FRIENDS OF THE MAD RIVER

# A Guide to Using Fulcrum for Mad River Watch

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# Why Fulcrum?

We are using this Fulcrum based data collection app as a way to streamline and simplify processing your field data. With this tool we have a powerful way to track, with great accuracy, your sampling time, location, photographs, and notes. By automatically compiling the data and records into one place, we are more easily able to generate reports and provide real time feedback to this community.

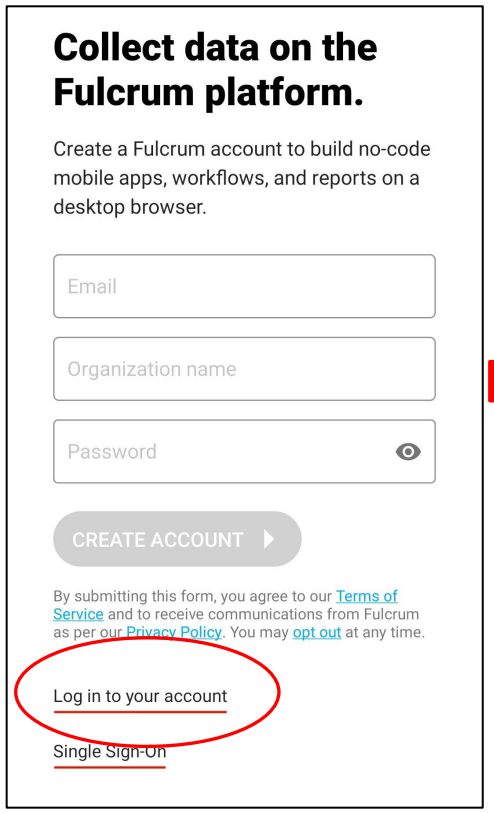
Read on to get step-by-step instructions for using the app in the field – and have fun out there!

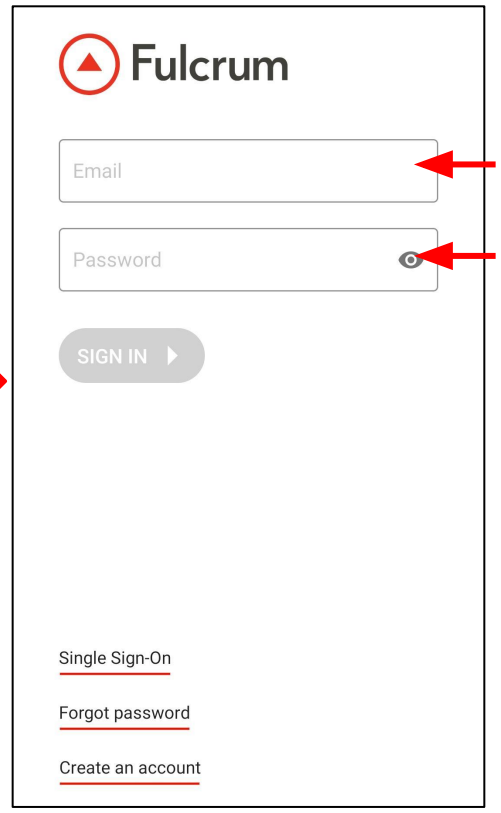
# How to Log In to Fulcrum

1. Connect to the internet

2. Open the Fulcrum App and navigate to the correct login location
   Select “Log in to your account”

3. login using the FMR Volunteer email address



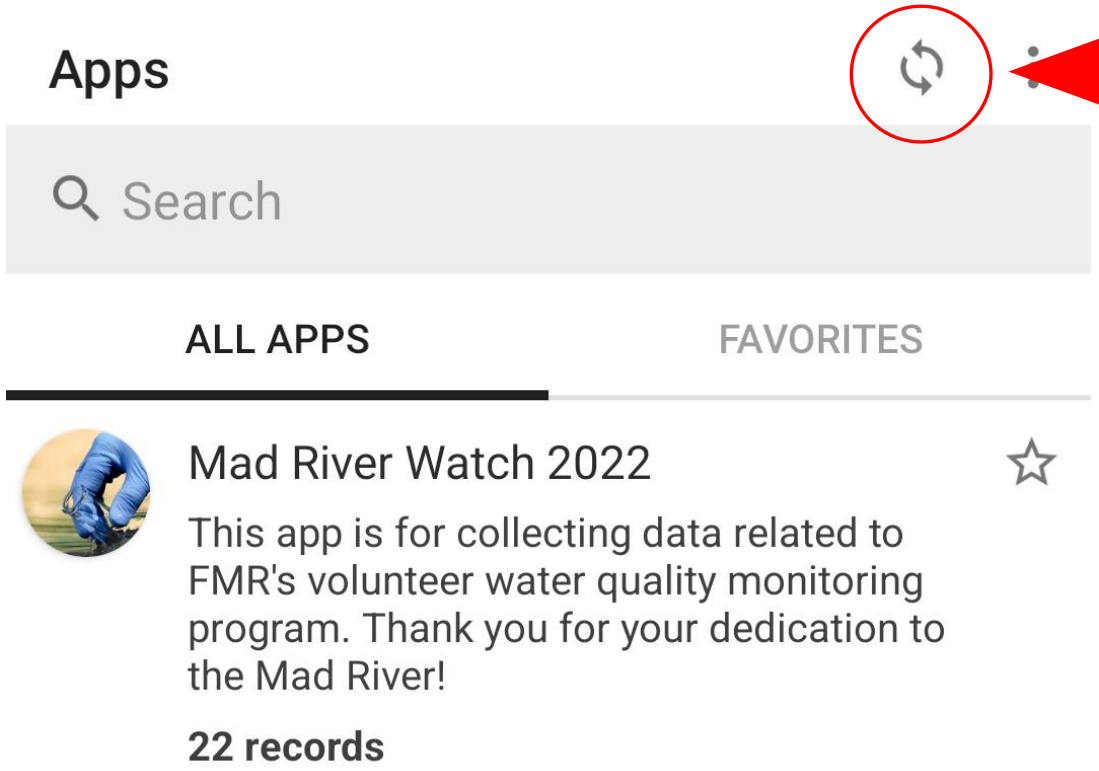




Login: **volunteer@friendsofthemadriver.org**

Password: **MRWatch2021!**

**Re-Logging In**
Once you have logged in for the first time, you should not have to log in again during the field season. If you do get logged out, follow the instructions here.

