

Maple Health Watch Research

iNaturalist and Sample Collection

Field Manual



FOREST HEALTH WATCH COMMUNITY SCIENCE

April 2023 version

More information available at <https://foresthealth.org/tacoma>

JM Hulbert & F Dewitz, Washington State University
Puyallup Research and Extension Center

Table Of Contents

Introduction	3
Summary of Steps to Participate	3
Other iNaturalist Projects in Tacoma	3
Using iNaturalist on a Desktop Computer (Internet Browser)	
Create Login in iNaturalist	4
Join the Project	4
Add an Observation	5-6
Tag Project and Answer Questions	6
Share the Observation	7
Using iNaturalist on the Mobile Application (IOS or Android)	
Create Login in iNaturalist	8
Join the Project	8
Add an Observation	9-10
Tag Project and Answer Questions	11
Share the Observation	12
Best practices for making observations in urban areas	13
Sooty Bark Disease Signs	14
Sooty Bark Disease Symptoms	15
Crown Dieback Percent	16
Powdery Mildew	17
Percent Coverage	17
Sample Collection Methods	18
Public Health Concerns	19
Additional Resources	20
Project Background and Funding	20

Introduction

The purpose of this project is to collect observations of maple trees. Together we can assess the health of our trees and identify vulnerable areas.

Summary of Steps to Participate

1. Create an account on [iNaturalist.org](https://www.inaturalist.org).
2. Join the [Maple Health Watch](#) project.
3. Add an observation of a tree via mobile app or internet browser.
4. Tag Maple Health Watch project in the observation.
5. Answer required (and optional, if capable) project questions about the observation.
6. Share the observation!

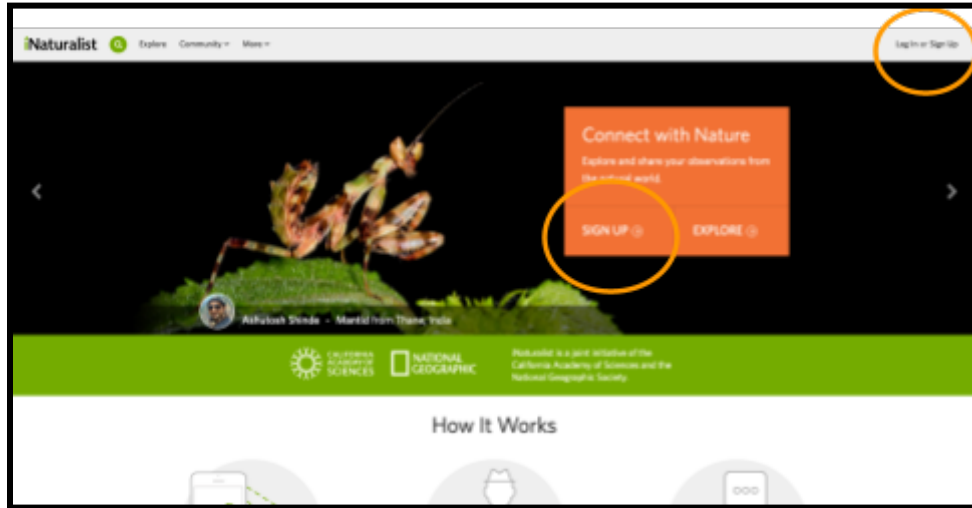
Other iNaturalist Projects in Tacoma

- [Western Redcedar Dieback Map](#) - Regional project collecting observations of healthy and unhealthy redcedar trees.
- [Tacoma Street Tree Vulnerability Study](#) - Local Project collecting observations of randomly selected trees and assessing their health
- [Tacoma Trees](#) - Local project collecting observations of trees anywhere in Tacoma.
- [Tacoma Exceptional Trees](#) - Local project collecting observations of exceptional trees.
- [Sooty Bark Disease Watch](#) - Regional Project collecting observations of Sooty Bark disease

