
photo credit: Matt Leizinger

Tracking Whitebark Pine
Field Manual
Your step-by-step guide to completing an observation


photo credit: Matt Leizinger

TO DO BEFORE HEADING OUT

1. Complete the online training

2. Download Survey 123 application and Tracking Whitebark Pine Survey

- Use the QR code or this link

Note: if you do not already have Survey 123 loaded on your device, you will need to visit the QR code or link two times.

3. Plan your adventure

- Use the map on the volunteer homepage to plan your adventure.

What you need:

Adventure Scientists Provides:

1. Observation permit (this was emailed to you and also available on the volunteer homepage)
2. This Field Manual; be sure to download it to the device you will have with you in the field.
3. Trail and Project Boundary file; download this to your mapping application on your device.

Volunteers provide:

1. Smartphone with Survey 123 application downloaded and Tracking Whitebark Pine Survey loaded.
2. Adventure and safety equipment
3. GPS navigation application or device
4. Binoculars (or a camera with a good zoom)

Optional, but recommended:

1. Smartphone binocular attachment

Observation Basics

Before you head out on your adventure, make sure to download the Tracking Whitebark Pine layer and add it to the navigation app of your choice.

This layer will clearly show where the outlines of the project area are (in national forests, non-wilderness zones above 5,250ft).

When you begin your adventure and every time you log presence/absence make sure to open your navigation app to ensure that the observation is inside the project area.

Remember that you are recording observations every mile and every time you see a potential whitebark pine tree above 5,250 feet in elevation.

Searching for Whitebark Pine

Once you reach 5,250 feet in elevation, visually scan the proximity for potential whitebark pine trees.

As you adventure, keep an eye out (both on & off your route) for potential whitebark pine. Scan the surrounding area in all directions, especially in areas where the habitat changes.

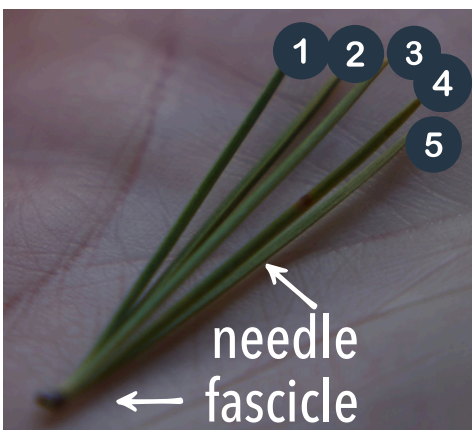
Whitebark thrive in harsh, high-elevation environments, typically growing between 5,250ft - 11,000ft. They favor cold, windy, snowy areas with dry, coarse, well-drained soils. As a pioneer species, they're growing where other trees struggle including exposed ridges, talus slopes, and recently glaciated terrain.

If you spot a tree that could be a whitebark safely approach it to take a closer look. If you don't see whitebark as you move along, be sure to stop at least every mile to log absence data. Your navigation app of choice can help you keep track of mileage.

Whitebark pine tree ID

Basic Tree Shape

Needle Bundles



Entering Data in Survey 123

Once you reach 5,250 ft within the project boundary, stop at least every mile and anytime you see a potential whitebark pine.

At every mile, if you do not see potential whitebark pine, you will complete observation A.

If you spot a potential whitebark pine at any time, you will complete observation B.

At the end of your day in the field, you will complete observation C.

A. No potential whitebark pine tree(s) sighted, begin on this page.

B. Potential whitebark pine tree(s) sighted, begin on page 8.

C. Trip Report, begin on page 23.

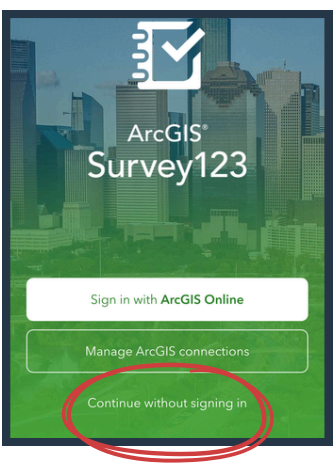
NOTE: The Trip Report is completed only once per adventure. When you are finished completing surveys for the day, you will submit one Trip Report.

Entering Absence Data

(no potential whitebark pine tree sighted)

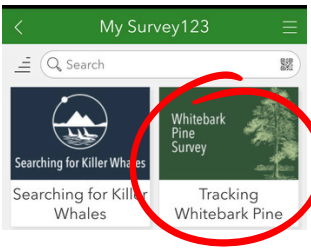
1. Open the Survey 123 App.