# App Selection Screen

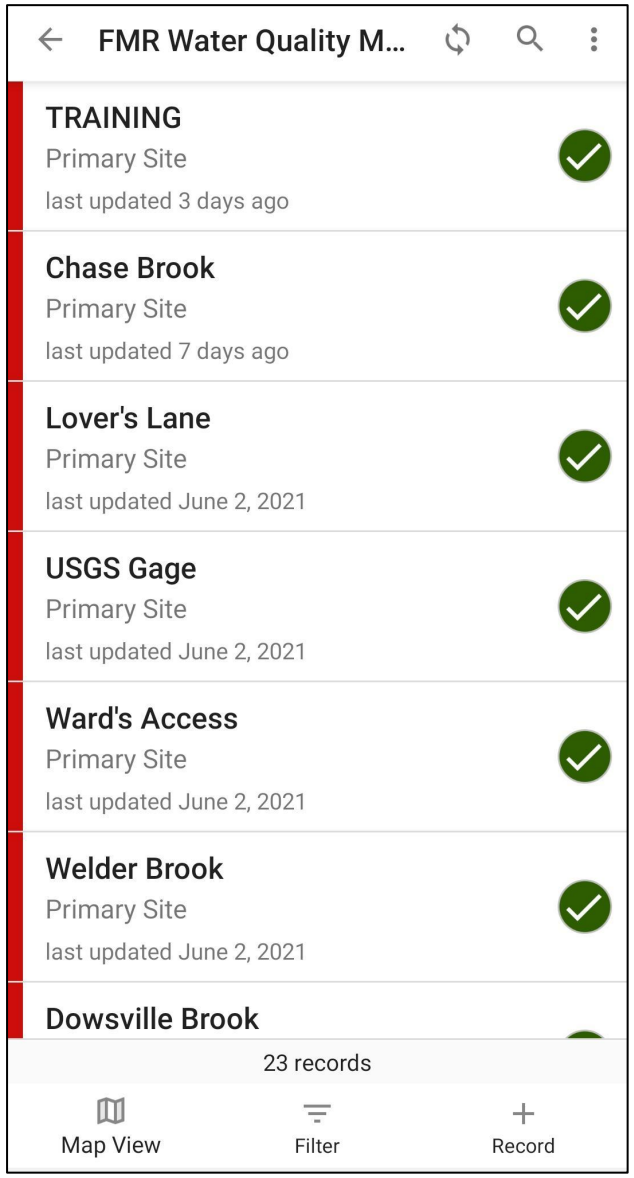


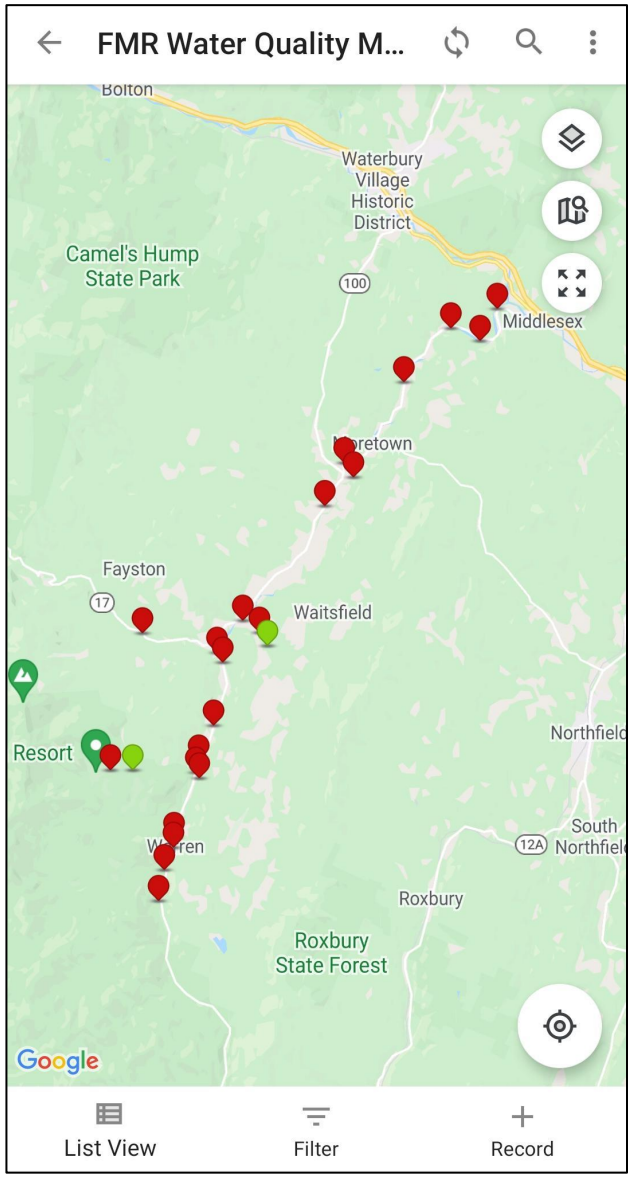

**IMPORTANT NOTE**
The two circling arrows here are the ‘sync’ button. This button should be pressed before you start each field day and at the end of each field day. Syncing allows data to flow from your phone to Friends of the Mad River. It also allows you to receive any updates to the app that have happened between field days.

1. Sync your device

2. From this screen, select Mad River Watch 2022 to move on to the list of sites.

# Site Selection Screen



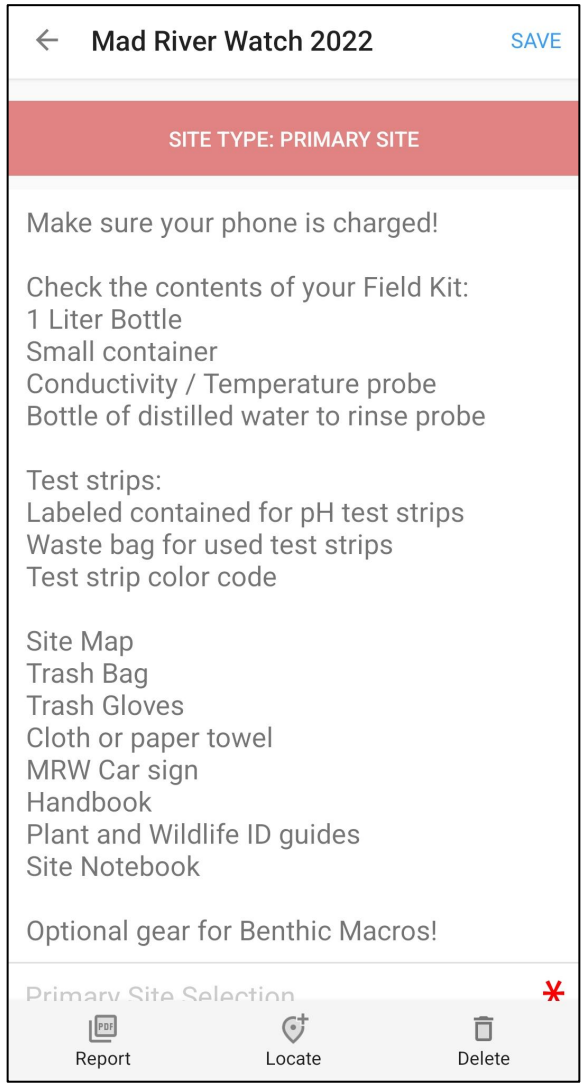

1. You can find your field site using either list view OR map view

   This screen shows primary sites in red and secondary sites in green

2. Selecting your field site will take you to the next screen where you will be able to create a new record.

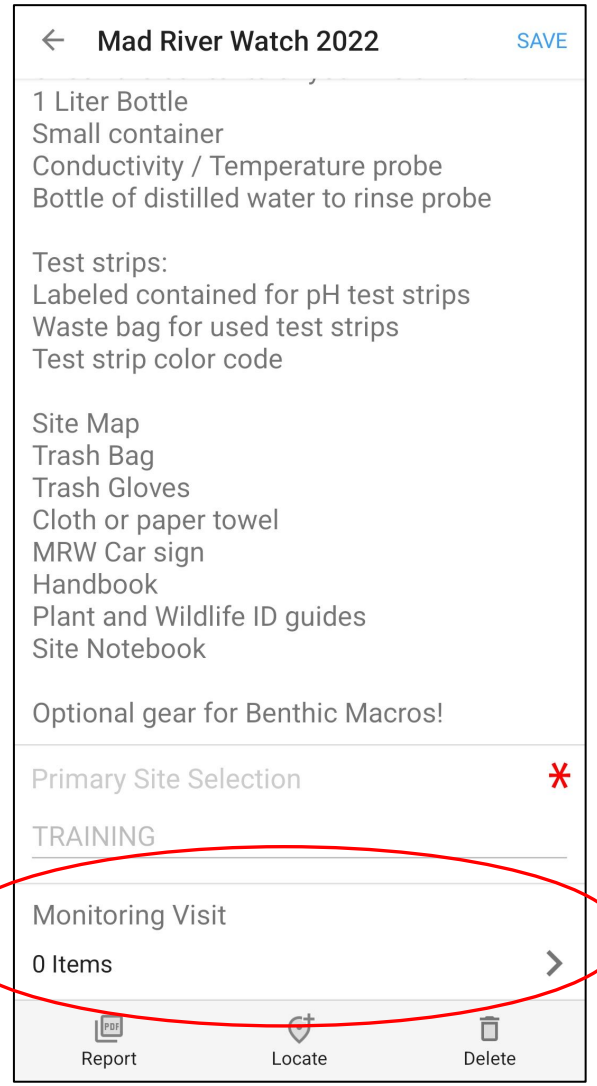
**NOTE**
You do not create a new record on this screen.

# Field Kit Review




1

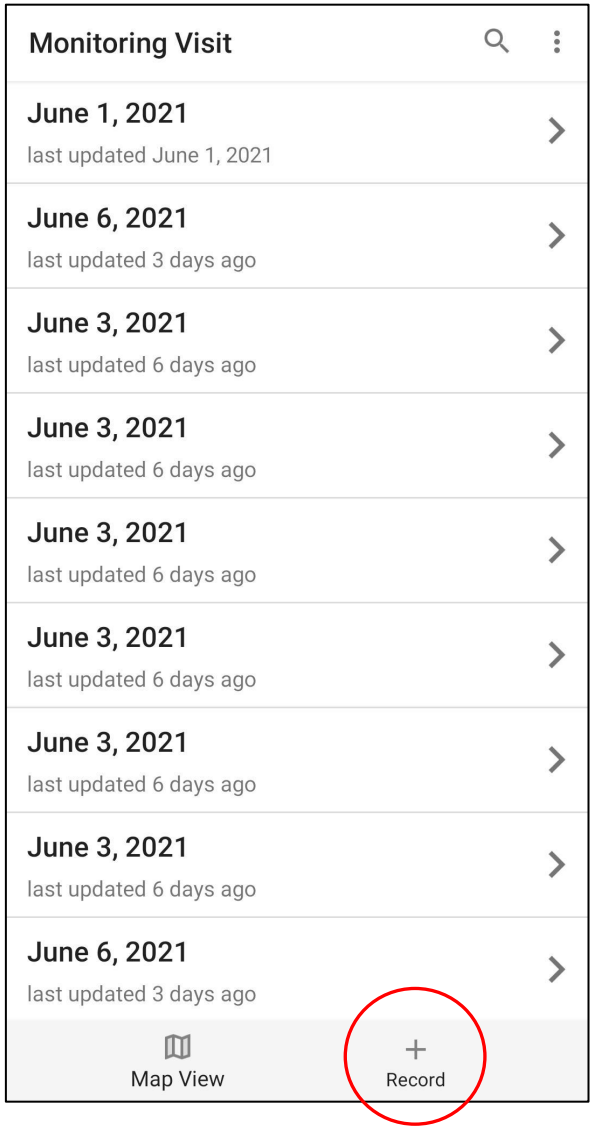
Review the contents of your field kit to make sure you are ready to visit your field site. Scroll down to see the whole page.




2

Select “Monitoring Visit” to advance to the next screen where you will be able to start a new record for each field site visit.

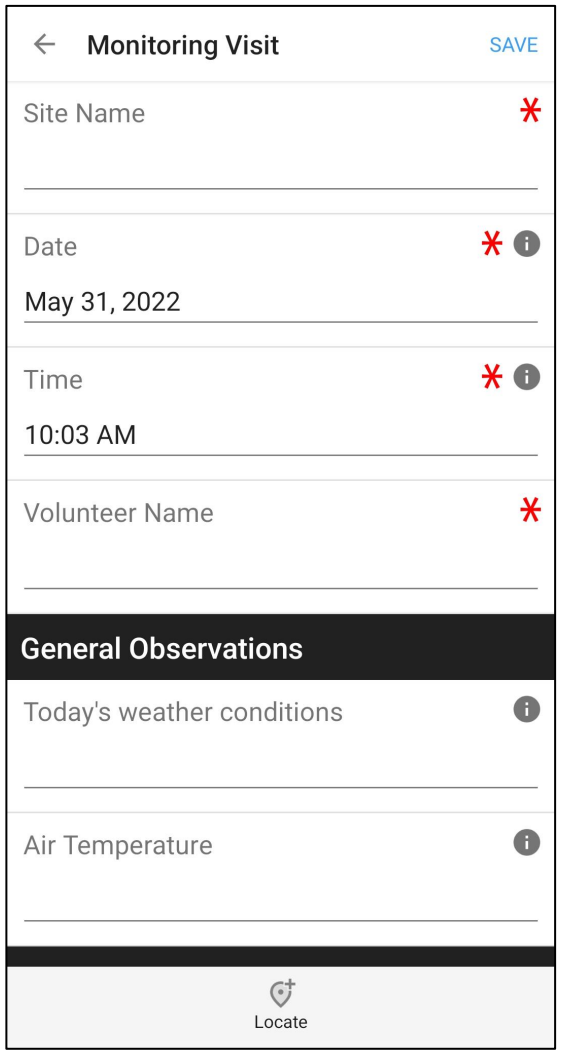
# New Site Record Screen




1. This screen shows all of the records you have taken of your site over the course of the field season. Each new record shows up as a date.

