



# Box Tree Moth Trapping & Visual Data Collection User Manual



*Credit: Alison Morris, Bugwood.org*

Program: Box Tree Moth

Application: ArcGIS Field Maps

Host: USDA-MRP GIS Enterprise (Portal)

URL: <https://maps.mrp.usda.gov/arcgis/>

Map Title: PPQ BTM [ST] Trapping and Visual 2024 Field Map

**\*\* Refer to the [“Mobile Data Collection Tools”](#) public webpage for all training support.**

**2024 Disclaimer:** Training techniques or workflows held within are designed as basic job aids. Mobile collection tools and technology used are constantly being improved upon. End users should consult with management for current workflows and standards.

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*End User Tools Request links:* [Support Request \(End User Tools\)](#) [Mobile Device Request](#) [Training Request](#)

## Overview

**\*\*There are no data collection changes for the 2024 application from the previous year.\*\***

This document provides guidelines for conducting electronic data collection for the Box Tree Moth (BTM) program using the [ArcGIS Field Maps](#) application on mobile devices. The application was developed to reflect program specifics and is intended to replace paper surveys.

Each map is intended to be used by PPQ staff or state cooperators to collect and view trapping and visual program data **only within their state**. Reference layers may vary, depending on the state collecting data.

# ArcGIS Enterprise (USDA-MRP GIS Portal)

## Sign In

*Requires Wi-Fi connection and eAuthentication Level 2 User ID and Password.*

You will need to sign into ArcGIS Enterprise (USDA-MRP GIS Portal) to locate maps shared with your USDA-MRP GIS Portal user account. Once signed in, ArcGIS Field Maps will retain your sign in for offline data collection.

The MobileLinc authentication option uses an identity established within the Entrust application to confirm authentication for use of the ArcGIS mobile applications.

Some in PPQ Field Operations are exempt from this option and can enter their eAuthentication user ID and password manually using the Log in with Password option. If your device is managed by Intune, [contact CEC IT](#) for support in creating that Entrust identity to enable sign in with MobileLinc.

Locate the ArcGIS Field Maps application icon and tap to open it. (Figure 1)



Figure 1. ArcGIS Field Maps application icon

Field Maps presents with sign-in options for “Sign in with ArcGIS Online” or “Sign in with ArcGIS Enterprise”. (Red box in Figure 2)

Tap “Sign in with ArcGIS Enterprise”.



Figure 2. ArcGIS Field Maps Sign in screen

On first opening the application, you will have to add the ArcGIS Enterprise URL. Once established, your device saves this as a sign in option. The red box in Figure 3 indicates a saved URL and the yellow box in Figure 3 highlights the option to “Specify a New URL”.

## Official Data Collection

USDA-MRP GIS Production Portal URL: <https://maps.mrp.usda.gov/arcgis>

## Training Maps and Practice

**\*BE SURE TO ENTER REAL DATA IN PRODUCTION MAPS ONLY!!!\*** Sign out when training exercises are completed to avoid accidental data entry when performing “real” survey activities.

USDA-MRP GIS Stage portal: <https://maps-stg.mrp.usda.gov/arcgis>

## Specify a New URL

If choosing to “Specify a New URL”, this is entered manually using the keyboard. Check it carefully and then tap “Ok”. (Figure 4)

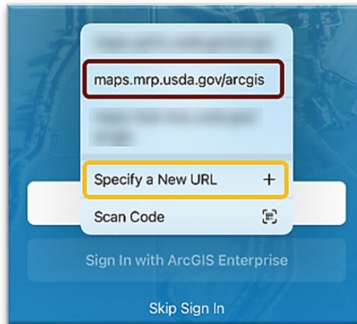


Figure 3. Sign in with ArcGIS Enterprise options



Figure 4. Specify a New URL

Next you may be asked to confirm “usda.gov” to Sign In. Tap “Continue”. (Figure 5)



