Diamondback Dash Survey123 Guide

Thank you for your interest in diamondback terrapins and DWR's Diamondback Dash! We are excited to see this project grow and to partner with volunteers, just like you, to collect data about Virginia's diamondback terrapin populations.

Your participation in this project will not only help us better understand the status of terrapin populations in Virginia – it will also help us develop better management strategies to protect and conserve diamondback terrapins in the future.

For this study, we will be utilizing the ArcGIS application – Survey123. Survey123 is a form-based application that allows users to create, share, and analyze surveys. Survey123 makes data collection and analysis fast and efficient. With a few clicks on a smartphone, you will easily be able to report your diamondback terrapin sightings and other information.

Downloading the Survey123 App

Note for returning participants: We <u>HIGHLY</u> recommend uninstalling and reinstalling the Survey123 application from your phone to clear any associated data or maps from last year that are no longer in use.

1. Go to the app store on your smartphone or tablet and download the free Survey123 app. You are looking for the app with this logo
2. Open the app and press the option "continue without signing in" (Figure A).
3. Allow the app to access your location and camera while using the app (Figure B).
   a. If the app does not prompt you to allow this, check the location and photo settings on your phone.
4. Once you reach the home screen, you are ready to download the "Diamondback Dash" survey!
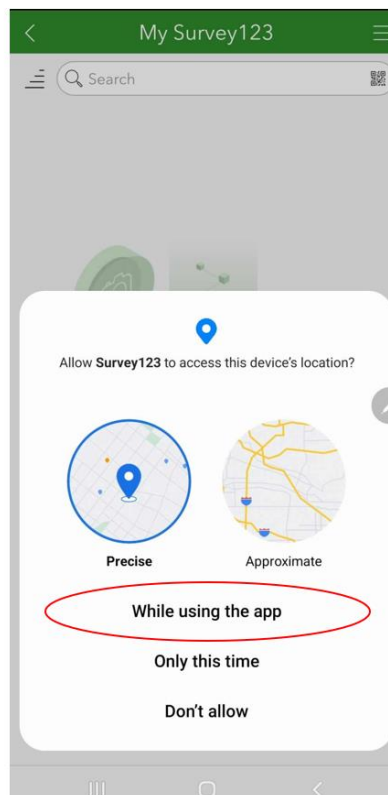
Figure A

Figure B

Figure C

Downloading the Survey

1. Press the QR code icon in the search bar (Figure C) and scan this QR code ➡

2. The "Diamondback Dash" survey will automatically open.

3. You have successfully downloaded the "Diamondback Dash" Survey! Close out of the survey (Figure D) and press "Close and lose changes" (Figure E). The survey is now saved in your app for easy accessibility.
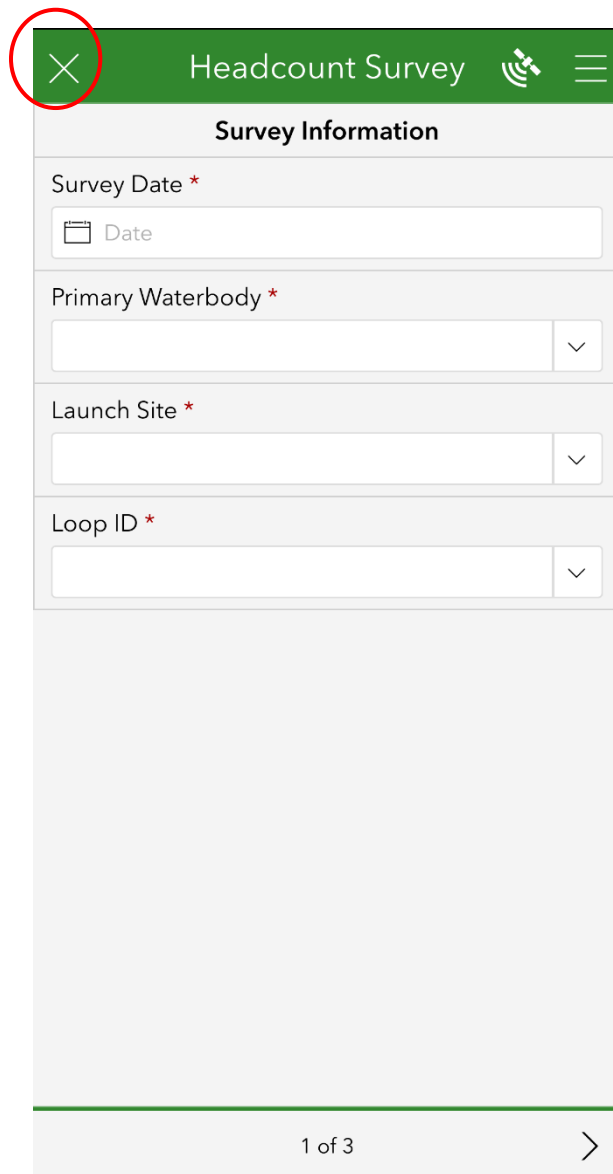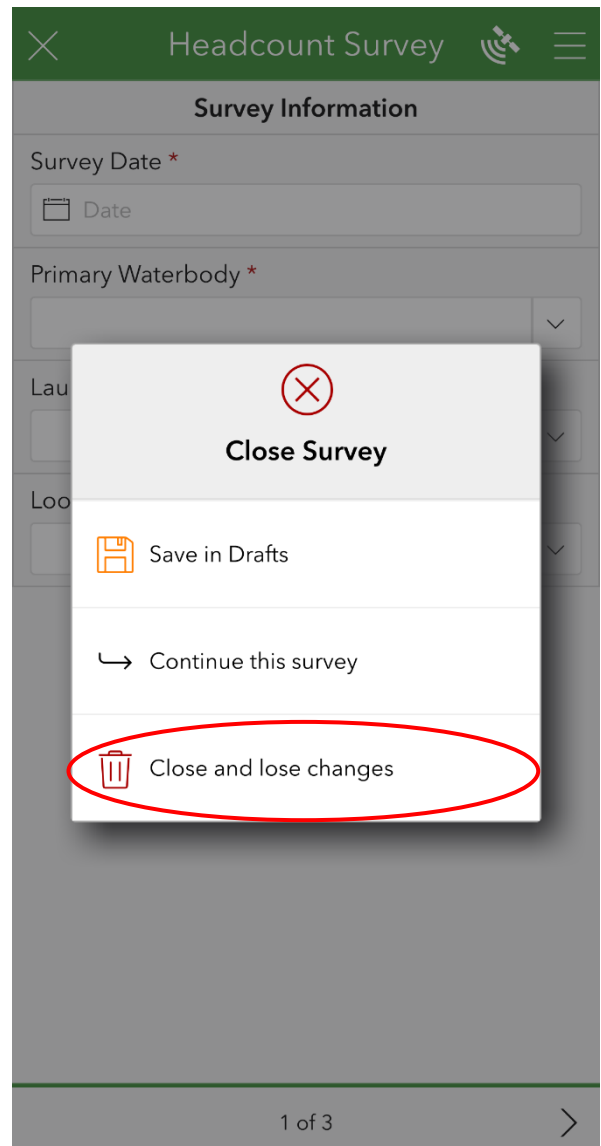
Figure D