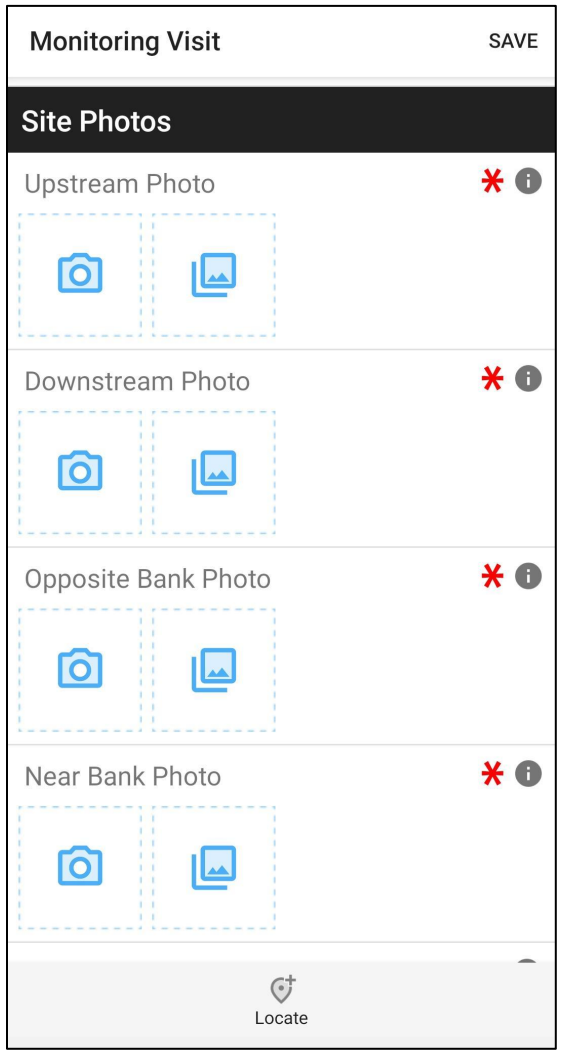
2. Select the + symbol to create a new record. Do this for each new site visit.

# Inside the Field Record – First Observations




1

- The date and time will automatically be recorded when you start a new record at each visit.
- Select your name from the drop down list (or enter it using the "other" option).
- Record the weather conditions from the drop down menu.
- Record the air temperature using whatever method you have on hand (weather app, thermometer, etc)




2

- Take a moment to observe your site for large changes or important context.
- Take four photos. These photos should be taken from the same location each time you visit the site:
  - Upstream
  - Downstream
  - Opposite Bank
  - Near Bank

**IMPORTANT NOTE**

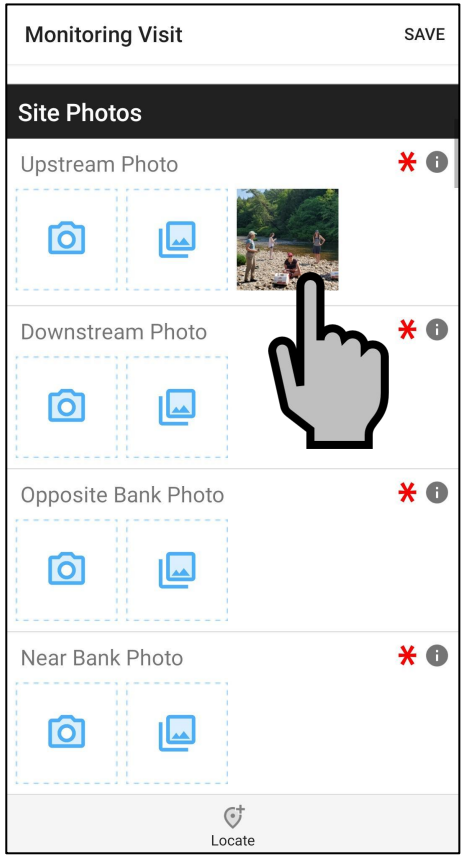
The red star symbol seen throughout the app means that this is a required field. Required fields need to be completed in order to save the record.

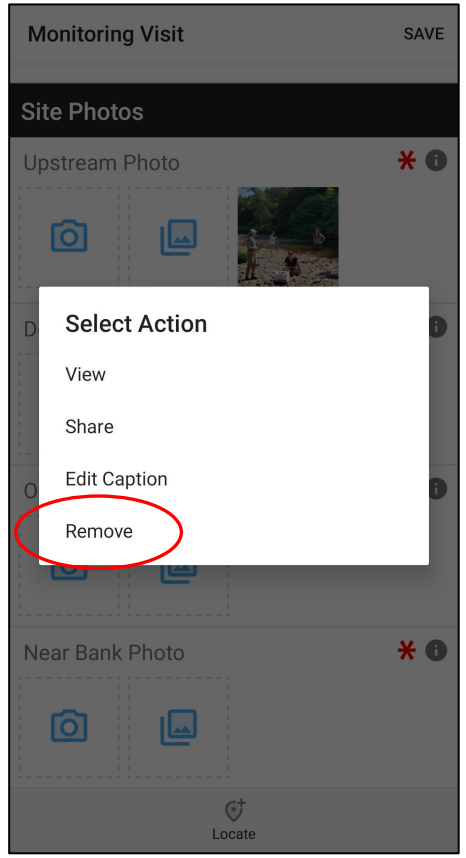
Click this symbol for additional explanations in the app

# Inside the Field Record – Taking Photo

**Take a photo**
Selecting this symbol will open your device's camera app and allow you to take a photo that will be stored within Fulcrum. This is the preferred method.

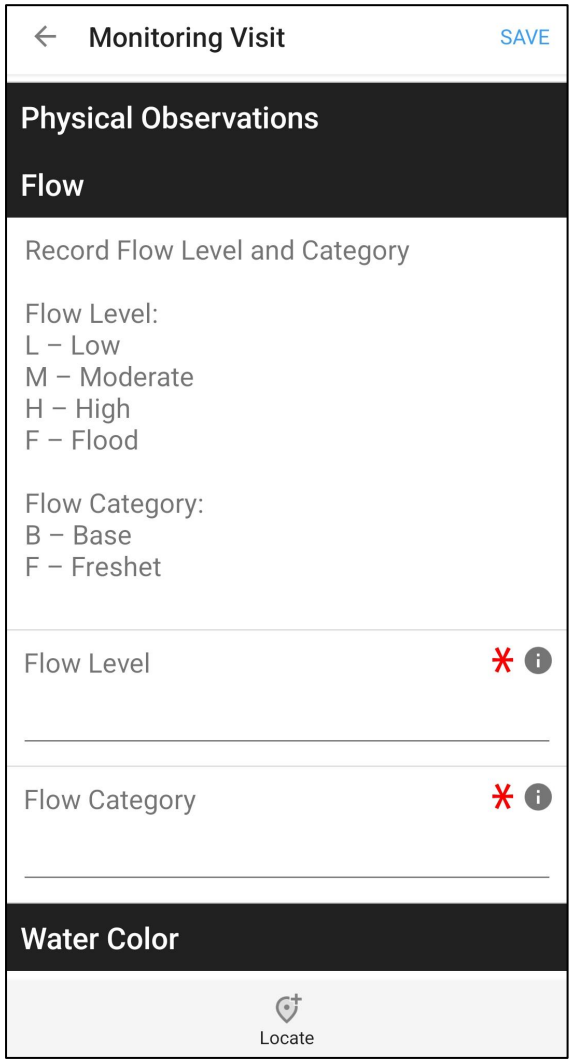
**Upload a photo**
Selecting this symbol will allow you to upload photos taken outside the Fulcrum app. Use this only when necessary.



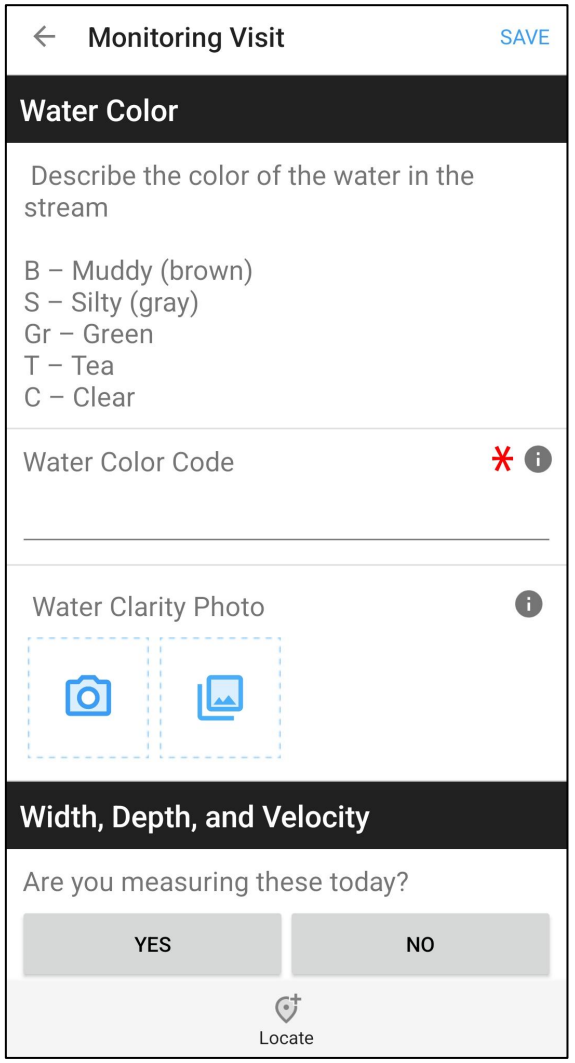

**Deleting a photo**
Selecting the photo after it is taken will open up a menu. Delete the photo from the app by selecting "remove".