Figure 5. Confirm usda.gov sign in

Again, choose the Enterprise login by tapping on the blue “eAuth Account” button. (Figure 6)

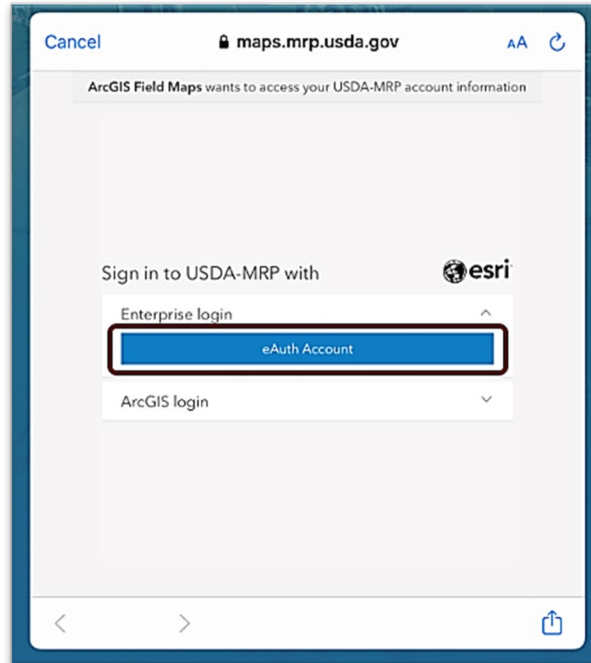


Figure 6. Sign in to USDA-MRP with eAuth Account

Select MobileLinc. (Figure 7)

Enter your User ID (eAuthentication user name) using the keyboard. Tap Log In with MobileLinc. (Figure 8)

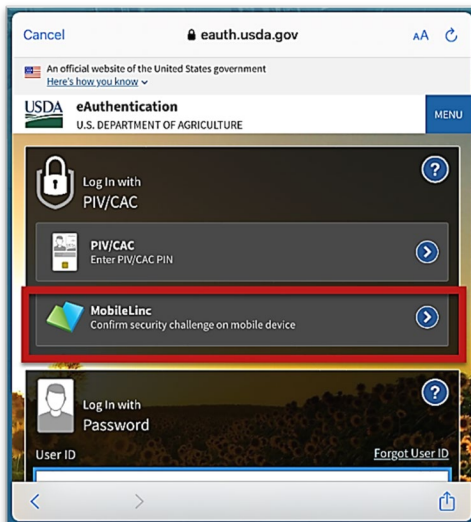


Figure 7. eAuthentication options

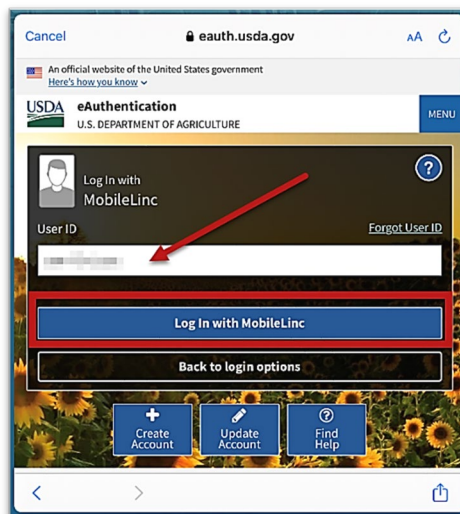


Figure 8. MobileLinc User ID & Log In

## Entrust Application Security Challenge

A “New Security Challenge” message should drop down along the top of the screen. Tap this message to open Entrust. (Figure 9)

If you lose track of the message, tap Home button, locate and open the Entrust application. You may need to tap to open the Challenges menu along the bottom of the Entrust application screen.

