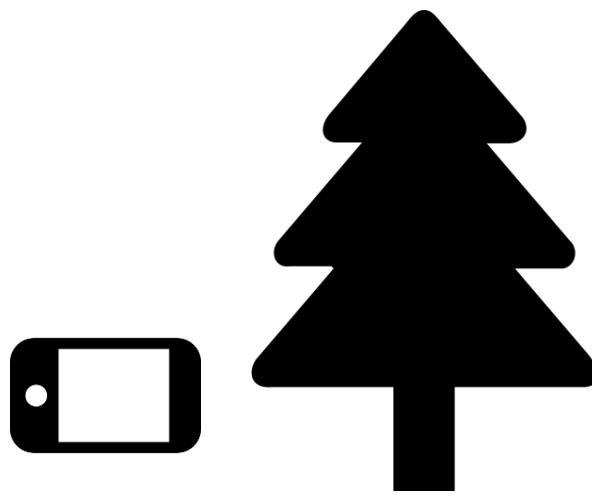


Forest inventory using KATAM Forest



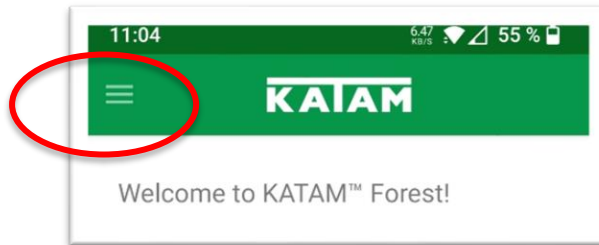
User guide

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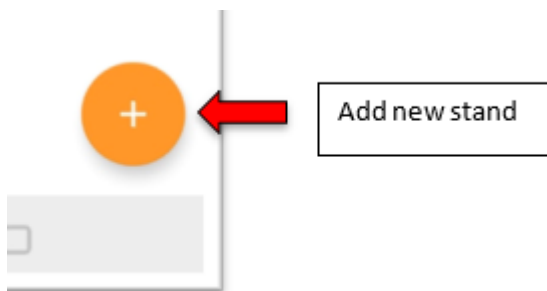
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1. Quick start guide

1. Download the KATAM Forest app.
2. Tap the navigation menu to create and name a new estate.



3. Create and name at least 1 stand for the estate.



4. From the stand, tap the add icon to create a recording.



5. Start and complete your recording.



6. Adjust the stand afterwards, if required.

2. Introduction

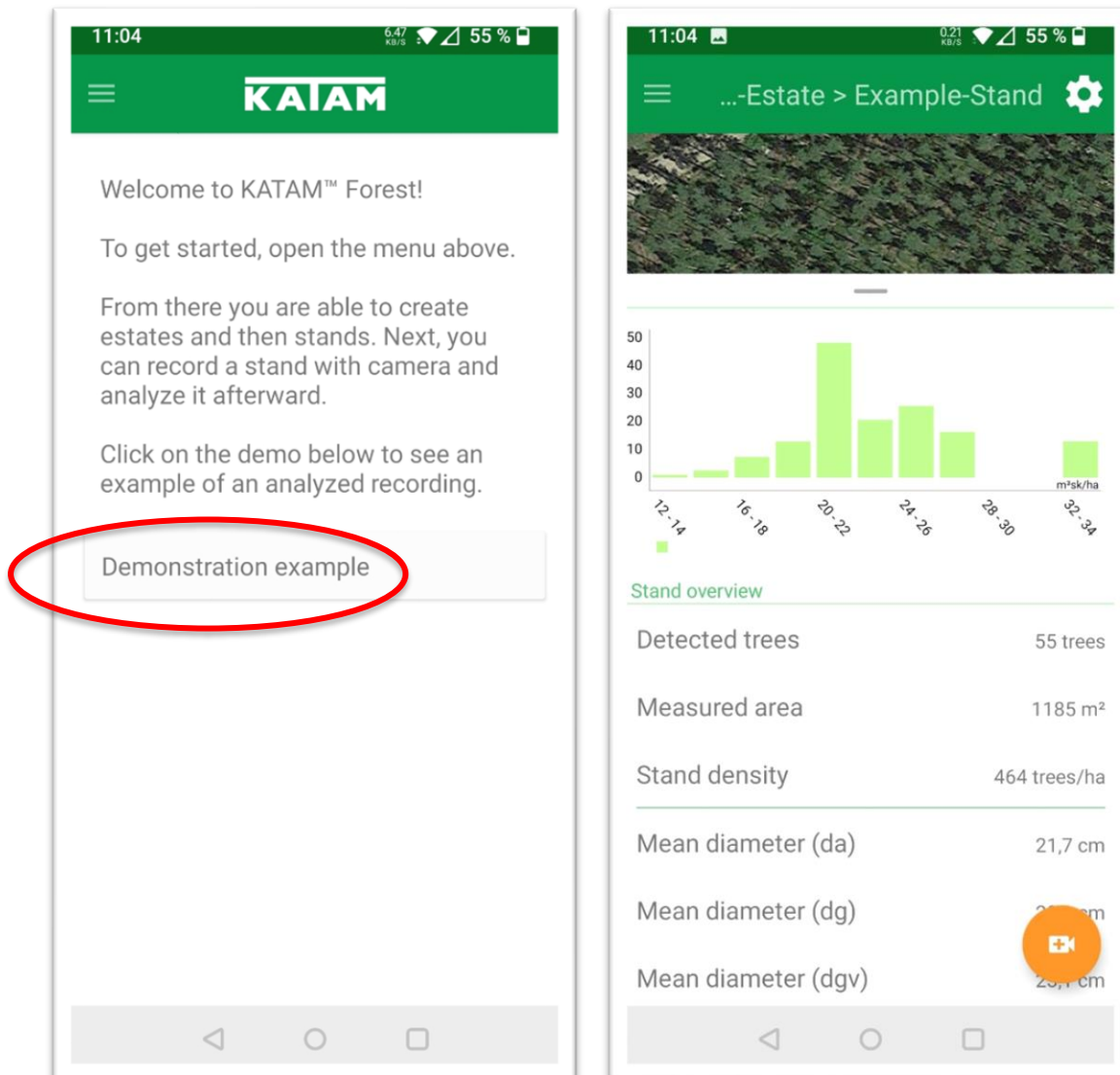
This guide contains practical advice for making forest measurements with KATAM Forest, which is available for Android devices and smartphones.

