

Polygon Collection Workflow

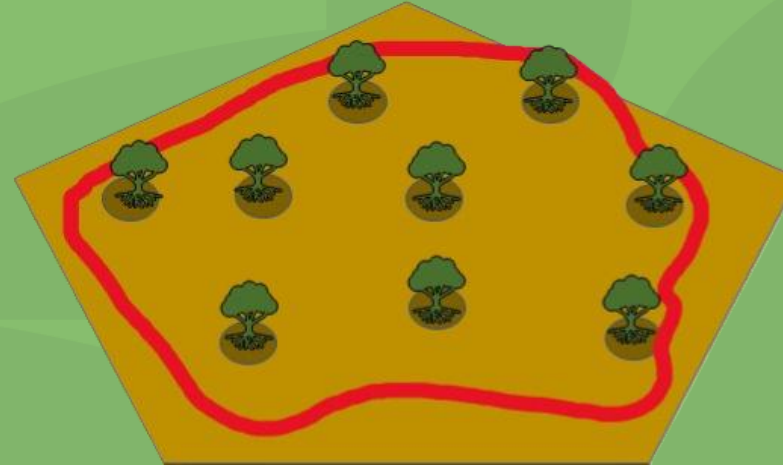


Polygon overview



What is a Polygon?

A closed shape that starts and ends at the same coordinate and encloses a geographically contiguous area, saved as a GIS file (GeoJSON or Esri Shapefile)



Why Polygons?

- Polygons provide locations where tree planting is happening and serve as the basis for calculating active area under restoration.
- Precise polygons are vital for monitoring hectares and tree-growing indicators for TerraFund.
- Seeing your work on a map builds trust with funders and could help unlock additional funding and investment.



TerraFund Polygon requirement?

- Every polygon is associated with a **site on TerraMatch**, champions can continue adding new polygons to an existing site throughout the entire 2-year planting life span of the project.
- Polygons are collected **after planting has occurred**, and only for the area planted (not future planting that will take place next year or next planting season).
- ANR projects will submit polygons during site profile creation on TerraMatch (before implementation activities begin)
- Polygons must have complete attribute information, we provide the following (**Polygon name, Target landuse, Restoration practice, planting start date, distribution & number of trees planted.**



TerraFund Polygon attributes?

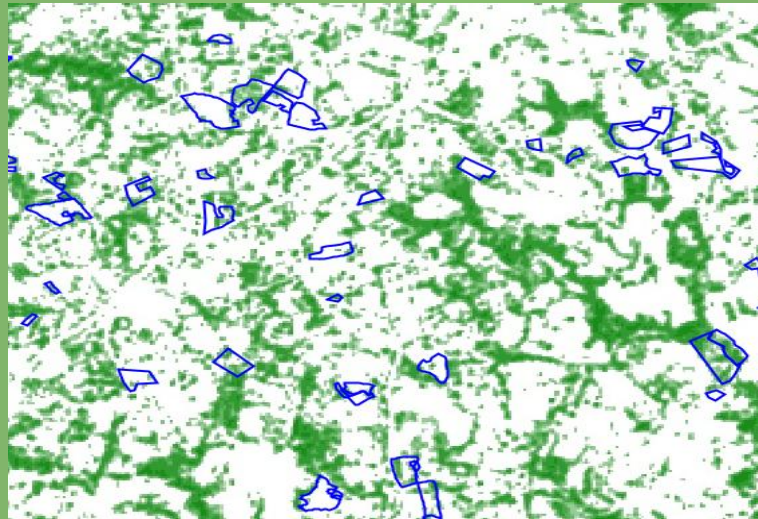
ATTRIBUTES	DESCRIPTION
Polygon Name	Name of polygon (Name of farm owner)
Restoration Practice	The restoration method (e.g., tree planting, direct seeding, assisted natural regeneration).
Target Land Use System	The restoration target land use (e.g., agroforest, grassland, natural forest, mangrove, silvopasture, woodlot, urban forest).
Tree Distribution	Tree planting arrangement (e.g., single-line, partial, full coverage).
Planting Start Date	The actual tree planting start date.
Trees Planted	The number of trees planted (num_trees).



How TerraFund uses polygons



Tree count



Tree cover change



Field visits and
verification

Polygon collection tools



Flority & greenhouse.



Flority

- Mobile app to collect GPS-photos + polygons and attributes
- Android only



greenhouse.

- Web application that connects to Flority App
- Manage Flority user access
- Receives photos, polygons and associated attributes collected through Flority
- Used to edit and approve photos and polygons before sending to TerraMatch
- Shared login details with Flority



What you need to know before collecting polygons on flority

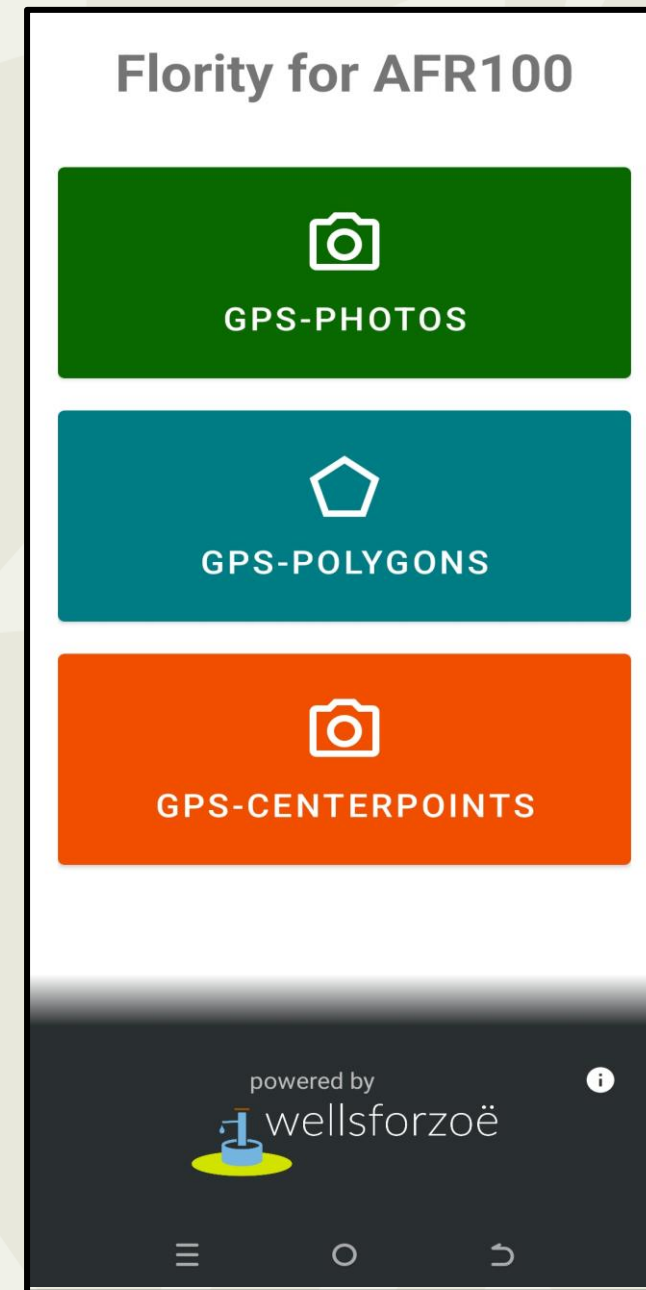


Mobile phone specifications

- Flority works only on **ANDROID** Phones
- The Android version must be **Android 8.0** and above
- Phones with strong GNSS is recommended but not a requirement
- Works well on Samsung A05, A06 and A07, Tecno Camon 30 series and newer models, and Xiaomi Redmi phones