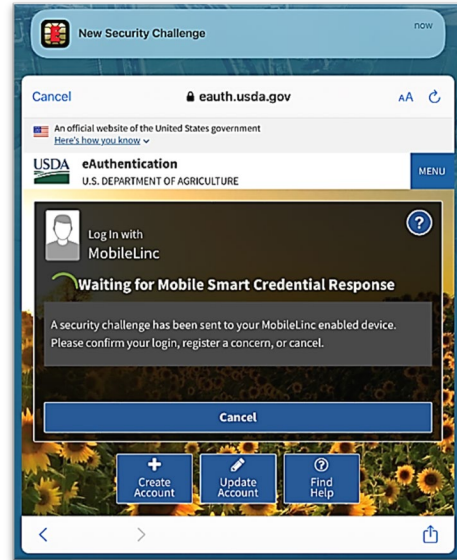


Figure 9. *New Security Challenge*

Enter your PIN. (Figure 10)

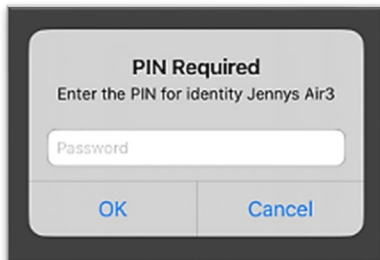


Figure 10. *Entrust PIN*

Tap Confirm (Figure 11) and Yes to allow this action (Figure 12).

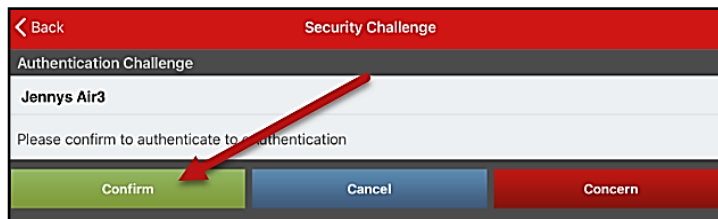


Figure 11. *Confirm Authentication*

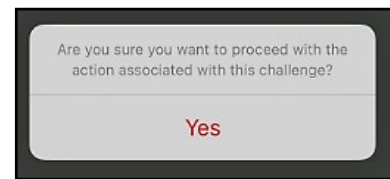


Figure 12. *“Yes” to proceed*

Return to ArcGIS Field Maps. If shown, tap Accept at the U.S. Government information warning message. (Figure 13)

Locate your map or survey and begin field data collection!

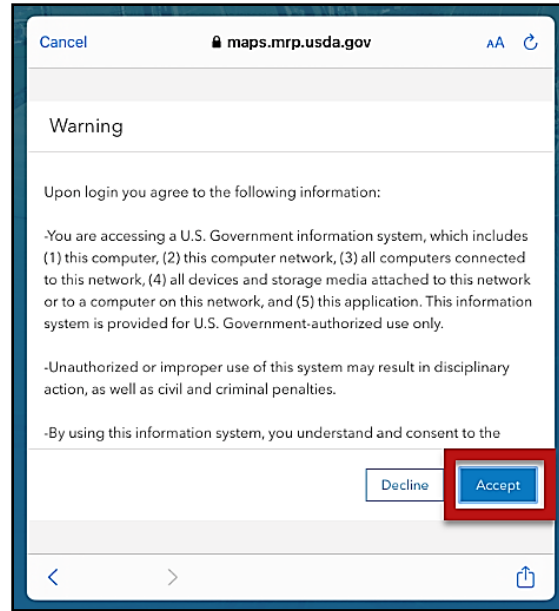



Figure 13. US Government warning

## Sign Out

To sign out of any environment, tap the profile icon  on the Maps page in the upper left, scroll down, and tap “Sign Out”. (Figure 14)

Tap “Sign Out” again to confirm the action. (Figure 15)

Then choose “Sign In with ArcGIS Enterprise” to enter the correct URL. For reminders on signing in, see [Sign In](#) section.