Prerequisites

- The KATAM Forest app. No special skills required for use.
- An Android mobile device. If you can find the KATAM app in Google Play, then your device is compatible. See katam.se for full compatibility details.
- The larger the image sensor in the device, the better the results.

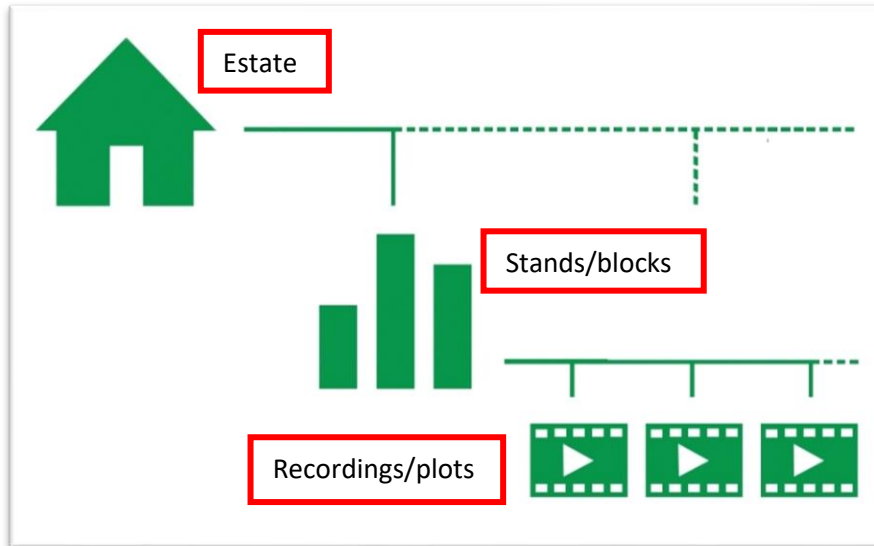
Getting started

Before starting to do your own measurements in the field, we recommend that you use the example data pre-loaded in the app to get familiar with the various functions.



Data organization

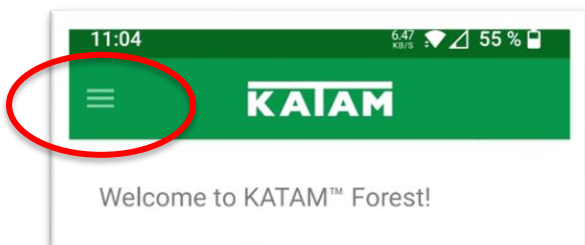
All forest measurements in KATAM™ Forest are organized into *estates* at the top level. Each estate can have 1 or more *stands* (a.k.a. *blocks*), that is, areas containing trees. Each stand/block can have several *recordings* (a.k.a. *sample plots*).



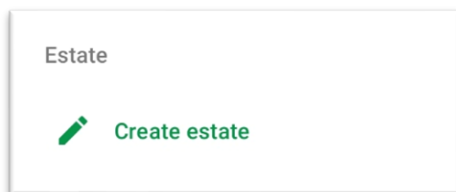
3. Creating estates and stands

To create a new estate:

- 1) Tap on the menu icon.



- 2) Tap on **Create estate**.



- 3) Give the estate a name and tap **OK**.

