

# Today's Schedule (in EST!)

11:00-11:20 Introduction to CartograPlant - Dr. Jill Wegrzyn

11:20-11:40 Introduction to Data Submission with TPPS/TPPSc - Emily Grau

11:40-12:00 Introduction to Data Collection/Mobile Phenotyping with TreeSnap - Dr. Margaret Staton

12:00-12:15 Break

12:15-12:35 Behind the Scenes of CartograPlant - Environmental Layers and Data - Risharde Ramnath

12:35-12:55 Analytics with CartograPlant (GWAS and GEA). Part 1 - Gabriel Barrett

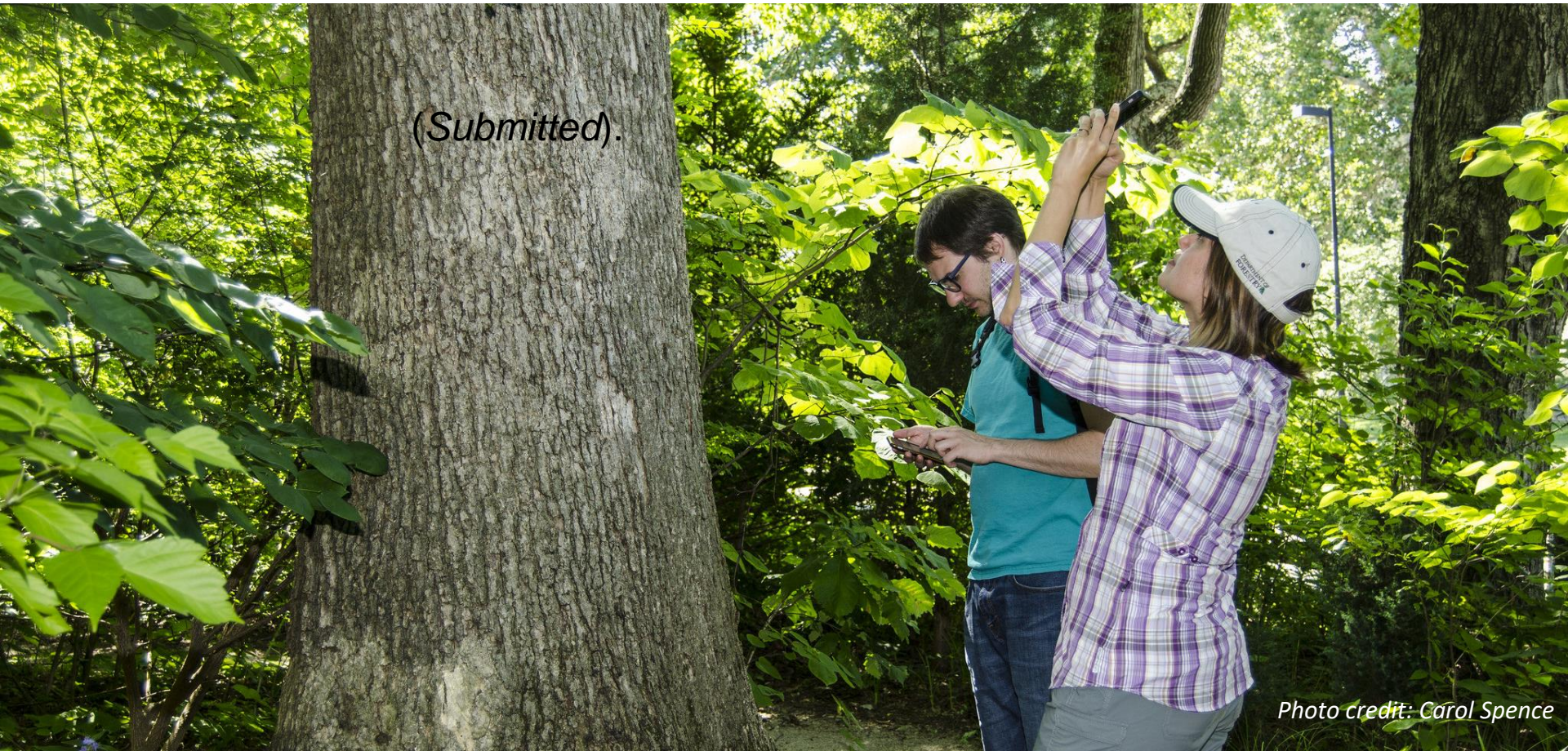
12:55-1:15 Analytics with CartograPlant (GWAS and GEA). Part 2 – Dr. Irene Cobo-Simon

1:15-1:30 Q&A

# TreeSnap

## A Forest Data Collection Tool

*Ellen Crocker, Bradford Condon, Abdullah Almsaeed,  
Albert Abbott, C. Dana Nelson, and Margaret Staton*



(Submitted).