# Inside the Field Record – Flow and Color




1

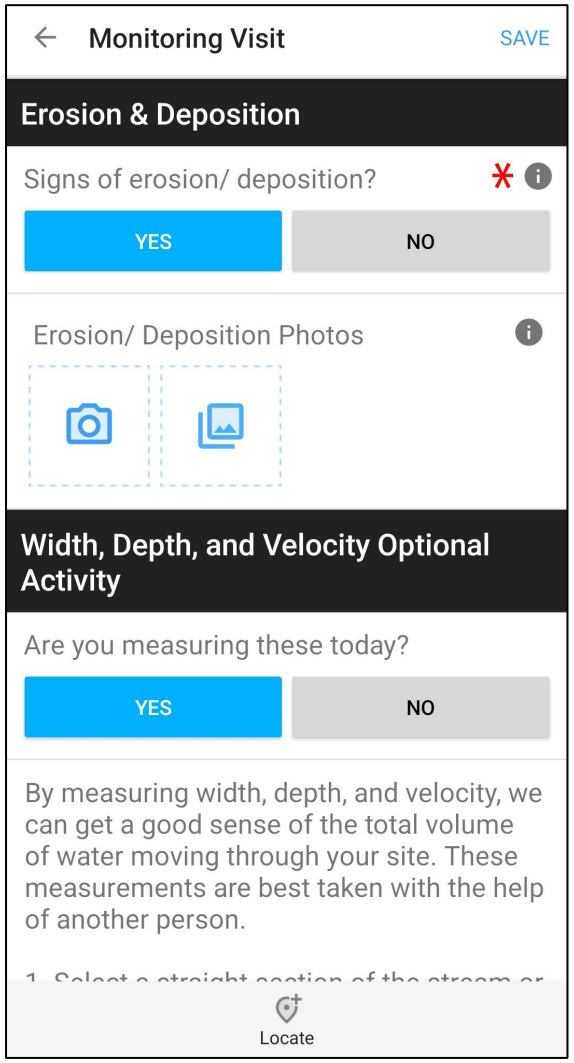
- Use the reference guide in the handbook to note the flow level. As you visit your site, you will get a clearer picture of what the different flow levels look like.
- Note whether the flow is base flow or a freshet flow




2

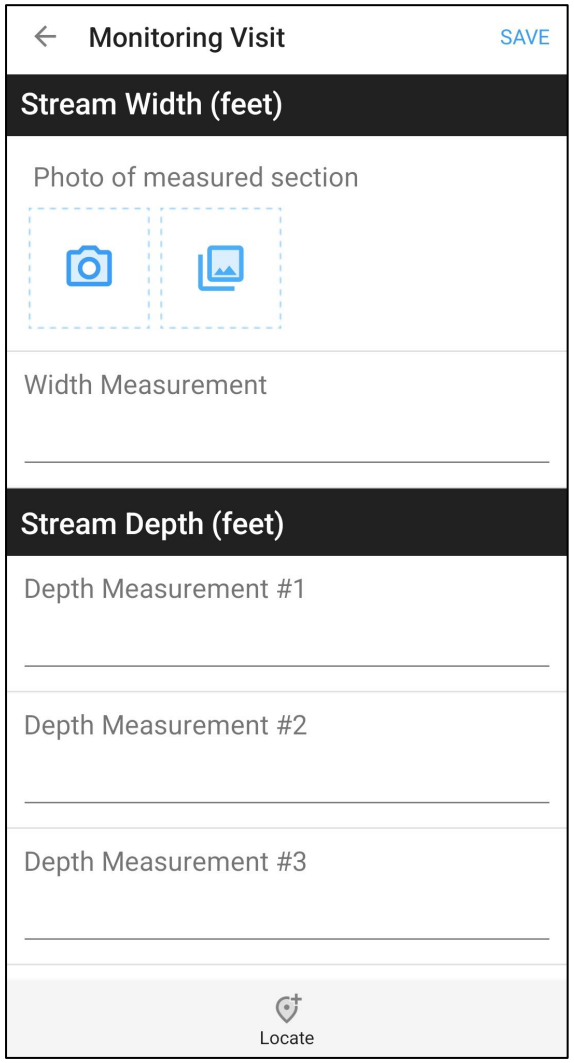
- Use your best judgement to note the color of the water.
- If you have a clear container, photograph the water against a neutral background

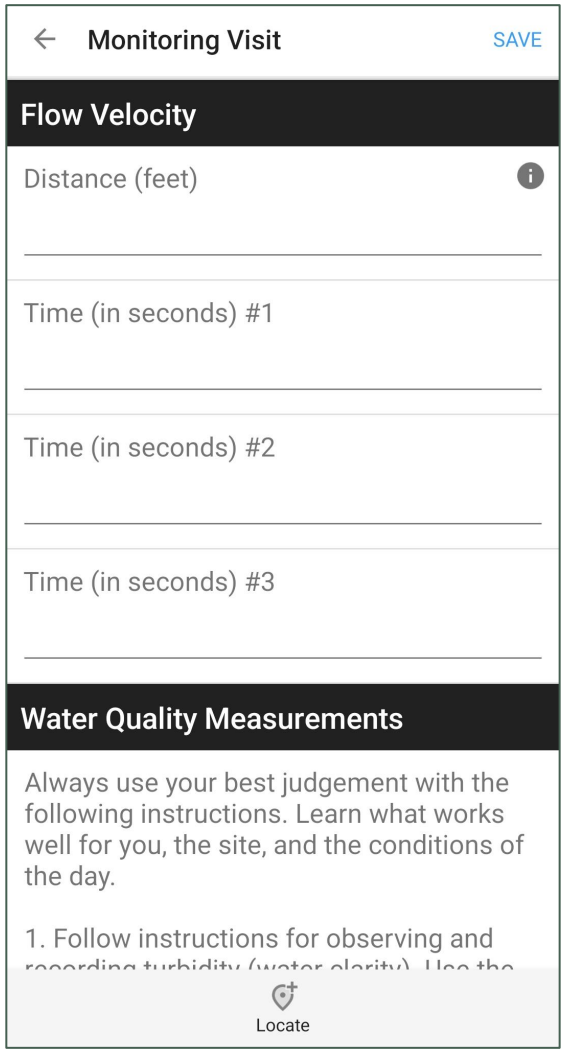
# Inside the Field Record – Erosion and Deposition




- Note if you see evidence of erosion and deposition and take a photo.
- Take additional photos on subsequent visits only if you see changes to erosion or deposition at the site.

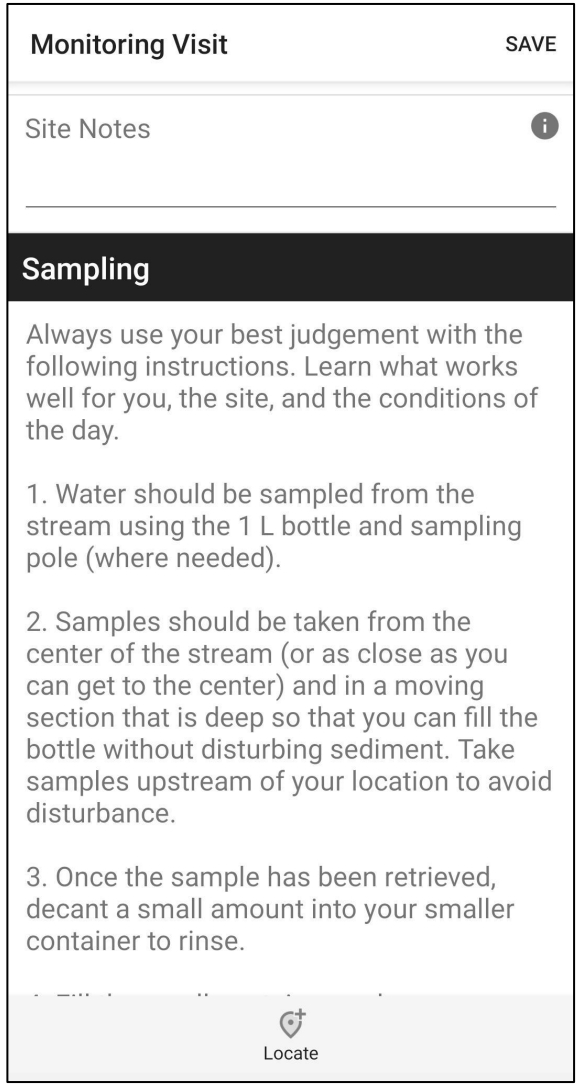
# Inside the Field Record – Width, Depth, & Velocity



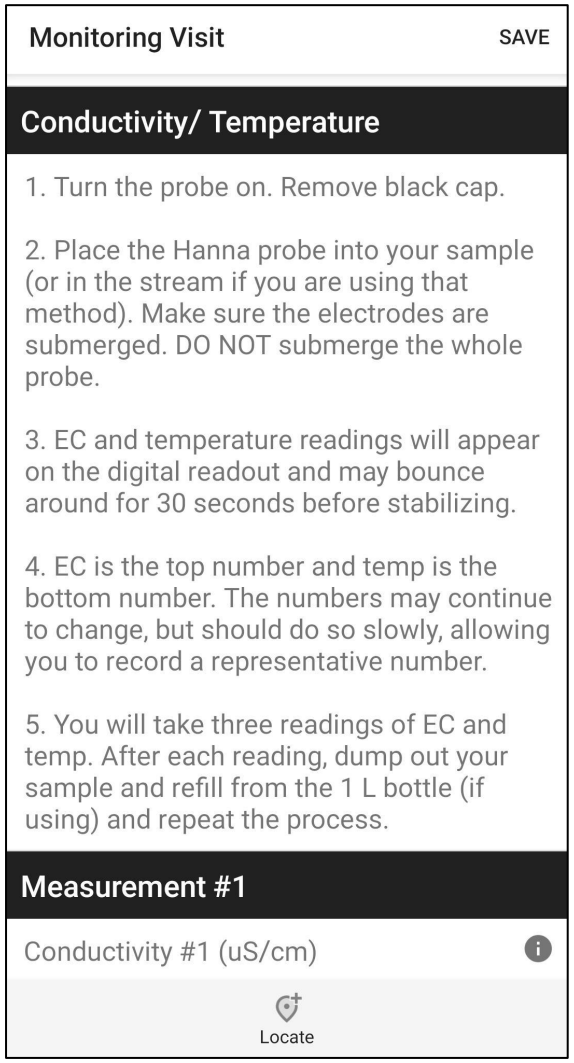

- If you are testing out the optional Float Method activity, record each measurement in this section of the app.
- Details for the activity can be found in the handbook.
- Make sure to photograph the section where the activity took place using the app.