Using iNaturalist on a Desktop Computer

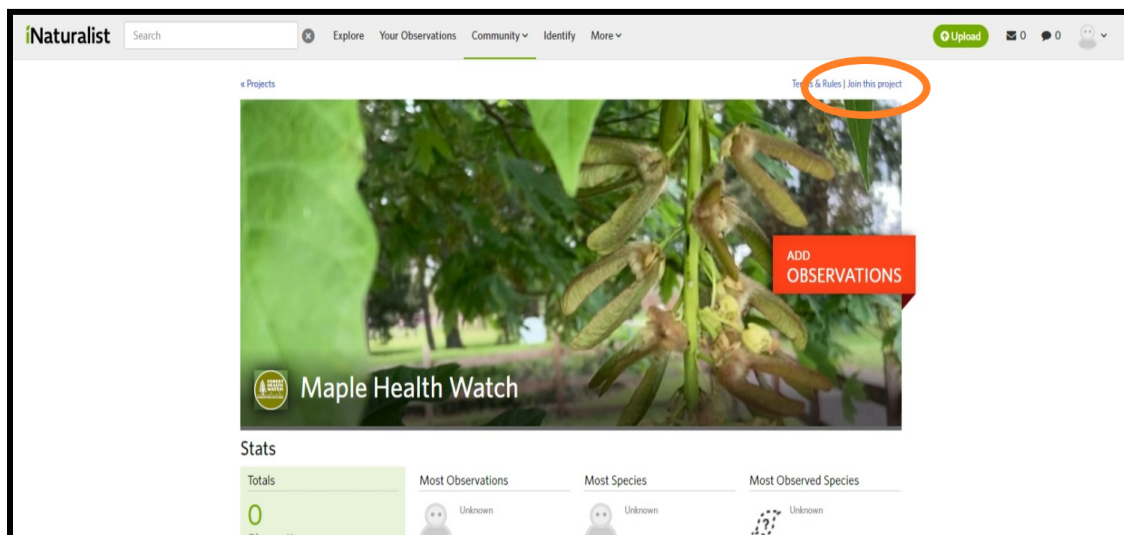
Create a Login in iNaturalist

Browse to <https://inaturalist.org> on your computer then click 'Login or Sign Up' in the upper right corner of the page.



Join the Project

Browse to the Maple Health Watch project
<https://www.inaturalist.org/projects/maple-health-watch>

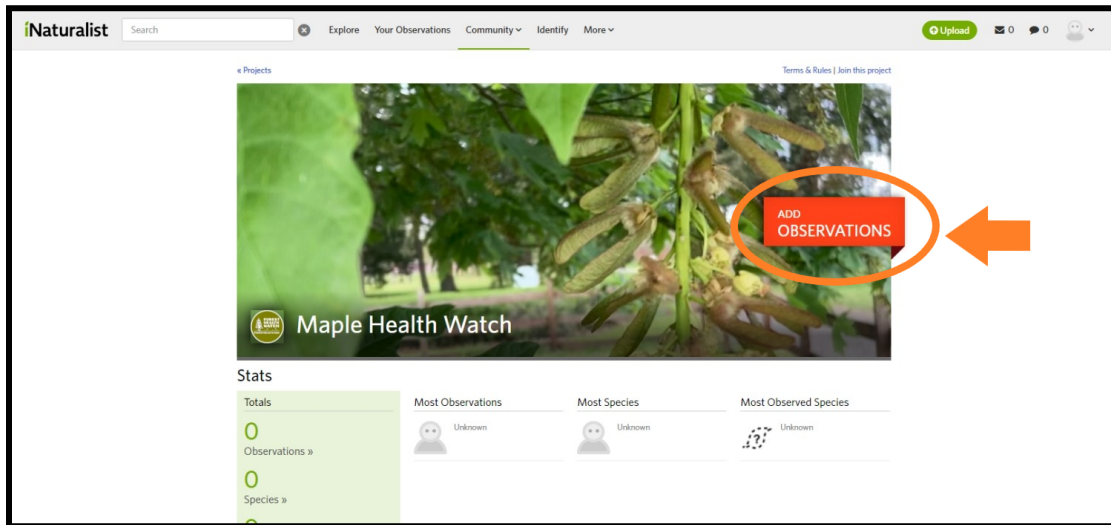


Add an Observation to iNaturalist

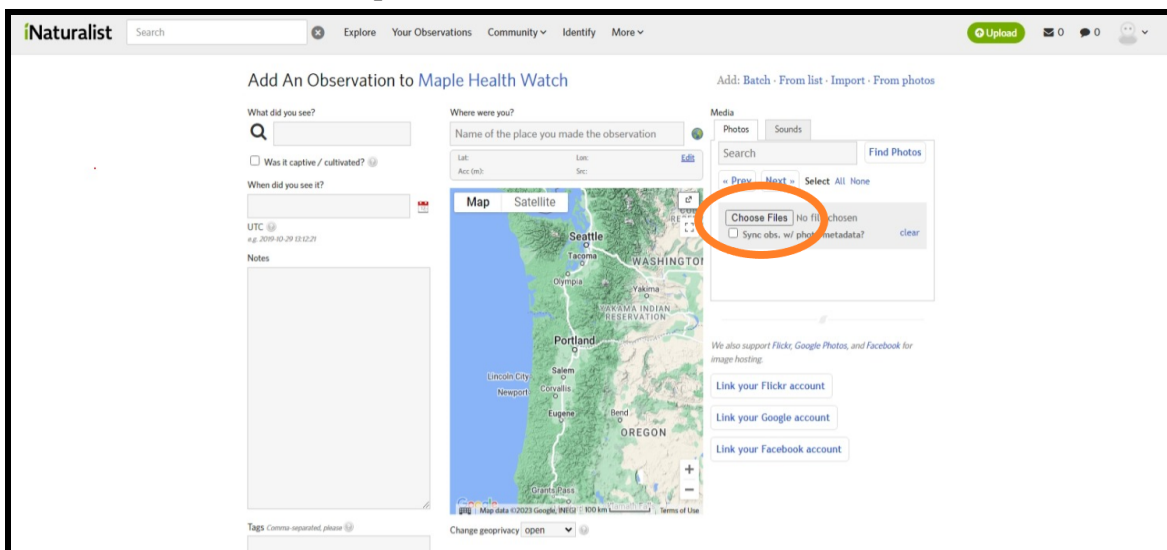
Add an observation to iNaturalist from your internet browser.

Note: We recommend taking photos and then adding the observations from your computer, the 'Photo Library' (iOS) or 'Choose Image' (Android) options to select photos from your device.

