



Flighted Spongy Moth Complex Data Collection User Manual



USDA APHIS PPQ, Bugwood.org

Program: Flighted Spongy Moth Complex (FSMC)

Application: ArcGIS Field Maps

Host: USDA-MRP GIS Enterprise (portal)

Map Title: PPQ FSMC Trapping 2024 Field Map

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

**** 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 and What's New 2024

This document provides guidelines for conducting electronic data collection for the Flighted Spongy Moth Complex (FSMC) 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.

State cooperators may use this application.

The look and feel of the map for FSMC remains very similar to that of last year (2023) except for the changes described below:

- Trap Sites

There is a new required field for *Survey Classification*, which is a meaningful description of the trap's location (FSMC Port and Waterway, FSMC Port Environs, or FSMC Inland). Defaulted to "FSMC Port and Waterway", users tap on the field to choose another option.

There is a calculated field for *Cumulative Specimen Count*, which is a sum of all suspects collected in the Activities table. This number will not appear immediately after recording an activity. It will be updated by a script on a nightly basis.

- Trap Activities

There is an optional field for *Survey Type* (Precision Delimiting or Post-Treatment). Since survey type may change over time, this attribute is related to the activity on a particular date, rather than being attached to the trap site.

There is a new required field for recording *Number of Suspects Collected*. In cases where it is difficult to get an exact count, the surveyor should provide a reasonable estimate.

If the Number of Suspects Collected is >0, then the *Sample Name* field appears to record the name (or ID) inscribed on the sample container.

- A new reference layer, "FSMC Cumulative Specimen Count 2024", is available to display the cumulative specimen count for Trap Sites. This will assist the surveyors in identifying hot spots of capture activity.

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”.

Tap “Sign in with ArcGIS Enterprise”. (Red box in Figure 2)



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)

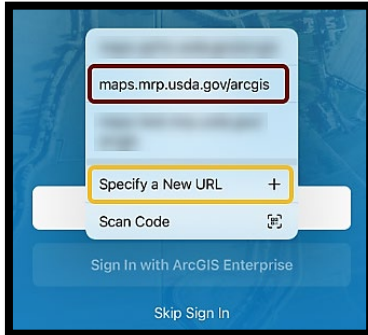


Figure 3. Sign in with ArcGIS Enterprise options



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)

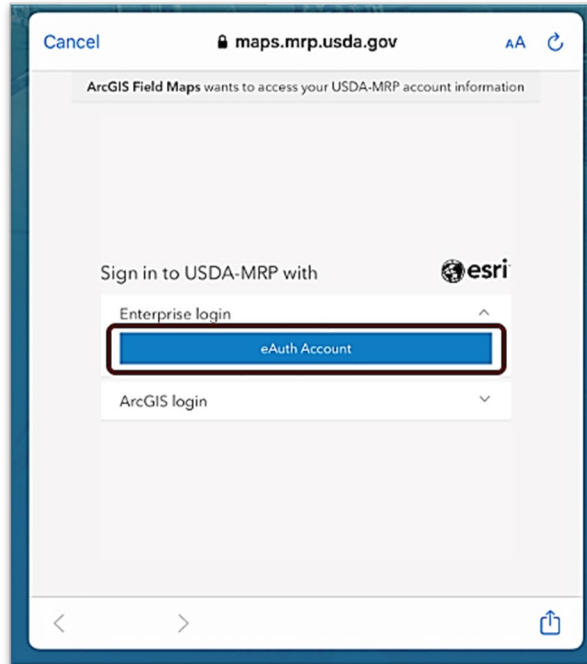


Figure 6. Sign in to USDA-MRP with eAuth Account

MobileLinc

CEC IT is deprecating the MobileLinc credentialing using the Entrust application. For new or recently re-enrolled mobile devices the Certificate Based Authentication (CBA) process uses the [USDA Work Account](#) sign in option.

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

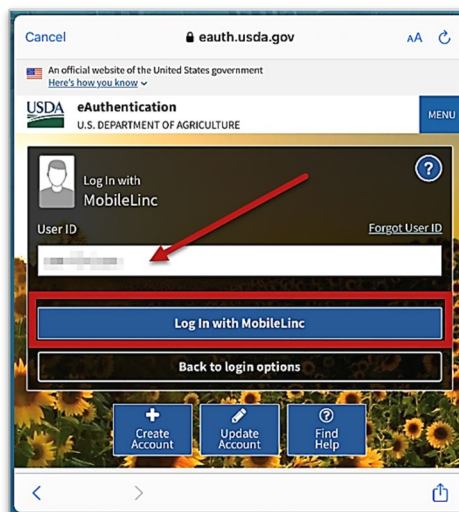


Figure 8. MobileLinc User ID & Log In

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.

