Exotic Wood Borer / Bark Beetle
Data Collection
User Manual

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Program: Exotic Wood Borer / Bark Beetle (EWBBB)

Application: ArcGIS Field Maps

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

Map Title: PPQ EWBBB Trapping 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.

CONTENTS

Overview

There are <u>no data collection changes</u> for the 2024 application from the previous year.**
Some of the trap/lure combinations have been updated.

This document provides guidelines for conducting electronic data collection for the Exotic Wood Borer / Bark Beetle (EWBBB) 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 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 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

<u>Training Maps and Practice</u>
*BE SURE TO ENTER REAL DATA IN PRODUCTION MAPS ONLY!!!** <u>Sign out</u> 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)
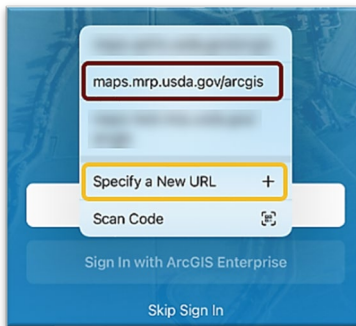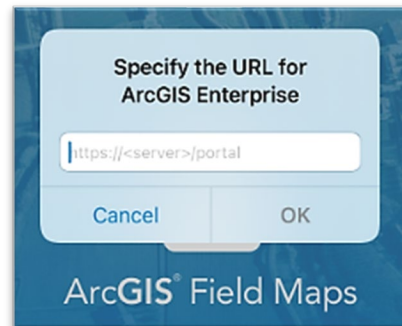

Figure 3. *Sign in with ArcGIS Enterprise options*

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)
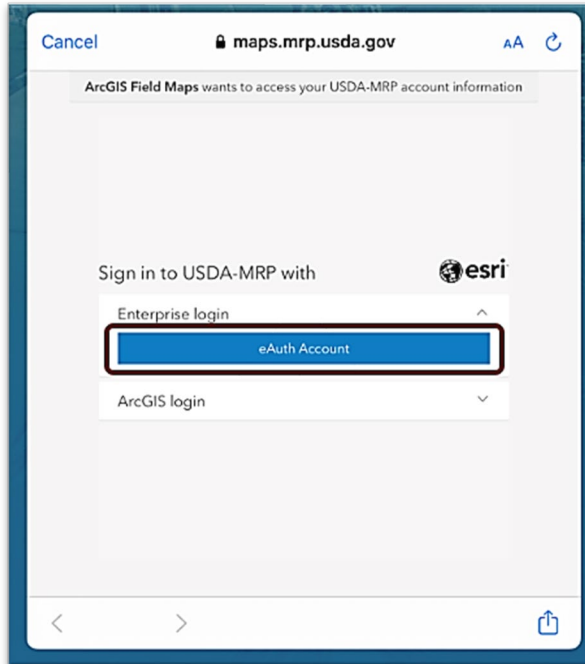

Figure 6. *Sign in to USDA–MRP with eAuth Account*

Tap to select from the <u>user type</u> options listed: Customer, USDA Employee/Contractor, or Other Federal Employee Contractor. (Figure 7)
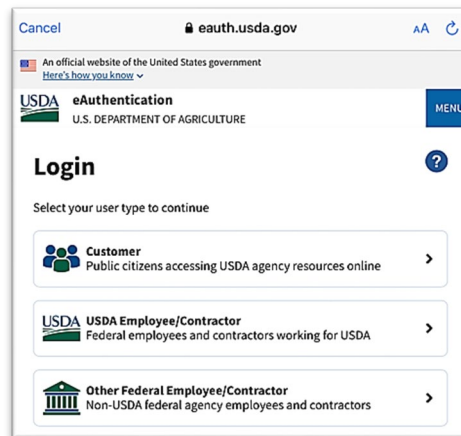

Figure 7. *Select eAuthentication User Type*

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 8)

Next select between MobileLinc+Microsoft or MobileLinc+Entrust. Most likely the correct option is: MobileLinc+Entrust (Figure 9)