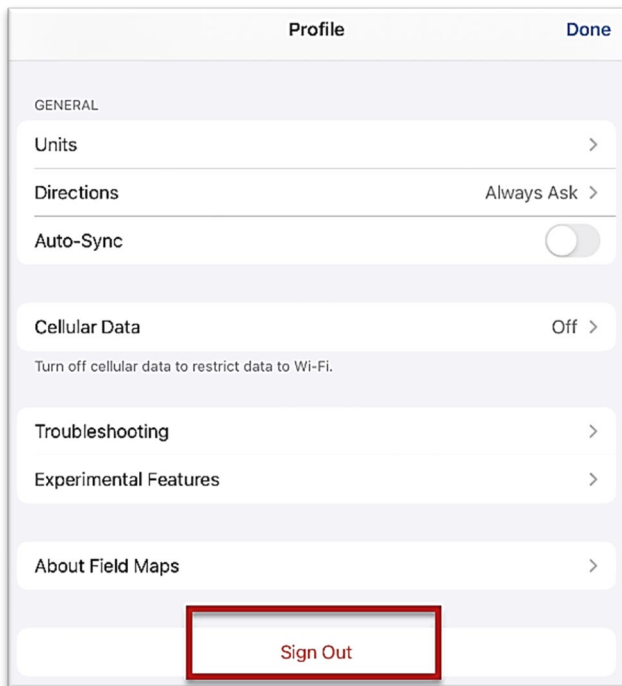


Figure 14. Profile Menu

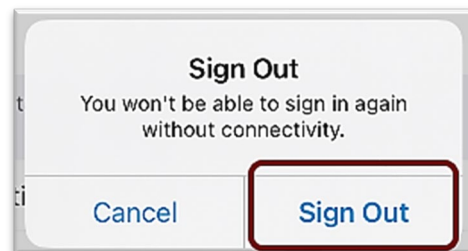


Figure 15. Sign out confirmation



## Disconnected Data Collection

The ArcGIS Field Maps application is specifically designed to operate in disconnected mode. An area of interest is downloaded to your device while connected to a Wi-Fi network. Then the device is disconnected from the internet and field data collection is performed. Once a reliable network connection is regained, the data is synchronized with the online map hosted in the USDA-MRP GIS Enterprise (Portal).

It is common for a pest program surveyor to download a map area for a season/year and continuously use it. This means daily sync of data collected in the morning (before start) to pull new data into the map view and in the evening (end of daily data collection) to push out data collected for the day on that device.

The diagram below (Figure 16) represents the workflow of the disconnected mode concept.

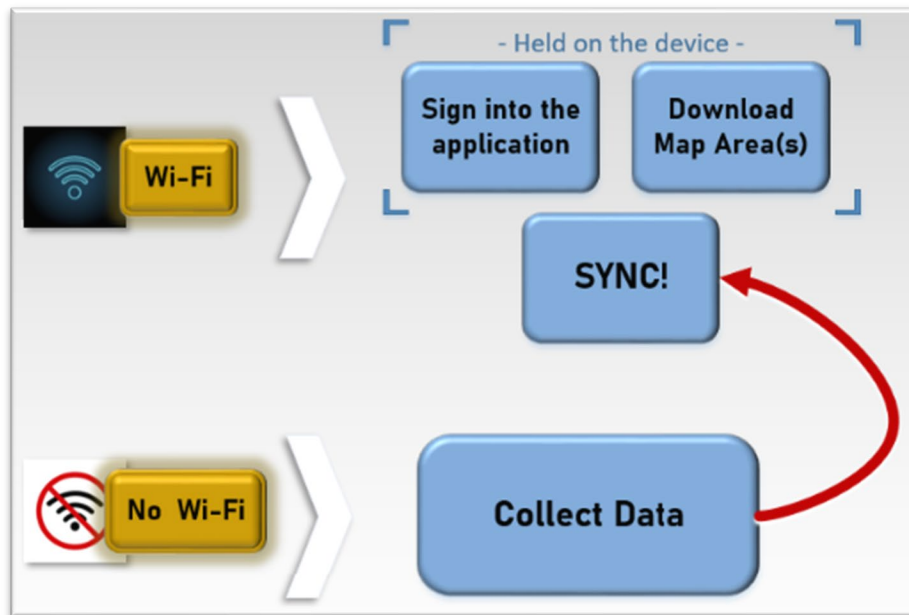


Figure 16. *Wi-Fi preparation and disconnected data collection*

Never assume you are prepared for offline data collection. ALWAYS perform a few tests in the parking lot before you go. For a sample set of steps, see the next section on [Before You Go](#).