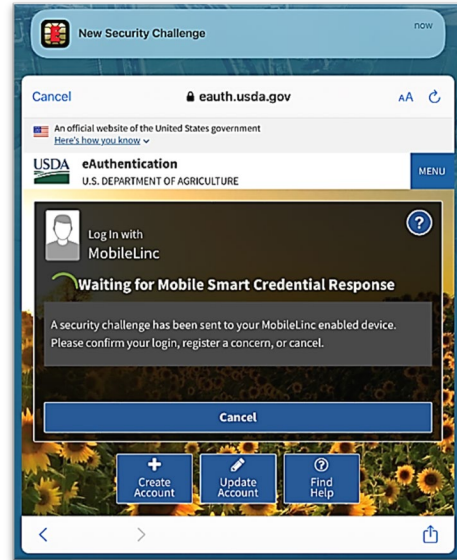


Figure 9. *New Security Challenge*

Enter your PIN. (Figure 10)

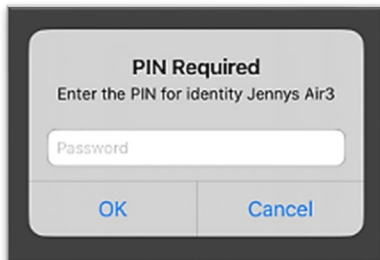


Figure 10. *Entrust PIN*

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

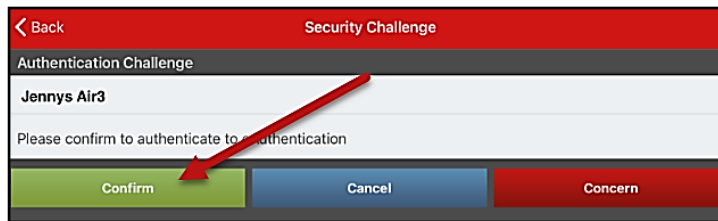


Figure 11. *Confirm Authentication*

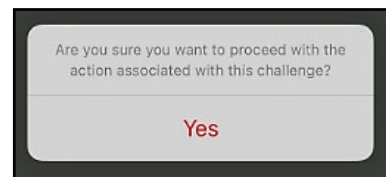


Figure 12. *“Yes” to proceed*

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!

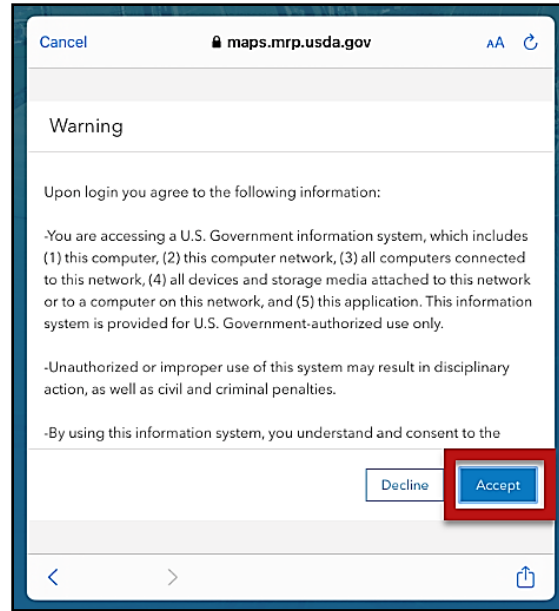


Figure 13. US Government warning

USDA Work Account

CEC IT is deprecating this [MobileLinc](#) credentialing using the Entrust application. For new or recently re-enrolled mobile devices the Certificate Based Authentication (CBA) process uses the USDA Work Account sign in option.

Select USDA Work Account. (Figure 14)

Tap "OK" at the next screen to confirm.