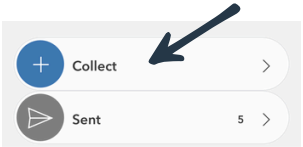
2. Click "Continue without signing in"



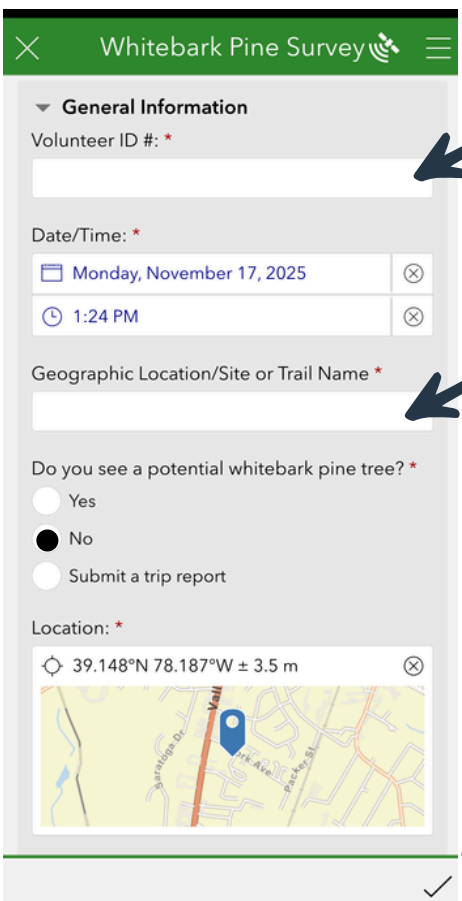
Entering Absence Data cont'd
(no potential whitebark pine tree sighted)

3. Click the "Tracking Whitebark Pine"
4. Click "Collect"





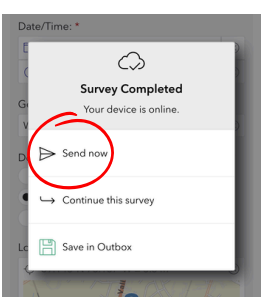
5. Begin entering observation data



This was emailed to you when you signed up for the project. You can also retrieve it here

Enter the trail or name of the relative location where you made the observation.

Click here to submit the observation.

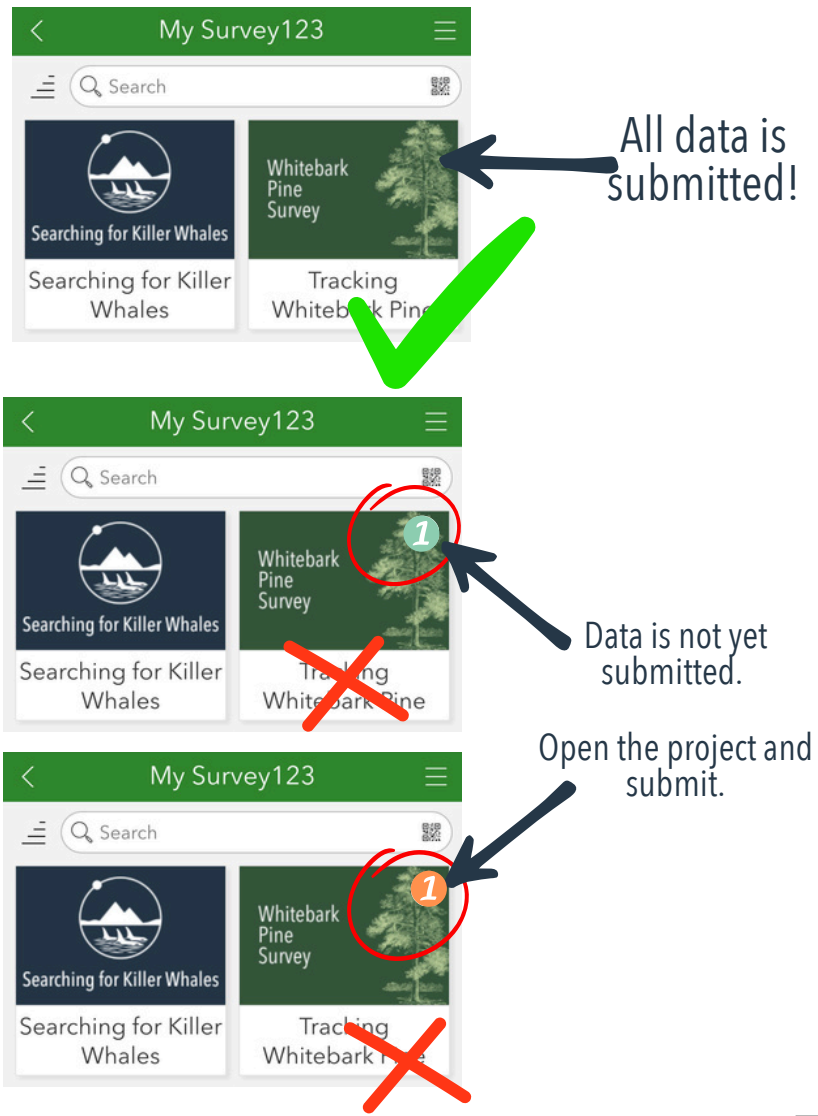


Entering Absence Data cont'd

(no potential whitebark pine tree sighted)

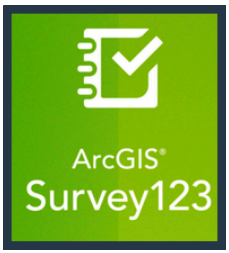
6. Check that your data was submitted.