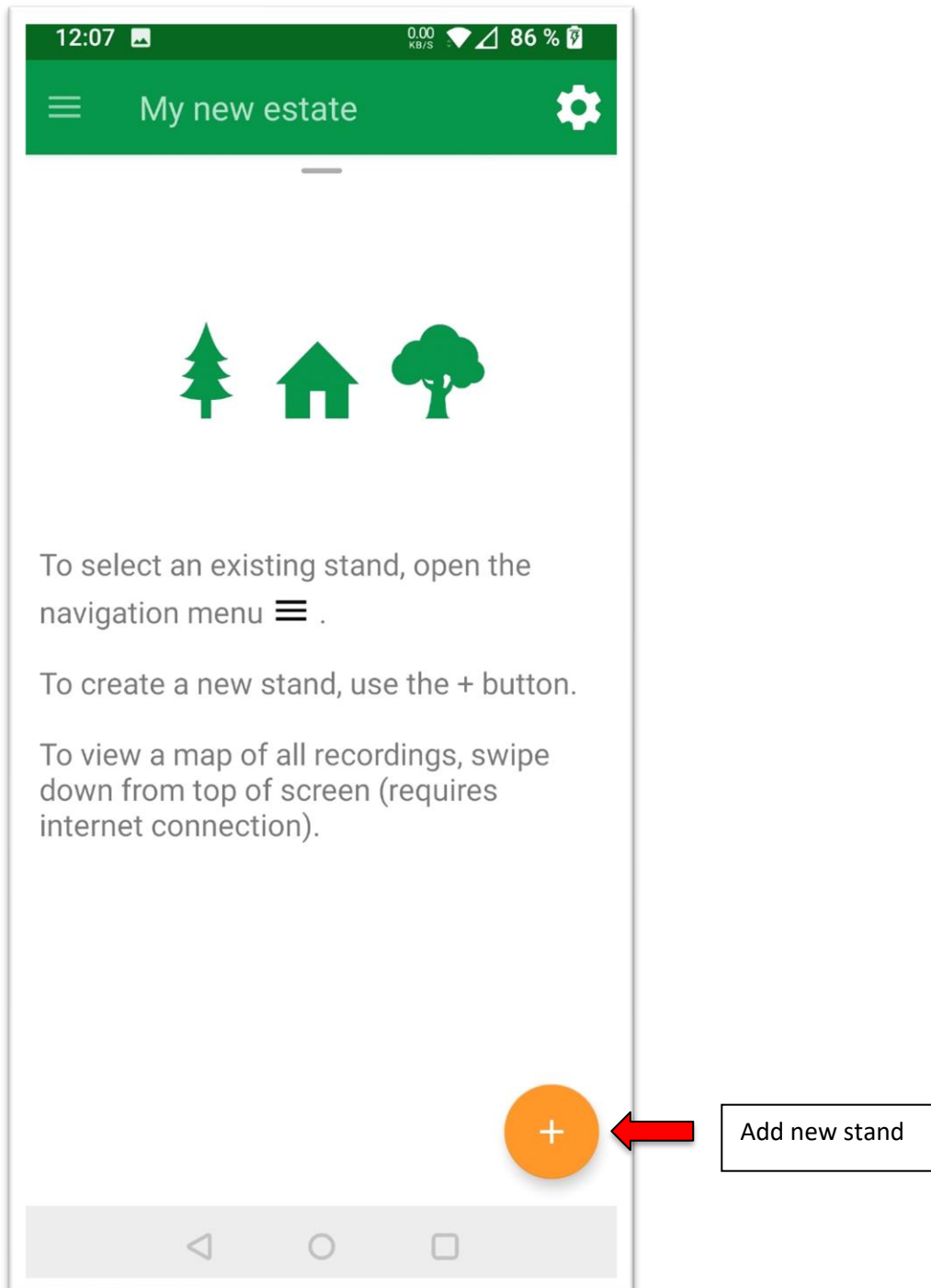
Create estate

This creates a new estate

Name: My new estate

CANCEL OK

Your estate is now saved and ready for further configuration.



- 4) To create a stand in the estate, click the + icon, as shown in the previous step.
- 5) Give the stand a name and click **OK**.

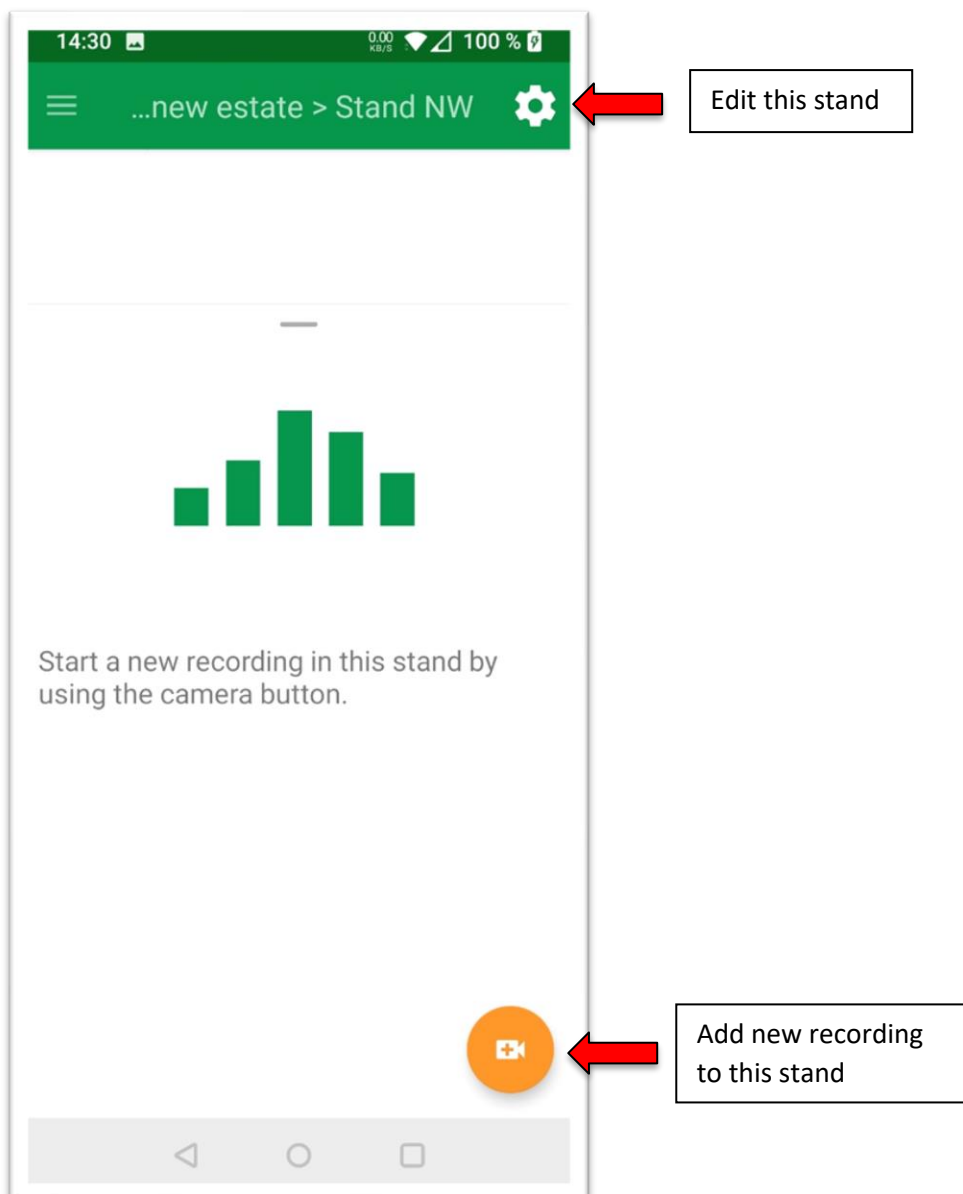
Create stand

This creates a new stand

Name:

CANCEL OK

The new stand appears in the estate.