Photo credit: Carol Spence

# Cell phones= citizen science tools

App Store > Education > iNaturalist, LLC



iNaturalist 4+

iNaturalist, LLC >

[Details](#) [Ratings and Reviews](#) [Related](#)

Screenshots

iPhone

iPad

+ Download ▾

This app is designed for both iPhone and iPad

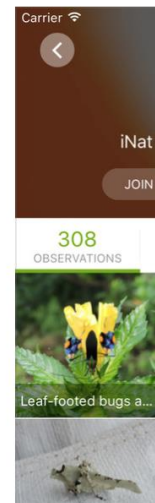
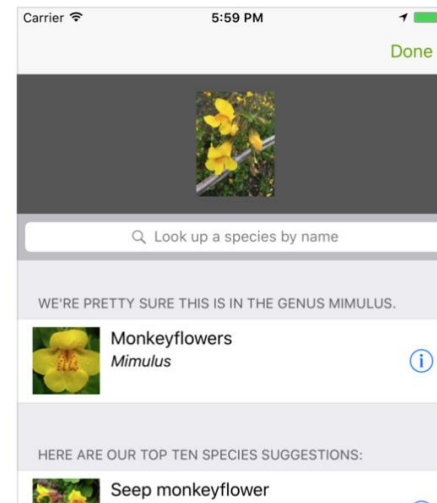
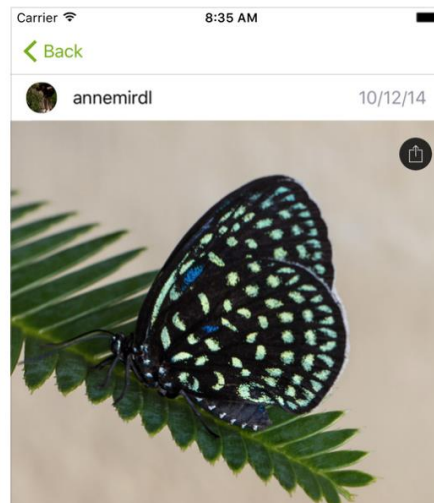
★★★★★ (18)

Rating: 4+

LINKS

[Privacy Policy](#)

[Developer Website](#)



# Great on education, weak on science

- Is the data being collected informative and rigorous?
- Is the data being used scientifically?
- How can we improve this process?

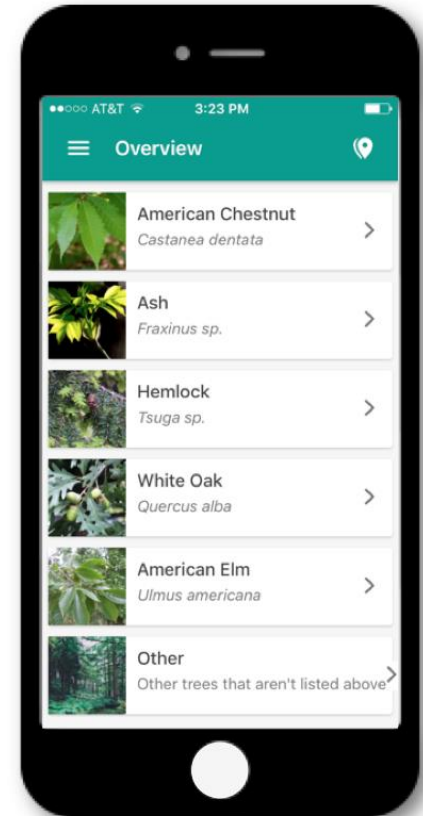


# TreeSnap

## Citizen Science Mobile App

Help Scientists  
Help Trees

Connects the public to tree-related research programs looking to collaborate with citizen scientists



# TreeSnap

## Citizen Science Mobile App

Ellen Crocker  
Bert Abbott  
Dana Nelson



Noah Caldwell  
Bradford Condon  
Abdullah Almsaeed  
Meg Staton



THE UNIVERSITY OF  
TENNESSEE  
KNOXVILLE



The Nature  
Conservancy



# Scientific Partners

- Partnered with restoration tree breeding programs
- Improved format for reporting survivor trees



# Improvements over current sampling

**Purpose:** This form is to help TACF® record, map, and analyze chestnut trees across their native range.

**Result:** An analysis of the macro and microscopic characteristics of the leaf and twig sample will be completed by a TACF identification expert and the results will be sent to the submitter in 4-8 weeks.

## LEAF and TWIG SAMPLE

- 6-12" of twig and **attached, mature, green** leaves growing in the full sun.
- Press sample **flat** between sheets of cardboard and place in an envelope.
- Use a single paper towel between the sample and

## Tree Locator Form

### Location:

County: \_\_\_\_\_

Town: \_\_\_\_\_ State: \_\_\_\_\_

Latitude (N): \_\_\_\_\_ Longitude (W): \_\_\_\_\_



THE  
AMERICAN  
CHESTNUT  
FOUNDATION®

**Location information is crucial.** The closer you can get us to a tree with your directions, the better. Lat/Long measures are the best.