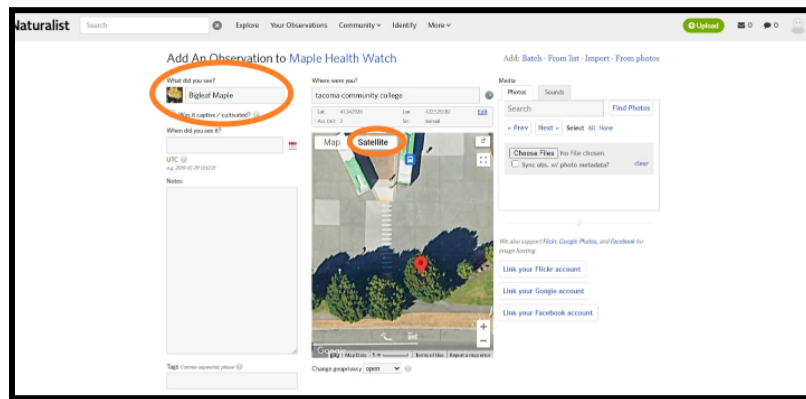
1. Browse to the [Maple Health Watch](#) project and click 'add observations'.



2. Select Photos from Computer



3. Identify the Organism in the Observation and Drop a Pin in the location:
 - When identifying, get as close to species as possible
 - Choosing the satellite option can help find the exact tree you observed



Tag Project and Answer Questions

Note: If you clicked 'Add Observation' from the project page in your web browser, the project questions will be at the bottom of the page.

Fill out project observation fields:

Tree Health Condition* Please describe the health of the tree

Tree canopy symptoms - Maple Please indicate the type of tree canopy symptoms (e.g., if you can see through the canopy more than normal, please indicate "thinning"). Similarly, please indicate if the tree has a dead top or if the tree canopy is browning.

Dishabit percent* Please estimate the percent of canopy that is unhealthy or dying (enter 0 for healthy tree, 50 for half dead tree, 100 for dead tree)

Signs of Sooty Bark Disease? Please indicate if you observed any possible signs of sooty bark disease (black/gray sooty fungal mats under bark that has fallen off)

Optional - Tree Size Please select the best description or select "other" and elaborate in the Notes

Optional - Estimated time spent to make this observation (if at all) Please estimate how much TOTAL time was required to make this observation (include transport, hiking, time spent uploading this observation, etc). Please indicate the number in minutes (30 = 45 mins, 1hr = 60 mins, etc). This will be averaged.

Powdery Mildew? Did the leaves have powdery mildew (white/gray coating on leaves)?

Powdery Mildew - Percent Coverage Please estimate the percent of the tree canopy covered by powdery mildew

*required

More Fields

Share the Observation!

Check that all of the questions are answered and a project is tagged in the observation.
Please check there is a '1' or greater listed in the Projects section of the observation.

Nice! Now you're ready to share the observation!

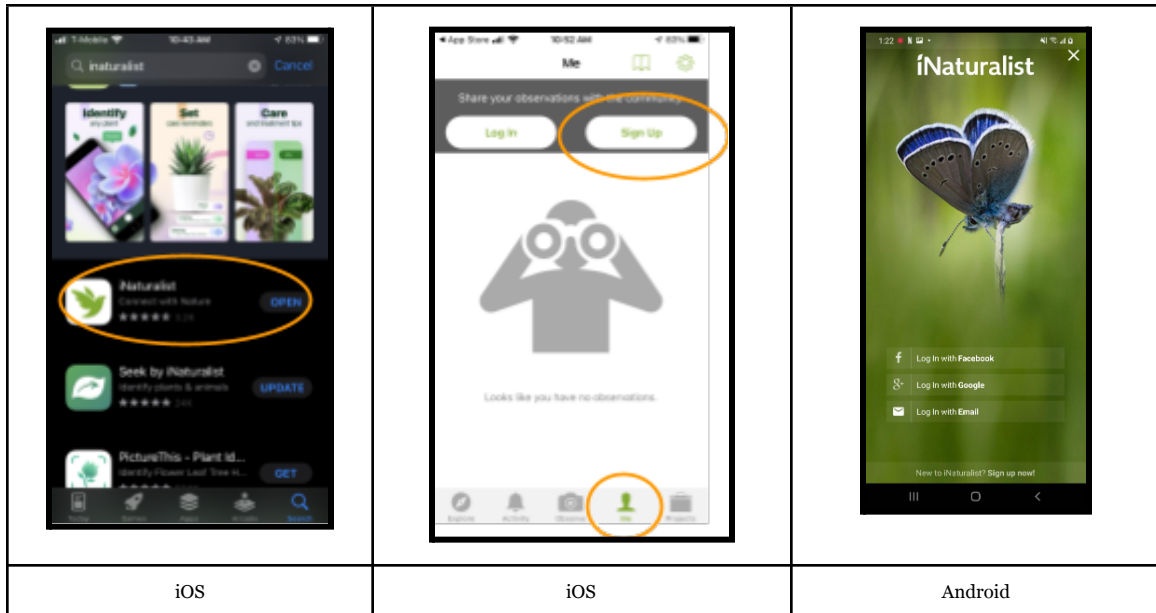
Finish adding the observation by clicking 'Share the Observation' at the very bottom.

THANK YOU for participating as a community scientist!