4. Recording technique

Creating good-quality recordings can require a little practice. We recommend that you start out by making short recordings (approx. 20 seconds) until you see that your recordings are of the required quality for processing.

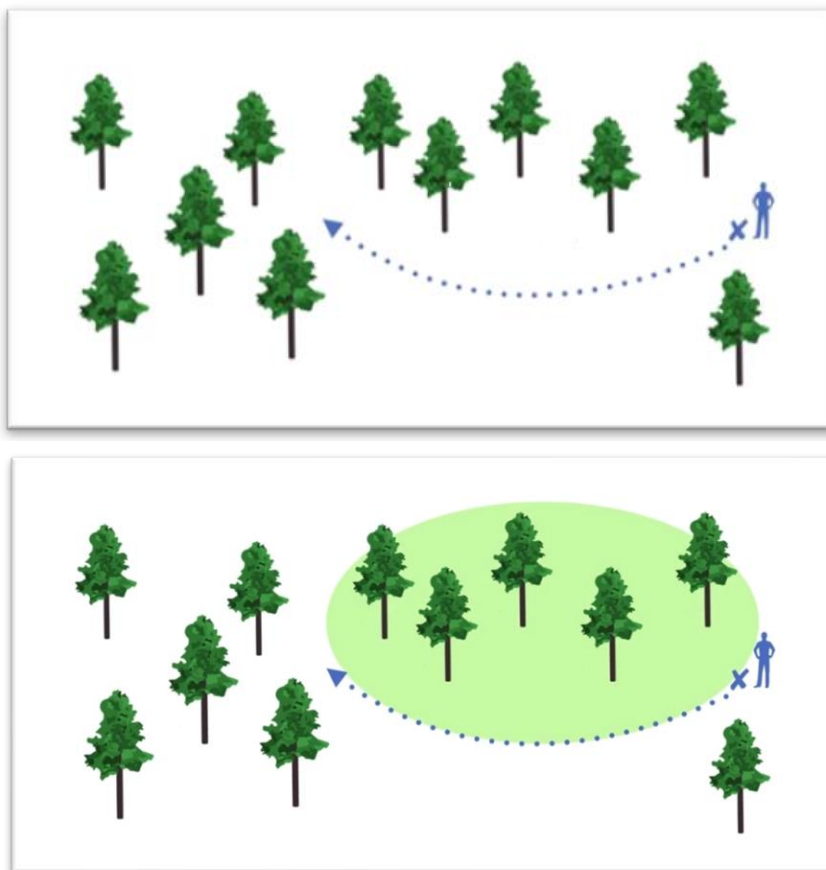
You need to move in the correct manner and direction, and the camera angle and distance to trees need to be within certain limits. See the instructions below.

Plan your route

When you walk between the trees you wish to measure you will be walking in one direction while aiming your smartphone 90° away from that direction, i.e., the camera should point to the trees. As this means your attention needs to be on two things at once, try to find a path that is not too uneven and without too much undergrowth.

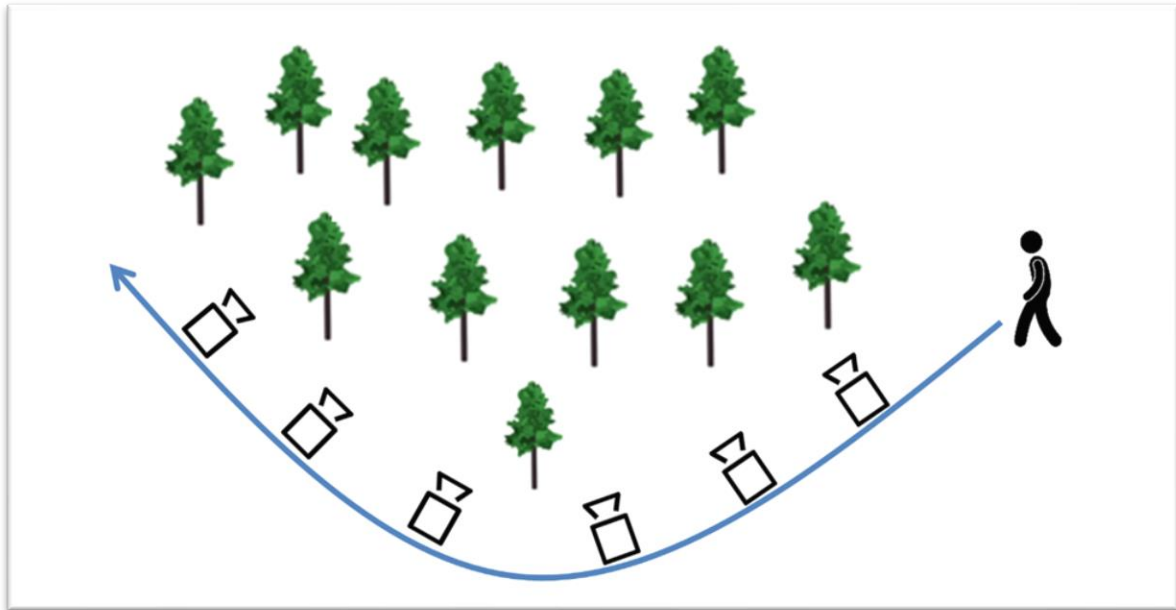
Assuming a constant speed, the length of the path is, of course, related to the duration of the recording. Start out by walking a path of approx. 20m.

If possible, try to make your path curved, so that the survey area is captured more completely.