Close the application then reopen.

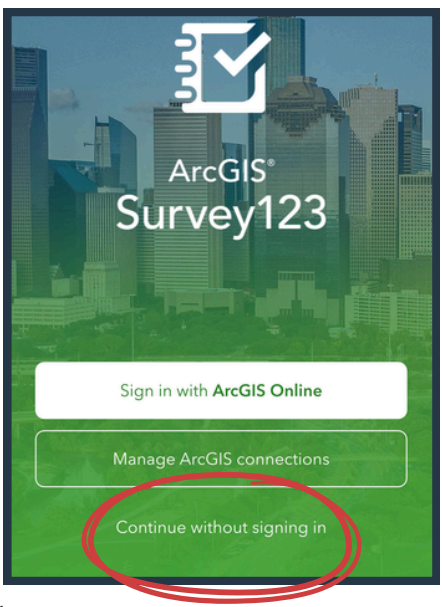


Entering Potential Whitebark Pine Tree Sighting Data

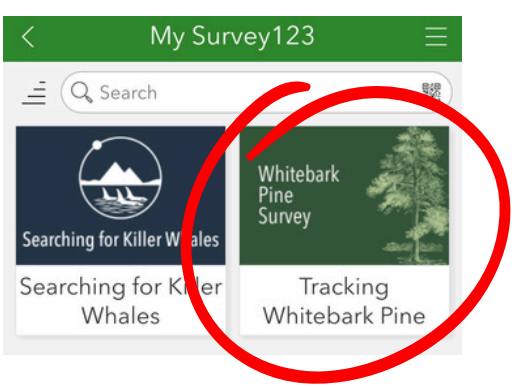
1. Open the Survey 123 App.



2. Click "Continue without signing in"

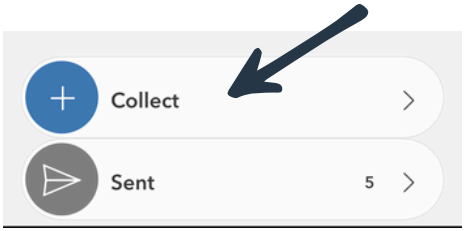


3. Click the "Tracking Whitebark Pine"



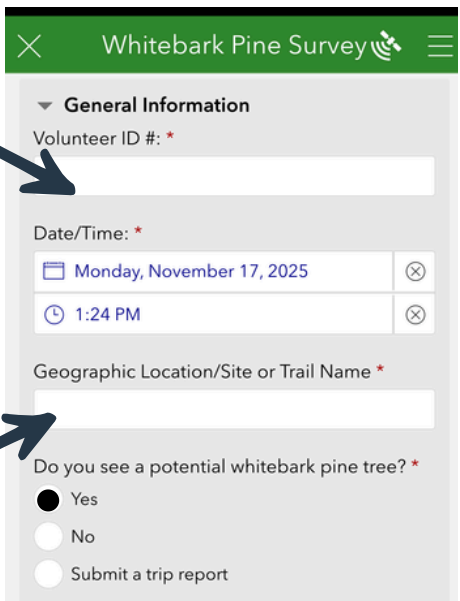
Entering Potential Whitebark Pine Tree Sighting Data

4. Click "Collect"



5. Begin filling in observation data.

This was emailed to you when you signed up for the project. You can also retrieve it here

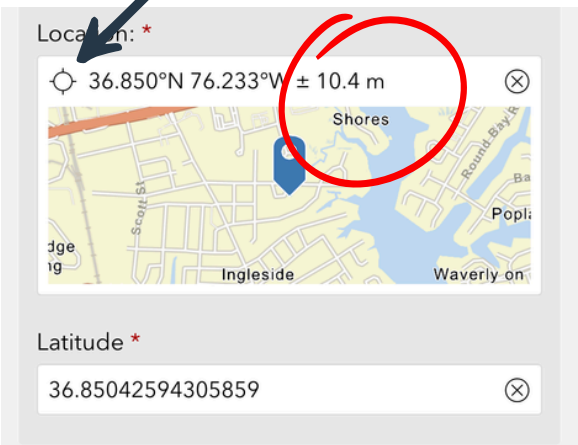


Enter the trail or name of the relative location where you made the observation.

Entering Potential Whitebark Pine Tree Sighting Data

6. Check the Location accuracy.

If the value is greater than 5m, click the circular icon to refresh.



Troubleshooting GPS accuracy

If the GPS accuracy is greater than 5m

Wait a couple minutes to allow multiple satellites to pass and triangulate your position for more accuracy.