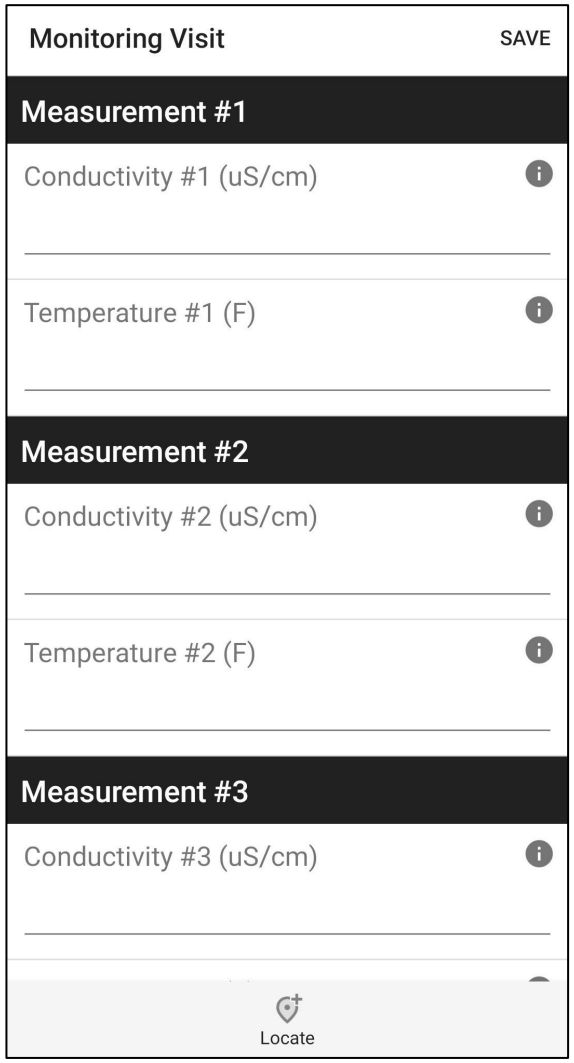
# Inside the Field Record – Water Sampling




1. Always use your best judgement with the following instructions. Learn what works well for you, the site, and the conditions of the day.
2. Water should be sampled from the stream using the 1 L bottle and sampling pole (where needed).
3. Samples should be taken from the center of the stream (or as close as you can get to the center) and in a moving section that is deep enough so that you can fill the bottle without disturbing sediment. Take samples upstream of your location to avoid disturbance.
4. Once the sample has been retrieved, decant a small amount into your smaller container to rinse.
5. Fill the small container and measure temperature and electrical conductivity (EC) following instructions below.
6. After measuring temperature and EC, follow instructions for sampling pH.

# Inside the Field Record – Temperature and Conductivity




**Note:** Some sites may only measure temperature using a standard thermometer.

1. Turn the probe on.

2. Remove black cap.

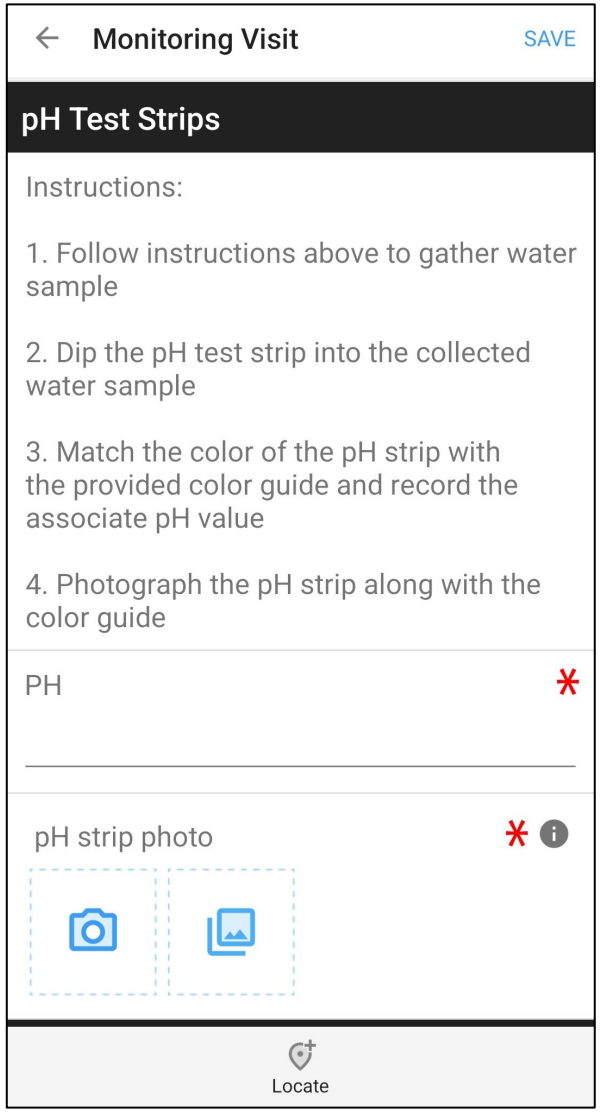
3. Place the Hanna probe into your sample (or in the stream if you are using that method). Make sure the electrodes are submerged.
   *__DO NOT__ submerge the whole probe.

4. EC and temperature readings will appear on the digital readout and may bounce around for 30 seconds before stabilizing.

5. EC is the top number and temp is the bottom number. The numbers may continue to change, but should do so slowly, allowing you to record a representative number.

6. You will take three readings of EC and temp. After each reading, dump out your sample and refill from the 1 L bottle (if using) and repeat the process.

# Inside the Field Record – pH Test Strips




1

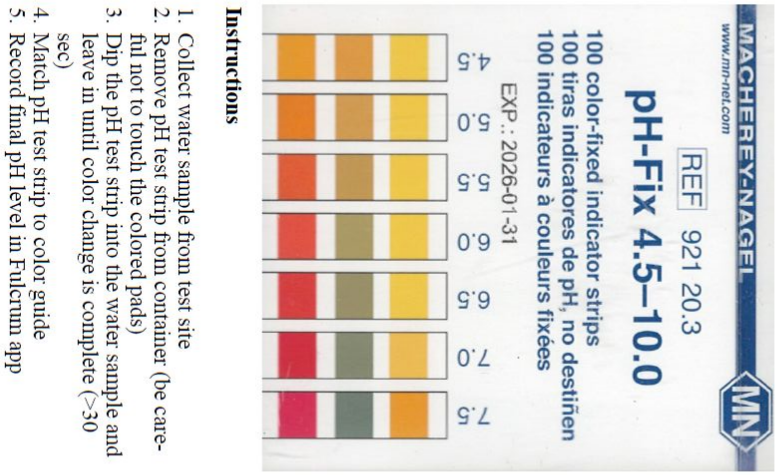
Take a water sample (as noted earlier.

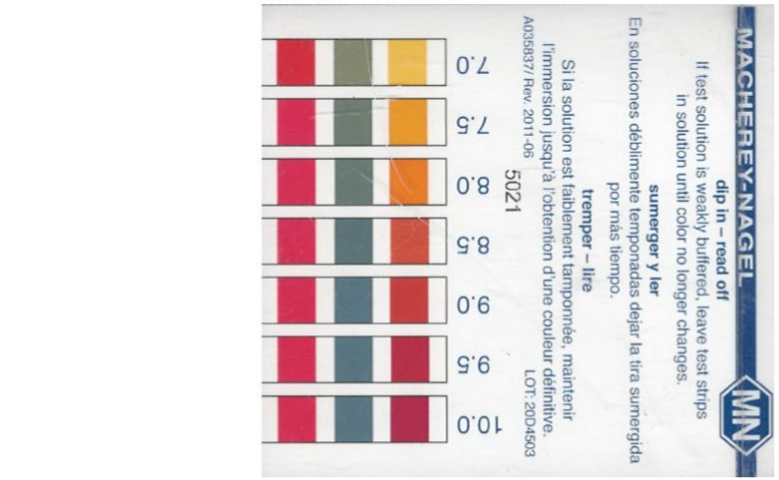
2

Place the pH test strip into the collected water sample and leave until it finishes changing color.