- You may obtain location information from **Google Maps** (<http://maps.google.com>). Right-click and select "What's here".
- If you can't obtain Lat/Long measurements, then please **attach map and/or directions** to the tree from the nearest road.

### Tree Information:

**SIZE:** Diameter (inches @ 4.5ft): \_\_\_\_\_ Height (feet): \_\_\_\_\_

**HOW MANY:**  Isolated Tree  Clump of Trees (number): \_\_\_\_\_

Clear-cut w/ many sprouts/trees \_\_\_\_\_ (~acres)

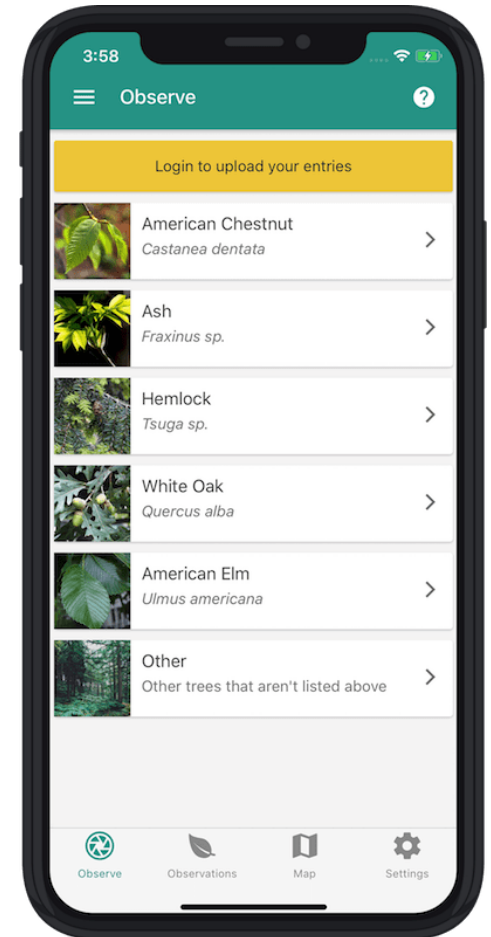
**NUTS:** Burs:  None  Few  Many  Unknown





# TreeSnap app

- Launched in 2017
- Android and iPhone
- Free
- People can record the locations of trees of interest
  - For research partners
  - Or for other purposes/ projects



# Partners

- Ash and elm breeding program, USDA Forest Service Northern Research Station
- Chestnut breeding program, The American Chestnut Foundation
- Hemlock research program, Forest Restoration Alliance and Hemlock Restoration Initiative
- White oak breeding program, Forest Health Research and Education Center and Kentucky Division of Forestry

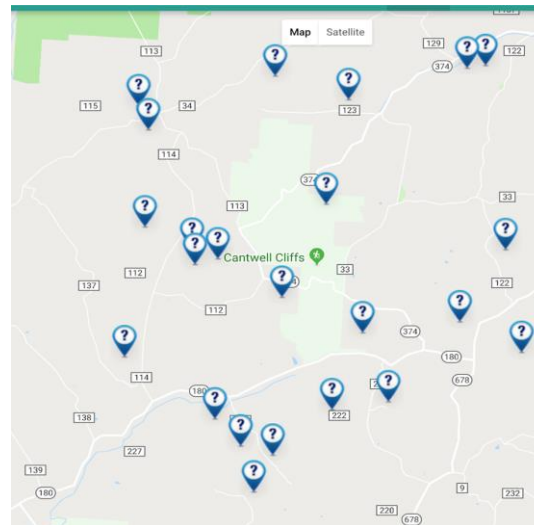
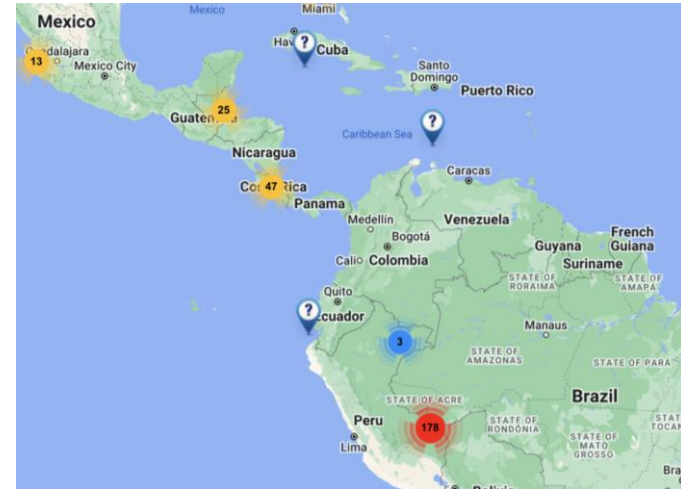
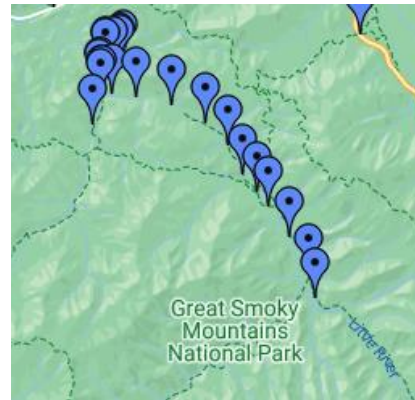