## Before You Go

Be sure all is ready for field data collection in disconnected mode **before** you leave. This includes downloading and testing a map area and performing a [data sync](#).

## Download Map Area(s)

This step may be carried out or overseen by your supervisor or local GIS Specialist. If performing yourself, make sure of the appropriate Level of Detail and Area of Interest.

A strong Wi-Fi connection is key to success. For detailed steps, refer to the [ArcGIS Field Maps Getting Started Guide](#).

## Parking Lot Tests

From the Settings application on your device:

1. Turn Wi-Fi OFF (on a phone: also turn off Cellular Data)
2. Turn Location Services ON
3. Open the ArcGIS Field Maps app
4. Locate and open the offline map area:
  - a. Zoom in/out
  - b. Tap the add data button to be sure the data form appears to the left with GPS reading in blue (not red)
  - c. Tap "Cancel"
  - d. Then "Discard" that point

You have confirmed offline use. Now you are ready to head out to the field!

**If you do not see your map or it does not open as expected or you are not signed in...  
Go back inside, connect back to Wi-Fi, and try again.**

## Collect Data

**Reminder!** [Synchronize your map](#) at the beginning and the end of each workday.

ArcGIS Field Maps automatically opens in the last map view used. If the [Before You Go](#) steps were performed, opening ArcGIS Field Maps should also open the previously downloaded map area. Tap the back arrow at the top left of the screen to locate the appropriate downloaded map area for data collection, if needed.


**\*\*Always follow program survey protocol to determine suitable locations for performing surveys.**

## Map Notes Points


**Not program required.**

Use the “Map Notes Points” layer to record hazards and other information.

Be aware that [this is a \*shared layer\*](#) and other surveyors will have access to your notes.

1. Tap the layers icon  and tap the toggle switch to the right of the desired layer name to make additional layers visible for data entry. A blue toggle switch indicates the layer is visible. (Figure 17)

2. Stand near the location for the map note.

3. Tap the blue icon with the white plus sign  located in the lower-right corner of the screen to add a new map note.

4. Scroll down, if needed, and choose the Map Notes Type from the list on the left. (Figure 18)

5. Fill out the data form.

\* Asterisks indicate mandatory fields.  
Verify the Note Date is Today.

6. Review your entered data carefully prior to submitting the form.

7. Tap the [Submit](#) button on the upper-right corner of the form to save the new map note.

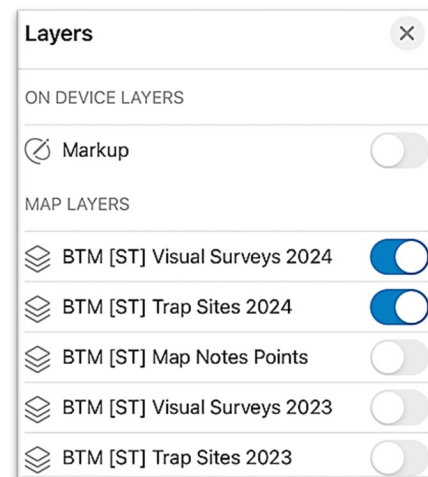


Figure 17. *Map layers*

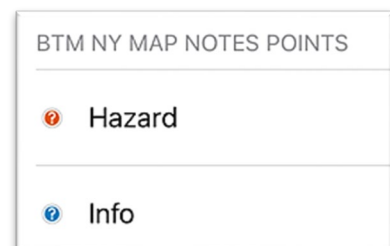


Figure 18. *Map Notes Points: choose an option*

**NOTE:** If the [Submit](#) button fails, you have not completed all required fields or GPS accuracy requirements were not met.

