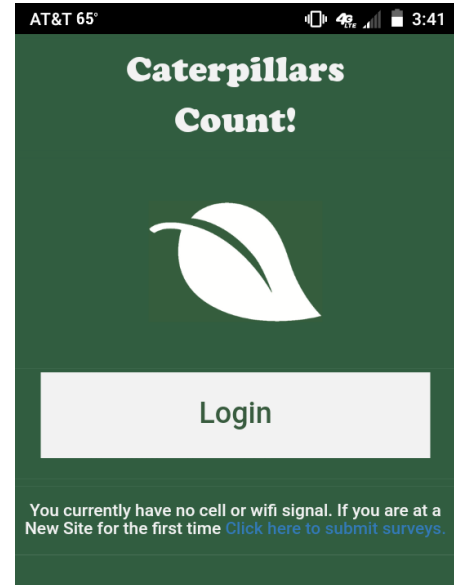


Caterpillars Count!

Mobile App User Manual

Getting Started

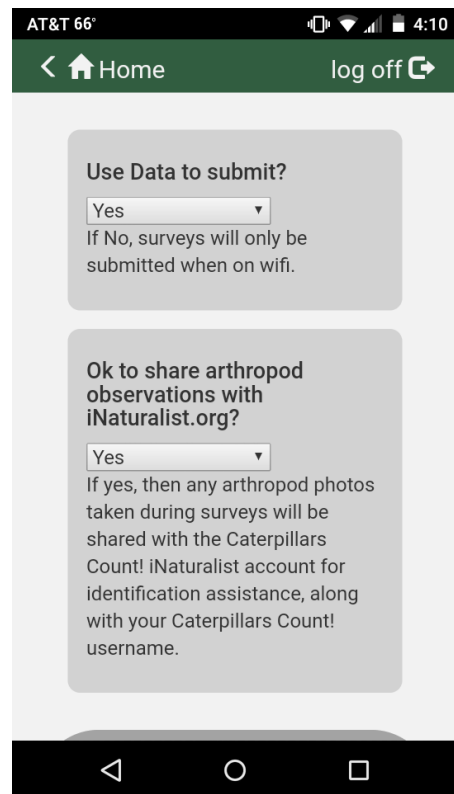
To get started with Caterpillars Count, download the app from either the Google Play or Apple App Store and open it. If you have never used the app before, you can create an account by tapping the “Register” button on the start screen. You’ll then need to confirm a registration email sent to that account. Once you’ve registered, you’ll be taken back to the start screen. Tap the “Login” button to enter your information. Once you’ve provided a username and password, they will be stored on your device. From that point on, you can open the app and get started without having to enter your user information. If you don’t want to be automatically logged in, you can change the “Remember Me” option on the Login page.



Settings

The first time you use the app, you will want to configure two settings, which are available by tapping the gear in the top right after logging in. First, if you would like to submit surveys using cellular data (assuming you have a cellular data plan AND that the survey location has cell service), set "Use Data to submit?" to YES. The default is that the app will only be able to submit when connected to WiFi, which may be once you're back at home or in the classroom (see Pending Surveys below).

Second, although we only expect participants to identify arthropods to Order, expert identification of your observations to species may be possible if you elect to share photos taken during surveys with the citizen science website iNaturalist.org (select YES for this option). Arthropod photos from your surveys will automatically get shared with the Caterpillars Count! iNaturalist page (www.inaturalist.org/observations/caterpillarscount), and you will be able to see experts weigh in on what you've seen! Note that your Caterpillars Count! username (i.e., the part of your registered email address before the @) will appear in the notes of the observation as shown on the next page. Unfortunately, we are not able to link to personal iNaturalist accounts at this time.



« caterpillarscount's observations

Spiders (Order Araneae) · Observed by caterpillarscount · February 17, 2017

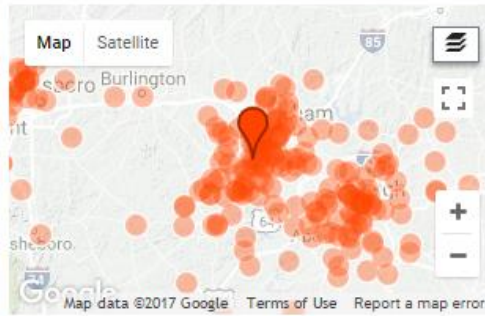


Photo © caterpillarscount, some rights reserved

Location: Test (Google, OSM) [Details](#)