Figure 8. *eAuthentication options*

Figure 9. *MobileLinc Microsoft or Entrust*

Enter your User ID (eAuthentication user name) using the keyboard. Tap Log In with MobileLinc. (Figure 10)
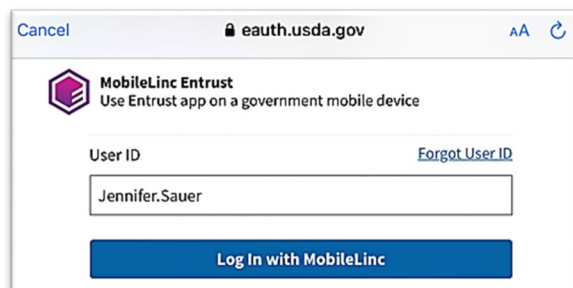

Figure 10. *MobileLinc User ID & Log In*

Tap on the banner that descends prompting that "You have pending actions". This will open the Entrust application for you to confirm the request. (Red box Figure 11)

If this banner disappears, open the Entrust application manually. Do not close the ArcGIS Field maps application.
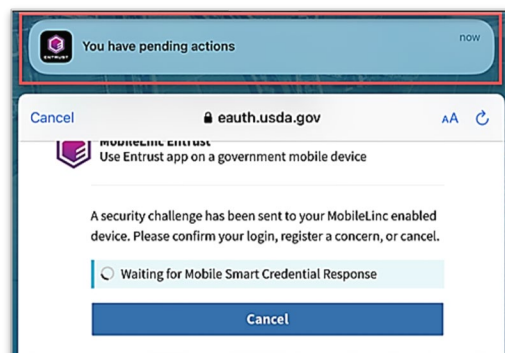

Figure 11. *You have pending actions…confirm in Entrust*

Once in the Entrust application, you will be prompted to enter the Identity PIN you set when configuring this credentialing method.

Enter your PIN and tap the "Allow" button. (Figure 12)
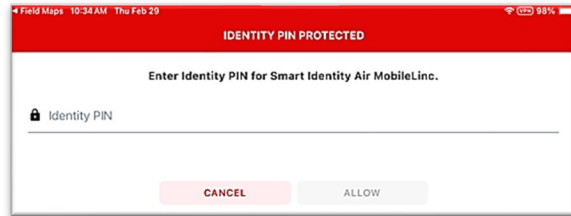

Figure 12. *Entrust Identity PIN*

Tap Confirm. (Figure 13)

Figure 13. *Confirm to authenticate*

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

Locate your map and begin field data collection!

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
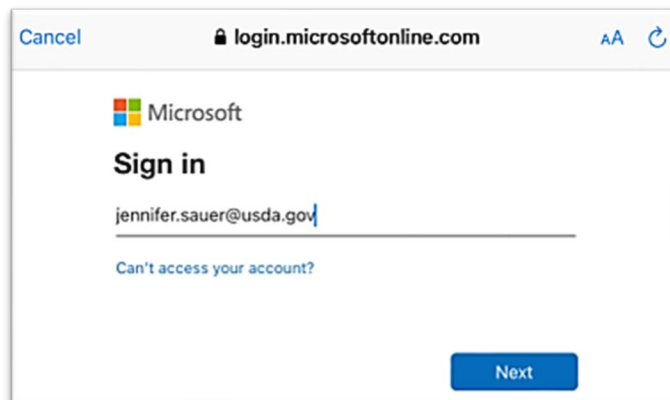
Then tap "Next". (Figure 15)

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)
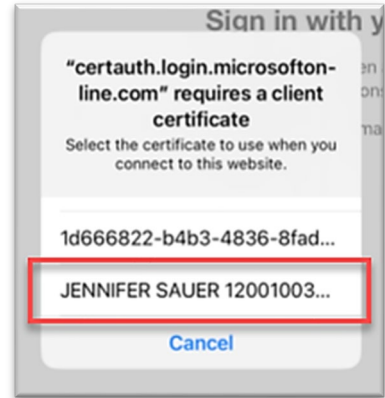
Figure 16. *Select the certificate*

