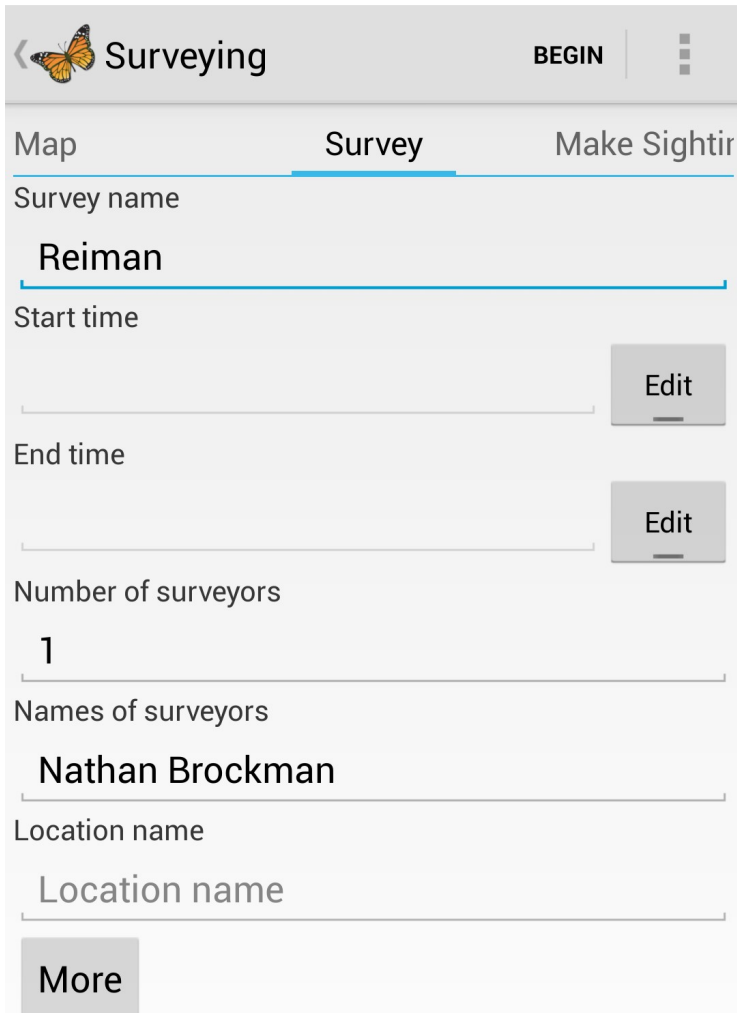


Instructions for UBR 1.0.0 17, 2013-12-02 05:11:00 AM

Open UBR

Click “New Survey” at the top and choose your survey type from the drop-down menu



The screenshot shows the 'Surveying' app interface. At the top, there is a header with a butterfly icon, the word 'Surveying', a 'BEGIN' button, and a menu icon. Below the header, there are three tabs: 'Map', 'Survey' (which is selected), and 'Make Sighting'. The 'Survey' tab contains several input fields and buttons:

- Survey name:** A text field containing 'Reiman'.
- Start time:** A text field with an 'Edit' button to its right.
- End time:** A text field with an 'Edit' button to its right.
- Number of surveyors:** A text field containing '1'.
- Names of surveyors:** A text field containing 'Nathan Brockman'.
- Location name:** A text field containing 'Location name'.
- More:** A button at the bottom left of the form.

Fill out the survey information.

- **Survey Name:** What the survey will be saved as (could be name, route on a location, etc.)
- **Start/End time:** Recorded automatically when you start and stop the survey, based on your system time. You can edit these times later if need be.
- **Number of surveyors:** How many people are participating in the survey
- **Names of surveyors:** Names of each of the participants
- **Location name:** Name of the location that you are surveying
- **Viewing radius (meters):** The maximum distance from a surveyor that an individual will be counted. This distance can be infinite if you want.
- **Transect division format:** How transects are distinguished. Is each habitat a transect, or is every x number of meters a transect?

