

Installation and use of the FOMELC Field Data Collector app

The idea behind the app is to simplify field data collection on the trail and reporting/submission of the collected data using a smart phone. Data can be collected in the field without cell service, then later uploaded. Battery life is greatly extended if the phone is placed in airplane mode. GPS will still work. It is always recommended that you keep a redundant paper copy.

Installation

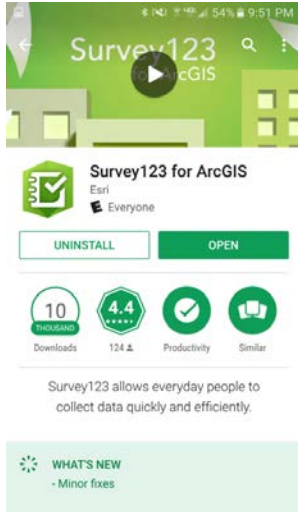


Fig.1

First, go to Google Play or iTunes, and download and install Survey 123 for ArcGIS on your phone.

Once installed, use your phone to open the link to the survey in the email. The survey should then load the FOMELC Field Data Collector tool in Survey123.

Using the App

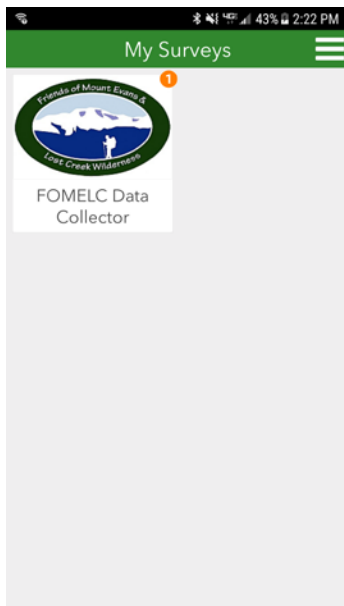


Fig. 2

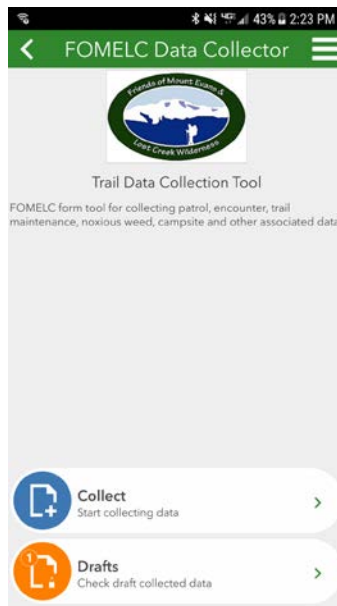


Fig. 3

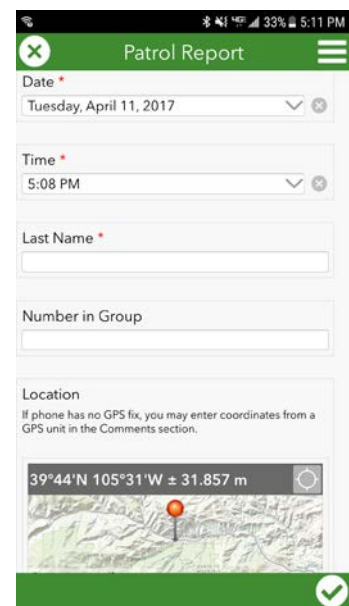


Fig. 4

The survey should then appear in Survey123 (Fig. 2). Select and open the survey. To record an event, tap the "Collect" button at the bottom of the page (Fig. 3). This brings up the survey form (Fig. 4).

Filling Out a Survey

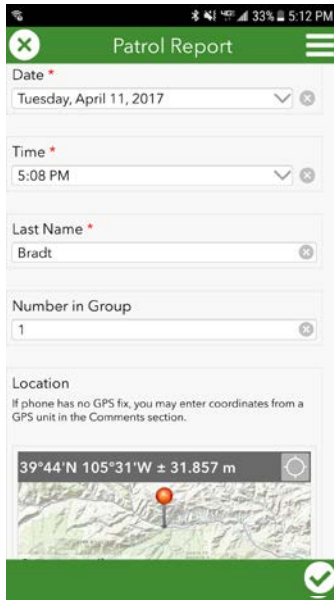


Fig. 5

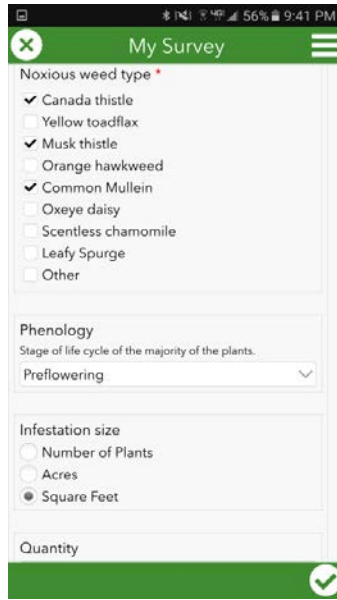


Fig. 6




Fig. 7

Items marked with a red asterisk are required. Scroll down through the menus as needed.

