2022 User Manual
National Early Detection Trapping Surveys

Credit: Alison Morris, Bugwood.org

Program: Box Tree Moth (BTM)

Application: ArcGIS Field Maps

Host: USDA-MRP Enterprise (portal)
CHECK URL! https://maps.mrp.usda.gov/arcgis/

Map Title: PPQ BTM National Early Detection Trapping 2022 Field Map

** Refer to the "Mobile Collection Tools" public webpage for all training documentation and videos.

2022 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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Contact: WebGIS.Connect@usda.gov
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Overview and What's New 2022

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.

ArcGIS Field Maps Mobile Application

The **PPQ BTM National Early Detection Trapping 2022 Field Map** is intended to be used only by PPQ staff in states without a known population of BTM (all but New York state).

- Since there is only one choice for trap type and lure, those fields are not editable.

- The main data form has an "Optional Street Address" section, which is minimized by default. Use a finger to tap and expand those fields, if desired.

CHECK YOUR PORTAL URL!! Sign out of the "OLD"
In the fall of 2021, the APHIS GIS Enterprise (portal) migrated from Esri management to MRP management. The "old" Esri managed Enterprise portal URL should no longer be used.

For detailed steps to sign into the "new" MRP GIS Enterprise (portal), see Sign in to ArcGIS Enterprise.

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.

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

Figure 1. *ArcGIS Field Maps application icon*

Field Maps presents sign-in options: "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".

The USDA-MRP GIS Portal URL is: https://maps.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)**
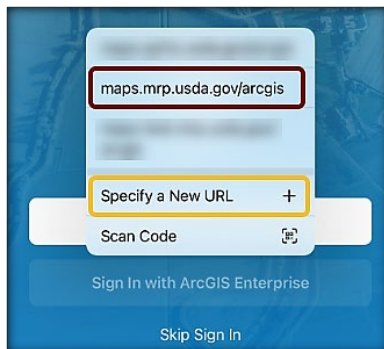
Figure 3. *Sign in with ArcGIS Enterprise options*

Figure 4. *Specify a New URL*

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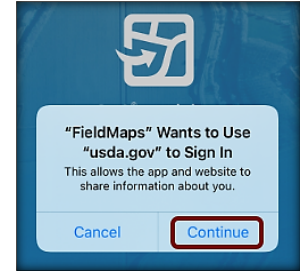

Figure 5. *Confirm usda.gov sign in*

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

Finally, you will be presented with the eAuthentication Sign In screen. Enter your eAuthentication User ID and password. Then tap "Log In with Password" or "return" on the keyboard. (**Figure 7**)
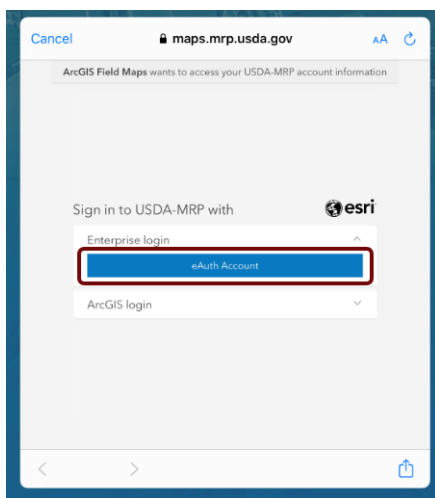

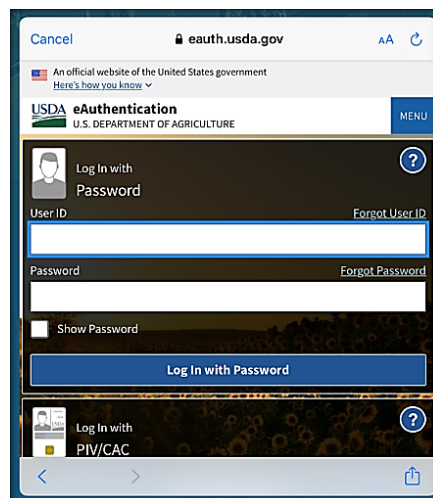**Figure 6.** *Sign in to USDA-MRP with eAuth Account*

Figure 7. *eAuthentication User ID and Password*

CHECK YOUR PORTAL URL!! Update to the "NEW" URL
In the fall of 2021, the Enterprise environment migrated from Esri management to USDA-MRP management. The "old" Esri managed Enterprise portal URL can no longer be used.