More:

- General Comments: Any other information you would like recorded
- Habitat type: Description of the habitat being surveyed (i.e. Forest, prairie, etc.)
- Habitat condition: The state of the habitat compared to normal (i.e. dry, flooded, recent burn, etc.)
- Wind Speed: Current wind speed
 - Calm: 0 mph, Smoke rises vertically
 - Light: 1-3 mph, Wind direction shown by smoke, but not by wind vanes
 - Light Breeze: 4-7 mph, Wind felt on face; leaves rustle
 - Gentle Breeze: 8-12 mph, Leaves and small twigs in constant motion; wind extends light flag
 - Moderate Breeze: 13-17 mph, Raises dust and loose paper; small branches move
 - Fresh Breeze: 18-24 mph, Small trees sway
 - Very Windy: 25+ mph Large branches move
- Cloud Cover: Current sky conditions.
 - Clear: No clouds
 - Mostly Clear: Less than half cloud cover
 - Mostly Cloudy: More than half cloud cover
 - Cloudy: Full cloud cover
- Temperature: Current temperature. The default units (Fahrenheit or Celsius) can be changed in Settings
- Level of engagement: The amount of attention given to the survey
 - 5: You are out just for the survey. No distractions.
 - 4: Your main reason for being out is to survey, but there are some distractions (i.e. You are talking with someone)
 - 3: You are doing a survey alongside another activity (i.e. Walking a dog)
 - 2: You are mainly out for something other than the survey and are recording some butterflies along the way
 - 1: You are out for reasons other than surveying and happened to see a few interesting butterflies you wanted to record.
- Below these is weather information automatically recorded from a station near you. Press “Refresh” to update this info

General comments	
General comments	
Habitat type	
Habitat type	
Habitat condition	
Habitat condition	
Wind speed	
Cloud cover	
Temperature (F)	32.00
Level of engagement (1 is low)	
Viewing radius (meters)	0.0
Transect division format	

Tap “Begin” at the top. Your start time will be recorded automatically and you can begin your survey. The program will also start recording your GPS coordinates as “Breadcrumbs”. These will track the general route that you take.

Slide one screen to the right to get to the *Make Sightings* tab.



Here you can use the search bar at the top to find a butterfly species, or look through the list of species. You can choose whether species are listed in order of common name or scientific name in Settings.

Use the tabs below the search bar to switch between the list of all butterflies and the list of your Favorites. If you see a particular species especially frequently you can add it to your Favorites to access it more quickly. You can add a species to your Favorites list by tapping and holding on a species, then selecting “Add to Favorites” from the menu that appears.

Tap a species to record a sighting. Subsequent taps will record additional sightings. You can also use the arrows that appear to the right to add or subtract sightings. Multiple clicks will be saved as a single record of multiple sightings. You do not have to wait for the number to disappear before recording another species; it will disappear and be recorded as soon as you tap the next species.

When a sighting is added this way, time is

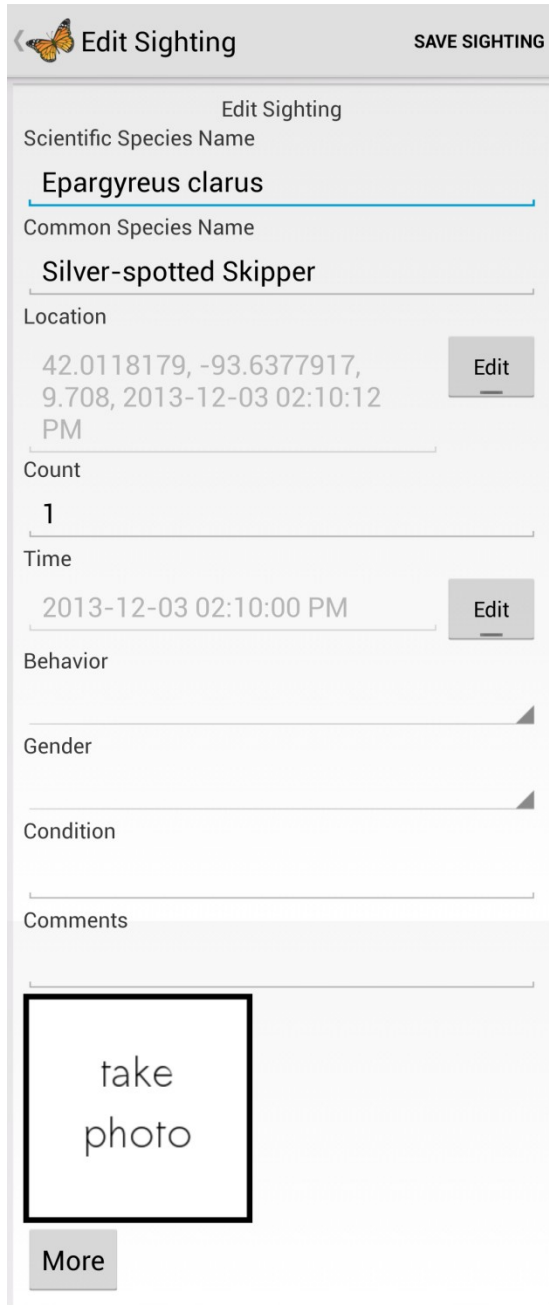
automatically recorded based on your system’s time. GPS coordinates of the sighting are also recorded automatically.