Path direction and camera angle

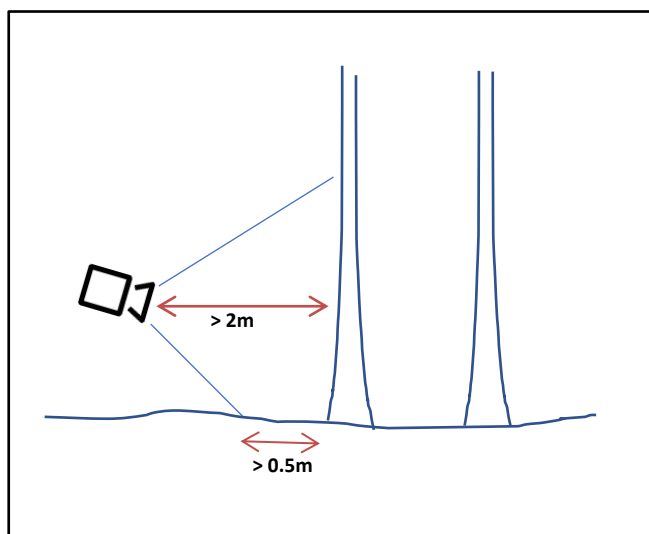
When walking the path, your phone/camera needs to be facing the trees, i.e., the camera angle should be roughly perpendicular (90°) to the direction in which you are walking.



Distance and tilt

For good results, the camera view needs to also include the ground. To achieve this, follow these recommendations:

- Try to stay at least 2 m (6.5 ft) from the closest trees.
- Hold the phone tilted slightly downwards, to record a little (0.5 m/ 1.5 ft) of the ground in front of the closest trees. When the angle is correct, the horizon will occupy the top 1/3 of the screen.

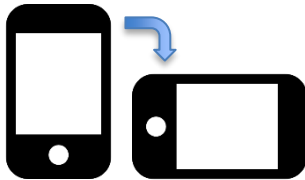


5. Create a new recording in a stand

- 1) Open the estate and stand where you wish to add the recording.
- 2) Click the camera icon to create a new recording.



- 3) Turn and hold your smartphone horizontally.



- 4) Check at the bottom of the screen that there is a good enough GPS signal.
- 5) Starting in an area with little or no undergrowth – tap the “Record” icon.



- 6) **WAIT 1-2 seconds** before you start walking – this gives the 3D modelling time to stabilize.
- 7) Walk your path, while keeping the phone as stable as possible.
- 8) Stop the recording and upload it for processing when prompted.

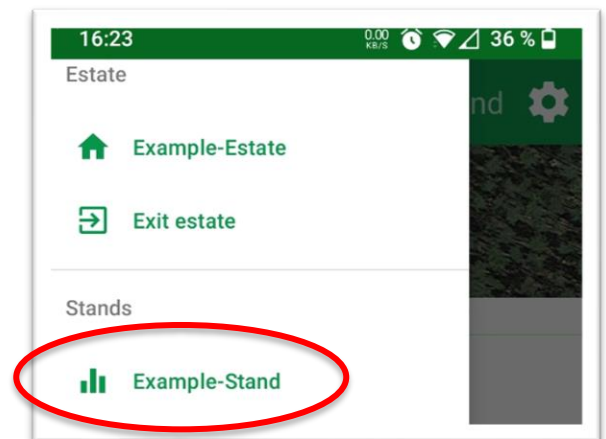
Good to remember when recording

- Avoid rapid and/or shaky movements.
- Try to avoid direct sunlight in the camera view.
- Try to maintain the correct tilt, i.e., try to keep the ground in view at all times.
- Recording bushes and branches is OK, but dense undergrowth will affect the results negatively.
- You can start the next recording even while the first one is being processed.
- Initially, you may find it easier to hold the phone with both hands.
- After a few test runs you can increase the recording length to approx. 90 seconds.

6. Viewing and adjusting the stand

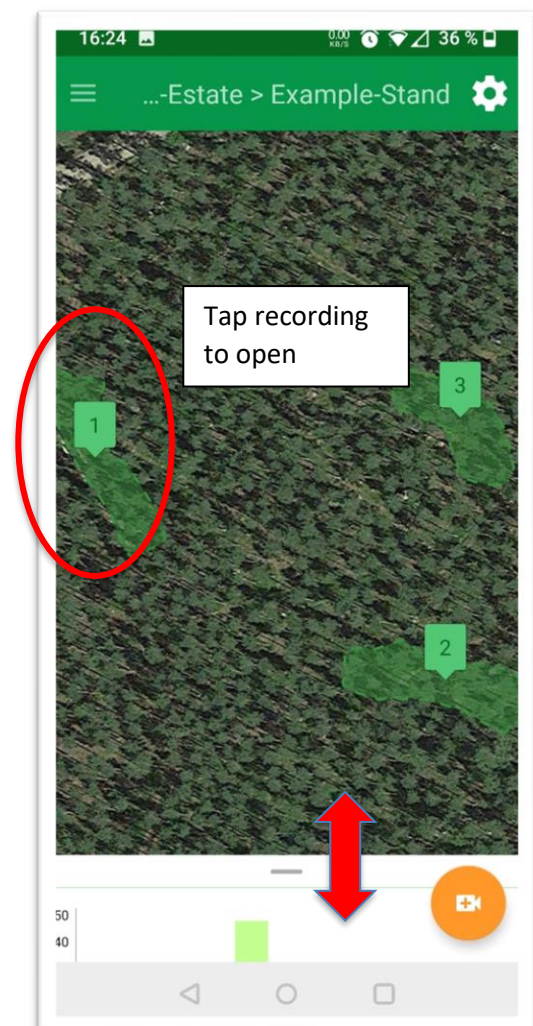
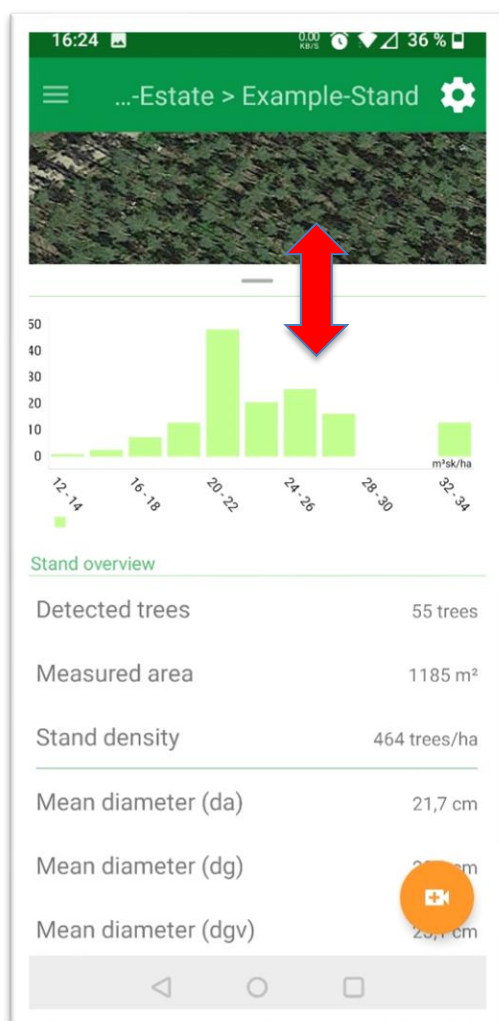
After finishing your recordings and after all material has been processed, your data is available directly on your phone. You can now make adjustments (if required), as well as generate reports about your stands.