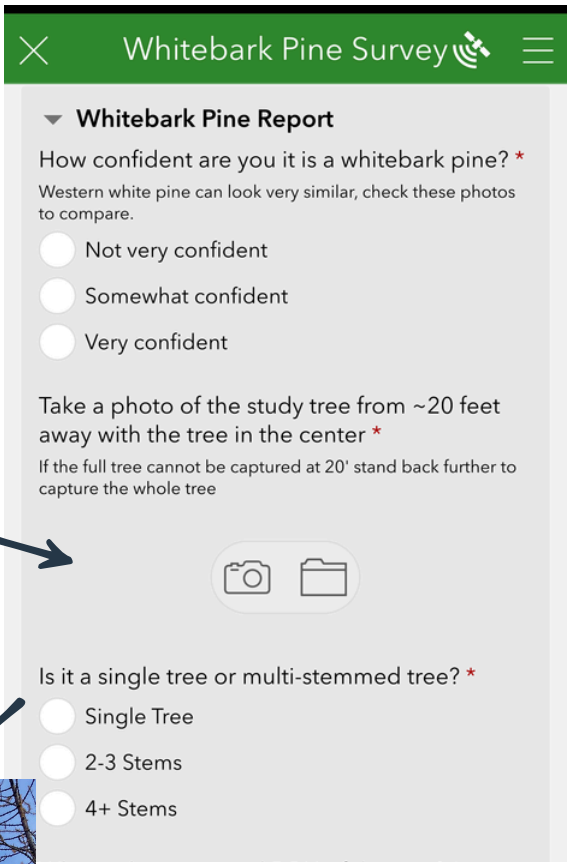
Do the best you can.

If you can't get it <5m, please continue the survey. We can still use the information about the tree.

NOTE: This accuracy is important for specific tree identification.

Entering Potential Whitebark Pine Tree Sighting Data

7. Whitebark Pine Report



Note: you must submit a photo here or you will be unable to complete the observation.

This photo shows a whitebark pine with 2 stems.

Recording whether the tree is a single tree or a multistemmed tree is a helpful way to describe the tree to researchers.

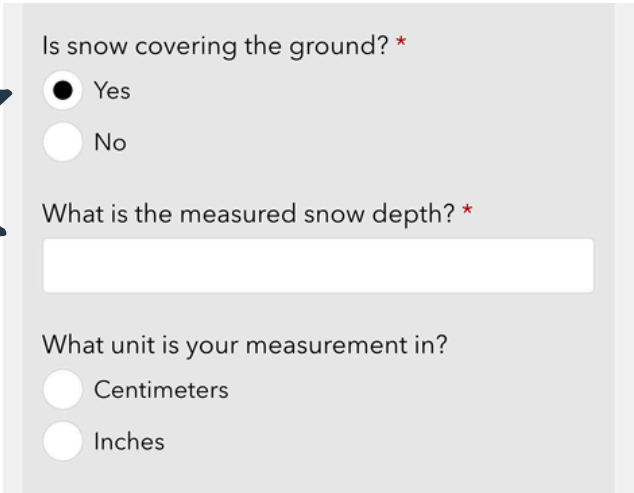
A multi-stemmed tree splits/separates below 4.5ft of height

Multi-stemmed whitebark pine trees are very common because Clark's nutcrackers often cache seeds that grow into separate trees in a clump/group together.

Entering Potential Whitebark Pine Tree Sighting Data

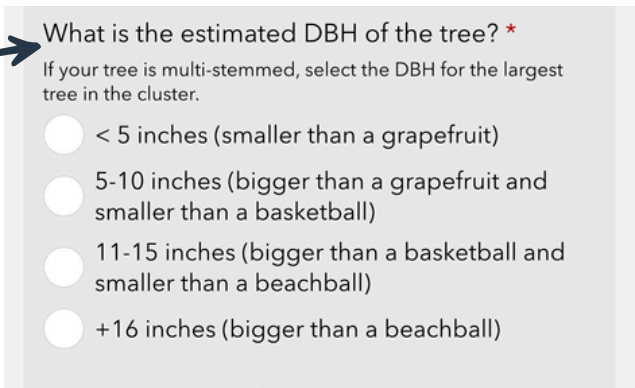
8. Enter additional observational data.