Data collection options



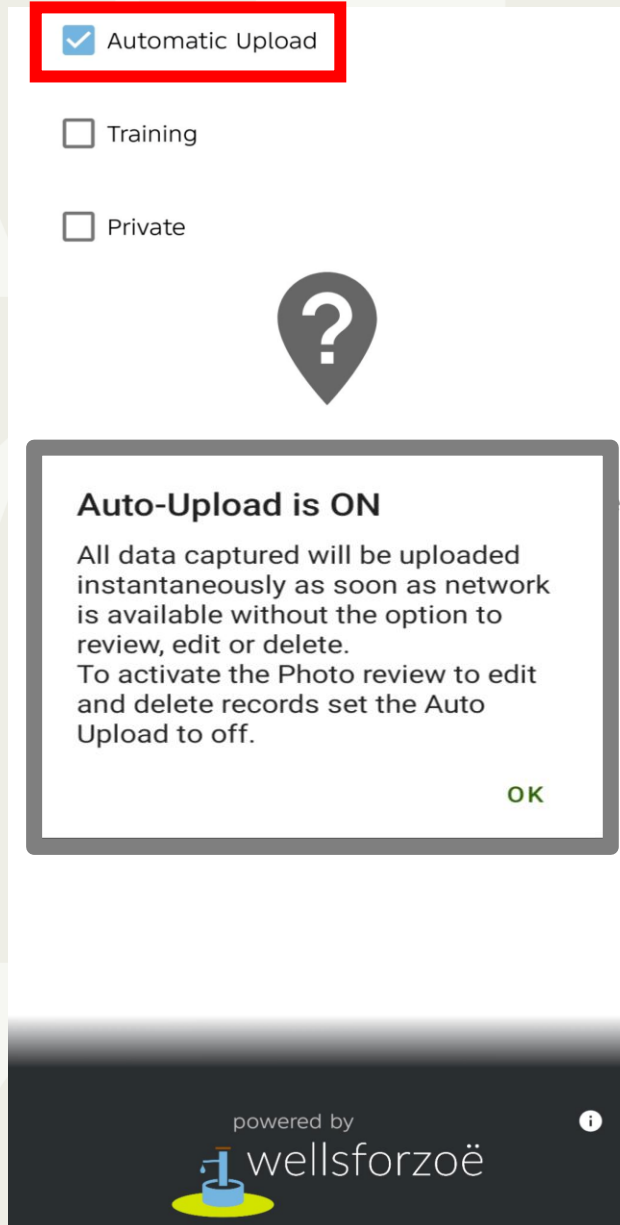
Automatic upload setting

Auto-Upload is ON

Data collected is instantly uploaded once connected to the internet

Advantages: All data is submitted to greenhouse

Recommended setting



☒ Automatic Upload

☐ Training

☐ Private

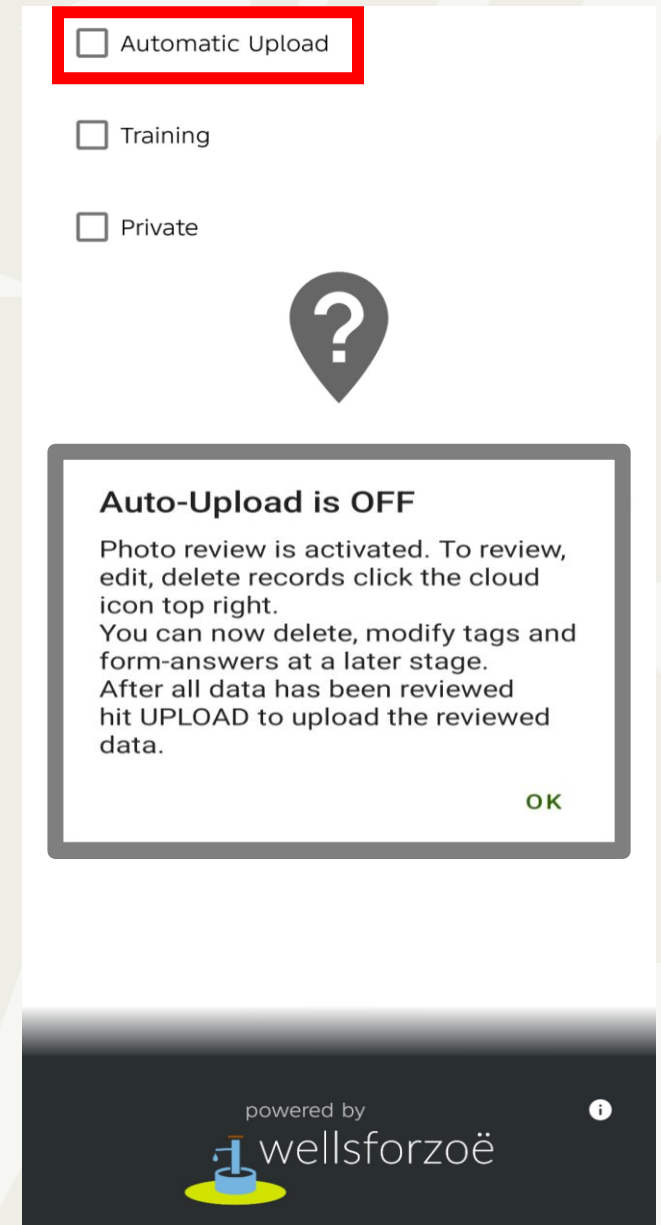
?

Auto-Upload is ON

All data captured will be uploaded instantaneously as soon as network is available without the option to review, edit or delete.
To activate the Photo review to edit and delete records set the Auto Upload to off.

OK

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☐ Automatic Upload

☐ Training

☐ Private

?

Auto-Upload is OFF

Photo review is activated. To review, edit, delete records click the cloud icon top right.
You can now delete, modify tags and form-answers at a later stage.
After all data has been reviewed hit UPLOAD to upload the reviewed data.