## Trapping

### Place a Trap



**Reminder!! Synchronize your map at the beginning and the end of each workday.**

When? The first data entry in the *BTM Trap Sites 2024* layer establishes a location for the trap site.

All future visits to this site are considered [trap activities](#) and are recorded in the Trap Activities table associated with that location.

**\*\*Always follow program survey protocol to determine suitable locations for performing surveys.**

Reference layer names may vary, depending on the state collecting data.

1. Tap the layers icon  and tap the toggle switch to the right of the desired layer name to make additional layers visible for data entry. A blue toggle switch indicates the layer is visible. (Figure 19)
2. Stand near the survey location.
3. Tap the blue icon with the white plus sign  located in the lower-right corner of the screen and tap “New BTM Trap Site 2024” from the option on the left. (Figure 20)
4. Fill out the main data form.  
\* Asterisks indicate mandatory fields.

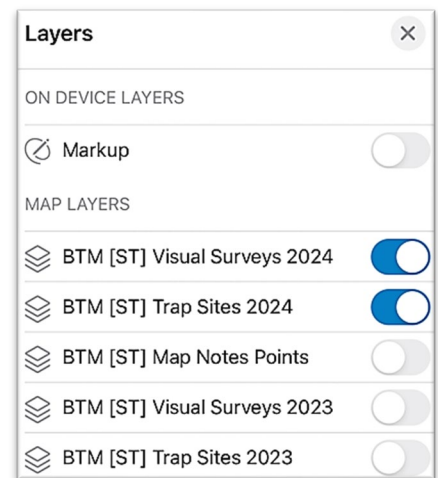


Figure 19. Map layers

Optional fields should be completed following survey protocol.

Drop-down lists are auto-complete enabled. Start typing to narrow options quickly.

Verify the *Install Date* entry is correct.

5. Review your entered data carefully prior to submitting the form.
6. Tap the **Submit** button on the upper-right corner of the form to save the new trap site record.

**NOTE:** If the **Submit** button fails, you have not completed all required fields or GPS accuracy requirements were not met.

## Trap Activities

Once a trap is placed, an action performed on any future visit is considered a Trap Activity. When a trap is removed, missing, or relocated, you must record the appropriate trap activity.



1. Locate the appropriate trap site and tap its symbol on the map. When selected, the point's symbol is highlighted in cyan, and the *Trap Sites 2024* data form opens on the left side of the screen. Use the Search function to retrieve trap sites by either Trap Site name or a Trap ID.

Select carefully (by zooming in) and verify the point selected is correct by reviewing the *Trap ID* or other unique field.

2. Scroll down the BTM *Trap Sites 2024* data form and tap "BTM Trap Activities 2024" or tap the link icon. (Figure 21)



Figure 21. Activities link

3. Tap the blue Add button to add a new activity. (Figure 22)

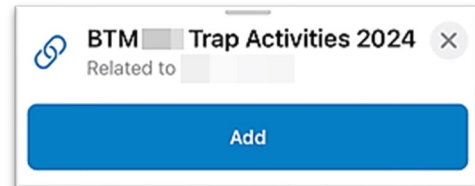


Figure 22. Add a new trap activity

4. Fill out the activity data form.  
\* Asterisks indicate mandatory fields.  
Optional fields should be completed following survey protocol.  
Verify the *Activity Date* field is **Today**.

5. Verify all is correct and tap **Submit** in the upper right corner of the screen to complete the activity entry.

**NOTE:** Choosing "Remove" as the activity type does not remove the symbol on the map but records a final activity of remove on the historic data record for that site.