If you select yes here, this will appear



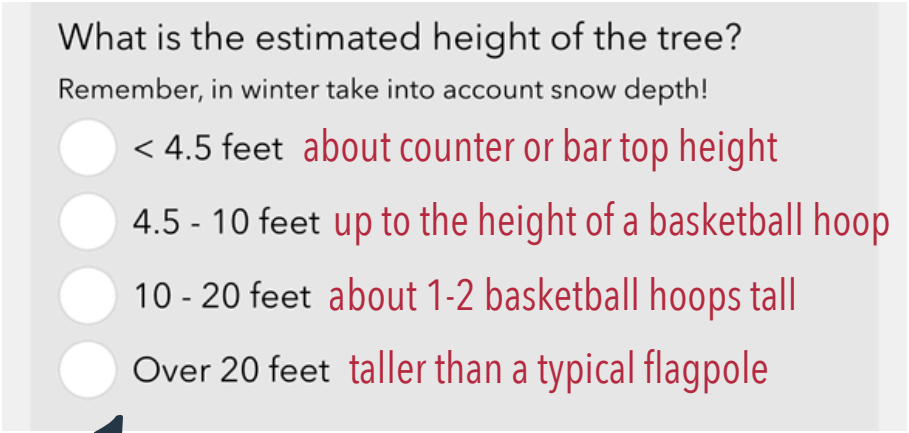
A. Look at the tree and estimate about 4.5 feet from the base of the tree up the trunk (about counter height).

B. Compare the width of the trunk at 4.5 feet to these values and select the best option.

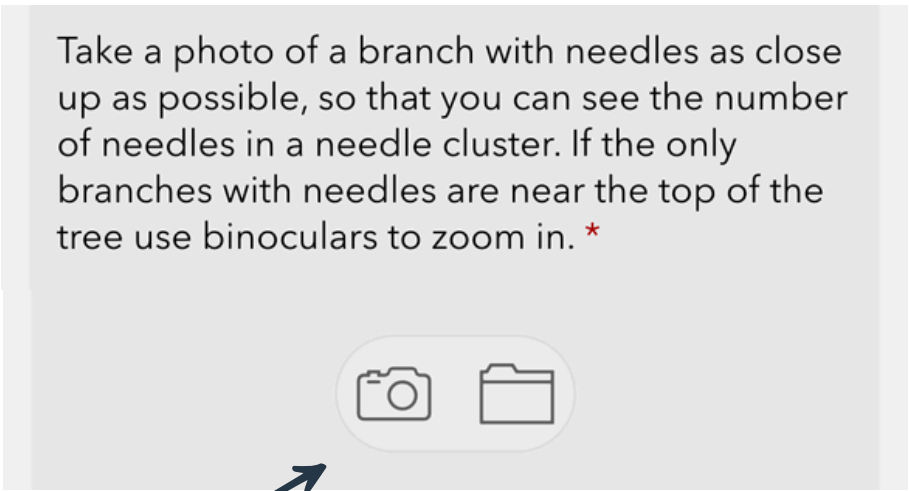


Entering Potential Whitebark Pine Tree Sighting Data

8. Enter additional observational data.



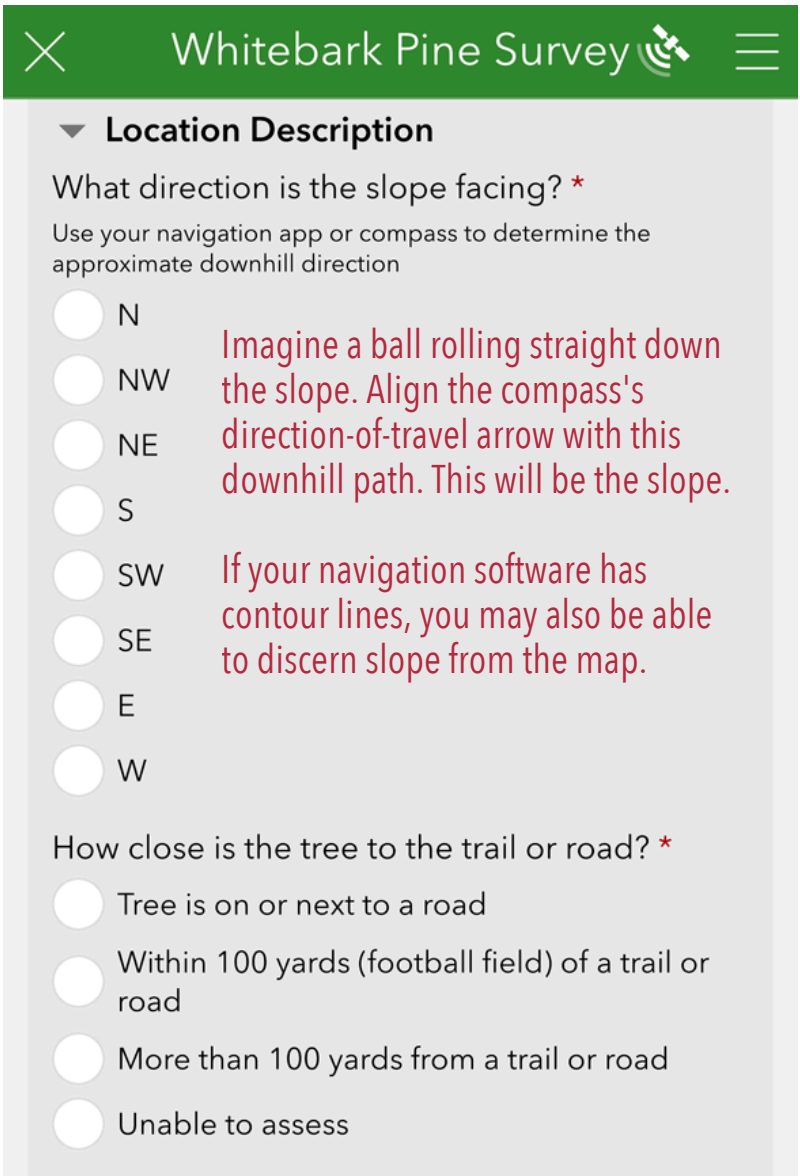
Make an estimate of the tree's height based on these options and guidance here.