Using iNaturalist on the Mobile Application

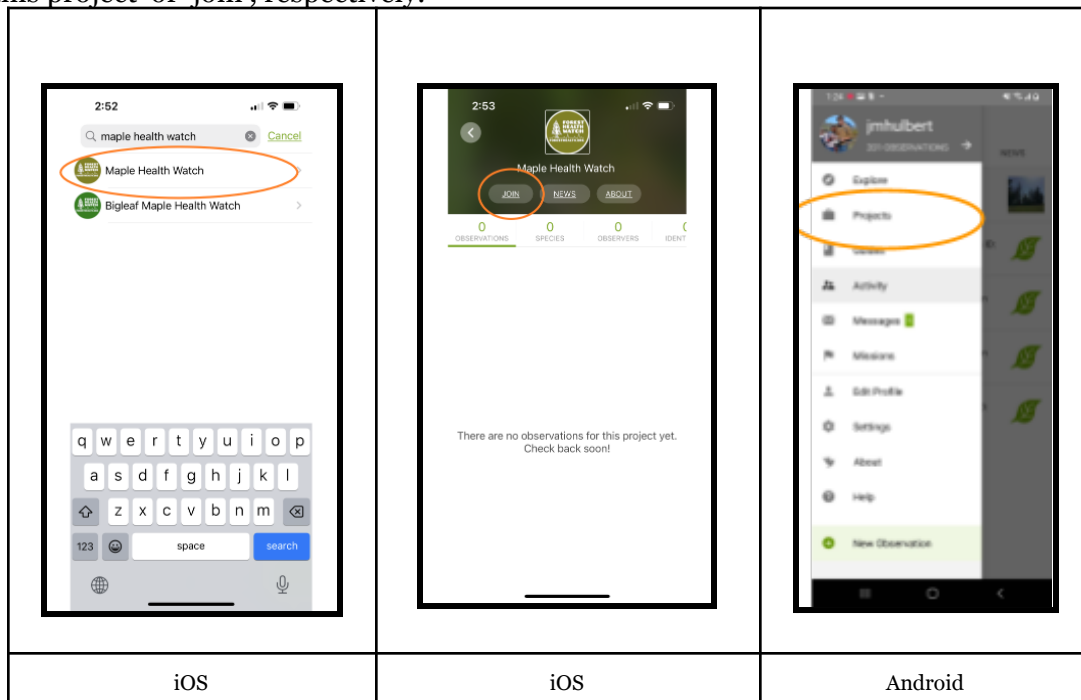
Create a Login in Inaturalist

Download and open iNaturalist from App Store or Play Store. Sign up or login from the 'Me' tab at the bottom on iOS).



Join the Project

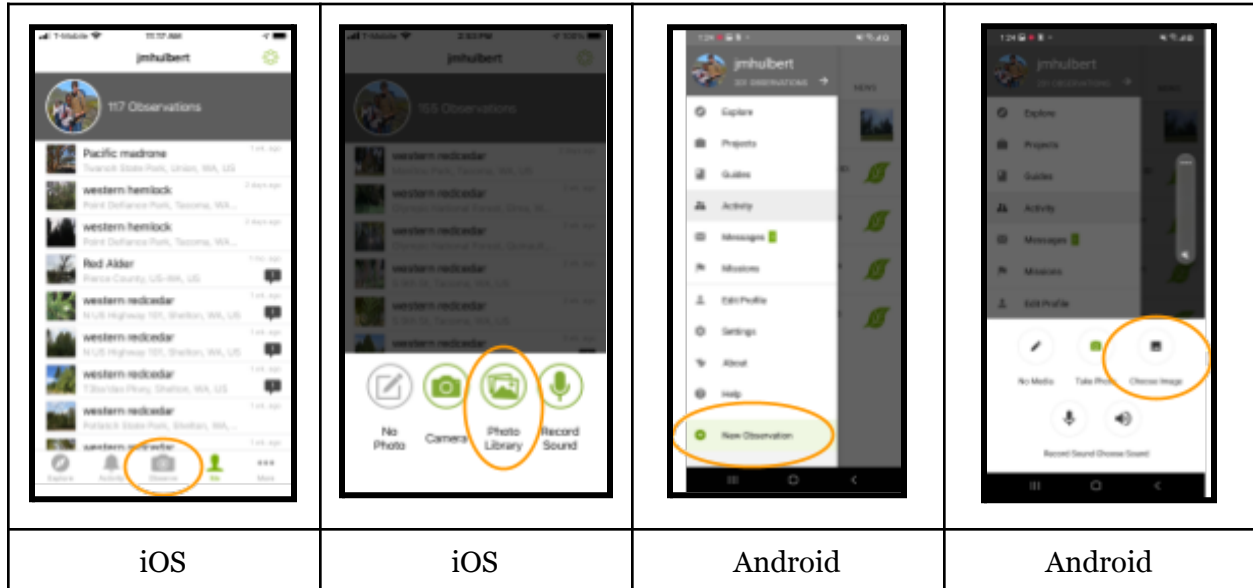
Search for 'Maple Health Watch' in the projects tab of the iNaturalist mobile App, then click 'join this project' or 'join', respectively.