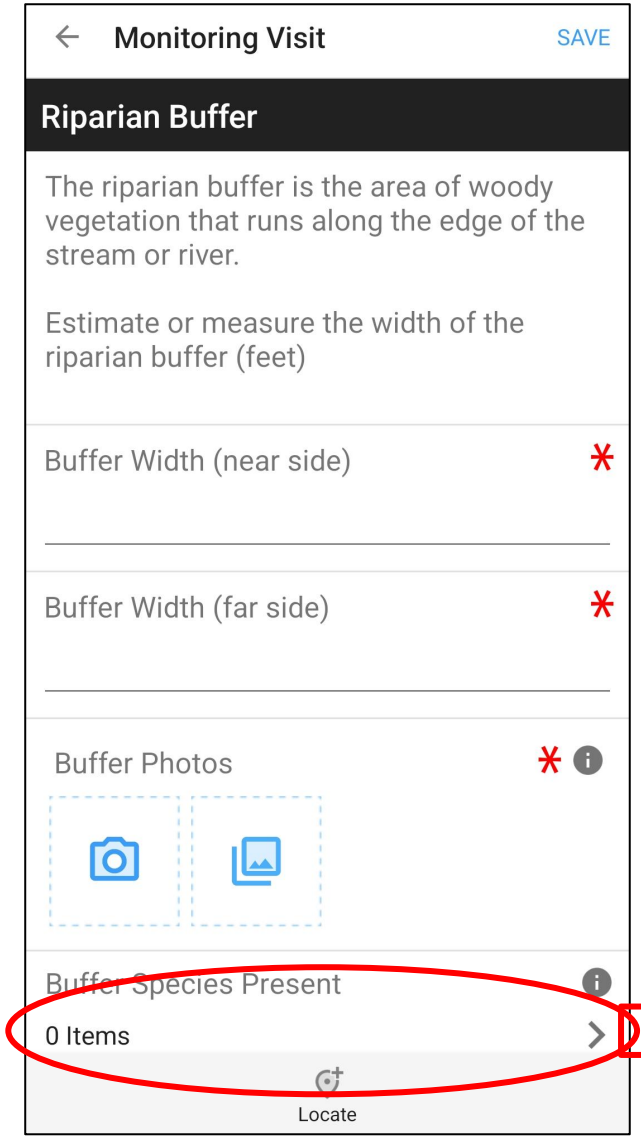
3

Lay the test strip along the color guide and photograph. Record the pH level.



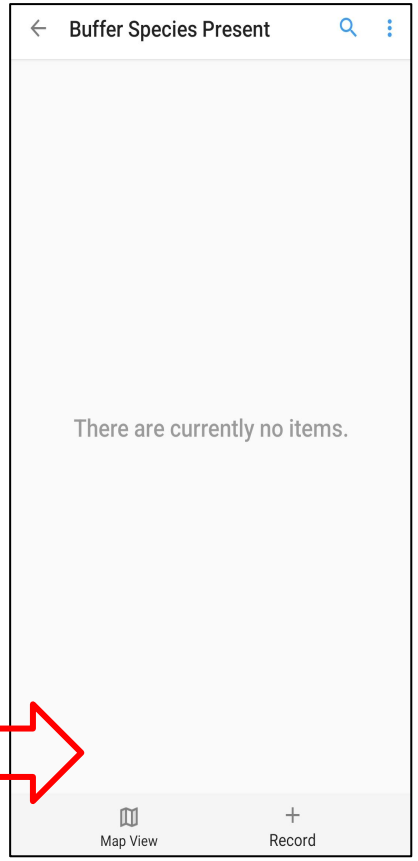
# Inside the Field Record – Riparian Buffers




1

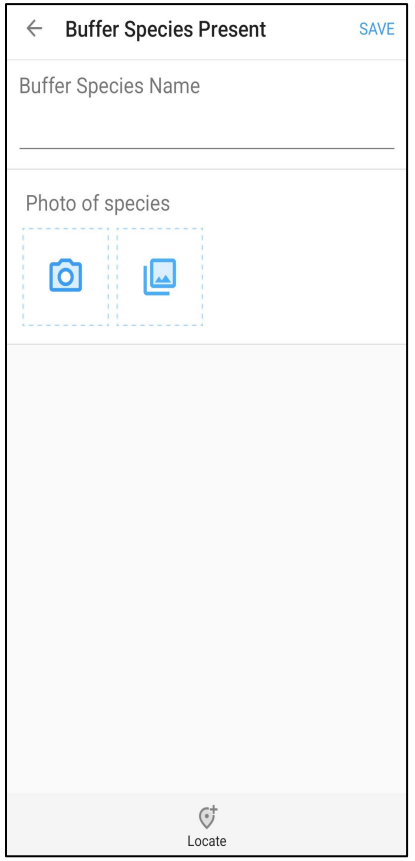
**Buffer Observations - Start and End of Season**

The riparian buffer at your site should be closely observed at the start and end of the field season. Begin by estimating the width of the woody buffer on each side of the river. Exclude areas of invasive species or mowed areas from this estimate. Photograph the area being estimated.




2

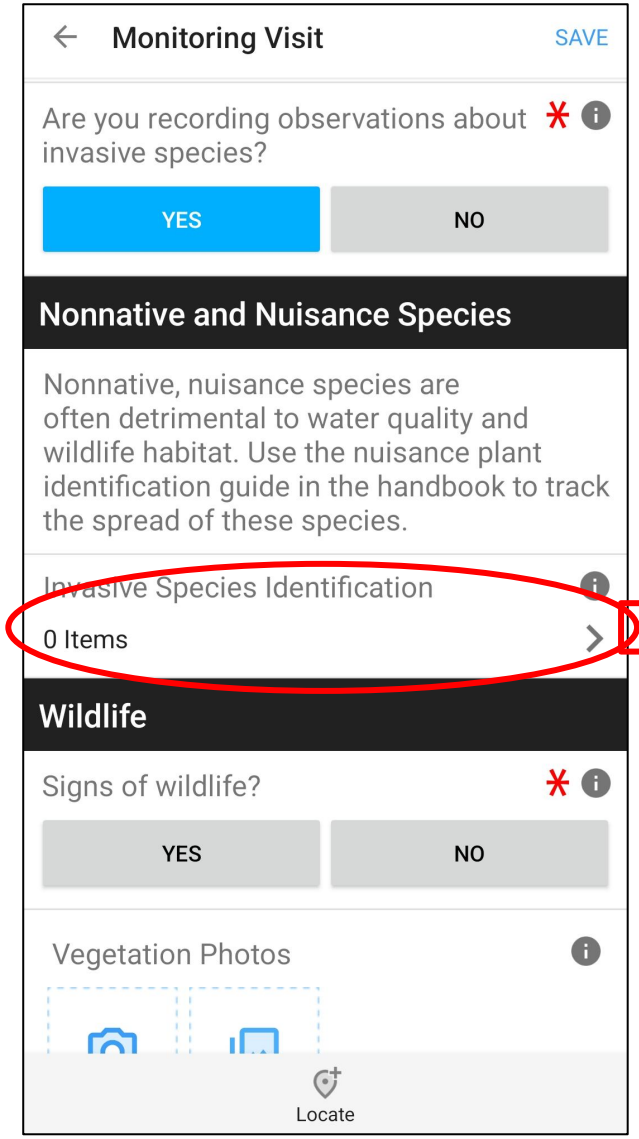
Create a new subrecord for each species being recorded. Try to identify the most common species of woody plants and shrubs found at your site.




2

For each subrecord, note the species name (to the best of your ability) and photograph a sample of that species. Try to capture important characteristics like leaf shape and bark texture.

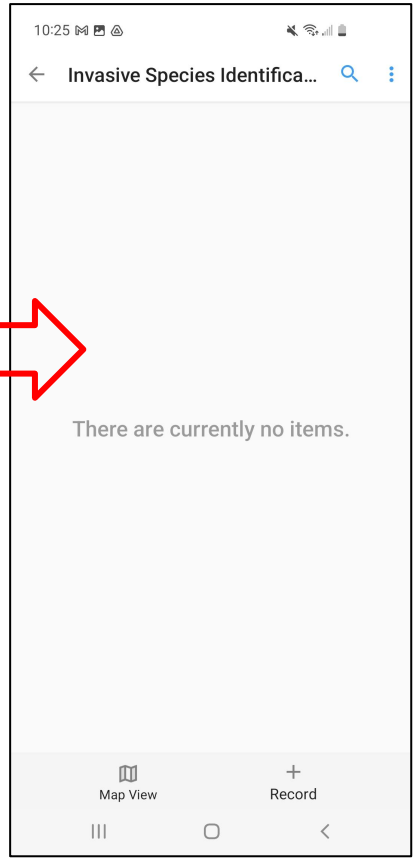
# Inside the Field Record – Nonnative and Nuisance




1

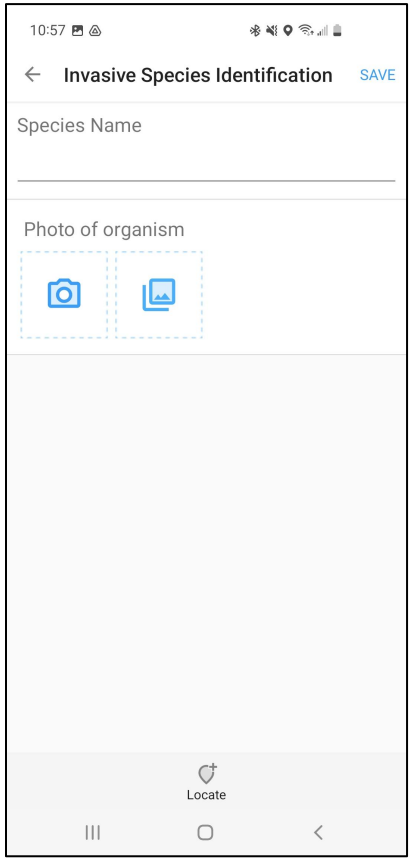
**Invasive Species - Start and End of Season**

Invasive species should be identified at the start and end of the field season. There are many nonnnative and nuisance species commonly found in the Mad River Valley. Try to identify and record the ones you find at your site. Invasive species in Vermont can be explored at https://vtinvasives.org.