OK

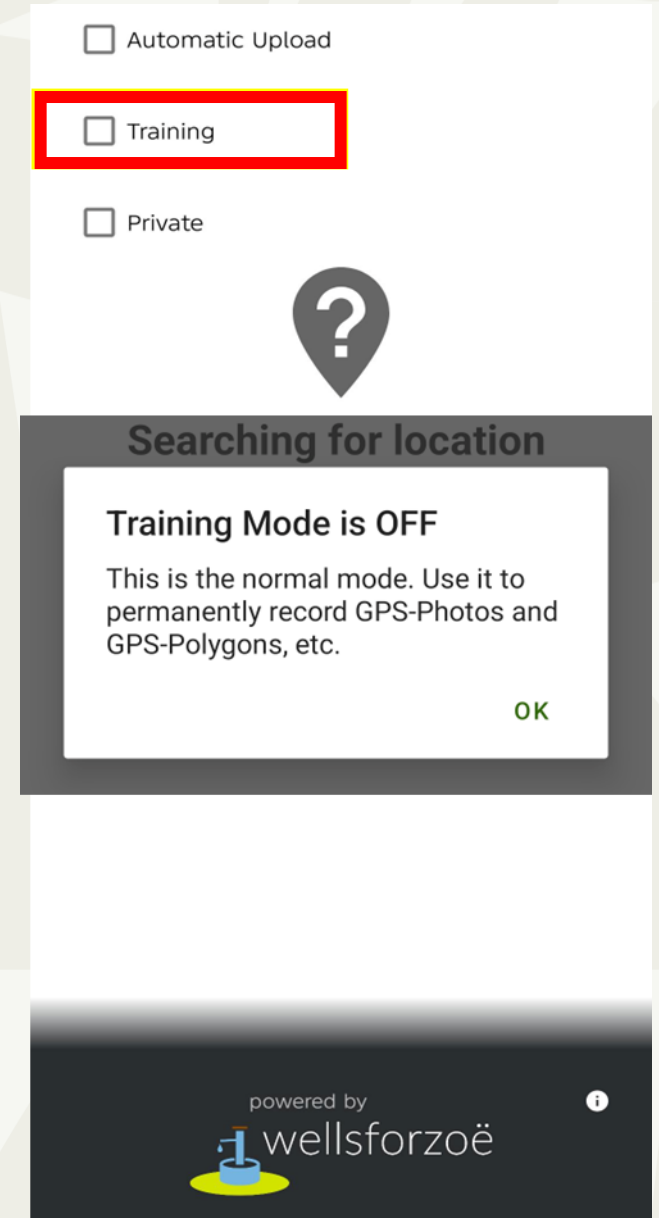
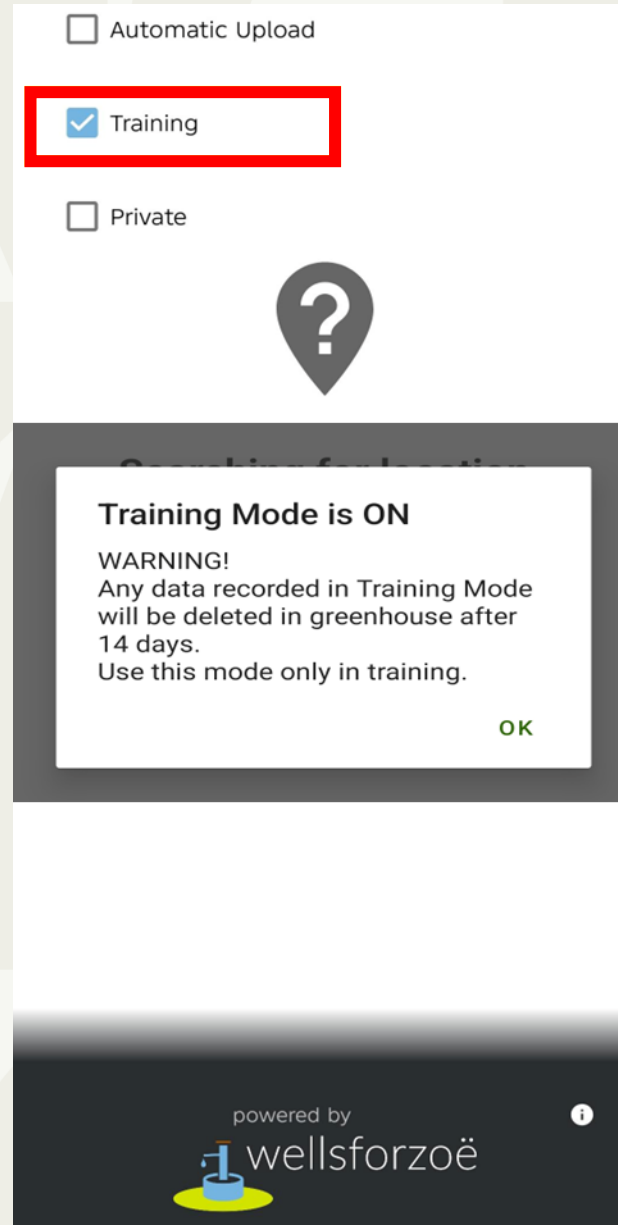
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Training mode setting

Training Mode is ON

When testing the app, only meant for purely Training data.

Important note: Data recorded in training mode is automatically deleted from Greenhouse after 14 days