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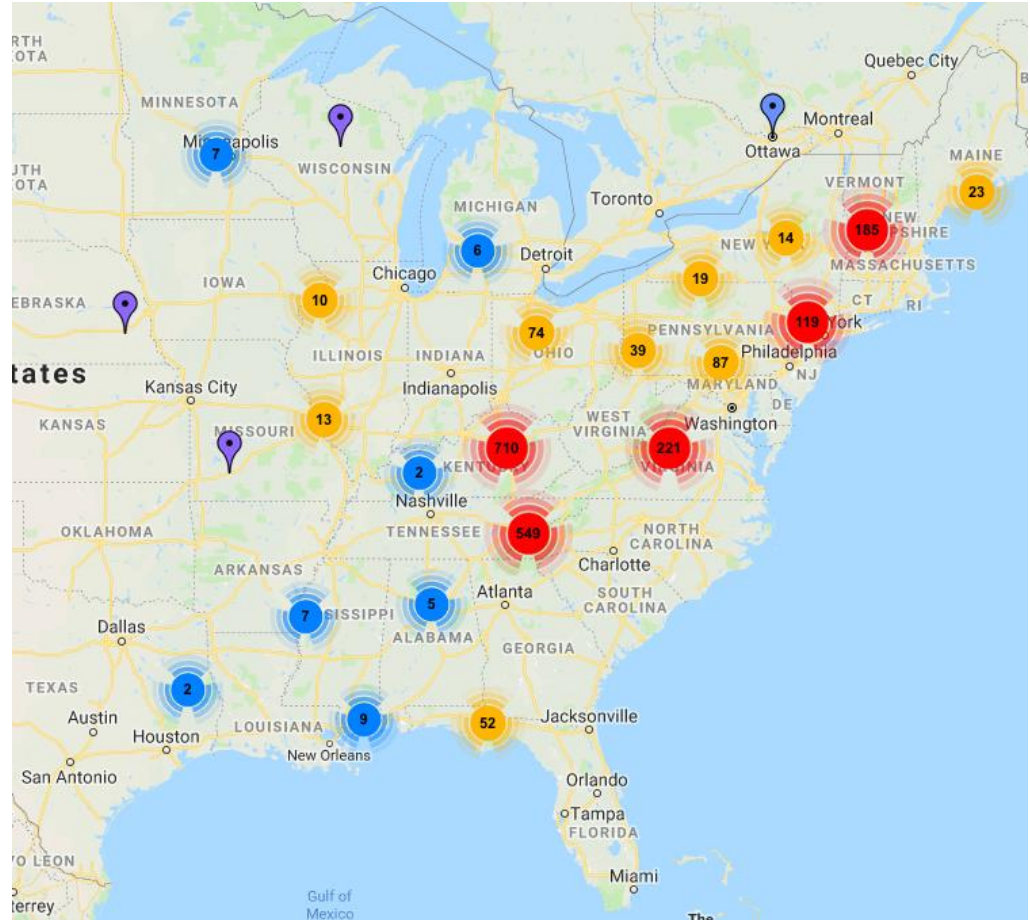
# Features

- No need for cellular coverage – go anywhere, accurate GPS
- International
- Privacy
  - We protect exact tree locations from the public
  - We protect user data



# Current TreeSnap use

- 2,253 active users
- 16,636 trees observed



# Use for individual lab collections

- Ash dioecy project
  - Working with collaborators from 6 states
  - Including pictures of the flowers enables sex id
- Ash genetic diversity project in the Great Smoky Mountains
  - Working with a team of undergraduates
  - Including pictures of the stems and the collection envelopes for later use
  - Accurate GPS down to 4-5 meters at most sites

# Live Demo

# Want to learn more or partner with us?

- Visit **TreeSnap.org**
- Download the **TreeSnap** app for iPhone or Android
- Email Meg Staton at [mstaton1@utk.edu](mailto:mstaton1@utk.edu)



# Questions?



TreeSnap.org

Facebook and twitter:  
@treesnapapp



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