If you cannot identify a butterfly there are Unknown species you can select instead. There is a general Unknown, as well as an Unknown for each family and subfamily if you can narrow it down.

You can use the + button next to the search bar to add a new species to your list. You can also edit species information by tapping and holding on it and selecting “Edit Species”. You can import species lists in CSV format by tapping the button in the top right and selecting “Import List”.

The Transect button at the top lets you determine which section or habitat on your route the sightings were recorded in.

Sliding one more screen to the right will bring you to the *Sightings* tab. This screen shows you all the sightings you have recorded.



 Edit Sighting SAVE SIGHTING

Edit Sighting

Scientific Species Name
Epargyreus clarus

Common Species Name
Silver-spotted Skipper

Location
42.0118179, -93.6377917, 9.708, 2013-12-03 02:10:12 PM Edit

Count
1

Time
2013-12-03 02:10:00 PM Edit

Behavior ▼

Gender ▼

Condition ▼

Comments

take photo

More

Tap a sighting to edit it. Tap and hold to either edit or delete a sighting.

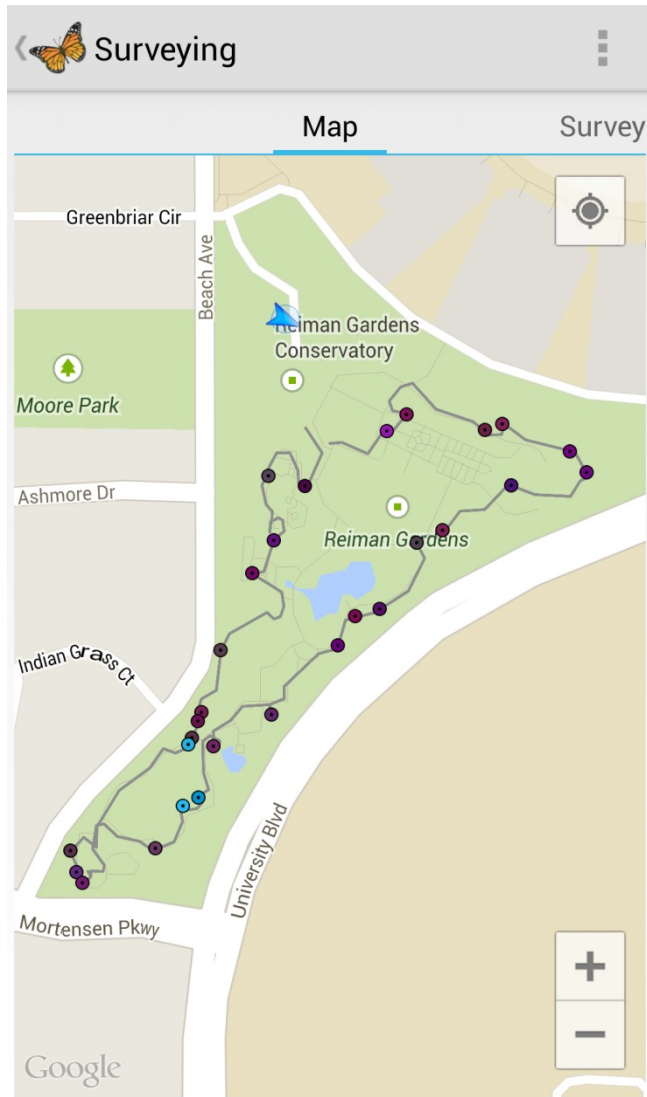
Editing allows you to change the species name, the number of individuals, as well as adding extra information. You can note interesting or unusual behavior, gender of a butterfly, or the condition it is in, such as what wing damage it has.