ArcGIS Field Maps opens to the main map gallery. Locate your map 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 da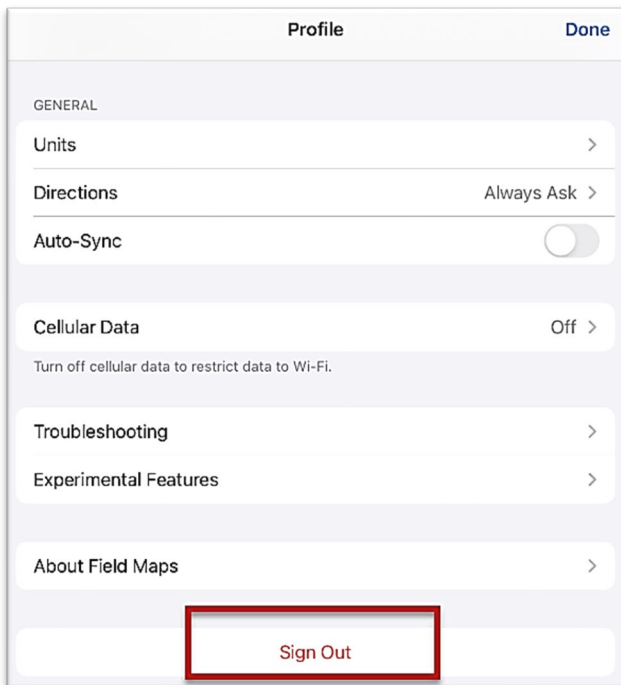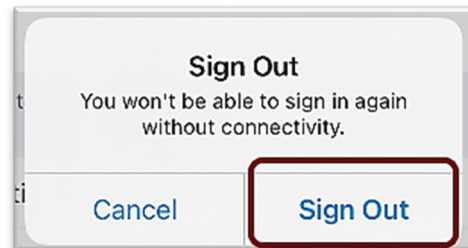ta collection is performed. Once a reliable network connection is regained, the data is synchronized with the online map hosted in the USDA-MRP GIS Enterprise (Portal).

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.
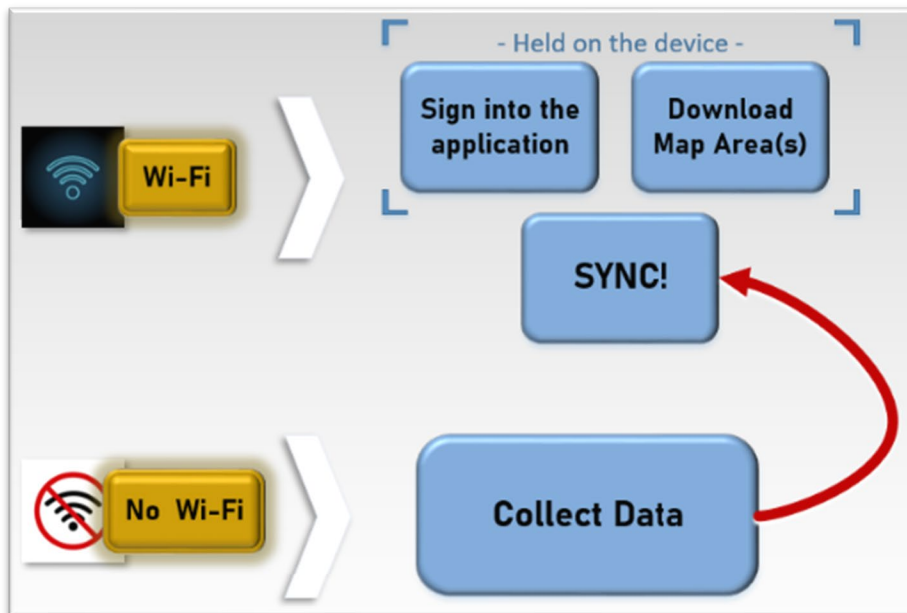

Figure 19. *Wi-Fi preparation and disconnected data collection*

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 *EWBBB Trap Sites 2024* layer establishes a location for the trap site.

Figure 20. *EWBBB Map Layers menu*

All future visits to this site are considered trap activities and are recorded in the *EWBBB 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)

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 an EWBBB Trap Type from the list on the left. (Figure 21)

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" status initially and status is maintained by GIS.