2

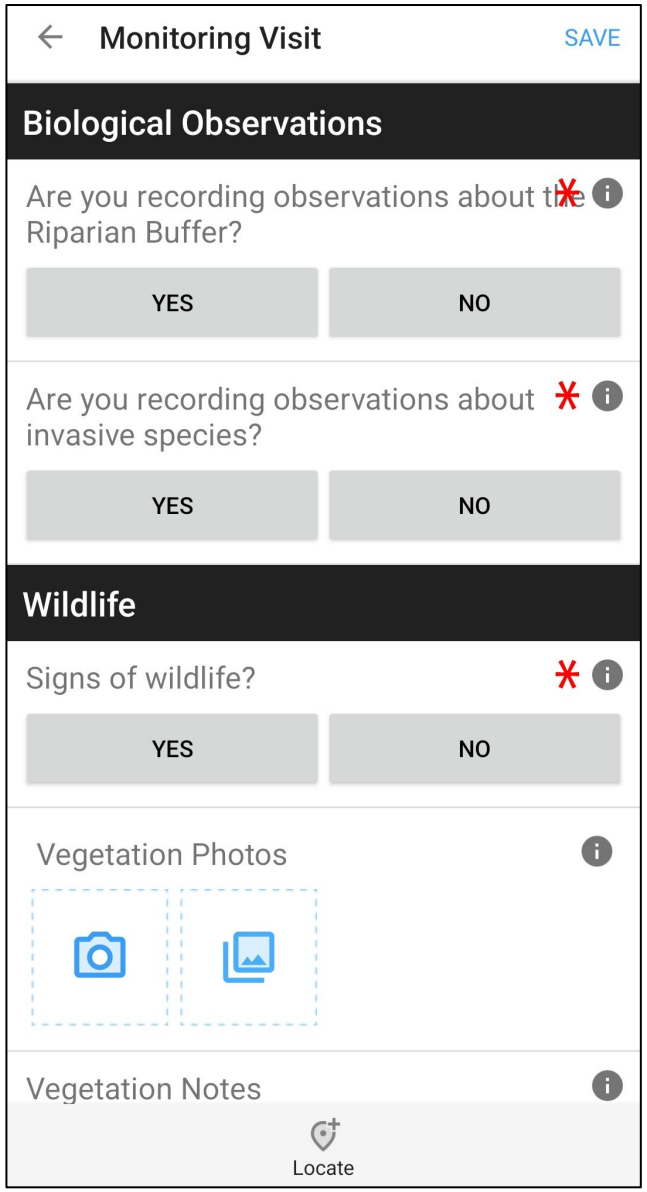
Create a new subrecord for each species being recorded.




3

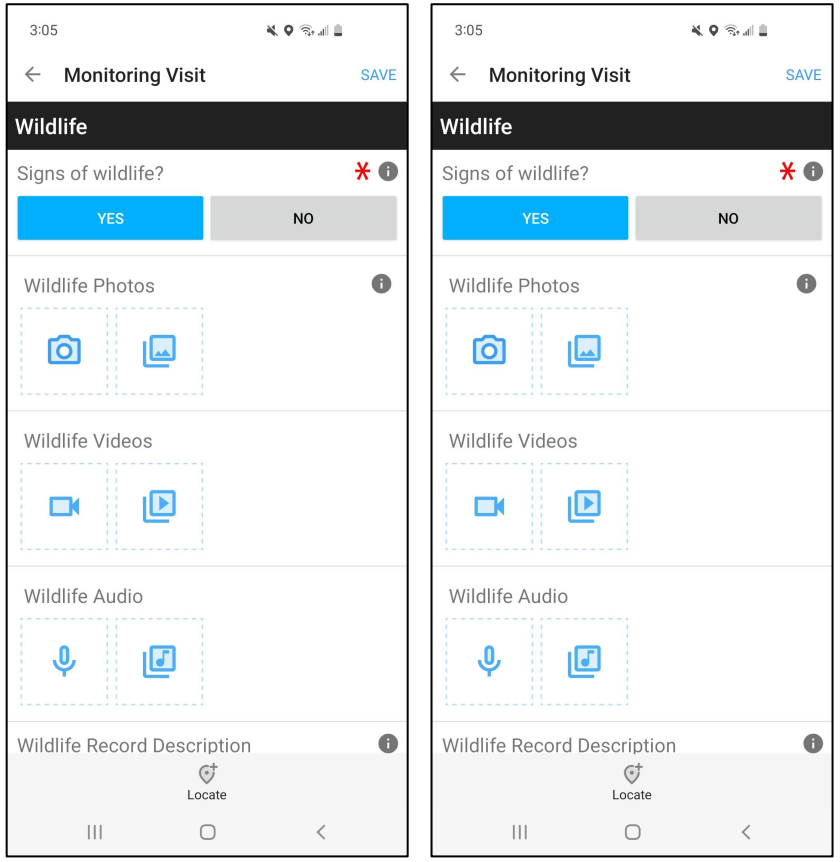
For each subrecord, note the species name (to the best of your ability) and photograph a sample of that species. Try to capture important characteristics like leaf shape and bark texture.

# Inside the Field Record – Wildlife and Vegetation



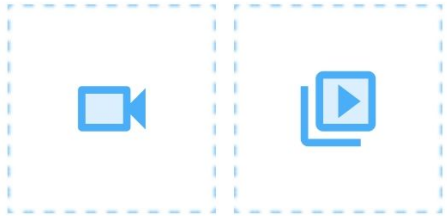

## Signs of Wildlife and Vegetation

This section offers you an opportunity to record any wildlife or signs of wildlife that you see during your field visit. Please also photograph and notable vegetation at your site as well.



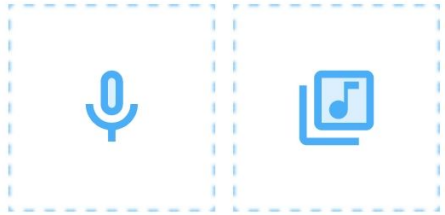






**Record / Upload Video**

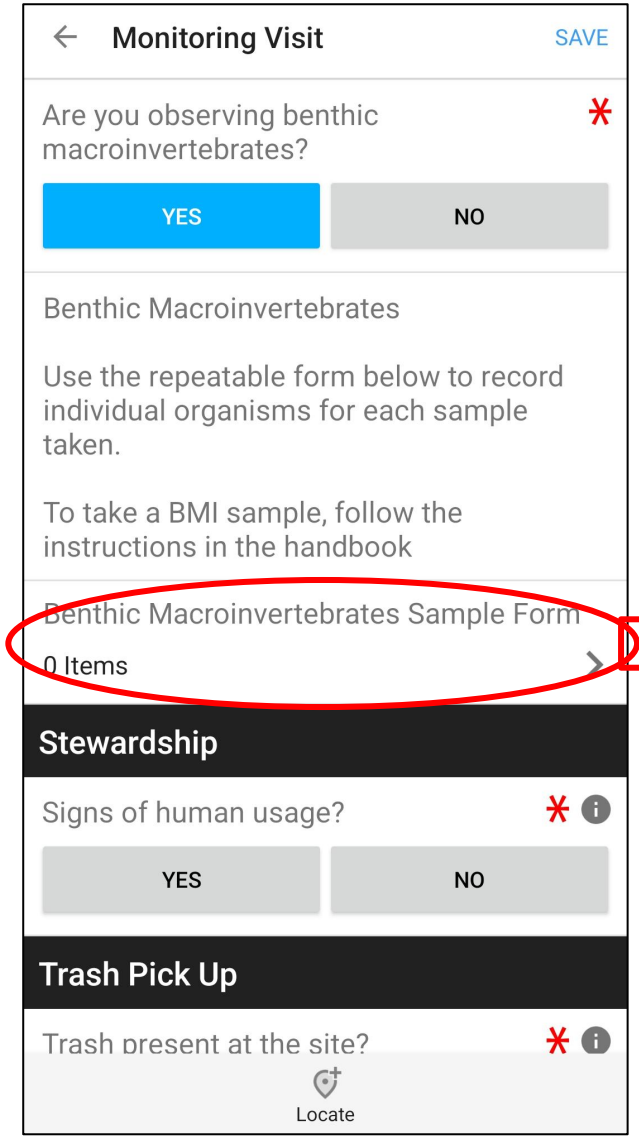
Selecting this symbol will open your device's video app and allow you to take a video that will be stored within Fulcrum.



**Record / Upload Audio**

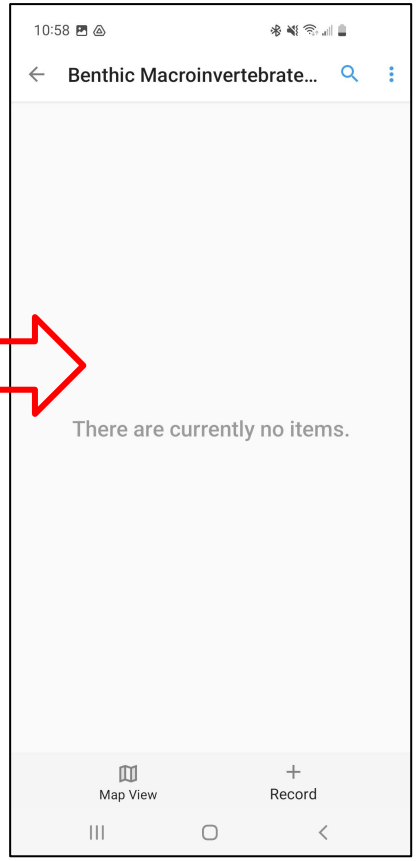
Selecting this symbol will open your device's audio recording app and allow you to take a audio recording that will be stored within Fulcrum.