To update this URL connection, tap "Sign in with ArcGIS Enterprise" and then "Specify a new URL" as indicated in Figure 3 above.

Manually enter the USDA-MRP GIS Portal URL: https://maps.mrp.usda.gov/arcgis

Training Maps
Requires Wi-Fi connection and eAuthentication Level 2 User ID and Password.
In 2022, with training maps hosted in the *stage* environment, users may "Specify a New URL" to access training maps for demonstrations and practice but <u>must sign out</u> when training exercises are completed to avoid accidental data entry when performing "real" survey activities.

The <u>stage</u> URL (hosting training maps) is: https://maps-stg.mrp.usda.gov/arcgis

BE SURE TO ENTER <u>REAL DATA</u> IN PRODUCTION MAPS ONLY!!!
The <u>production</u> URL (hosting official survey maps) is: https://maps.mrp.usda.gov/arcgis

Sign Out
To sign out of any environment, tap the profile icon [icon] on the Maps page in the upper left, scroll down, and tap "Sign Out".

Tap "Sign Out" again to confirm the action. (**Figure 8**)

Then choose "Sign In with ArcGIS Enterprise" to enter the correct URL. For reminders on signing in, see Sign In section.

Figure 8. *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 (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. This workflow, using the same downloaded map over a period of time, allows the user to cycle through steps 3-6 (shown in the dotted circled arrows below) throughout a data collection season.

The diagram below (**Figure 9**) represents the workflow of the disconnected mode concept.
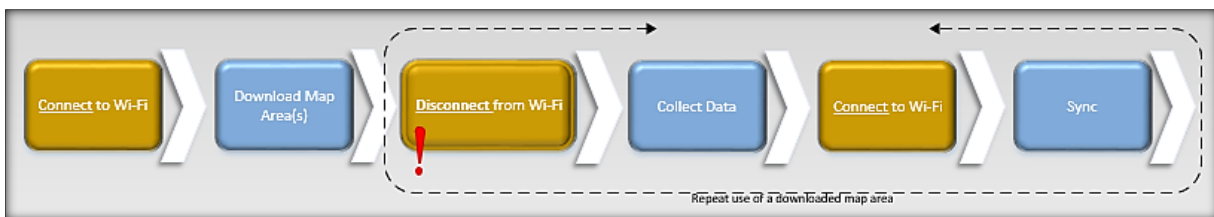

Figure 9. *Disconnected Workflow Diagram*

<u>Never assume</u> 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 <u>and</u> 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 *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 iPad, turn Wi-Fi **OFF** and Location Services **ON**.

1. Unlock the iPad
2. Open the ArcGIS Field Maps app.
3. 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

Now you are ready to head out to the field!

If you do not see your map or it does not open as expected, you are not signed in or the offline map download was unsuccessful. 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 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.

Place a Trap

When? Trap placement is typically performed at the start of a survey season.
All data collection to follow, once the trap is placed, is considered a Trap Activity.

**Always follow program survey protocol to determine suitable locations for installing traps.

For details on using the *Markup* layer, see the ArcGIS Field Maps Getting Started Guide.

1. Stand near the newly installed trap.

2. Tap the blue icon with the white plus sign [+] located in the lower-right corner of the screen to add a new trap site.

3. Select the appropriate *trap status: "Active"* from the list.
   The point on the map has a blue circle around it if your location meets GPS accuracy requirements and red if not. For more information on GPS troubleshooting tips, refer to the Mobile Solutions Manual (page 19)

4. Fill out the TRAP SITE DETAILS form.
   * Asterisks indicate mandatory fields.
   Verify the **Trap Status** field and symbol on the map. See Map Legend **Figure 10**.
   Verify the **Install Date** field is Today.

   Tap to expand the "OPTIONAL STREET ADDRESS" sub-form and enter the property address, if desired.
   Optional fields should be completed following survey protocol.

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.

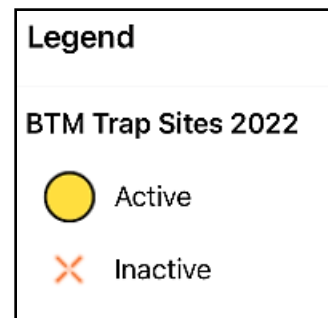**Legend**

BTM Trap Sites 2022

○ Active

✕ Inactive

Figure 10. BTM National Early Detection Trapping Map Legend

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

Record a Trap Activity

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 and then update the **Trap Status** field to "Inactive".