## Trap Schedule Status

Defaulted to begin as "Current", the Schedule Status is updated nightly to indicate trap sites that are:

- "Current" - trap servicing is up-to-date
- "Due" - trap needs servicing
- "Inactive" - trap is no longer present at site

(See legend in Figure 23)

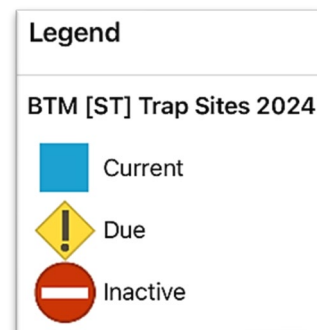
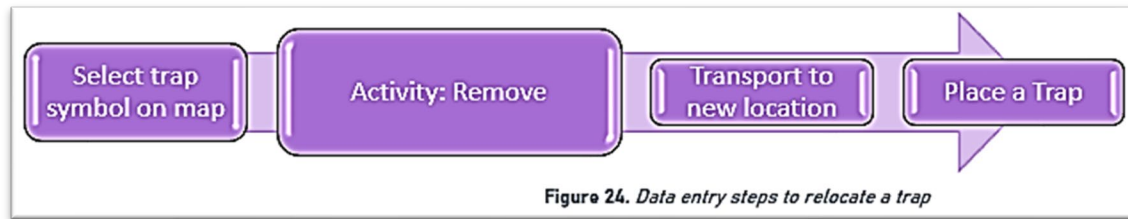


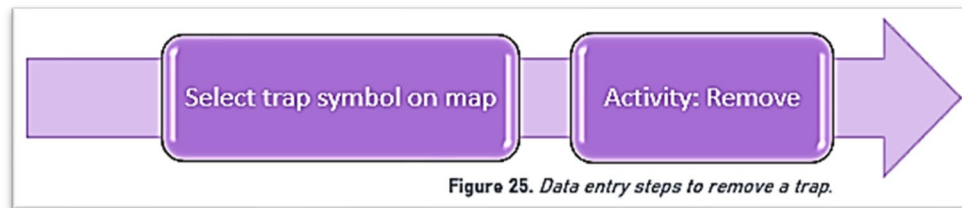
Figure 23. BTM Trap Sites 2024 legend

## Relocate a Trap



1. Tap the trap symbol on the map to select it. The data form opens on the left.
2. Enter a [Trap Activity](#) of "Remove".
3. Transport the trap to its new location.
4. Complete [Place a Trap](#) steps.

## Remove a Trap





1. Tap the trap symbol on the map to select it. The data form opens on the left.
2. Enter a [Trap Activity](#) of "Remove".

**NOTE:** Choosing "Remove Trap", "Remove Trap (Missing)", or "Remove Trap (Inaccessible)" as the activity type does not remove the symbol on the map but records a final activity of remove on the historic data record for that site.

## Visual

**Reminder!! Synchronize your map at the beginning and the end of each workday.**

The “BTM Visual Surveys 2024” layer is visible by default. If needed, toggle this layer to ON in the layers menu as described in Step 1 below.

1. Tap the layers icon  and tap the toggle switch to the right of the desired layer name to make additional layers visible for data entry. A blue toggle switch indicates the layer is visible. (Figure 26)
2. Stand near the survey location.
3. Tap the blue icon with the white plus sign  located in the lower-right corner of the screen to add a new visual survey.
4. If collecting data for visual surveys, tap the pest status (BTM Positive or BTM Negative). (Figure 27)

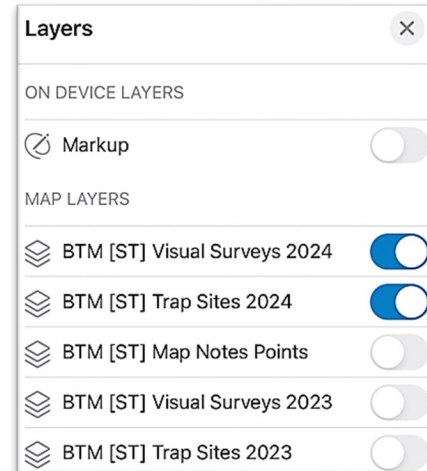


Figure 26. Map Layers

The point on the map has a **blue** circle around it if your location meets GPS accuracy requirements and red if not.