Figure 14. USDA Federal Login

Type in your Microsoft Sign In email.
Likely this is something like:
First.Last@usda.gov

Then tap "Next". (Figure 15)

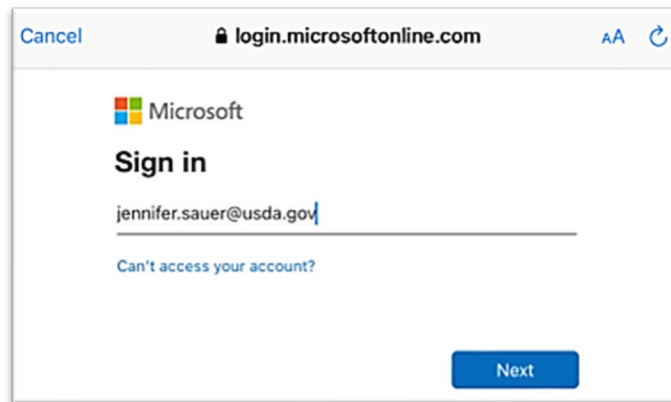


Figure 15. Microsoft Sign in - Email

You may need to tap and scroll to find the certificate listed with your name. Tap to select that line. (Figure 16)

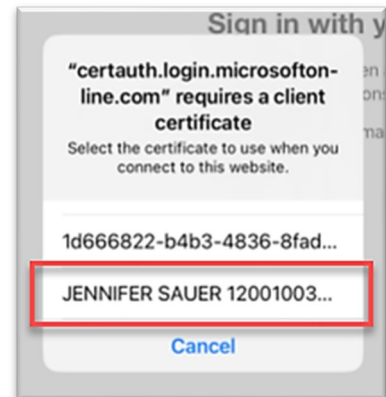



Figure 16. Select the certificate

ArcGIS Field Maps opens to the main map gallery.
Locate your map or survey and begin field data collection!

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 17)

Tap “Sign Out” again to confirm the action. (Figure 18)

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

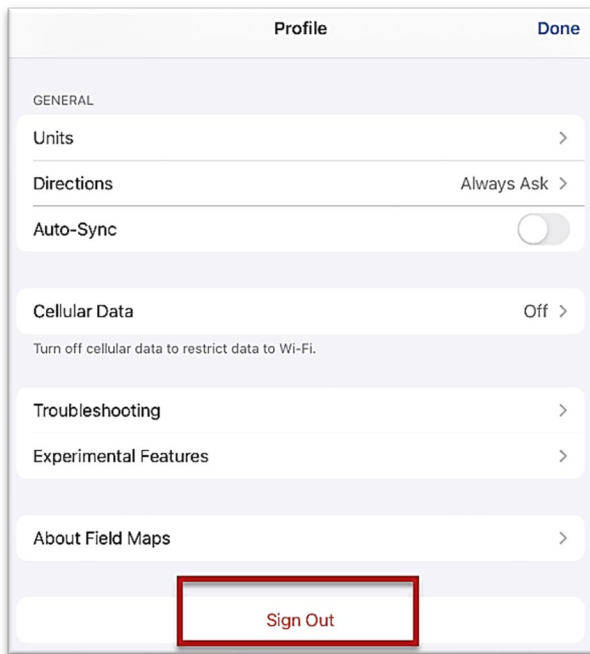


Figure 17. Profile Menu

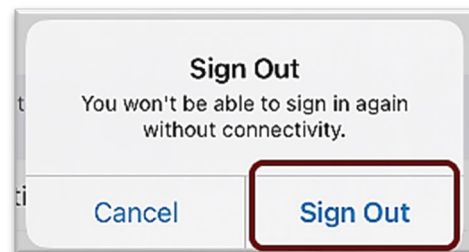


Figure 18. Sign out confirmation

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 19) represents the workflow of the disconnected mode concept.