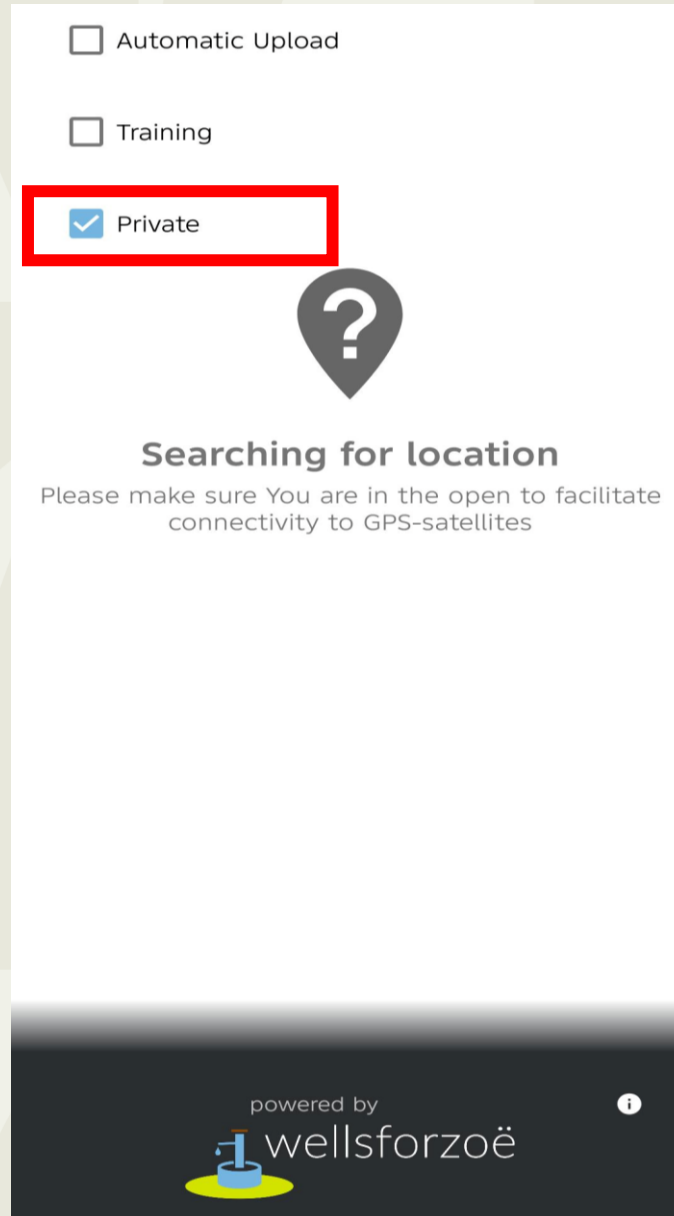


Private setting

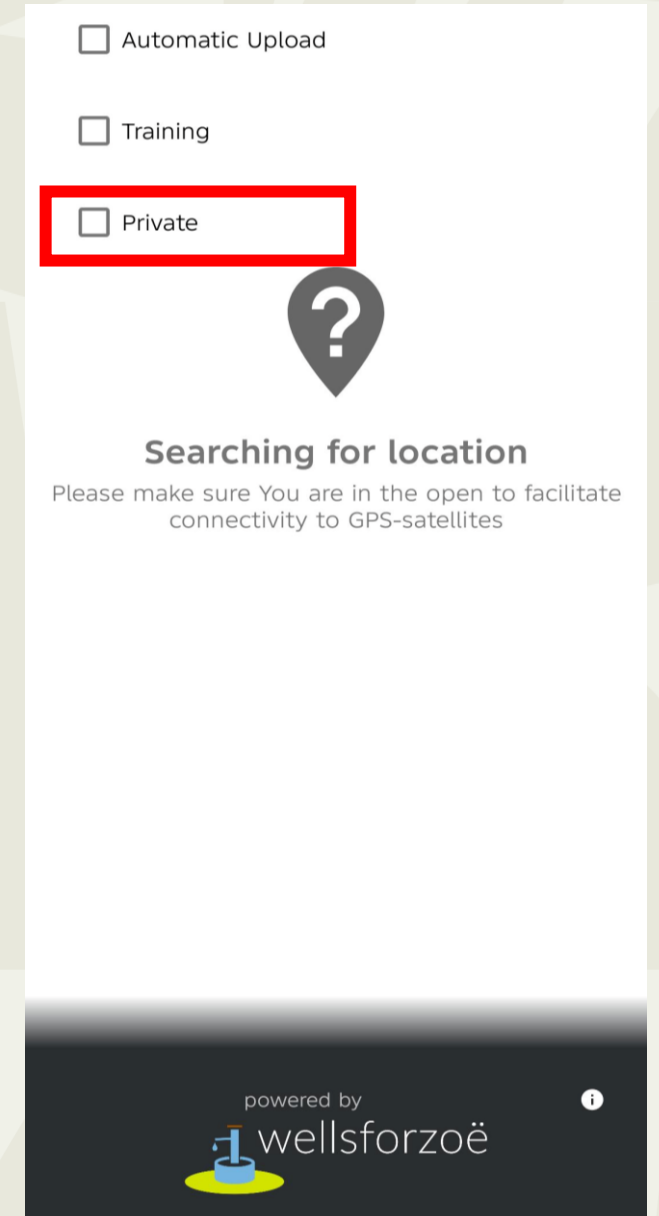
Private Mode is ON

If you want photos to stay private while still sharing them on greenhouse.

Important note: We recommend you keep all restoration implementation photos public during data collection. You can also decide which photos you want to make private after pushing them to greenhouse.



This screenshot shows the 'Private' setting interface. At the top, there are three checkboxes: 'Automatic Upload' (unchecked), 'Training' (unchecked), and 'Private' (checked). The 'Private' checkbox is highlighted with a red rectangle. Below the checkboxes is a large question mark icon. The text 'Searching for location' is displayed, followed by a smaller instruction: 'Please make sure You are in the open to facilitate connectivity to GPS-satellites'. At the bottom, there is a dark footer with the text 'powered by wellsforzoë' and a small information icon.