- 1) Start by opening the estate and stand you wish to view.

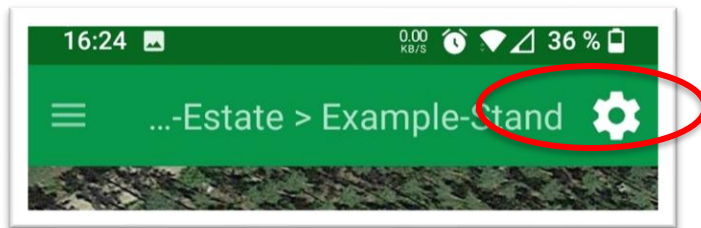


- 2) A summary of the stand is displayed. This includes data from all the recordings for this stand.

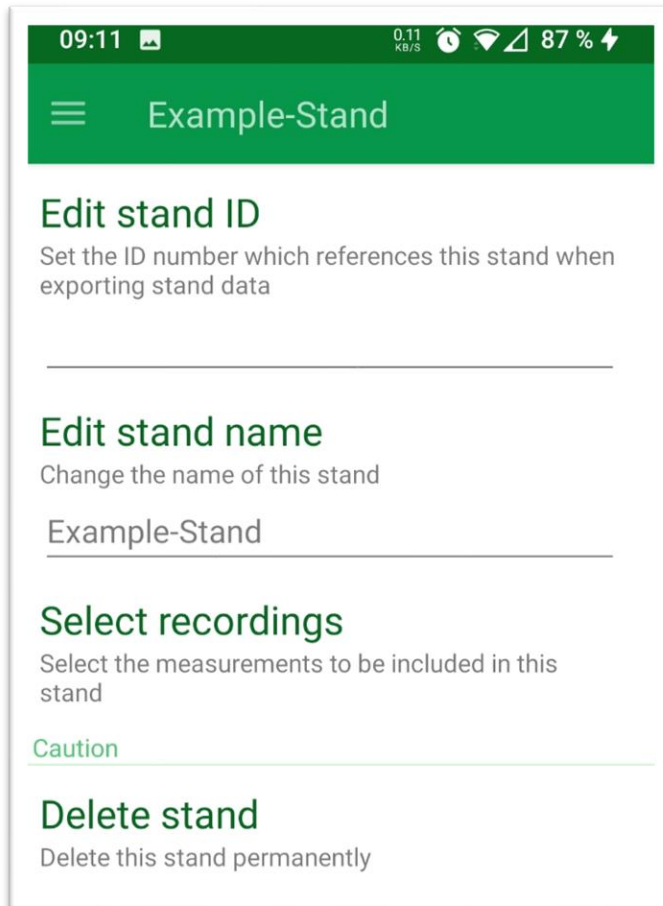
Note that you can quickly go to the individual recordings for the stand, by sliding the summary tab down to show the map and areas surveyed (recordings). The numbered recordings can be tapped to open.



3) If you wish to edit the stand, click the settings icon to make changes.



This opens the page showing the available settings for the stand.

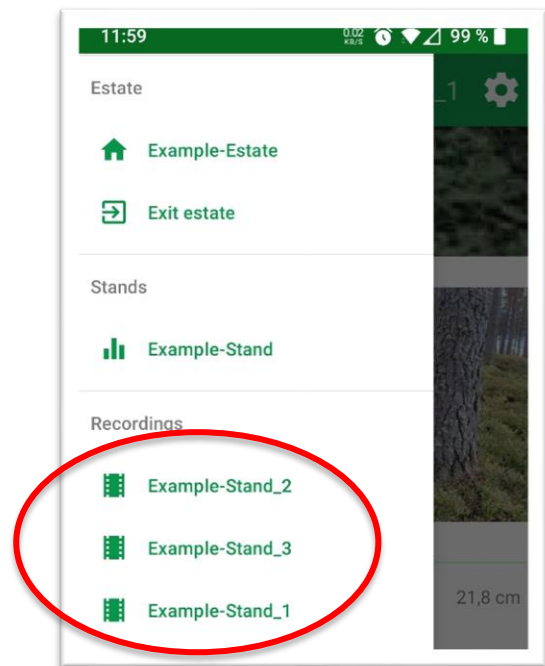


Note that if you delete the stand then all the recordings in that stand will also be deleted.