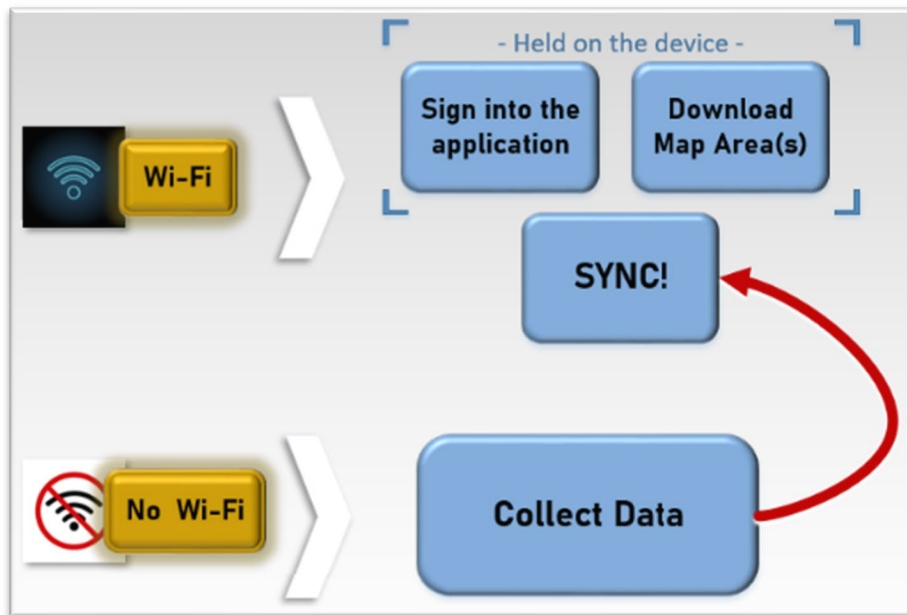


Figure 19. Wi-Fi preparation and disconnected data collection

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, size, 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.**

Place a Trap

When? The first data entry in the *FSMC 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 *FSMC Trap Activities 2024* table associated with that location.

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 20)

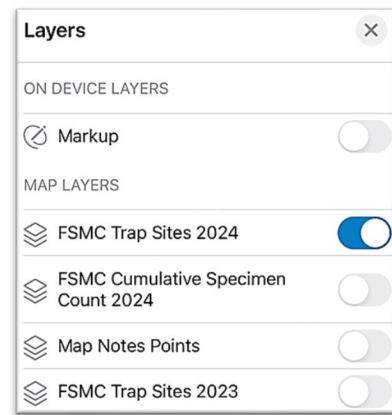



Figure 20. *FSMC Map Layers menu*

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 choose New FSMC Trap Site from the list on the left.
4. Fill out the main data form.
* Asterisks indicate mandatory fields.
Optional fields should be completed following survey protocol.
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 survey record.

NOTES:

All trap sites default to a “Current” schedule status initially. This field and the symbol on the map are updated by GIS with a nightly script. The trap schedule status changes to “Due” 14 days after the last data entry. (Figure 21)

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

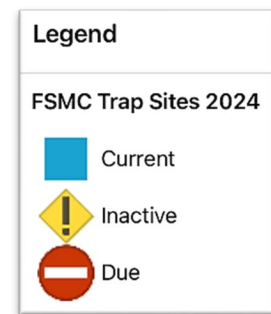


Figure 21. *FSMC Legend*

Trap Activities



Once a trap is placed, an action performed on any future visit is considered a Trap Activity.

For details on when and how to apply each Activity Type, see [Appendix: Activity Types](#)

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 *FSMC Trap Sites 2024* data form opens on the left side of the screen.

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 *FSMC Trap Sites 2024* data form and tap "FSMC Trap Activities 2024 " or tap the link icon. (Figure 22)



Figure 22. Activities link

3. Tap the blue Add button to add a new activity. (Figure 23)

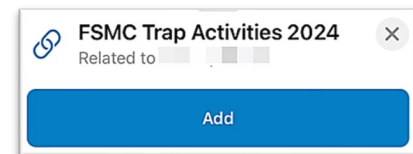
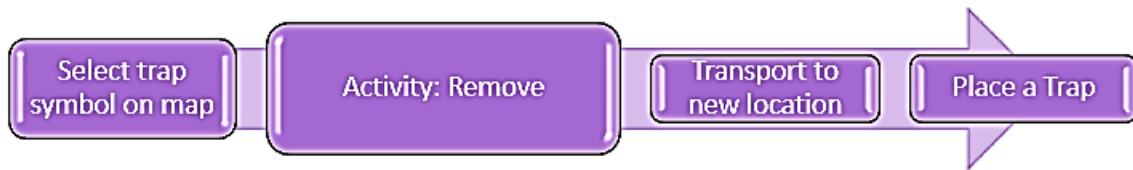


Figure 23. Add an activity

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.

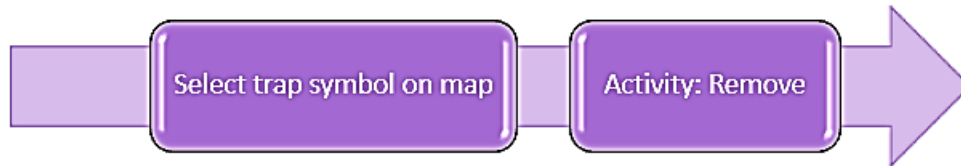
NOTE: Choosing "Remove Trap", "Remove Trap (Missing)", or "Remove Trap (Inaccessible)" as the activity type does not remove the symbol on the map but records a final activity of remove on the historic data record for that site. A nightly script will update the map symbology to Inactive.

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 Trap".
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 Trap".

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. A nightly script will update the map symbology to Inactive.