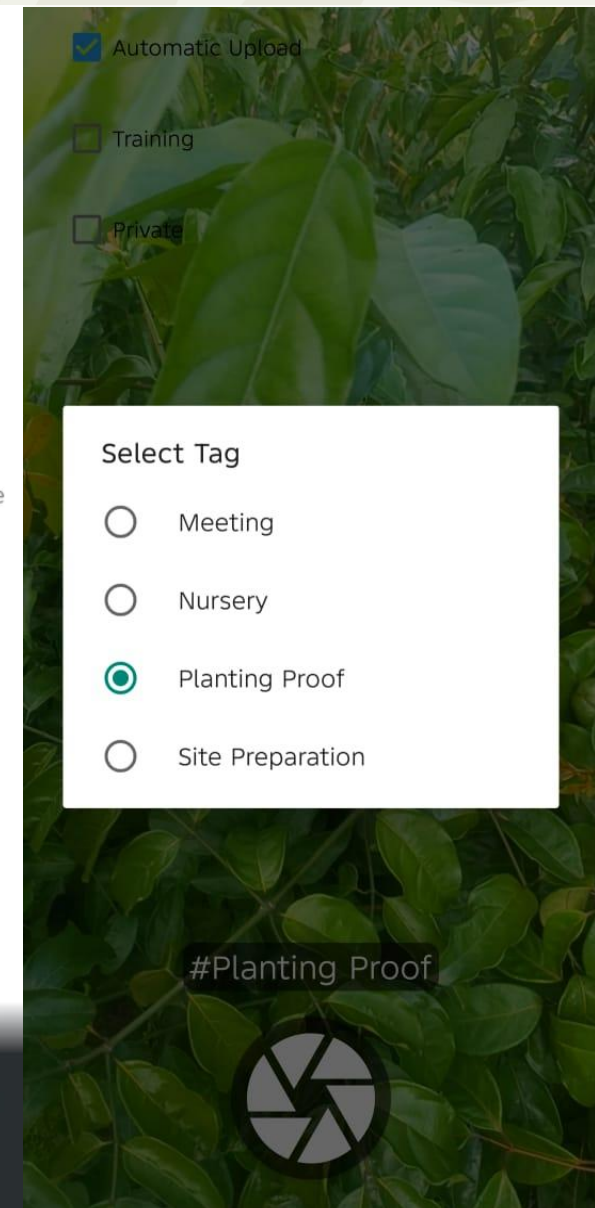
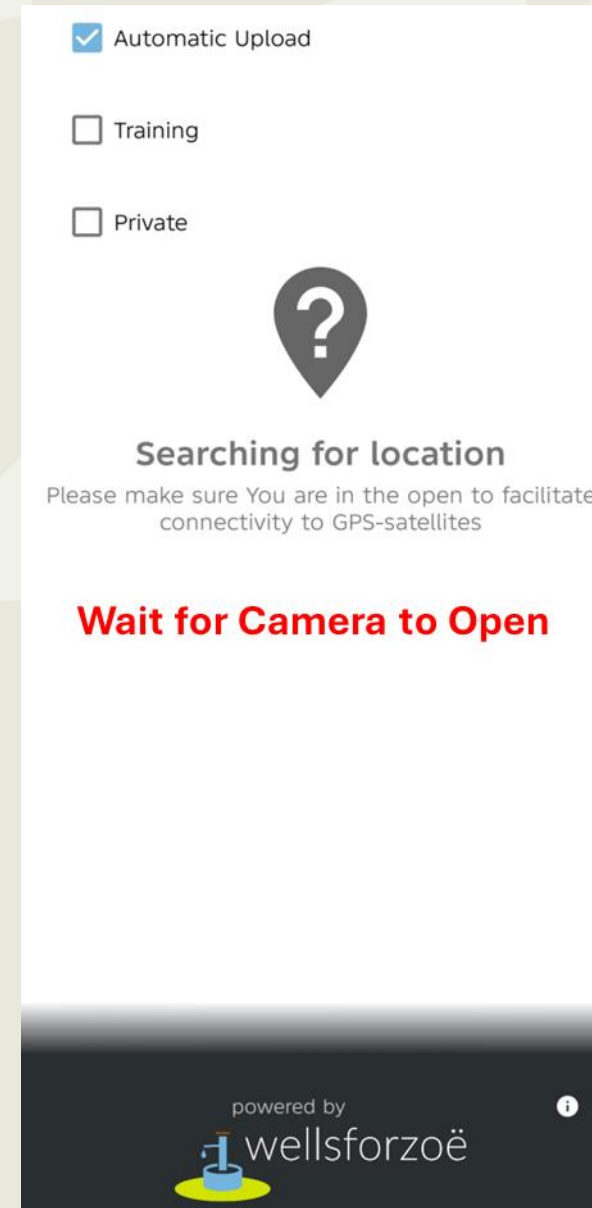
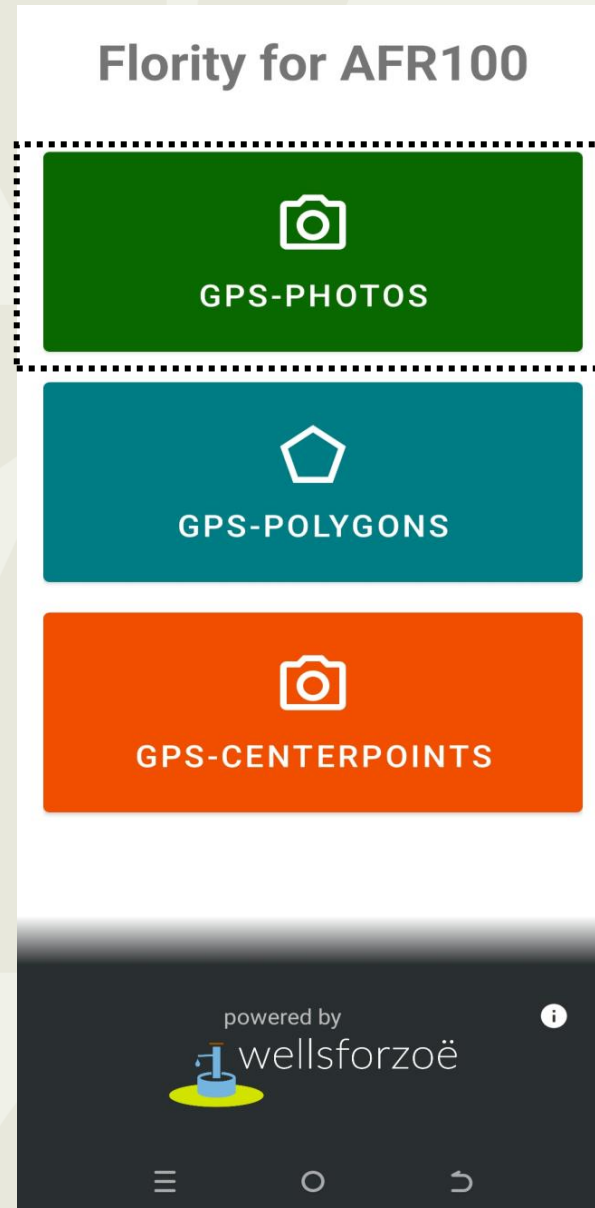