Figure 21. *EWBBB Trap Types list*

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

Trap Activities

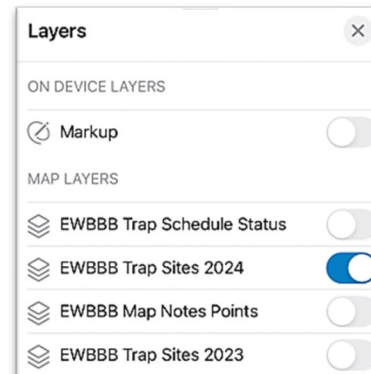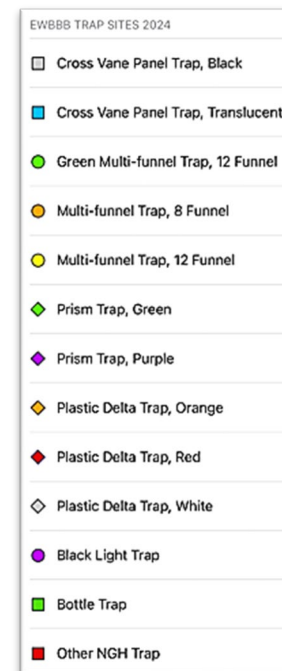Once a trap is placed, an action performed on any future visit is considered a Trap Activity. For details on when and how to apply each Activity Type, see Appendix C: Activity Types

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

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

2. Scroll down the *EWBBB Trap Sites 2024* data form and tap "EWBBB 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)
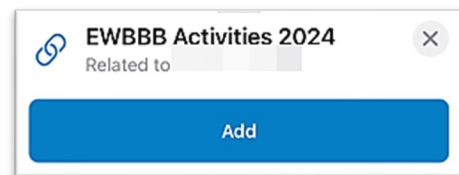

Figure 23. *Add an activity*

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.

Trap Schedule Status

Defaulted to OFF, the EWBBB Trap Schedule Status layer is updated nightly to indicate trap sites that are:
- "Current" – trap servicing is up-to-date
- "Due" – trap needs servicing
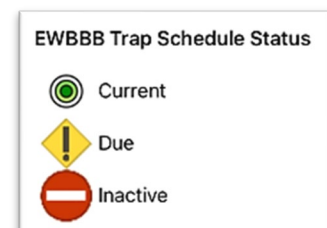- "Inactive" – trap is no longer present at site

When the layer is enabled, the trap status symbols display on top of the EWBBB Trap Sites layer on the map. (Figure 24)
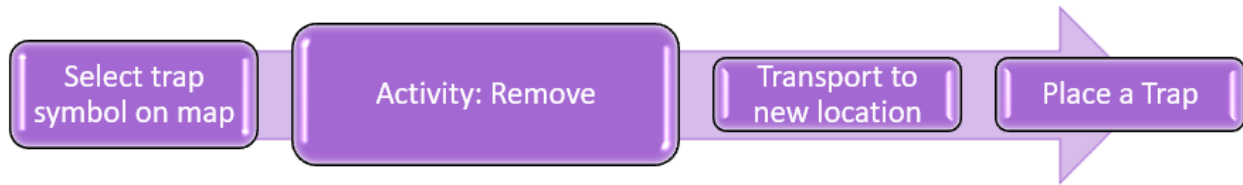
Figure 24. *EWBBB Trap Schedule Status legend*

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 Trap".
3. Transport the trap to its new location.
4. Complete Place a Trap steps.

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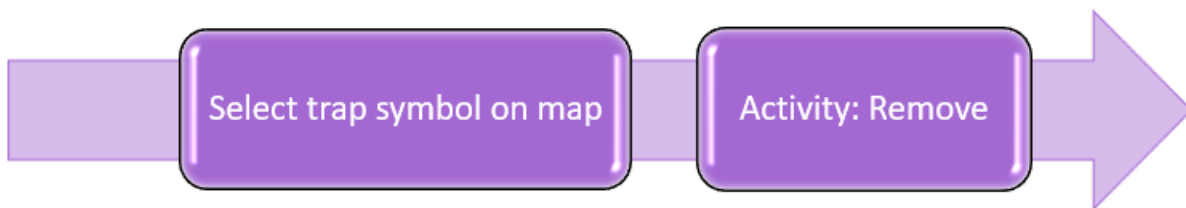
1. Tap the trap symbol on the map to select it. The data form opens on the left.
2. Enter a Trap Activity of "Remove Trap".

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

Use the "EWBBB Map Notes Points" layer to record hazards and other information.
Be aware that <u>this is a *shared* layer</u> 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 [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 25)

Figure 25. *EWBBB Trapping Map Layers menu*

2. Stand near the survey location.

3. Tap the blue icon with the white plus sign [icon] 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 26)

5. Fill out the data form.
   * Asterisks indicate mandatory fields.
   Verify the *Note Date* is Today.
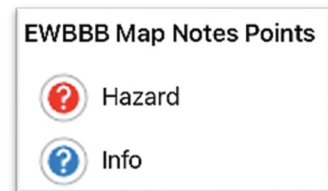
Figure 26. *EWBBB Map Notes Points*

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.