Added: Feb. 17, 2017 16:21:33 -0500

App: Caterpillars Count - dev

Average length (mm): 7

temperature_range: 60-69

Site Name: Test(NA)

circle_number: 3

survey_number: A

Plant species: Camelia

leaf-count: 50

herbivory: 1

Arthropod Count: 1

user: hurlbert

iNaturalist observation page showing user id

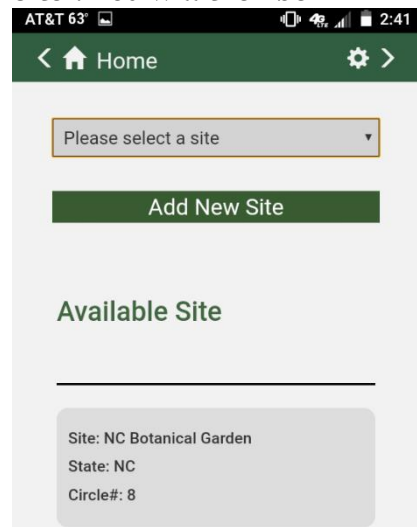
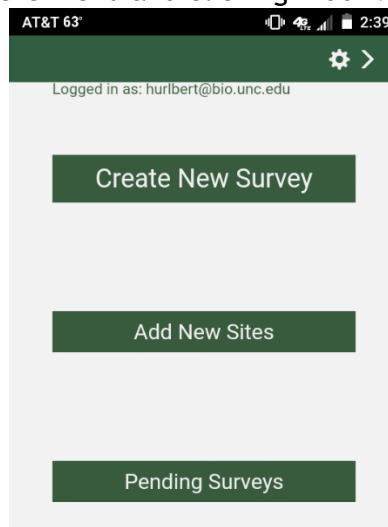
Home Page

Once you login, you'll be taken to the app's homepage. You'll see three buttons labeled "Create New Survey", "Add New Sites", and "Pending Surveys."

Add New Site

The "Add New Sites" button takes you to a page that displays all sites to which you currently have access. If you've never used the app before, the Available Sites page will be empty. Add a new site by selecting it from the menu and clicking "Add New Site". You will then be prompted for the site password, which you should have obtained from the local site coordinator.

If you do not know the site password, you can still create surveys which will get stored as Pending Surveys, but those surveys cannot be submitted until you have successfully added the site with the correct site password. **Add New Sites only works with cell or WiFi service.**



Conducting a Survey

The “Create New Survey” button is where the action happens. This is where you’ll enter your observations of foliage arthropods, but also the information about the temperature, time, date, location, plant species, leaf count, and herbivory level you observe. A typical survey would be completed as follows:

- 1) **TIME** and **DATE** will autofill with the current time and date, and unless you are entering data that was collected on some other occasion, you will not need to adjust them.
- 2) **TEMPERATURE**. Enter a Temperature range that describes the current temperature.
- 3) **SITE / CIRCLE / SURVEY** or **QR CODE**. If the site you are surveying has QR Code tags hanging on the survey branches, then you can tap the “Scan QR Code” button, scan the code, and the **SITE**, **CIRCLE**, and **SURVEY** fields should get filled automatically. If there is no QR Code, you will specify these fields manually based on the information on the branch tag. Note that surveys are lettered A-E, and occur in groups of five called “Circles”, which are labeled numerically.
- 4) **SURVEY TYPE**. You may choose to do a **Visual Survey** (in which you inspect a set of 50 leaves and associated petioles and twigs), or a **Beat Sheet Survey** (which requires that you beat a branch over a “beat sheet” [assembly instructions available on the website]).
- 5) **NOTES**. This is a space to enter notes about potentially relevant observations that might apply to the entire survey as a whole. For example, perhaps it just rained and all of the leaves on the survey tree are very wet. Or perhaps the branch was bent or disturbed since the last time it was surveyed. You can describe these things here.
- 6) **ARTHROPOD OBSERVATIONS**. For each new arthropod Order you observe, click on the “ADD” button to the left, and select the arthropod you observed from the dropdown menu. If the arthropod type is not listed, you may select “Other” and describe in the Arthropod Notes field what it was. If you are not sure what type of arthropod you observed, you may select “Unidentified”, and can describe any relevant aspects of its appearance in the Notes. Also record the length of the arthropod(s) you observed in millimeters, and the number of arthropods observed of this type and size. You may optionally take a photo of the arthropod. Click “Save” to add this observation record to your survey, and you will see

Carrier 10:04 AM

< Go back >

Temp. Time Date

10:04 AM Nov 6, 2016

Site Information ⓘ

Scan QR Code

Site

Please select a site

Survey Type

Please select a survey type

Circle

Please select a circle

Survey

Please select a survey

Notes



a record of this observation displayed in the ARTHROPOD ORDER INFO section. For every new arthropod you see within this survey, fill out a new record by clicking "ADD".

Note that if you conducted a survey and saw 5 ants, four of which were 3 mm and one of which was 10 mm, and 1 caterpillar of 35 mm, that would require 3 separate records to fill out: 1 for the ants of size 3 mm, 1 for the ant of size 10 mm, and 1 for the caterpillar (see figure).