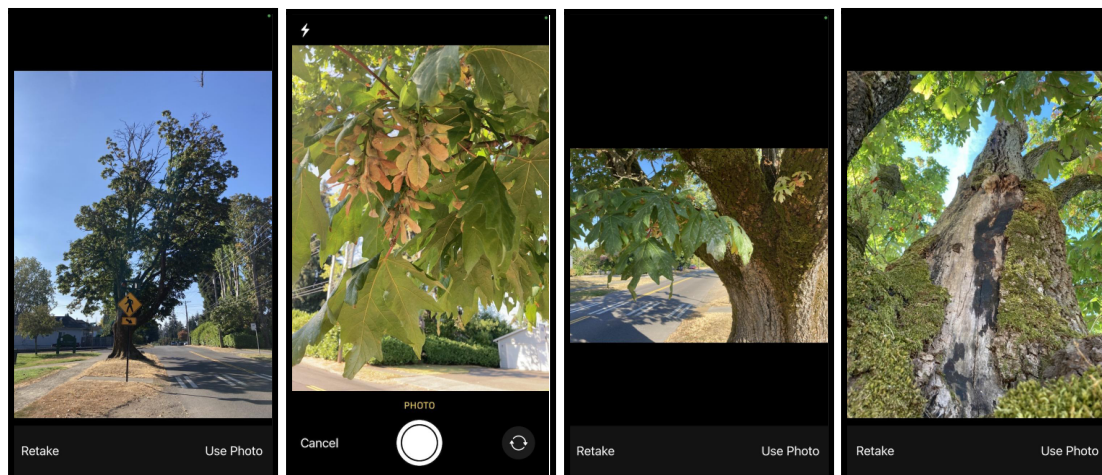
Add an Observation to iNaturalist

Add an observation to iNaturalist from your phone. The 'Photo Library' (iOS) or 'Choose Image' (Android) options to select photos from your device.

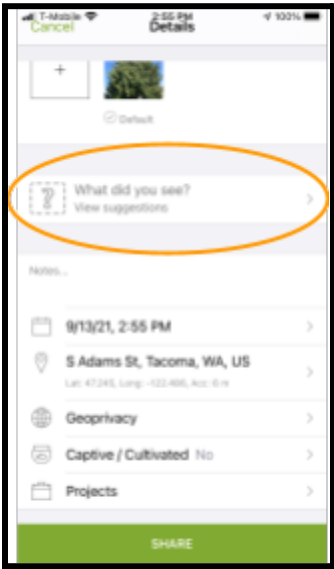
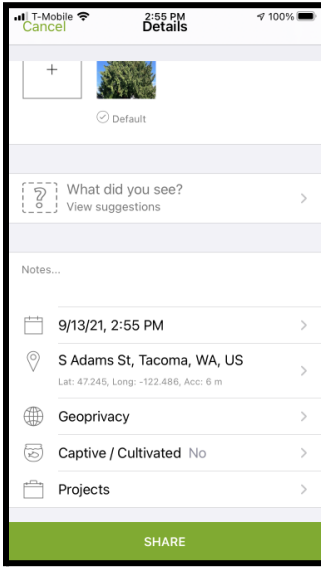
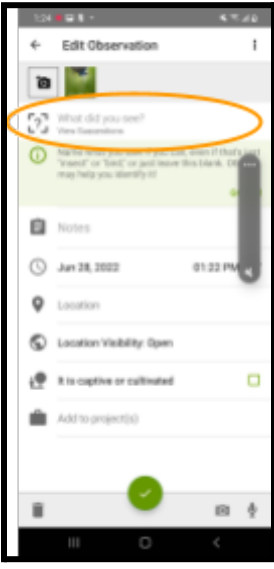
1. Tap 'Observe' (iOS) or 'New Observation' (Android)



2. Tap to select up to four photos
 - a. Please include at least four photos with your observation: 1) whole tree, 2) leaves and seeds/flowers (if present), 3) bark, and 4) signs or symptoms.