Map Notes Points

Not program required.

Use the “FSMC 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.

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

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 24)
2. Stand near the location of the hazard or other information you wish to note on the map.
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. Choose the Map Notes Type from the list on the left. (Figure 25)
5. Fill out the data form.
* Asterisks indicate mandatory fields.
Optional fields should be completed following survey protocol.
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 survey record.

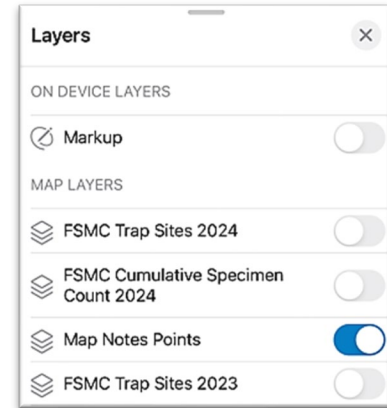


Figure 24. *FSMC Trapping Map Layers menu*

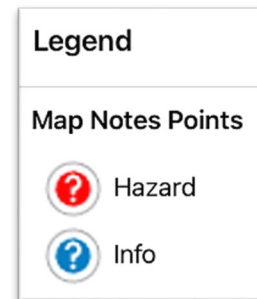


Figure 25. *FSMC Map Notes Points*

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.

NOTE:

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.

1. You may choose the sync icon from within a map area. Tap the sync icon at the top right of the map. (Figure 26)



Figure 26. Icon menu within the map

OR

2. 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 27)

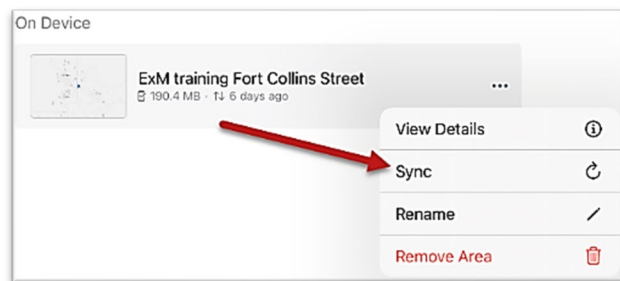


Figure 27. Offline Area menu

NOTE: Be sure Auto-Sync is OFF. Tap the sync button



and then toggle to disable Auto-Sync. (Figure 28)

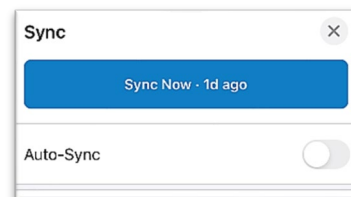


Figure 28. Auto-Sync toggled to OFF

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

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.

Appendix: Activity Types

Inaccessible - The trap is inaccessible and cannot be monitored or serviced during this visit. No other Trap Activities can be performed at this visit. The surveyor should attempt to monitor the trap at the next visit. If the trap is still inaccessible at the next visit, the surveyor should choose Remove Trap (Inaccessible) as the Trap Activity at that visit.

Monitor - The trap is monitored. Samples are collected if present in the trap. If a surveyor performs a different trap activity (ex: replace lure, replace trap, etc.), then the surveyor does not need to enter a Monitor trap activity. It is assumed that the trap will be monitored when a lure or trap is replaced. Surveyors should monitor traps during every trap activity unless the trap is inaccessible.

Remove Trap - The trap and all trap components are being removed because either the survey has ended, or the trap needs to be moved to a new location. Choosing Remove Trap 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.

Remove Trap (Inaccessible) - The trap and all trap components are being removed because surveyors can no longer access the trap site. Choosing Remove (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.

Remove Trap (Missing) - The trap is missing. Choosing Remove (Missing) 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.

Replace Lure - The lure is replaced because it is time to replace the lure based on lure length of effectiveness. The surveyor should also monitor the trap and collect samples at this time. No Monitor activity needs to be entered, as it is understood that the surveyor will monitor the trap when replacing a lure or replacing a trap.

Replace Lure (Missing) - The lure is replaced because the lure is damaged or missing. The trap should also be monitored at this time. No Monitor activity needs to be entered, as it is understood that the surveyor will monitor the trap when replacing a lure or replacing a trap.

Replace Trap - The trap is replaced because it is damaged. The surveyor should also monitor the trap and collect samples at this time, if possible. No Monitor activity needs to be entered, as it is understood that the surveyor will monitor the trap when replacing a lure or replacing a trap.

Replace Trap (Missing) - The trap is replaced because it is missing.