You can tap the “Take Photo” button to take a picture of the butterfly with your device’s camera. This photo will be displayed next to this sighting on the sightings list.

Tapping the “More” button allows you to edit the family and subfamily information of the butterfly.

Tap “Save Sighting” when you have finished editing to save your changes.

The tab farthest to the left is the Map tab. This displays a map of the world with the GPS data of your survey laid out on it.



Press the crosshair button in the top left to zoom in on your survey location.

The grey line is your breadcrumb data, the general route you have taken.

The dots are the locations of each sighting you have recorded.

A blue dot with a circle around it marks your current location.

To return to the Survey tab, tap its name at the top.

When you have completed your survey, navigate back to the *Survey* tab and tap “End” at the top. This will stop recording of GPS Breadcrumbs and automatically record your end time. You can go back and change information any time if you need to.

Survey List: Tap and hold on a survey to bring up actions.

- Summary: Gives a list of each species recorded and how many individuals of each
- Upload: Uploads the survey data to a selected server (see settings)
- Delete: Delete the selected survey

Tap “Export DB” to save all survey data to your device’s storage. The data is saved as six files:

breadcrumbs.csv: Breadcrumb GPS data

imported_butterflies.csv: Butterfly species data from imported lists

regional_butterflies.csv: Butterfly species data from default regional lists


sightings.csv: Data from recorded sightings

surveys.csv: Information recorded about the surveys (date, time, type of survey, etc.)

transects.csv: Information about the transects used

UBR		NEW SURVEY	EXPORT DB	
Surveys				
			Reiman	
2013-11-14 12:56:00 PM			Reiman	
2013-11-14 12:58:00 PM			Reiman	
			Reiman	
			Reiman	
2013-11-15 01:23:00 PM			Lyra survey 2	
2013-11-19 06:36:00 PM			Reiman	

To change program settings, tap the button in the top right corner, and select Settings.

 Settings

Butterfly Sort
Select whether the butterflies are listed by common or scientific name

Sighting Accuracy
Desired accuracy of per-sighting GPS readings

Breadcrumb Accuracy
Desired level of accuracy of GPS breadcrumb readings: Points plotted periodically during a survey.

Breadcrumb period
Number of seconds between each location request

Temperature Units
Whether temperature is in Fahrenheit or Celsius

Warm up GPS
Automatically start location services when opening a new/incomplete survey. ☒

Survey Name

Surveyor Name

Number of Surveyors

Regions
Change regions of interest

Transect Names
Switch name mode, Alphabetical or Numerical

Transect Count
Change number of visible transects

Server Location
Address of the server for uploads

Weather Key
Adjust the key used to authenticate with weather service

- **Butterfly Sort:** Determines whether the species list is sorted by common name or scientific name. Set to scientific name by default.
- **Sighting Accuracy:** Determines the accuracy of GPS coordinates recorded per sighting. Default is High.
 - Low: Coordinates accurate to within 500m; will wait 20 seconds for an accurate reading
 - Medium: Coordinates accurate to within 100m, will wait 30 seconds for an accurate reading
 - High: Coordinates accurate to within 10m, will wait 40 seconds for an accurate reading
- **Breadcrumb Accuracy:** Determines the accuracy of the Breadcrumb coordinates recorded. Default is High.
 - Low: Coordinates accurate to within 500m
 - High: Coordinates accurate to within 50m
- **Breadcrumb Period:** Determines the interval (in seconds) between recording of each Breadcrumb coordinate. Default is 60 seconds.
- **Temperature Units:** Determines whether temperature is recorded in Fahrenheit or Celsius. Default is Fahrenheit.
- **Warm up GPS:** If turned on, will begin tracking your coordinates before the survey has started to improve initial accuracy. Default is On.
- **Survey Name, Surveyor Name, and Number of Surveyors** determine default information for each survey.

- Regions: Select which species list(s) you would like to use in your survey.
- Transect Names: Determines whether transects are named as letters or as numbers. Default is Alphabetical
- Transect Count: The number of transects you can select. Default is 5.
- Server Location: The url entered here determines the server that survey data is uploaded to when you choose to upload a survey from the survey list.
- Weather Key: Authentication key for weather service information.