Select Trap Site	BTM Activities 2022 & Add	Complete Activity form	Submit

Figure 11. *Record a Trap Activity workflow*

1. Locate the appropriate trap site and tap its symbol on the map.
   When selected, the trap site symbol is highlighted in cyan, and the trap site data form opens on the left side of the screen.

   Select carefully (by zooming in) and verify that the trap you selected is correct by reviewing the *Trap ID*.

2. Scroll down the trap site data form and tap "BTM Activities 2022" or tap the link icon. **(Figure 12)**

Figure 12. *Activities link*

3. Tap the blue Add button to add a new activity. **(Figure 13)**

4. Fill out the activity data form.
   * Asterisks indicate mandatory fields.
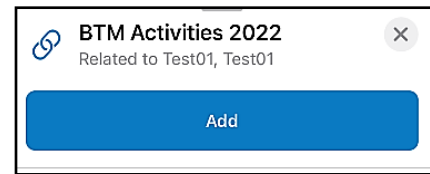   Optional fields should be completed following survey protocol.

> BTM Activities 2022
> Related to Test01, Test01
>
> **Add**

Figure 13. *Add a Trap Activity*

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

Update the Trap Site Status

When a trap is removed, missing, or relocated, you must record the appropriate trap activity and then update the **Trap Status** field to "Inactive", as described below:

1. Tap the trap icon to select it, scroll down, and tap Edit. **(Figure 14)**

Figure 14. *Edit icon*

2. Change the **Trap Status** field from Active to Inactive.

3. Tab Submit and close the data form.

Relocate a Trap

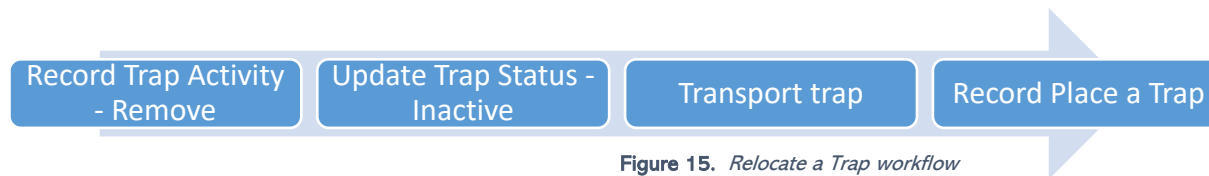| Record Trap Activity - Remove | Update Trap Status - Inactive | Transport trap | Record Place a Trap |

Figure 15. *Relocate a Trap workflow*

Relocating a trap requires that you <u>remove</u> a trap (Trap Activity) and place it in a <u>new location</u> (<u>Place a Trap</u>):

1. Follow steps as above in Record a Trap Activity, selecting "**Remove**" as the Activity Type.

2. Tap **Submit** and close the BTM Activities 2022 form. Follow Update Trap Status steps to update as "**Inactive**".

3. Physically transport the trap to its new location and install it.

4. Follow the Place a Trap steps to record the new location for the trap.

End of Season Process

| Record **Trap Activity** - Remove | Update **Trap Status** - Inactive | Physically Remove Trap |

Figure 16. *End of season workflow*

When a trap is removed, missing, or relocated, you must record the appropriate trap activity and then update the **Trap Status field to "Inactive".

As with the steps involved in removing a trap for any reason, there are two important data entry steps to take:

1. Record a Trap Activity selecting the "**Remove**" as the Activity Type.
2. Tap **Submit** and close the BTM Activities 2022 form. Follow the Update Trap Status steps to update as "**Inactive**".

> NOTE:
> Completing these steps will **not** remove the symbol for the trap on the map. The symbol simply changes to reflect the trap as Inactive with the last recorded Trap Activity as "Remove". This is correct and important to the data capture.
>
> Do NOT delete the trap symbol.

Daily Data Sync

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

**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.

Locate the Map Area containing data collection points from the day.

1. You may choose the sync icon from within a map area. Tap the sync icon at the top right of the map. (**Figure 17**)

   OR

Figure 17. *Sync button*

2. You may also choose to sync by choosing the ellipsis menu found on each Map Area. You will have the option to Sync, Rename, or Remove Area. (**Figure 18**)

Figure 18. *Map Areas and overflow menu*

Getting Help

APHIS PPQ

Be as specific as possible. Include screenshots, error messaging, 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 hierarchy:
1. Your 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.