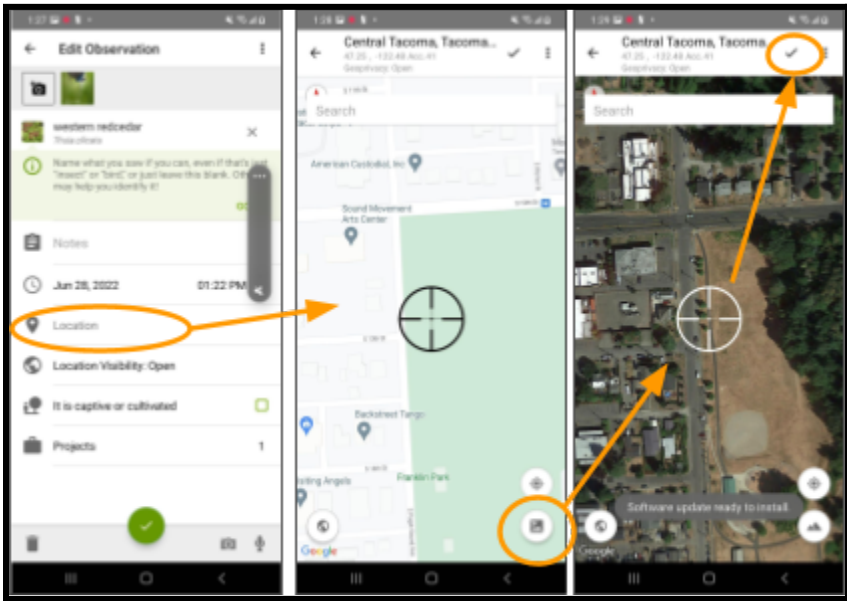


3. Identify the Organism in the Observation

		
iOS	iOS	Android

4. Record Location

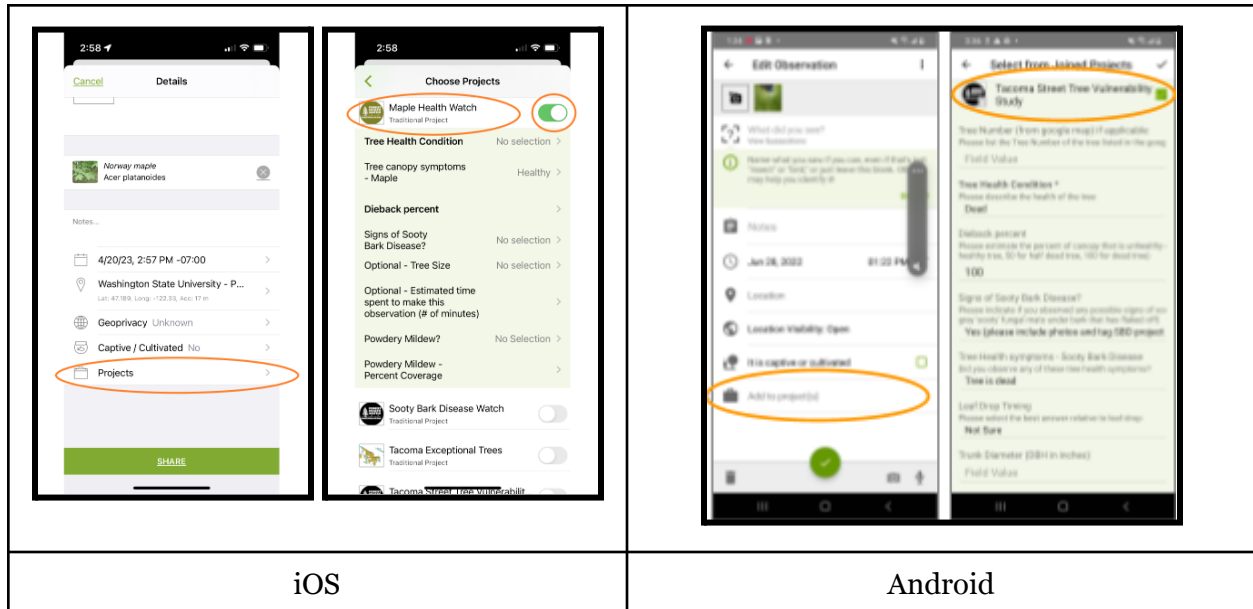
- The location will be automatically added with photos if you give your phone permission to record location when you take photos.
- Otherwise, click on location, zoom in to the place on the map, and click the check box (Android) or back arrow (iOS).


Android

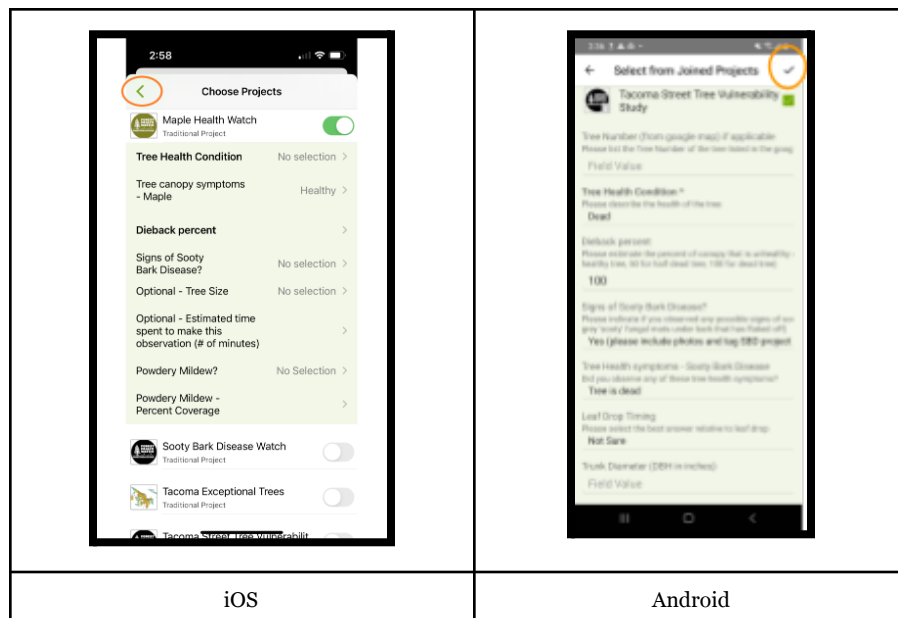
Tag Project and Answer Questions

Tag the project in the observation edit field before hitting share. Otherwise, you can edit the observation after it has been shared.