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GPS-Photos

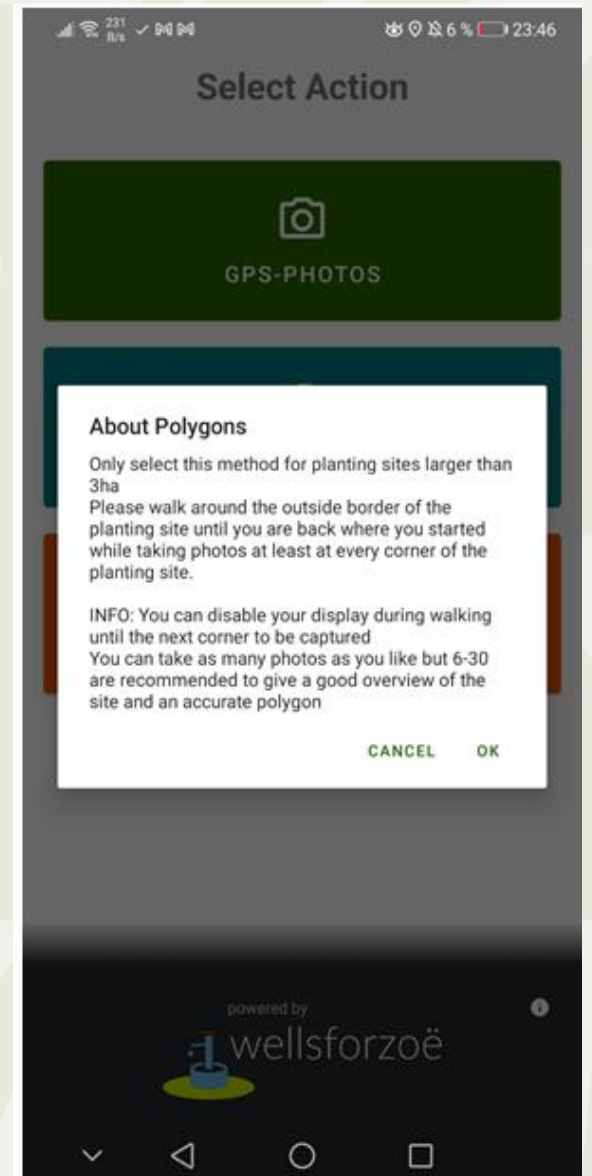
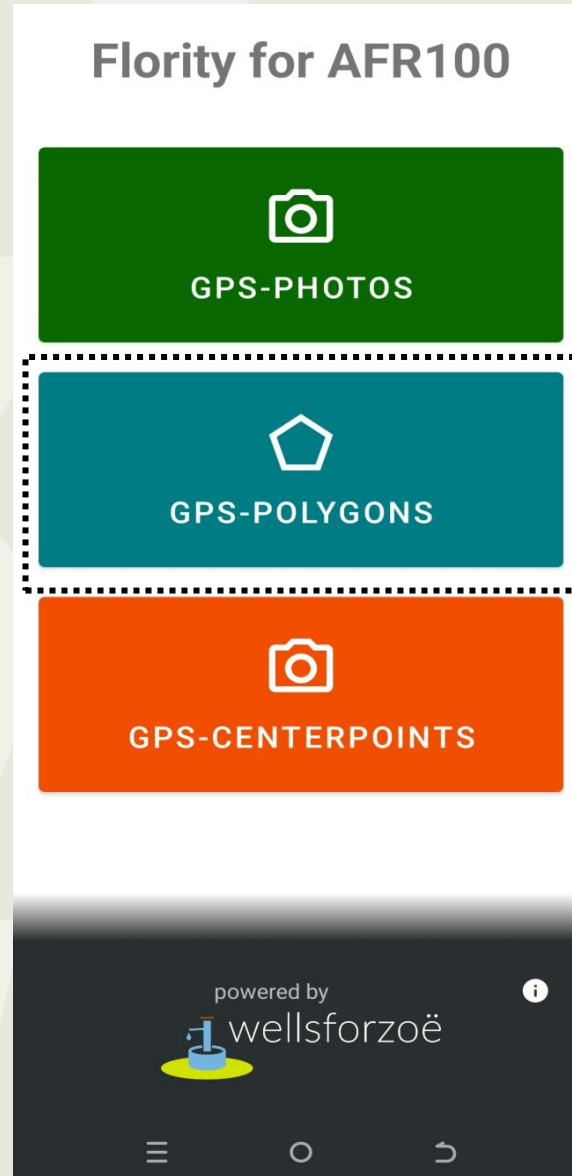
These are photos with a geolocation tags.

Tags can be set on the camera when taking photos to categorize restoration activities.



GPS-Polygons

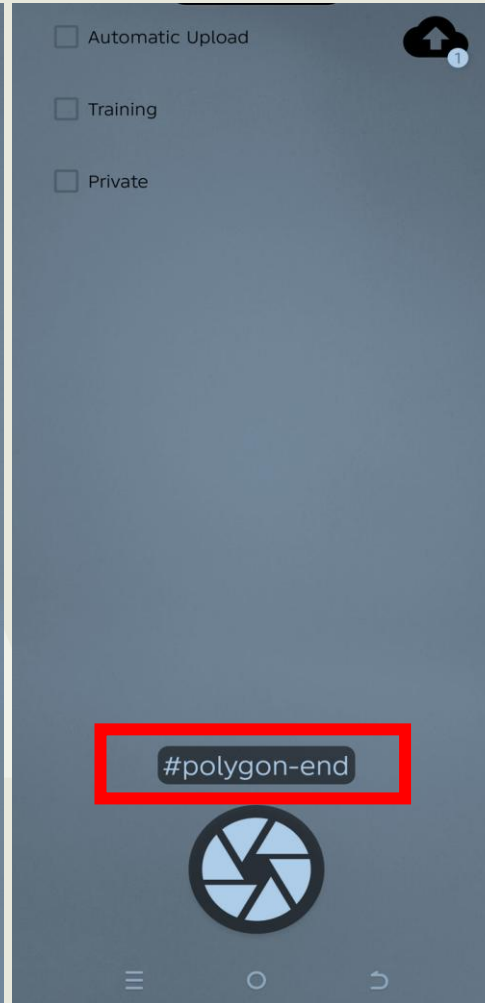
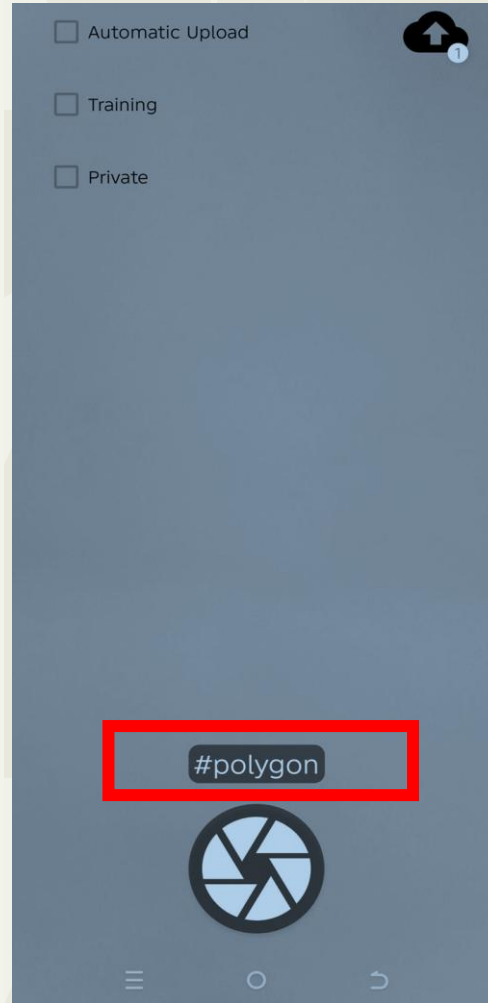
GPS-Polygons are recorded by walking around the area of interest (e.g. restoration site) and taking GPS-Photos, ideally looking inwards, at bends to demarcate the area. Depending on boundary-complexity of the site, less or more photos are sufficient during this process (see example)



GPS-Polygon

Take photos from every corner of the field using (**#polygon**).

At the last corner, change the tag to **#Polygon-end** and take the last photo to close the polygon.



Polygon attributes

Once you have completed taking the polygon of the planted area, fill out the form with additional information about the polygon and submit it.

Important note: The only non-mandatory field is the 'Comments' field.