Date and time are automatically filled in.

Fill in your last name as the surveyor and enter the number in your group. See “Auto Filling Repeated Fields” (page 4) to simplify repeated entry of the first few fields.

Location is automatically recorded. If the location bar above the map is red, GPS location is not established. This will be rare unless the phone does not have a view of the sky.

I strongly recommend holding your finger on the “” symbol to the right of the coordinates in the title bar until the GPS shifts into waypoint averaging mode, as shown in Fig. 8. This will first, result in a more accurate point location and second, will show you if you have a GPS fix. If the location bar says “Averaged 0 of 0 positions” you know you have no GPS fix. During testing, using waypoint averaging eliminated almost all location errors. I almost always use waypoint averaging and have had no location errors. I start waypoint averaging first, then let it run as I complete the survey.

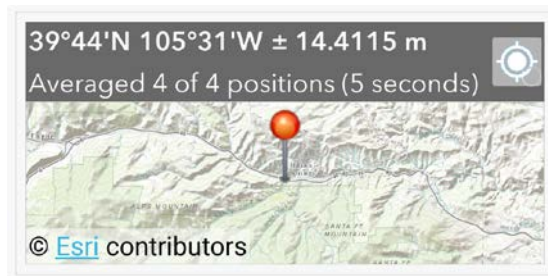


Fig. 8

Select the Wilderness and this will populate the trail name dropdown for that Wilderness (Fig. 5).

Next, select the type of event you want to survey, “Noxious Weeds” in this example. This will bring up the survey items for that event (Fig. 6). Scroll down, filling in survey items.

The last two items (Fig. 7) are common to all surveys. Neither comments nor photos are required, but are completed as desired. Photos are always good, except when recording an encounter. To take a photo, tap the camera icon to bring up the phone’s camera.

Completing a Survey

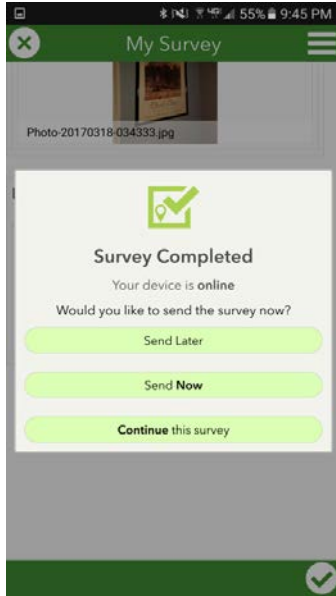


Fig. 9

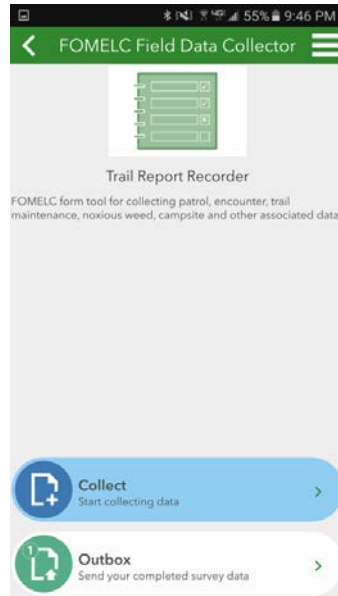


Fig. 10

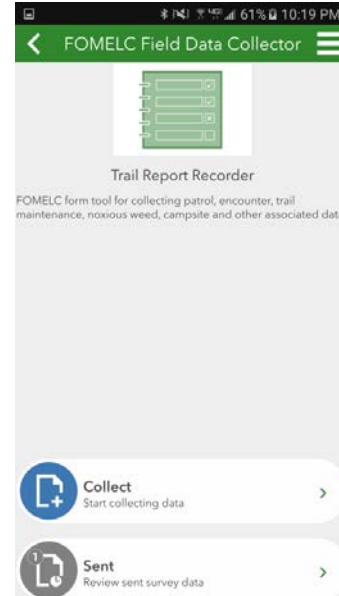


Fig. 11

Once the survey is complete, finalize it using the green check mark at the lower right. If any required items are missing from the survey, a message referencing the missing item will be displayed. Complete the missing item(s) and finalize it again.