1. Click on Projects and Search for Maple Health Watch, then click the arrow (iOS) or check box (Android)



2. Answer project questions
 - a. Note answers for the bold questions are required before the observation can be added. The other questions are optional.
 - b. See the Tree Health Classification Field Guide for guidance on symptoms.
3. Tap check box (Android) or back arrow (iOS) after answering questions

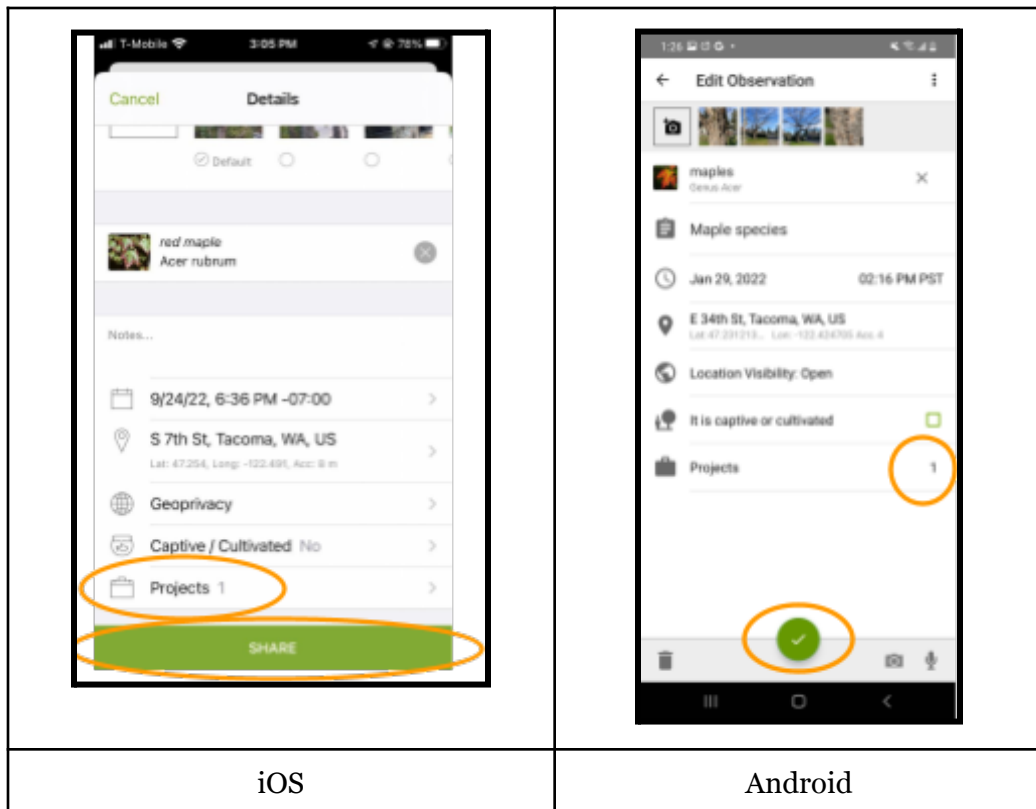


Share the Observation!

Check that all of the questions are answered and a project is tagged in the observation. Please check there is a '1' or greater listed in the Projects section of the observation.

Nice! Now you're ready to share the observation!

If you're using the mobile App, finish adding the observation by tapping 'Share' or the check mark (Android).



If you're using your internet browser, finish adding the observation by clicking 'Share the Observation' at the very bottom.



THANK YOU for participating as a community scientist!

Best practices for making observations in urban areas

Please be respectful of the privacy of others

- If possible, please avoid capturing photos of private property (consider taking photos toward the street instead)
- Avoid capturing photos that include people
- Be considerate of sensitive areas like school yards
- Unless permitted, only make observations of trees in the 'right of way' or public property

Be careful







- Your safety is more important than any observation or tree
- Let community members know you're volunteering to check the health of trees if asked
- Contact Joey at hulbe@wsu.edu or 541-908-5129 if you have any concerns or issues
- If handling samples, check Public Health Concerns section on Page 20

Capture the below photos so the iNaturalist community can confirm the species is identified correctly.

- Leaf shape
- Leaf attachment (opposite or alternate)
- Bark
- Whole tree, if possible
- Any observations of 'other factors' that may affect tree health
- Any observations of signs or symptoms of Sooty Bark Disease

Sooty Bark Disease Signs

Sooty Bark Disease ‘signs’ are observations of fungal tissues. Keep an eye out for black ‘sooty’ looking patches and be sure to include photos if you observe them. Note the signs can look different depending on the tree species. Please include any photos that are potential signs in observations.

Bigleaf Maple	Red Maple	Pacific Dogwood
		
Horse Chestnut	Water Birch	Vine Maple
		







Sooty Bark Disease Symptoms

Below are some common symptoms of tree health issues on maples. Feel free to add photos of any other type of symptom you observe.

Stem sprouts	Bark peeling	Old dead stem
		
Branch tip dieback	Thinning	Other - Bleeds
		

Crown Dieback Percent

Do your best to estimate the percent of the crown that is dead or dying, but don't worry too much about the accuracy.

~5%	~15%	~20%
		
~30%	~35%	~100%
		

Powdery Mildew

Powdery mildew is a fungal disease that may be present on maples. Keep an eye out for white 'powdery' looking patches on leaves and be sure to include photos if you observe them. Powdery patches usually start as circular, white spots on the upper side of the leaf but can grow on the underside as well.