Note: you must submit a photo here or you will be unable to complete the observation.

Entering Potential Whitebark Pine Tree Sighting Data

9. Location description

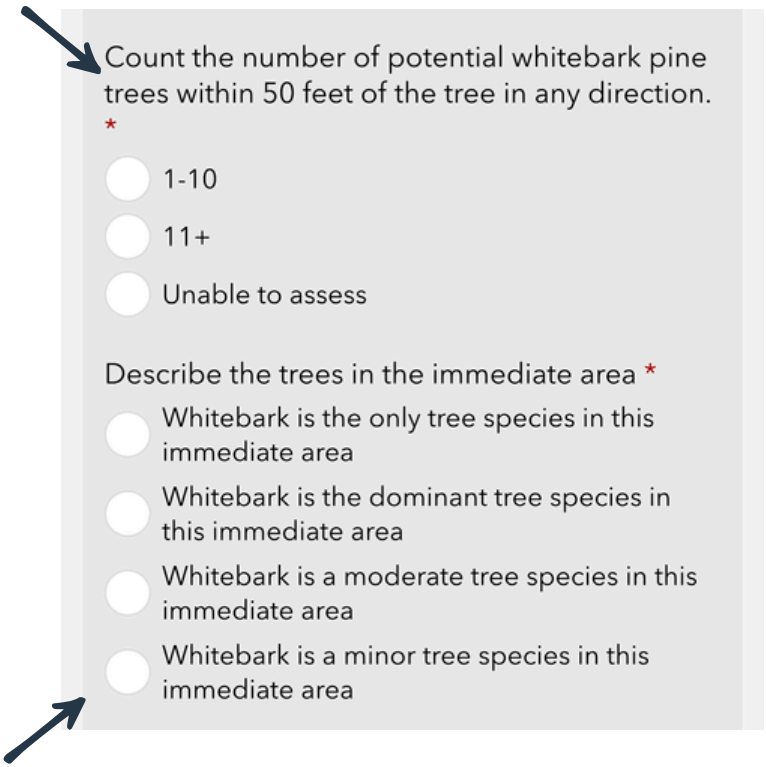


Entering Potential Whitebark Pine Tree Sighting Data

10. Surrounding Tree Assessment.

Note: This is a quick estimate to help researchers know the density of whitebark pine in the area.

Focus on potential whitebark pine trees >5 inches in diameter. (larger than a grapefruit)



Use your best judgment to determine if most of the trees are whitebark pine (dominant), there is a mix of species (moderate), or there are only a few whitebark pine trees among other tree species (minor).

Entering Potential Whitebark Pine Tree Sighting Data

11. Potential Whitebark Pine Tree Assessment

Tree Assessment

What percentage of the tree is dead? *

- Live, healthy tree, no flagged branches
- One or two flagged branches
- 1/3 of the tree dead
- 2/3 of the tree dead
- More than 2/3 dead
- 100% dead with red flagged needles still attached
- 100% dead with no needles remaining

Take a photo of the flagged branches: *

NOTE: Flagged branches are where the needles have turned orange or red, like a "flag"

Flagged branches are a sign that parts of the tree might be dead.

If the tree is 100% dead, please select a living tree to survey. The primary goal of this research is to collect data on living trees.

If there are flagged branches, you will be prompted to submit a photo here.

Entering Potential Whitebark Pine Tree Sighting Data

12. Potential Whitebark Pine Tree Assessment

In winter months, it will be difficult to assess blister rust, mountain pine beetle infestations, and dwarf mistletoe accurately.

Unless you can definitively say "yes" or "no" here, default to answering "unable to assess" in this section.

NOTE: For a refresher on evidence of these, see pages 18-20

Do you see potential evidence of blister rust on the tree? *

e.g. swollen zone, roughened bark, old cankers, sporulating cankers

- ○ Yes
- ○ No
- ○ Unable to assess

Do you observe any holes in the trunk of the tree likely caused by mountain pine beetles? *

In winter, especially if there is snow on the tree, select unable to assess

- ○ Yes
- ○ No
- ○ Unable to assess

Do you see areas of excessive growth or limbs/needles on the tree that suggests it has been affected by dwarf mistletoe? *

- ○ Yes
- ○ No

Evidence of Blister Rust

Photos: Stauder

Evidence of Pine Mountain Beetle

photo credit: Shamhart

photo credit: Stauder

photo credit: Belfield

Evidence of Dwarf Mistletoe

Photo: Stauder

Entering Potential Whitebark Pine Tree Sighting Data

13. Regeneration Potential

If you select cones or conelets, additional fields will appear

Regeneration Potential

Do you see any cones or conelets on the tree you are observing? *

In winter, especially if there is snow on the tree, select unable to assess

- Cones
- Conelets
- I don't see any
- Unable to assess

Additional Notes

Please include any additional information that might help identify the tree or explain your observation.