If the survey is complete, a message giving the choice of sending later, sending now, or returning to the survey is presented (Fig. 9). Generally, on the trail, you will choose “Send Later”, which will take you back to the initial screen, ready for a new survey (Fig. 11). Note there is now an outbox showing the number of surveys ready to send. When cell service or a wireless connection becomes available, tap the Outbox button and send the surveys. Connecting to a wireless network will avoid using your cell data plan.

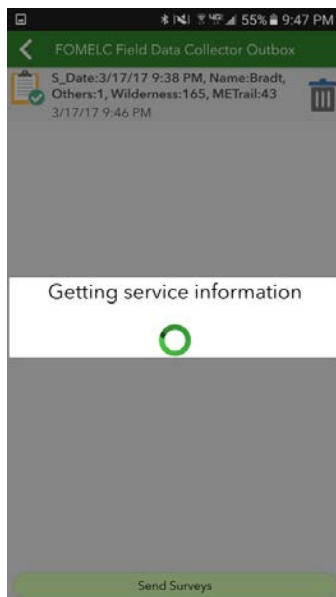


Fig. 12

On rare occasions, I have had the app hang on sending (Fig. 12) or gotten an error message. I have found that if I wait a little while and try again, they will send. If not, reboot the phone, and restart the app.

Auto Filling Repeated Fields

When recording surveys on a trail patrol, there will likely be things you want to repeat on every survey completed on that patrol, rather than enter it in every survey, like name, number in party, Wilderness, trail, etc.

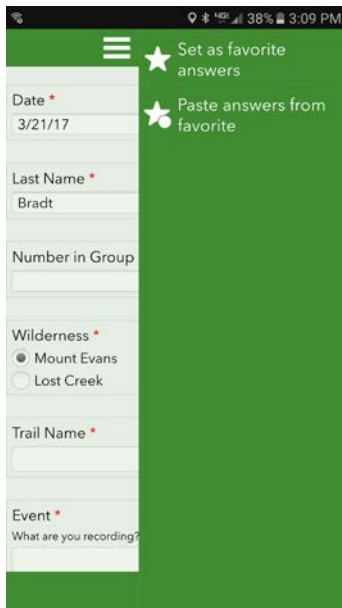


Fig. 13

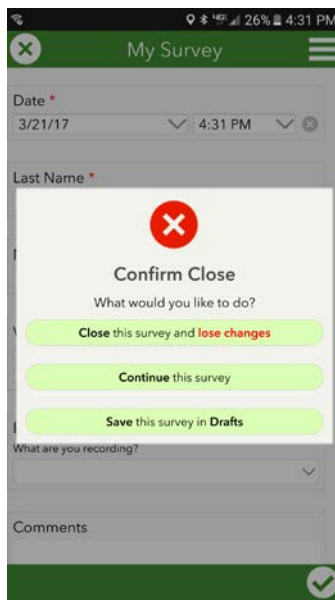


Fig. 14

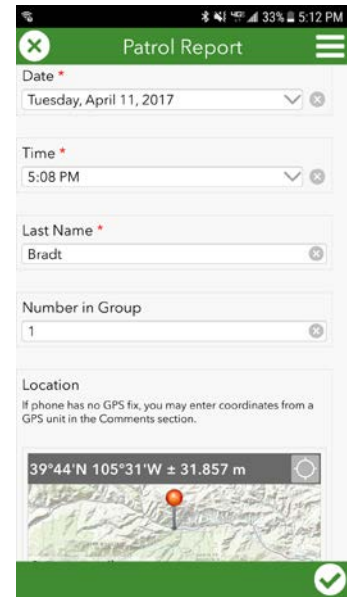


Fig. 15

For those Items, before starting your patrol, open a new survey and put in the answers you'll want to repeat. Then, from the menu on the upper right (Fig.13), choose "Set as favorite answers". Once you've set those answers, tap the X in the upper right (Fig. 14) and select "Save this survey in drafts".

Next time you open a new survey, you can use "Paste answers from favorite" as in Fig. 13, and your saved answers will be filled in.

HOWEVER, if you don't have a good GPS fix before pasting in your favorite answers, the saved GPS location will be filled in also. To avoid using the saved location, each time you create a new survey, either make sure the location bar is gray before pasting your answers, or tap the "📍" symbol to the right of the coordinates in the title bar, as shown in Fig. 15 to make the phone look for a new GPS fix. It should find one within a minute or so.

The best thing to do is use waypoint averaging, as described on page 2 and figure 8.