# Inside the Field Record – Benthic Macroinvertebrates



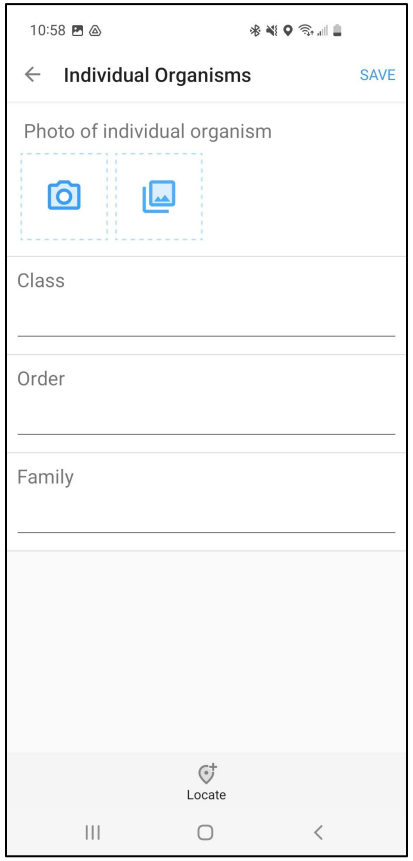

1

**Benthic Macroinvertebrates (BMI) - Optional Activity**
Refer to the optional activity guide in the handbook for the steps to sample and identify BMI species from your site.




2

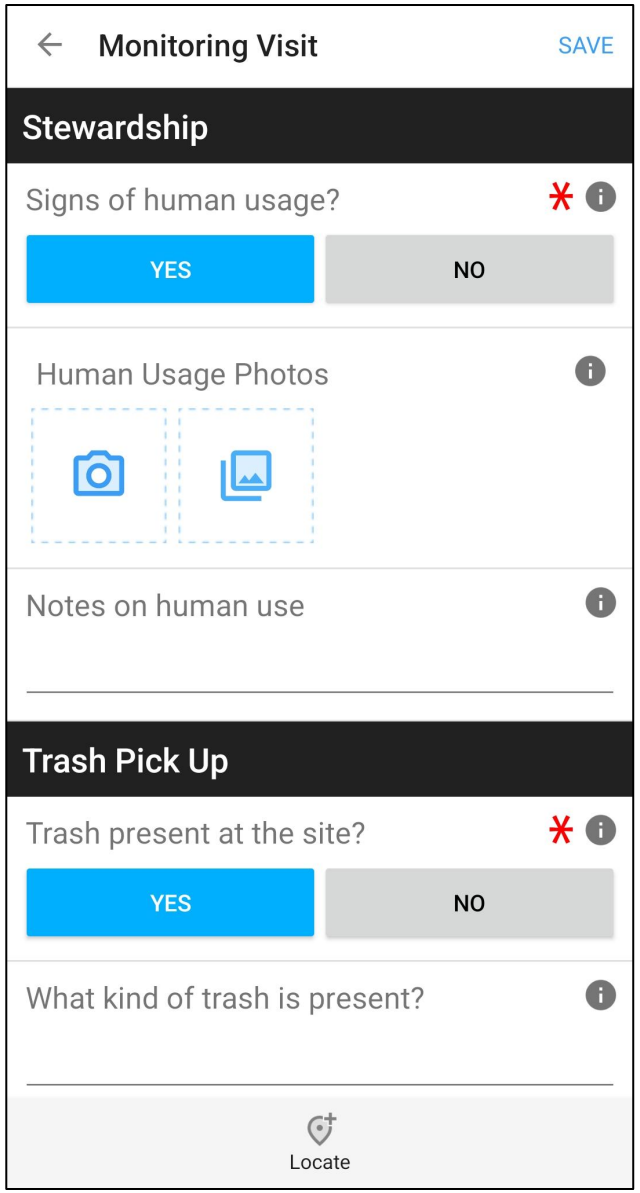
Create a new subrecord for each species being recorded.

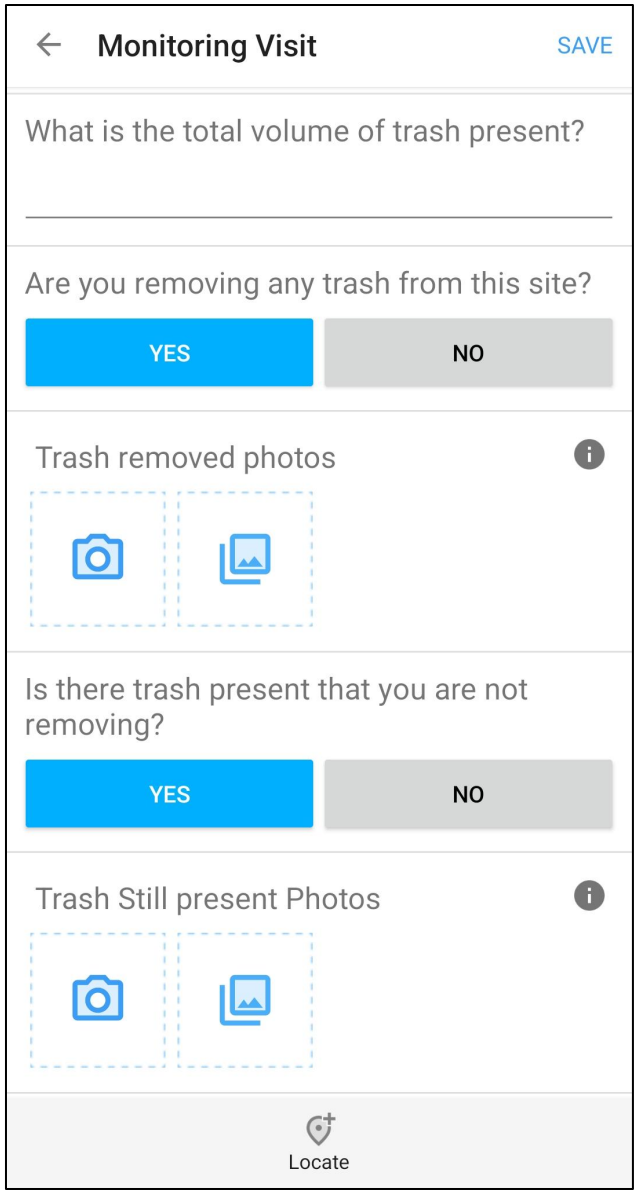



3

For each subrecord, note the species name (to the best of your ability) and photograph a sample of that species.

# Inside the Field Record – Stewardship



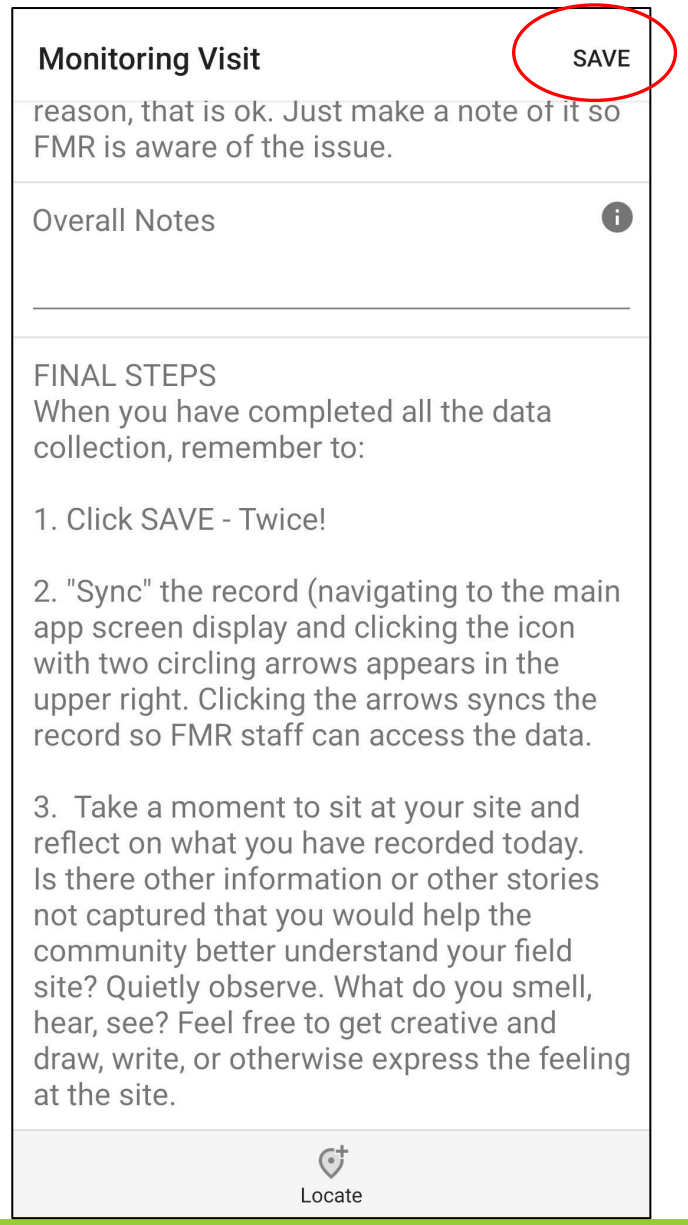

1. Record information about the impact human presence has or is having on your site.

2. Indicate all of the types and rough volume of trash that is present. If you do not know the source of some trash, indicate that you don't know. If the source is not listed, just enter "other" and fill in the source with text.

3. Take a photo of the trash that you are removing from the site.
   Take a photo of any trash that you are not removing.

4. When you have completed all of the tasks in this section, and you feel comfortable, please bag the trash, remove it from the site, and dispose of it properly. If you do not feel comfortable removing the trash for any reason, that is ok. Just make a note of it so FMR is aware of the issue.

# Final Steps – Important!




When you have completed all the data collection, remember to:

1. Click SAVE. This will take you to the “New Site Record” screen. From here, navigate to the “Field Kit Review” using the back button on your device and click SAVE again. If you have not entered all required fields, you can “save as a draft”. All fields should be completed before syncing.

2. "Sync" the record (navigating to the main app screen display and clicking the icon with two circling arrows that appears in the upper right). Clicking the arrows syncs the record so FMR staff can access the data. You will need to be connected to the internet to sync successfully.

3. Take a moment to sit at your site and reflect on what you have recorded today. Is there other information or other stories not captured that would help the community better understand your field site? Quietly observe. What do you smell, hear, see? Feel free to get creative and draw, write, or otherwise express the feeling at the site.