Powdery Mildew on big leaf maple
Photo: Rosetta, OSU



Colonies on the surface of the leaf
Photo: Jay W. Pscheidt, 1999

Percent Coverage

References that may help you calibrate your estimations of percent cover of powdery mildew

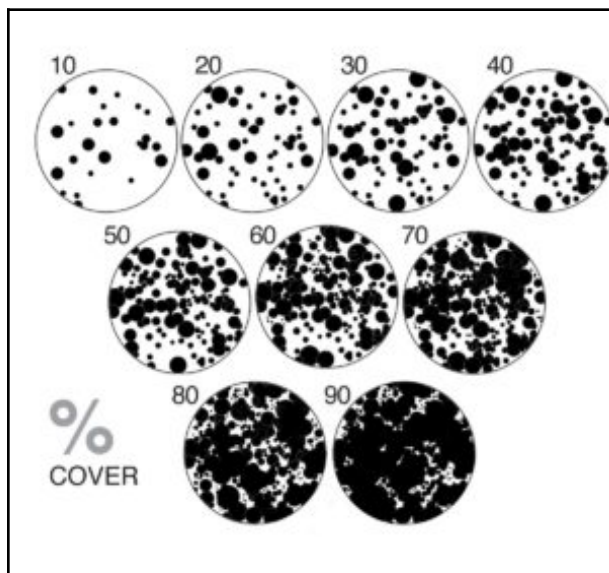


Photo: John Muir Laws

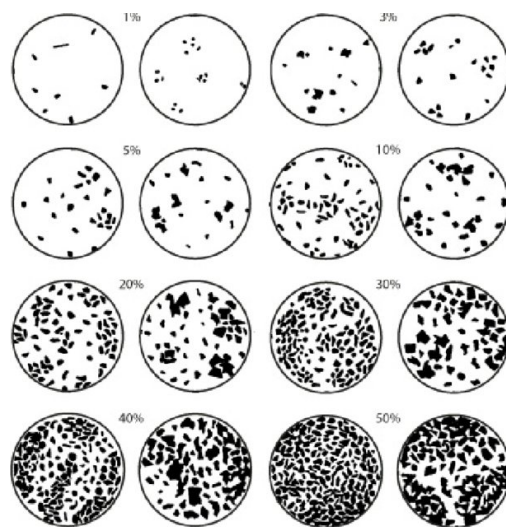


Photo: Stephen C. Phillips

Sample Collection Methods

Samples can be collected and sent to our lab in Puyallup. Please see the Public Health Concerns section below for cautionary information about handling potentially infected samples.

In general, we don't need much material; a few bark chips or slabs with or near the sooty looking part is usually enough. You can place them in a ziplock and mail them to the address below. Please let us know the tree species and location (gps coordinates or address) if possible. Please clean tools between collecting samples. For example, we recommend using an old toothbrush to scrub a pocket knife with soap water.



Please address samples to the below address:

ATTN: Joey Hulbert / Collin Marshall
WSU Puyallup Research and Extension Center
2606 West Pioneer
Puyallup WA 98371

Public Health Concerns

Please note, inhaling spores from *Cryptostroma corticale* can cause hypersensitivity pneumonitis or temporary respiratory issues in some people. If you're vulnerable, we recommend wearing a N95 mask or respirator for protection against inhaling the fungal spores while handling possibly infected plant samples. For more information, please read this [Maple Bark Disease resource](#) provided by the Washington State Department of Health.

The screenshot shows the Washington State Department of Health website. The header includes the department's logo, navigation links for Newsroom, Publications, and About Us, and buttons for Topics A-Z and Español. A search bar is also present. The main navigation menu lists categories: You & Your Family, Community & Environment, Licenses, Permits, & Certificates, Data & Statistical Reports, Emergencies, and For Public Health & Health Care Providers. The page title is 'Maple Bark Disease'. The content includes sections for 'What is Maple Bark Disease?', 'What is Cryptostroma corticale?', and 'Where is Cryptostroma corticale in Washington?'. The 'Where is...' section lists tree species in Washington where the fungus has been confirmed: Sycamore maple (*Acer pseudoplatanus*), Bigleaf maple (*Acer macrophyllum*), Norway maple (*Acer platanoides*), Japanese maple (*Acer palmatum*), and Field maple (*Acer campestre*).

<https://doh.wa.gov/node/12614>

<https://foresthealth.org>

Additional Resources

Forest Health Watch Home Page: <https://foresthealth.org/>

Forest Health Watch Sooty Bark Disease <https://foresthealth.org/sbd>

Sooty Bark Disease, Washington State University: <https://ppo.puyallup.wsu.edu/sbd>

Project Background and Funding

This project is hosted by the Ravenholt Urban Forest Health Lab at the Puyallup Research and Extension Center of Washington State University. The project is designed as an extension of the Forest Health Watch program.

Funding to support this initiative was provided by a Community Forestry Assistance grant from the Department of Natural Resources Urban and Community Forestry program (Grant Agreement 93-103786). The Forest Health Watch was established with funding provided by a USDA NIFA Postdoctoral Fellowship (Proposal 2019-07338). The Ravenholt Urban Forest Health Lab was established with a gift from the Albert Victor Ravenholt Fund.