If you conducted a survey and saw NO ARTHROPODS, then you need not fill out this section and can move on to #7.

7) PLANT SPECIES. If your survey has a QR code then this may have filled in automatically. If not, enter the plant species that you surveyed if you know it, or if it is written on the survey tag hanging from the branch. If you do not know, you can write "Unknown".

8) LEAF COUNT. If you conduct a Visual Survey, this count will be 50 and cannot be edited. If you conduct a Beat Sheet Survey, please estimate the number of leaves that were hanging directly over the beat sheet when you beat the branch.

9) HERBIVORY. Give your 50-leaf sample an herbivory score based on how much leaf damage there is. Herbivory scores are as follows: 0 - none, 1 - trace (<5%), 2 - light (5-10%), 3 - moderate (10-25%), 4 - heavy (>25%). If you summed all of the observed leaf holes together over a 50-leaf survey and were able to cover 5 average leaves, that would be 10%. If leaf holes only sum to about 2 average leaves worth, that would be 4%, etc.

10) LEAF PHOTO. Please take a photo of an average sized leaf from the sample you just surveyed. This works best if you can rest it flat on a white sheet of paper so that there will be strong contrast between the leaf and its background, and it is helpful to have an object of known size in the photo for scale. We have a Leaf Photo Scale Sheet available on our website that can be printed out for this purpose. Please ensure the photo is taken from directly above the leaf at a 90 degree angle. Otherwise the image will be distorted and yield a less accurate estimate of leaf area.

11) Once you've recorded all arthropods observed, and the plant information for the tree you surveyed, tap SUBMIT and move on to the next survey!

AT&T 63° 3:04

Go back

Add Arthropod Order Info

Ants (Formicidae) ✕

Length: 4
Count: 3
Notes:

Ants (Formicidae) ✕

Length: 10
Count: 1
Notes:

Caterpillars (Lepidoptera larvae) ✕

Length: 35
Count: 1
Notes:
Hairy or spiny: false
Leaf roll: false
Silk tent: true

