polygons

- For simple named places check the box to “draw error polygon” and click GeoLocate.

- For complex geometric figures, the polygon data may be too large for GeoLocate to input (<80,000 character). In this case, rely on Uncertainty (error radius)

- Don’t include polygons for offsets

- When to Manually Draw Error Polygon
  Mainly for geographic features with easily distinguishable geometric boundaries.

- In short – don’t spend too much time drawing polygons, only do so if it’s fairly straightforward.

**Examples**
- SIM0003261 Aspinwall (polygon)
- MOAR0000212 Wissahickon Ravine (manually draw polygon)
If points are incorrect OR If GeoLocate fails...

- Evaluate whether the record should be moved to closed...
  
  ex. contradictory geographic information – the locality does not fall within the county listed on the label

- ...or whether the record can be re-processed after editing the locality string
Editing the locality string

- Use abbreviations that GeoLocate understands OR write out abbreviations for proper place names
  ex. mi should be mi.
  ex. east-northeast should be ENE
  ex. WMA should be Wildlife Management Area

- Try to match the name that you found on the map
  ex. some parks are not detectable as written on the label, but a slight wording change can help GeoLocate to detect the place
  ex. Valley Forge Park might be detectable as Valley Forge National Park

- Rearrange the locality string
  ex. Susquehanna River, 2 mi. S of Harrisburg might be rearranged as 2 mi. S of Harrisburg, Susquehanna River OR take Susquehanna River out for the search.

**Examples**

TAWES0004477 Roundtop Hill (multiple points, uncheck match water body, edit locality string, find correct point, measure, utilize map layers)
Before Georeferencing

**SUPERVISOR**

**Clean data (2)**

**Sort & Categorize Records (2)**

**DATA CATEGORIES**

- Coordinates Present on Label
  - Coordinates accurate and precise
    - Stage 2
  - Coordinates inaccurate or imprecise
    - Closed
- Coordinates NOT Present on Label
  - Possible to georeference
    - Closed
  - Not possible to georeference

**Evaluate Existing Coordinates (2.4)**

**Sort out Problematic Records (2.3)**

**Georeference**

**TECHNICIAN**

(also see Fig. 3)

**Process with GeoLocate (3.2)** preferably the batch tool

- Correct locality found
  - Stage 2
- Correct locality NOT found
  - Expert Required

**Solve Problems & Review**

**SUPERVISOR**

**Sort Out Problematic Localities (3.3)**

- Locality problematic
  - Closed
- Locality not problematic
  - Manually Georeference (3.4)
    - Manual georeference NOT possible
      - Closed
    - Manual georeference successful
      - Stage 2

**Review & Clean All Data (4)**
Manual Georeferencing

- Find the record using an outside source or map and enter the coordinates manually OR place or move the pin manually in the GeoLocate tool and input the coordinates.
- Use Herpnet guidelines for manual georeferencing when possible.
- Enter your source
  - Note that there is a text limit of 255 characters including spaces and punctuation – keep sources relatively short.
- Include a brief explanation in Georeferencing Remarks as needed.

*Example* SIM0003205 Egbertville, Staten Island (visible on map but GeoLocate fails)
Moving Records to Closed

- If GeoLocate and Manual Georeferencing fail, change the processing status to closed and include a brief explanation in Georeferencing Remarks
  - Ex. not georeferenced, insufficient geographic information
- Avoid spending excess time on problematic localities

*Examples*  
SIM0008623 Central New York