You can add any additional observation details or other information that you think might be helpful about your observation here.

How many cones do you see? *

Upload two different images for any cones observed.

- < 12
- 12-50
- 50+

Cone Image One *

Cone Image Two

How many conelets do you see? *

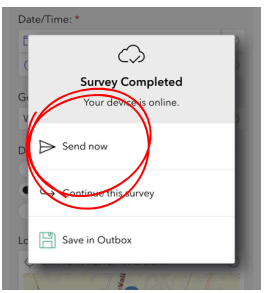
Upload two different images for any conelets observed.

- < 12
- 12-50
- 50+

Conelet Image One *

Conelet Image Two

Click here to submit the observation.

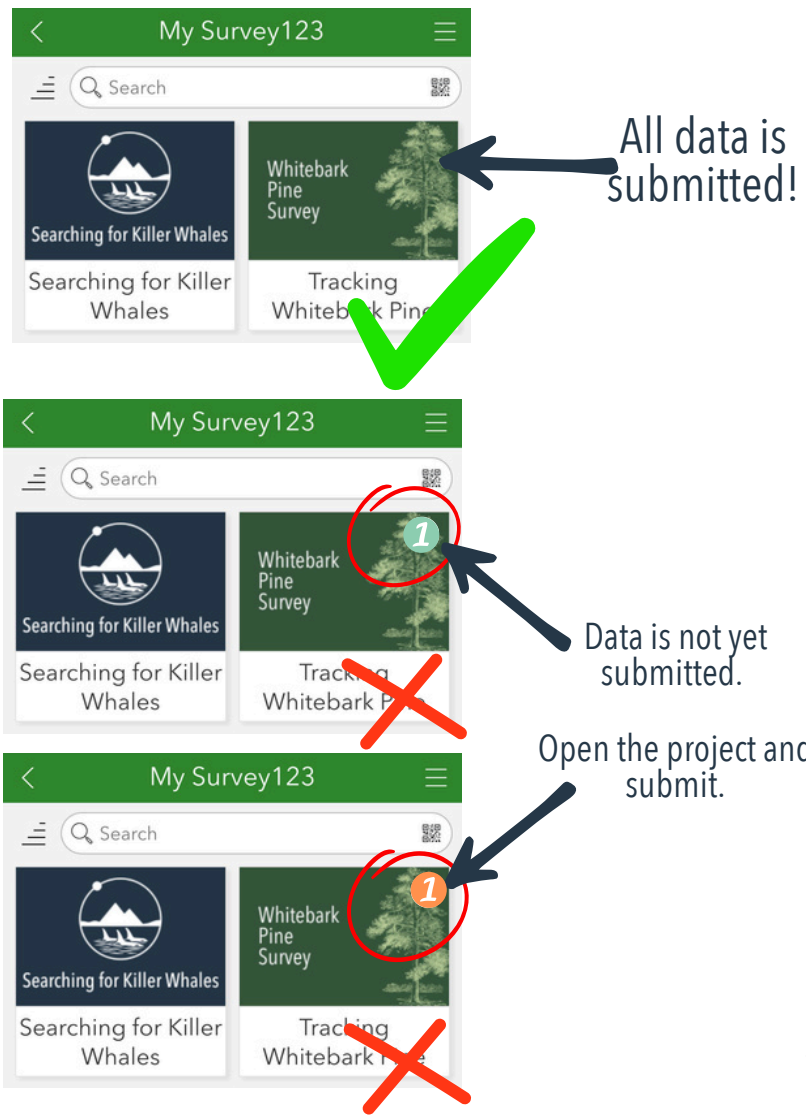


Entering Potential Whitebark Pine Tree Sighting Data

14. Click the check mark in the bottom right corner to submit your observation data.

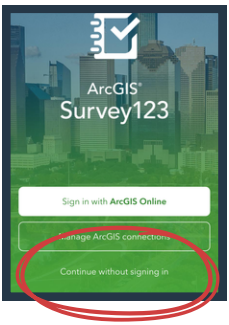
15. Check that your data was submitted.

Close the application then reopen.