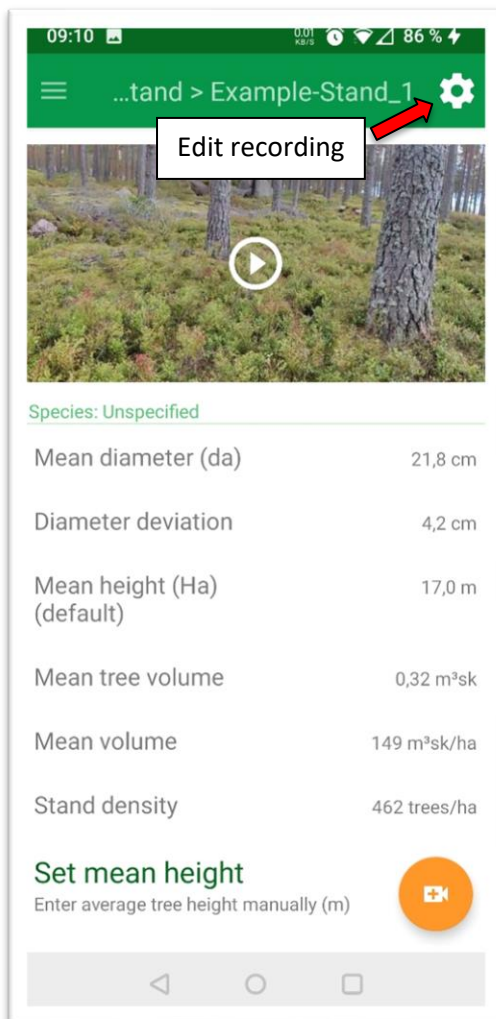
7. Working with recordings

You can open your recordings in two different ways:

- From the stand summary and map, as detailed in section 6.
- From the main navigation menu at the top of the screen (see right).



The recording summary



The tab for each recording shows the collected data for the survey area.

Scroll down the summary to do the following:

- Set mean height
- Get remote sensing height (where available)
- Set the majority species

Tap the **Edit** icon to:

- Edit the recording name
- Reprocess the recording
- Delete the recording

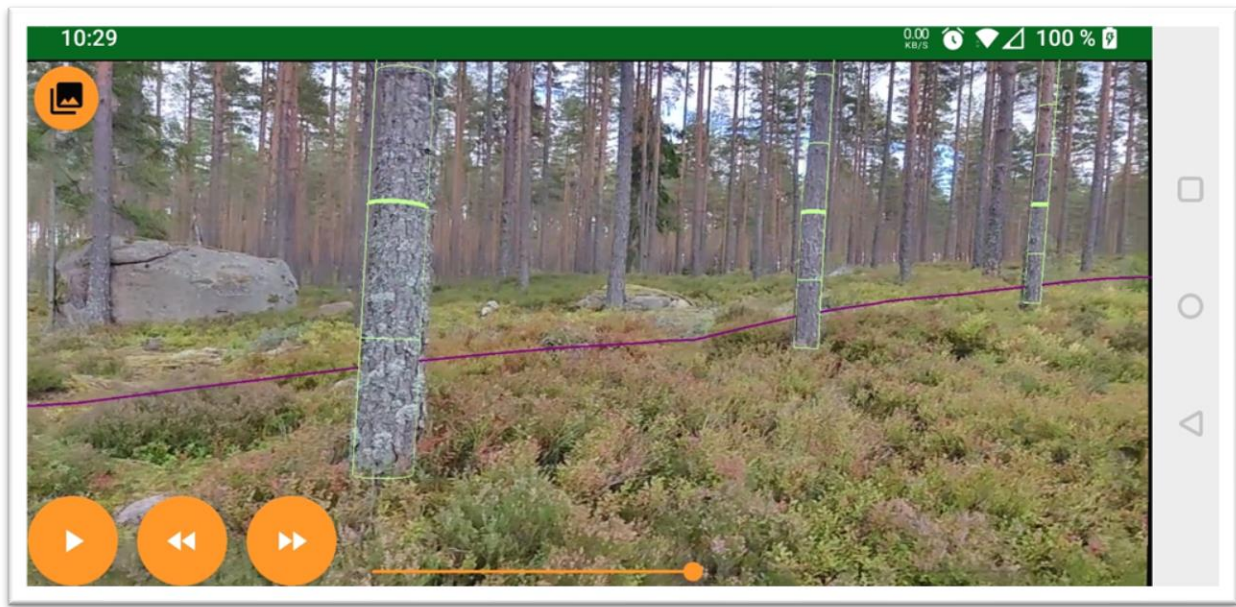
Above the summary there is a preview of the video, including a play button to start playback.

Review and modify recordings

When reviewing recordings, you may need to adjust the results. The following is possible:

- Delete individual trees from the results. Can be undone.
- Change the species for individual trees. Can be undone.

The video playback shows all the trees that were captured in the recording, by displaying green measurement lines on the trunks. The boundary is also shown, as a purple line.