5. Fill out the main data form. \* Asterisks indicate mandatory fields. Optional fields should be completed following survey protocol.
6. Review your entered data carefully prior to submitting the form.
7. Tap the **Submit** button on the upper-right corner of the form to save the new survey record.

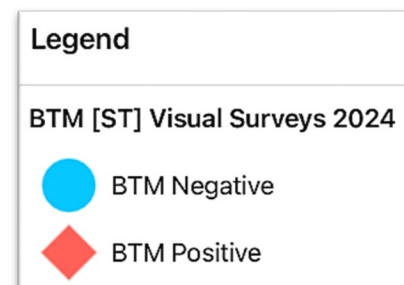


Figure 27. BTM Visual Surveys 2024

### Note:

If the **Submit** button fails, you have not completed all required fields or GPS accuracy requirements were not met.

## Daily Data Sync

**\*\*Sync your data first thing in the morning AND last thing at night – DAILY!**

This both pushes your data collection out and brings in other edits to your map.

If you are unable to sync your device, ask for help right away. Your data may be at risk if you delay synchronizing your device.

Be sure you are connected to a strong Wi-Fi network.

Be sure **Auto-Sync is OFF**. Tap the sync button  and then toggle to disable Auto-Sync. (Figure 28)

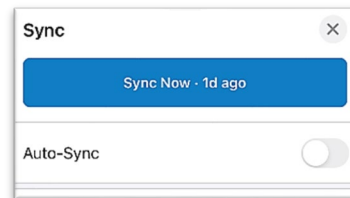


Figure 28. Auto-Sync toggled to OFF

You may choose the sync icon from within a map area. Tap the sync icon at the top right of the map. (Figure 29)

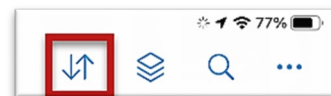


Figure 29. Icon menu within the map

OR

You may also choose to sync by choosing the ellipsis menu found on each Offline Area. You will have the option to Sync, Rename, or Remove Area. (Figure 30)

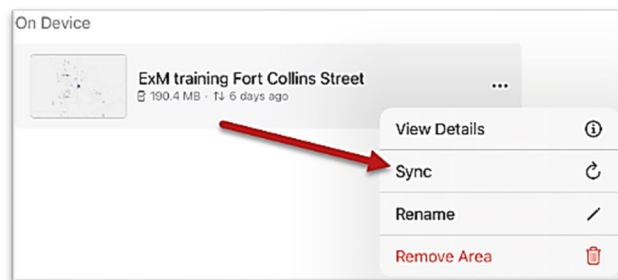


Figure 30. Offline Area menu



## Getting Help

### APHIS PPQ

Before requesting technical support, be prepared with detailed information, including the name of the map, and error messaging experienced. Be as specific as possible. Include screenshots, any troubleshooting you have performed, and indicate the type of device (iPad, laptop, phone, etc.).

For APHIS PPQ users, if you are having issues with the iPad, laptop, Wi-Fi settings, or issues dealing with installing software, open a ticket with CEC IT. CECHelpDesk@usda.gov or 877-873-0783

If you need technical support or help using the ArcGIS Field Maps application, follow this order:

1. Your field supervisor
2. Local GIS Specialist that supports your area
3. Email [WebGIS.Connect@usda.gov](mailto:WebGIS.Connect@usda.gov)

### Cooperators & Other Nonfederal Users

Contact your State Plant Health Director's office for assistance.

### All Training Resources

As new applications and programs are supported, newly created training documents and self-paced training videos are shared on the APHIS public facing website:

[Mobile Data Collection Tools](#)

Bookmark this site. Visit often. Provide feedback and ideas freely to the End User Tools Group.