In a worst case scenario, where you can't get a fix from your phone, if you have a GPS unit, you can add coordinates from it in the "Comments/Notes" section.

If no GPS fix can be gotten, save the survey and move on.

Survey Items

Date– Automatically collected when the survey is begun.*

Time – Automatically collected when the survey is begun.*

Last Name – Last name of surveyor*

Number in Group – Number of people in the survey group

Location – Automatically added as long as the phone has a GPS fix. See page 2 for waypoint averaging. If the phone cannot get a GPS position, you may enter coordinates from a GPS unit in the comments section.

Wilderness – Select Wilderness you are working in. This will populate the Trail Name choices with the trails in that Wilderness.*

Trail Name – Select the trail you are on.*

If Other, enter Other Trail Name or Description

Event-Patrol Event/Encounter/Trail Maintenance/Noxious Weeds/Campsite/Other Note*

Patrol Event – Start Patrol/Start Return/Trail Junction/End Patrol

Start Patrol – On starting patrol

cars at trailhead at start

Start Return – Point at which you turn back to trailhead (unless hiking through or hiking loop).

Trail Junction – Point of junction with another trail.

Trail Name - Junction with what trail? Dropdown to trail name choices populated by earlier Wilderness choice.

End Patrol – On ending patrol

cars at trailhead at end

Encounter – Record encounters with users on the trail.

People – Number of people encountered*

Dogs – Number of dogs encountered

Leashed – Yes/No*

Stock – Number of stock encountered

Type of stock – Horse/Llama/Goat*

Visit Type – Dayhike/Overnight/Unknown*

Contacted – Yes/No*

Trail Maintenance – Record trail maintenance items or features.

Observation – Deadfall/Drainage/Bridge/Signage/Other*

Deadfall – Trees down across trail

Number of Trees - # down at location*

Diameter – Size class of largest tree – Less than 6"/6-12"/12-18"/18-24"/Greater than 24" *

Cleared – Number of trees cleared*

Drainage – Waterbar/Check Dam/Drain Knick/Culvert/Other

Status –Needs cleaned/Cleaned/Needs added/Added /Improved

Bridge – Bridge condition

Status – Good condition/Needs Repaired/Repaired/Needs Replaced/Replaced*

Signage – Sign condition

Status – Good condition/Needs Repaired/Repaired/Needs Replaced/Replaced *

Noxious weeds – Record noxious weed locations, with type and extent

Noxious Weed Type – Multiple selections allowable – Canada thistle/Yellow toadflax/Musk thistle/Orange hawkweed/Oxeye daisy/Scentless chamomile/Leafy spurge/Other. If Other is checked, a text box will come up to enter other kind.

Phenology – Stage of life cycle of the majority. F1 Preflowering/F2 Flowering/F3 fruiting/ F4 Dead or dormant. *

Infestation size – Select the units you wish to use. Number of Plants/Acres/Square Feet*

Quantity – Number of units selected above. *

Percent cover – Estimated percent coverage

Density - Widely Scattered/ Scattered/Moderate/Dense/Very Dense

Campsite – Record simple locations or do rapid assessment inventory.

Record type – Location only / Rapid Assessment Inventory*

Location only – Simply recording location. Any details can go in Comments.

Rapid Assessment Inventory – Refer to R2 Rapid Assessment Protocols and forms for guidance

Campsite Number – Use the RA Protocol format using leading zeros as needed
XXXX=Trail number (0057 for trail 57) and XXX=Site number (007 for site 7)

Legal site – Yes/No

Litter? – None/Some/Abundant

Human waste? – None/Some/Abundant

Noxious weeds - Yes/No If noxious weeds are present.

User created Trails - Yes/No

Ground Disturbance Rating – 1-4

1 – Ground vegetation flattened but not permanently injured. Minimal physical change except for possibly a simple rock fireplace.

2 – Ground vegetation worn away around fireplace or center of activity.

3 – Ground vegetation lost on most of the site, but humus and litter still present in all but a few areas.

4 – Bare mineral soil widespread over most of the campsite.

Tree Damage Rating - 0-2

0 – No more than 3 severely damaged trees.

1 – 4 to 10 severely damaged trees.

2 – More than 10 severely damaged trees.

Disturbed Area Rating – 0-2

0 – No more than 25 m² (0-250 ft²).

1 – 26 to 100 m² (251 - 1000 ft²).

2 – More than 100 m² (more than 1000 ft²).

Comments/Notes – Record any pertinent notes of interest here.

Photo – Currently limited to one, so take your best shot. Additional photos can be uploaded or emailed.