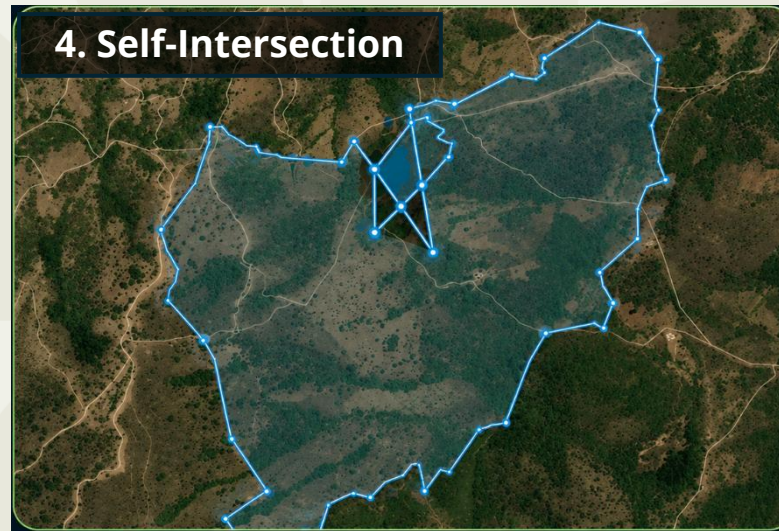
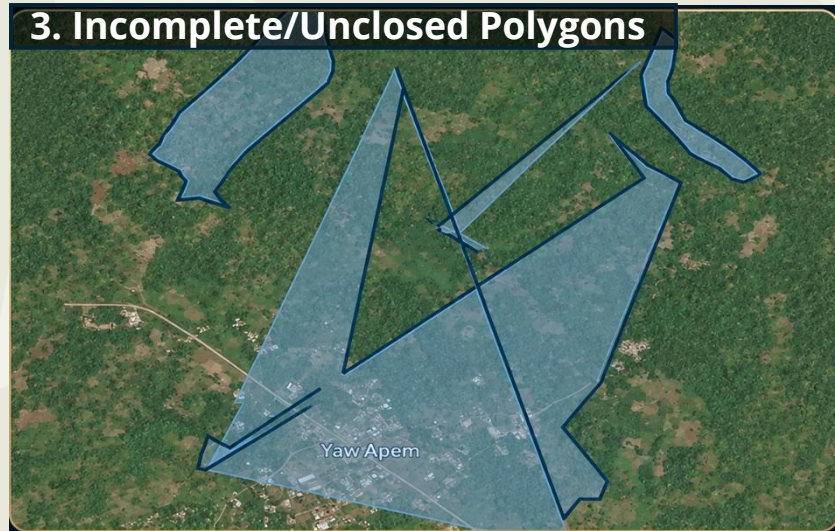
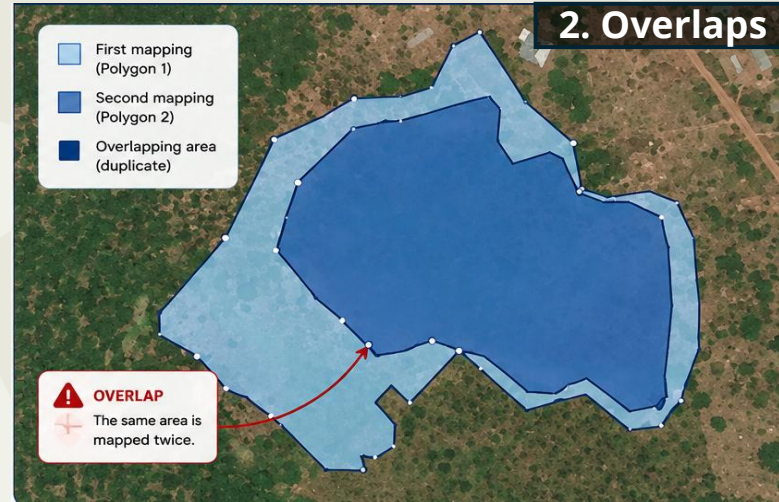
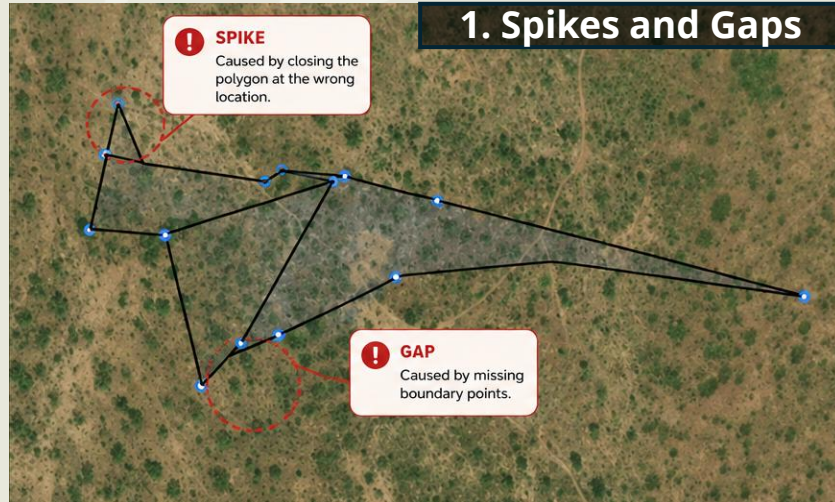
This screenshot shows the 'Select Form' screen in the Flority app, with the 'INFO' tab selected. The form includes fields for 'Name' (with a placeholder 'Name of polygon'), 'Planting Start Date' (with a calendar icon and placeholder 'When did Planting start?'), and a 'Target Land Use System' dropdown menu. The dropdown is open, showing options: Agroforest, Natural Forest, Mangrove, Riparian Area or Wetland, Silvopasture, Woodlot or Plantation, and Urban Forest. Below this is the 'Restoration Practice' section with three checkboxes: 'Direct Seeding', 'Tree Planting', and 'Assisted Natural Regeneration'. The 'Distribution' section has a dropdown menu with a placeholder 'Which option describes your planting pattern'. At the bottom are 'BACK' and 'NEXT' buttons.

This screenshot is similar to the previous one, but the 'Distribution' dropdown menu is open, showing options: 'Single Line', 'Partial', and 'Full'. The 'NEXT' button is highlighted in green.

This screenshot shows the 'Site info' screen in the Flority app, with the 'FINALIZE' tab selected. It features a 'Save & Upload' section with a warning message: 'If You submit this form, You cannot edit it anymore and it will be uploaded to greenhouse as soon as possible. All attached resources will be uploaded as well. If You choose to delete this Draft, associated resources will NOT be deleted.' Below this are three buttons: 'CLOSE', 'DELETE', and 'UPLOAD'. At the bottom is a 'BACK' button and a mobile navigation bar.



Polygon Errors to note ?



How to avoid Polygon Errors?

1 SPIKES, GAPS, OVERLAPS, AND INCOMPLETE/UNCLOSED POLYGONS



Plan the field trip well before the actual data collection date.