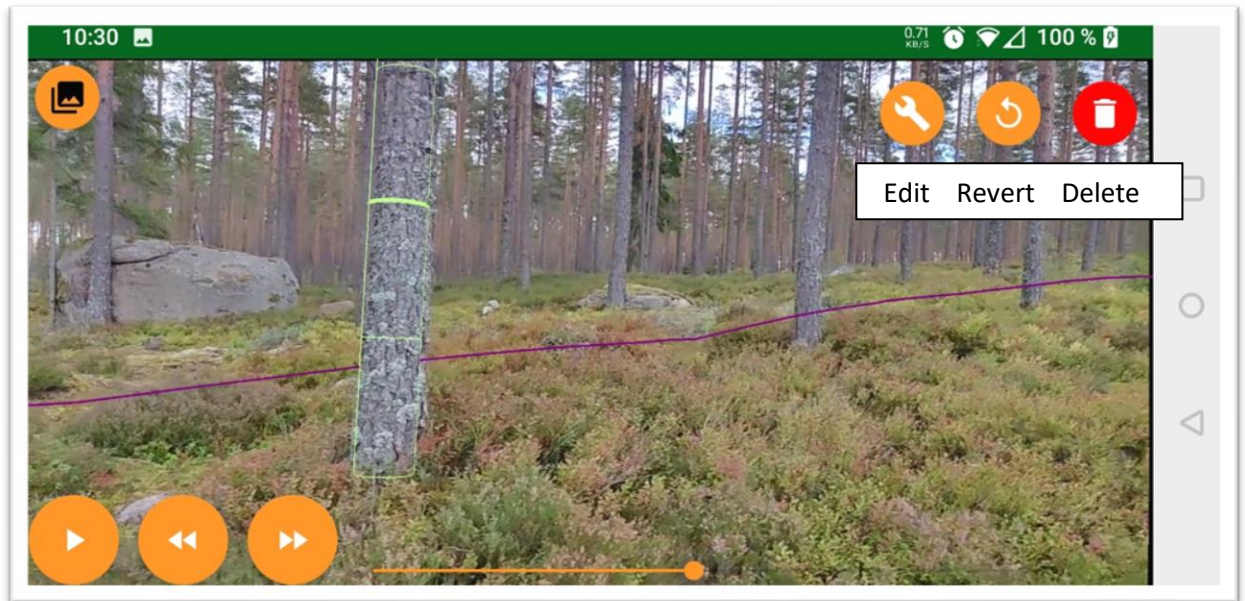


Modify the recording

- 1) Pause the video playback at the tree you wish to modify.



- 2) Tap on the tree to modify. This will temporarily deselect all other trees and will also show three editing icons: **Edit**, **Revert** and **Delete**.

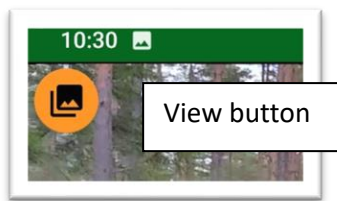


- 3) Tap the **Edit** icon to change the tree species for this tree. Select the species and tap **OK**. This change will override the setting for the stand. Note that the tree's measurement lines will change to orange, to indicate a change.

You can cancel the change by tapping the **Revert** icon.

- 4) To remove the tree from the measurement, tap the **Delete** icon. The tree can be un-deleted by tapping the icon a second time.

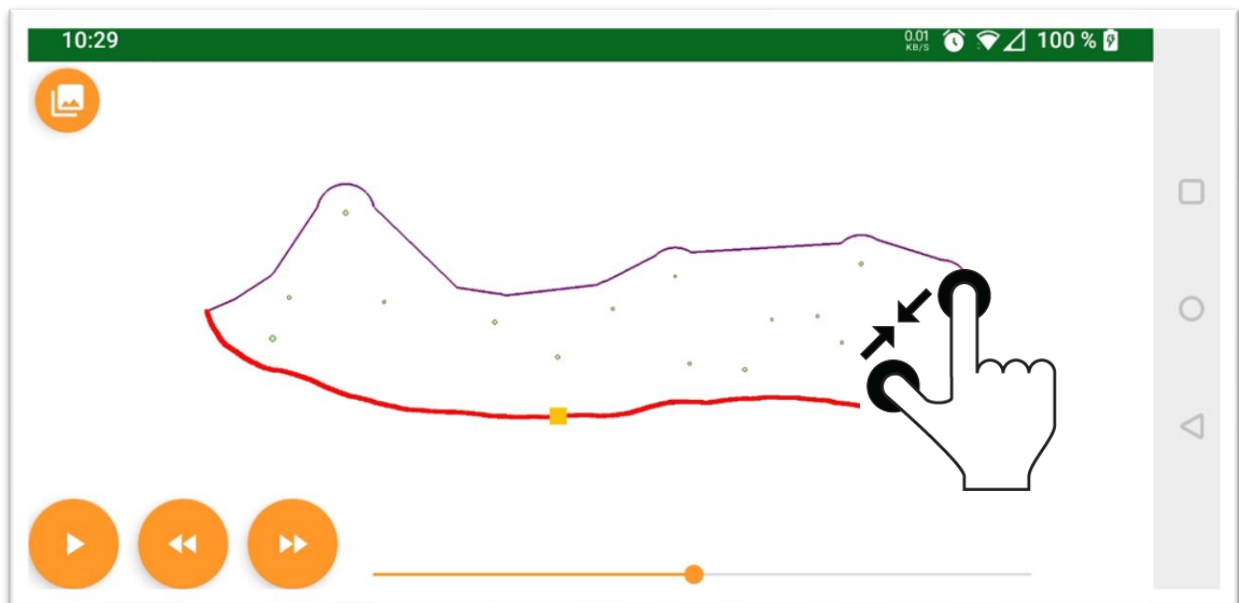
Outline view



To view an outline of the surveyed area, i.e., without video, tap the **View** button, as shown above.

The view now shows the path you walked (red line) and the boundary (purple line) of the area.

Pinch the screen to zoom in/out in this view.



Note that the individual trees in this view are represented by dots. These dots are clickable, meaning that you can make the same changes to individual trees as previously detailed for the standard video view.

8. Reports

Reports are provided at the stand level. Two types are currently available:

- Basic stand report
- Thinning follow-up report

Open the stand summary and scroll down to the report functions. Select the report type and save as a PDF. Note that you need to enter the stand size (in hectares) to proceed.

Note also that you can download these reports to your phone, to view them or to send as email attachments.