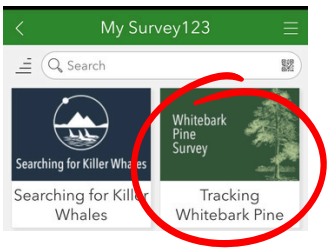
Completing a Trip Report

1. Open the Survey 123 App.

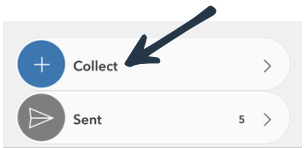


2. Click "Continue without signing in"

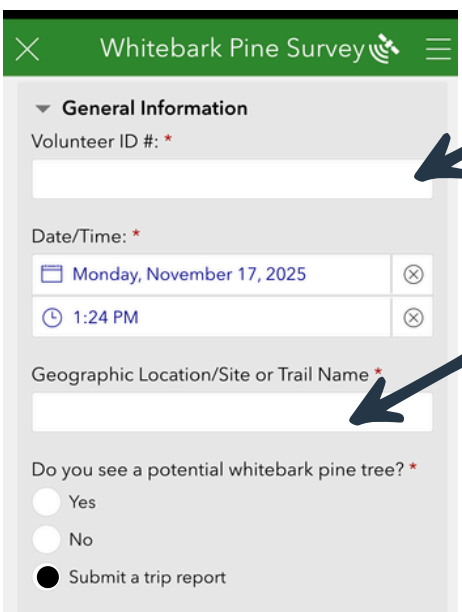
3. Click the "Tracking Whitebark Pine Project"



4. Click "Collect"



5. Begin entering observation data

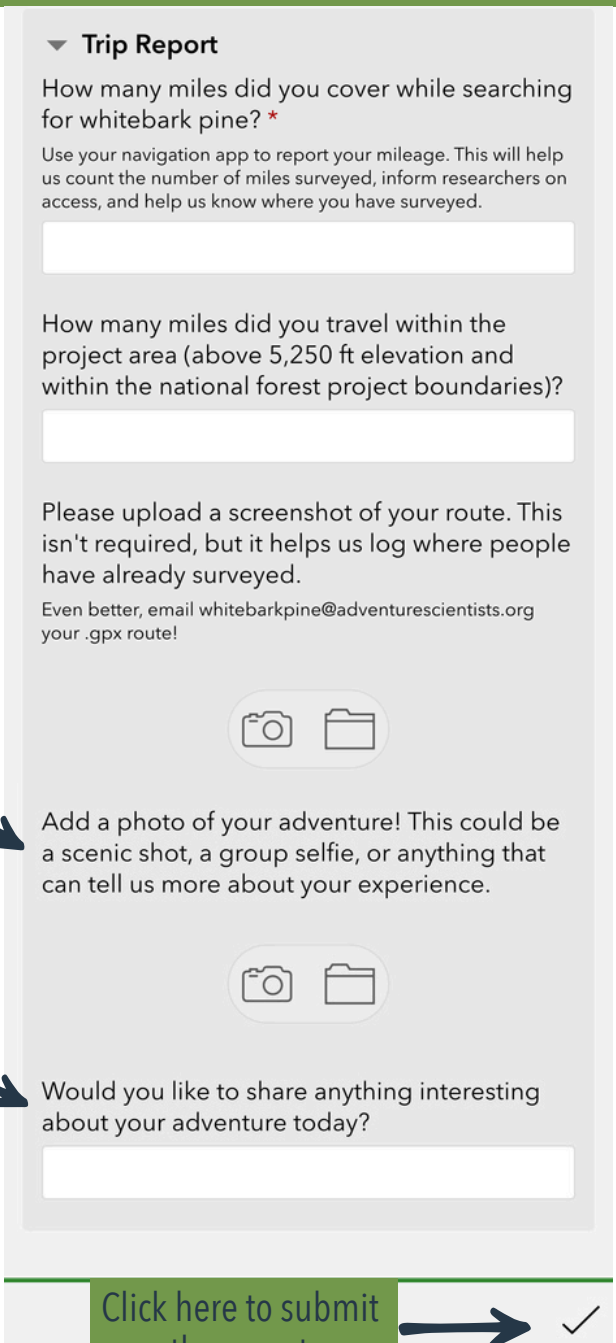


This was emailed to you when you signed up for the project. You can also retrieve it here

Enter the trail or name of the relative location where you made the observation.

Completing a Trip Report

6. Complete report.



Share a fun photo with us.

Add any details about your experience you would like to share

Click here to submit the report.

Safety Considerations

As an Adventurer, you know that participating in outdoor activities such as hiking, snowshoeing, climbing, skiing, etc., has inherent risks.

Before you head out on your adventure, familiarize yourself with the weather, environmental conditions, and wildlife.

Complete any additional safety preparation you feel is necessary for your adventure! And of course, always adventure with a buddy!

IN CASE OF EMERGENCY

FIRST, CALL 911

Once you are in a safe situation, after the emergency, alert Adventure Scientists staff about the incident by contacting: (406) 624-3320 extension 2

ONLY contact this number if you are reporting an incident.

Have project-related questions?

Email:

whitebarkpine@adventurescientists.org