Map each polygon once by walking around the edges of the plot to avoid overlaps and gaps.



Change the point/photo tag to #polygon-end when collecting the last point to close the polygon. This helps in eliminating spikes that can arise due to closing the polygon at the wrong location.

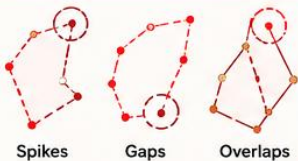


If you need to pause recording due to unforeseen weather events or low battery, you can revisit the site within **48 hours** and continue the polygon recording and finish it with **#polygon-end**.



Should you forget to finish the polygon recording with a final photo with **#polygon-end**, the system will autoclose the polygon which may add errors to the polygon.

✗ WRONG – Common Issues



Spikes

Gaps

Overlaps

✓ CORRECT – Properly Closed Polygon



No Spikes, Gaps or Overlaps



KEY TAKEAWAY:

Walk the boundary once and close it properly with **#polygon-end** to ensure accurate polygons.

2 MISSING OR INCOMPLETE POLYGON ATTRIBUTE INFORMATION



1 Finish the Polygon

Make sure you select **#polygon-end** to display attribute information.



2 Fill Out Attributes Accurately

Fill out attribute information accurately.



3 Verify Information

Review all fields to make sure the information is complete and correct before saving.



4 Need Help?

If you lack the required information, consult your geospatial lead or your project lead.

ATTRIBUTE CHECKLIST



- ✓ Polygon Closed (#polygon-end)
- ✓ Land Use / Land Cover
- ✓ Restoration Type
- ✓ Area Verified (ha)
- ✓ Photos Attached
- ✓ All Required Fields Complete
- ✓ Submitted



KEY TAKEAWAY:

Complete and accurate attribute information ensures data quality and usability.

3 SELF-INTERSECTION



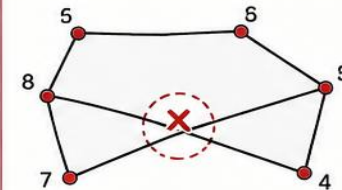
Ensure careful mapping and data collection to avoid self-intersections.

This can be done by collecting data along the edges of the polygon and not inside the polygon.



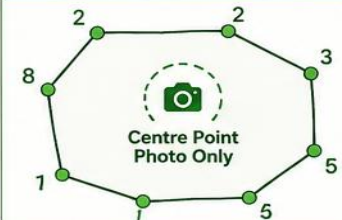
NOTE: You should collect a geotagged photo inside the restoration area only when picking a centre point of the plot/polygon.

✗ WRONG – Self-Intersection



- Line crosses itself
- Creates errors in area calculation
- Leads to invalid polygon

✓ CORRECT – Map Around the Boundary



- Walk along the boundary only
- No crossing of lines
- Valid polygon and accurate area

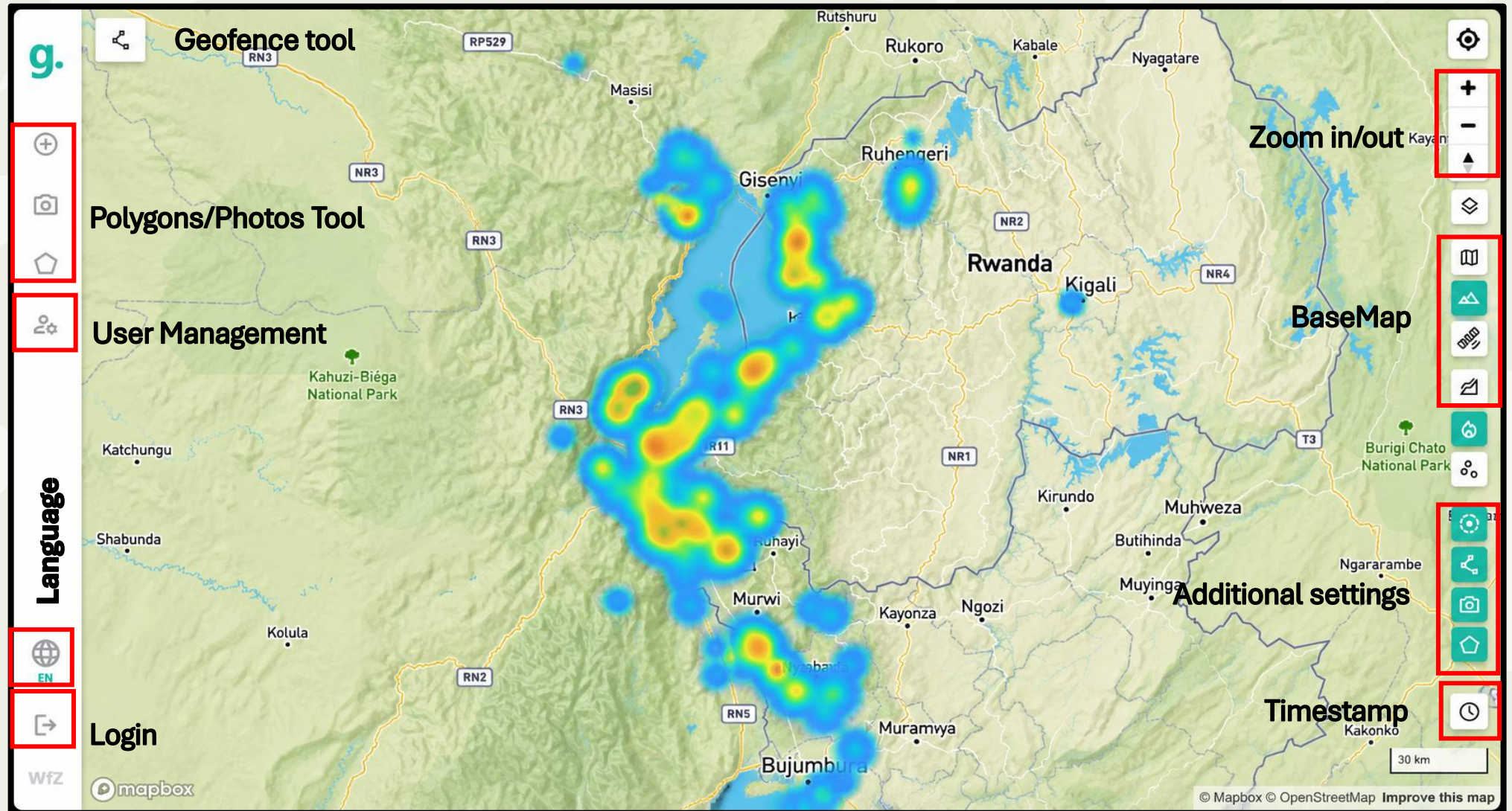


KEY TAKEAWAY:

Map around the edge, not through it. Capture the centre photo only once.



Greenhouse. interface





Thank You!



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RESOURCES
INSTITUTE