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 process both pushes your data collection out and brings in other edits to your map.
Be sure you are connected to a strong Wi-Fi network.

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 27)

Figure 27. *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 28)

Figure 28. *Icon menu within the map*

OR

You may also choose to sync by choosing the ellipsis menu found on each Offine Area. You will have the option to Sync, Rename, or Remove Area. (Figure 29)
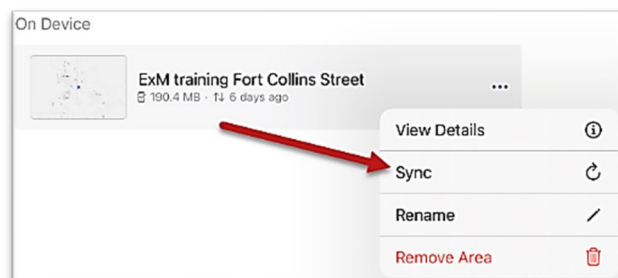
Figure 29. *Offline Area menu*

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 sp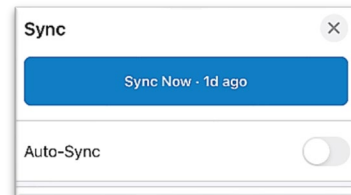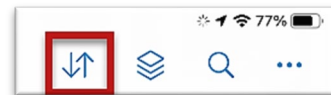ecific as possible. Include screenshots, any troubleshooting you have performed, and indicate the type of device (iPad, laptop, phone, etc.).

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 A: Habitat Types

Habitat	Comments/Definition
Agricultural	This option should also be used for sites at Farms, Orchards, and Vineyards.
Airport/Runways	
Ball Field	
Bioenergy Plant	This option should also be used for sites at Wood Chip Fueled Power Plants.
Botanical Gardens	This option should also be used for sites at an Arboretum.
Business/Office Park	
Campground/RV Park	
Cemetery	
County Park	
Forest	Use this option for sites with a mixture of hardwood and softwood trees.
Forest – Broadleaved (Hardwood)	Use this option for sites with predominately hardwood trees.
Forest – Conifer (Softwood)	Use this option for sites with predominately softwood trees.
Golf Course	
Highway Rest Area	
Industrial Property/Perimeter	
International Border	This option should also be used for sites at land and water Ports of Entry.
Landfill	
Logs – Unseasoned Wood	Use this option for sites with cut logs. This option should also be used for sites at Firewood Dealers.
Military/National Guard Base	
Municipal (City) Park	
Nature Center	
Nursery – General	This option should also be used for sites along the perimeter of a nursery.
Railroad Yard/Siding	
Reforestation Prog./Tree Farm	This option should also be used for sites at Christmas Tree Plantations/Tree Farms.
Roadside	
Sawmill/Finishing Operation(s)	
State Forest/Park	
SWPM (Solid Wood Packing Material Site)	
Tree Disposal/Green Waste Recycling	
US National Forest or Park	
Warehouse	
Wooded Residential Area	
Woodlot	Use this option for sites at a woodlot of standing/live trees. For cut trees, use Logs – Unseasoned Wood.

Appendix B: Host List

Host	Notes
Apple	Apple, crabapple, etc.
Ash	
Birch	
Cedar	
Chestnut	
Douglas fir	
Elm	
Fir	
Larch	
Locust	
Maple	
Mulberry	
Oak	
Pine	
Poplar	
Spruce	
Stone fruit	Cherry, nectarine, peach, plum, prune, etc.
Sweetgum	
Walnut	
Willow	
Misc. Hardwood	Can use if surveyor is unable to determine the tree genus. May enter the genus once leaves appear or can leave as Misc. Hardwood.
Misc. Softwood	Can use if surveyor is unable to determine the tree genus. May enter the genus once leaves appear or can leave as Misc. Softwood.
N/A	Hosts not present. Can use in a high risk setting, when no hosts are present (warehouse, etc.).

Appendix C: 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.
NOTE: For EWBBB surveys, the trap must be checked, and samples collected every two weeks.

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.
NOTE: For Khapra Beetle, the lures need to be changed every 28 days.

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 assumed 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.