AT&T 63° 3:10

Go back

Leaf Count

50

Herbivory

Please select an herbivory score. ▲

0 - None

1 - Trace
Less than 5%

2 - Light
5% to 10%

3 - Moderate
10% to 25%

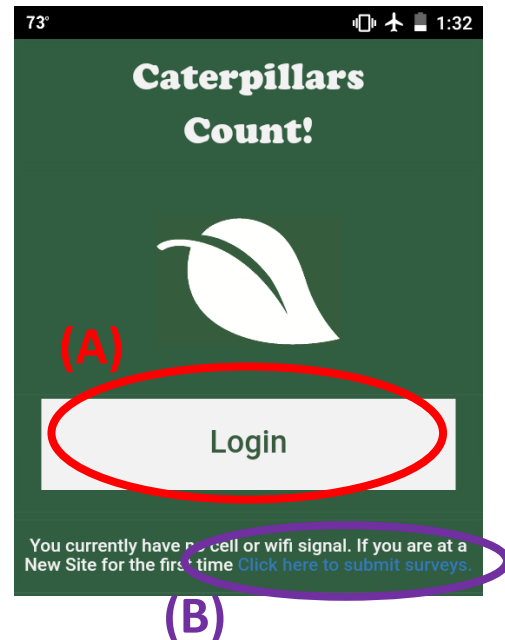
4 - Heavy
Greater than 25%

SUBMIT

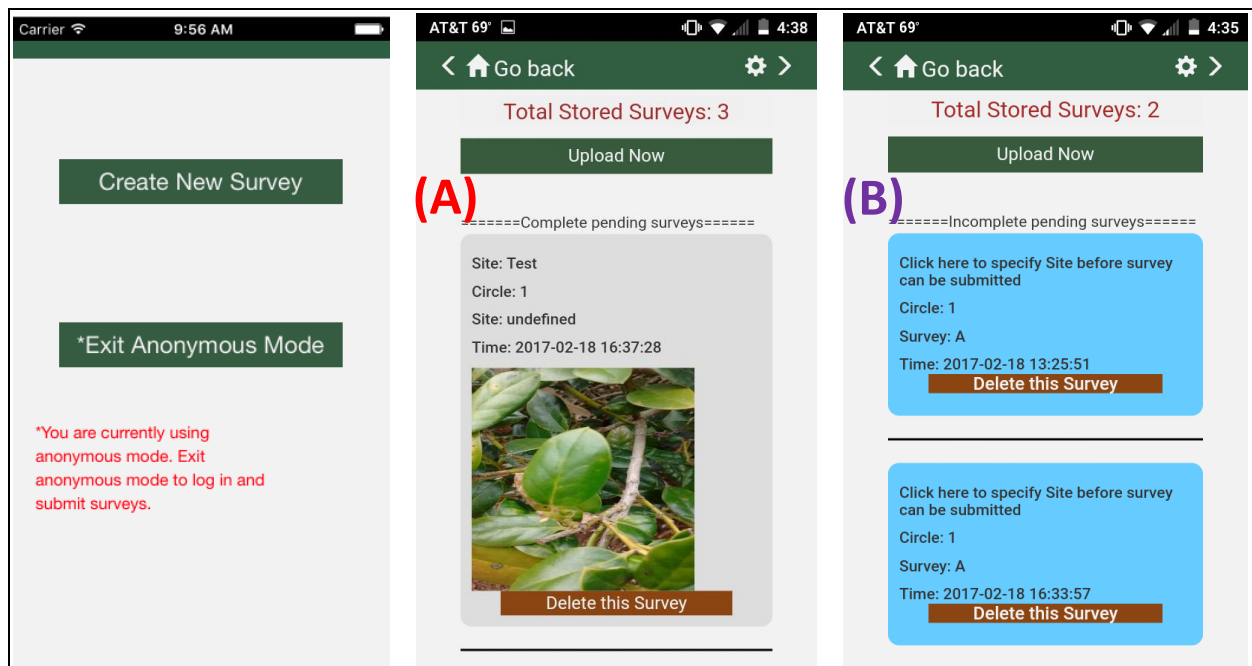
Conducting a Survey (without cell service)

In an ideal world, every Caterpillars Count! site would have excellent WiFi coverage, and users would be able to submit each survey as soon as they complete it. Unfortunately, since many of our sites are in remote locations, many users have trouble maintaining strong cellular coverage, let alone WiFi.

(A) Assuming you have already added the site to your Site List while you were connected (see Add New Site, above), you can simply tap **Login** and **Create New Survey** and follow the instructions above. Without cell or WiFi service, your surveys will be automatically stored as "Pending Surveys". You can submit these surveys at your convenience whenever your device is back online by tapping the **Upload Now** button on the **Pending Surveys** page (A, below).



(B) If you have no cell service and have not yet added the site to your site list, you can still conduct a survey in "Anonymous Mode" by tapping the small blue text ("Click here to submit surveys") at the bottom of the home page. In this case, when you fill out a survey (by tapping Create New Survey) you will not specify Site (it will get saved as "Unknown Site") and it will get saved as an Incomplete Pending Survey (blue boxes, below). Once you have cell or WiFi service again, tap **Exit Anonymous Mode** and then you can add the Site to your Site List with the password given to you by the site coordinator. Then tap on each blue Incomplete Survey on the Pending Surveys page (B, below), specify the site and hit Submit.



User FAQ

Q: What if I don't have permission for the site I'm at?

A: In both Anonymous Mode and the app's main mode, you may always choose "Unknown" in the site field. However, this will prevent your survey from being submitted immediately. Instead, it will be sent to your "Pending Surveys" page, and marked as an incomplete survey. You may add access to your desired site and submit the survey at your convenience.

Q: What if I'm at a site without internet access? Can I still log in?

A: If you have logged in to the app in the past and checked the "Remember Me" box, your username and password will be stored. In this case you'll be able to log in without internet access. If you haven't chosen remember me, you will need internet access to log in. However, you can still collect data even if you're not logged in! Refer to the "Conducting a Survey (without cell service)" section for details.

Q: What's the deal with the photo fields on the survey page? Are photos required?

A: The survey page contains a field titled "Leaf Photo." This photo is required for all submissions. When you add an arthropod order to a submission, you have the option to include an arthropod photo, although it is not required.

Q: Do I need to include an arthropod order in my submission? How many arthropod orders can I include in a given survey submission?

A: The goal of the survey is to record all arthropods observed on the survey branch, so you should make an entry for everything you see, even if you can't identify it (there's an option for Unidentified). Just keep tapping the "Add" button to add a new observation. However, sometimes there are no arthropods on the branch you survey, in which case you can simply skip the Arthropod Information section of the survey.

Q: Can I view my photos once they've been submitted?

A: Whenever you take a photo within the Caterpillars Count! app, it is automatically stored in your phone's photo gallery! In addition, you may choose to have your arthropod photos automatically submitted to iNaturalist (see the instructions for the **Settings** page).

Q: How can I view my arthropod photos on iNaturalist?

A: All your arthropod photos will be submitted to the Caterpillars Count! page on iNaturalist. Visit <http://www.inaturalist.org/observations/caterpillarscount> to see all project observations, or to just see your observations paste in this URL <http://www.inaturalist.org/observations/caterpillarscount/?field:user=<username>> but replace <username> with your own Caterpillars Count! username (the first part of the email address you used to register with our project).