Figure E

Downloading the Offline Map

This step is imperative to your success in completing your route. This will allow you to download and view your specific route with predetermined headcount locations into the app. Please complete this step before traveling to complete your route in a place with a stable WiFi connection.

1. Reopen your "Diamondback Dash" survey. On the first screen, select the three lines in the top right corner (Figure F). Next, select "Offline Maps" from the menu (Figure G). A list will populate with all the water bodies associated with this project (Figure H). Select the cloud icon that corresponds to the water body you will be sampling in and the map will download. You do not need to download all of the maps, only the one that is associated with your loop.
   a. **Note for Potomac adopters:** Due there are two Potomac maps. Loops LOPO1 and POLW4 should use the Potomac Northumberland map. Loops POSK2, POBC1, and POCB1 should use the Potomac Westmoreland map.
   b. Note: If you are sampling a smaller water body or an area known by a colloquial name and are unsure what main water basin your route falls into, please consult the route map sent to you by DWR map. Your main water body will be located within the legend area.
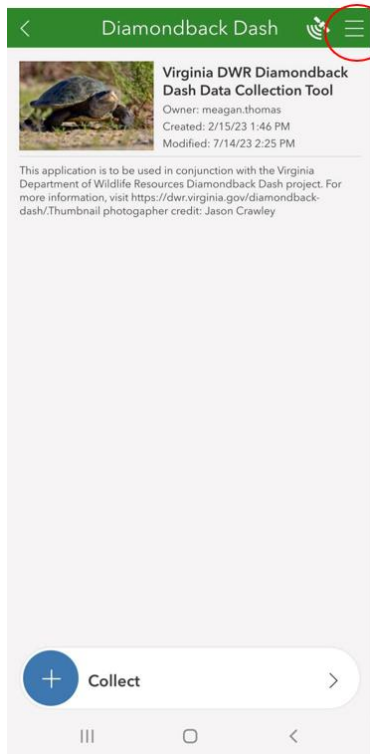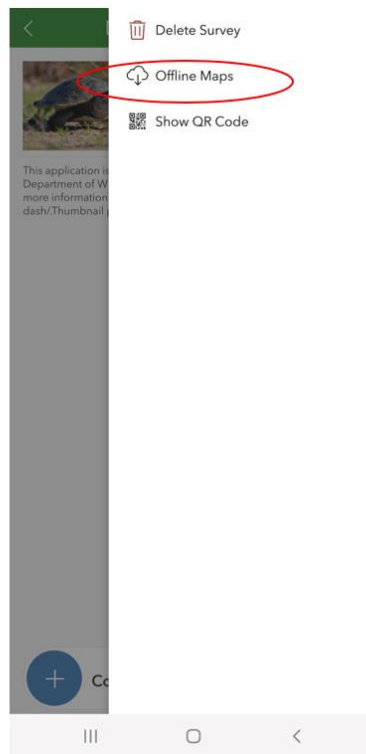

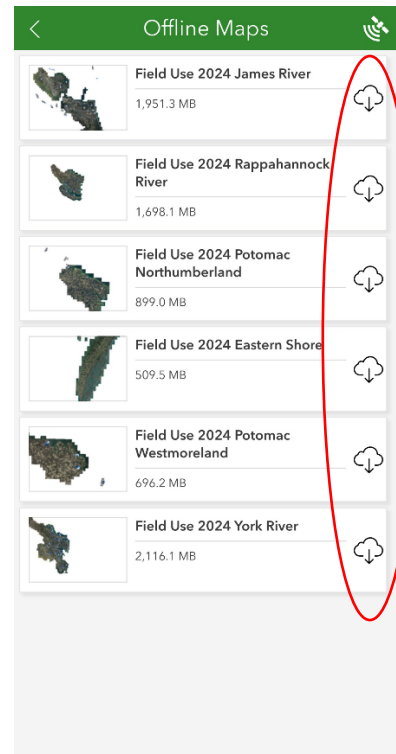**Figure F**   **Figure G**   **Figure H**

Day of Survey—Data Collection Protocols

1. **Prepare in advance.** Plan ahead and coordinate with the on-shore contact and other volunteers who will be sampling with you.

    a. Make sure you leave home with all the necessary and suggested items you will be taking with you.

    b. **Assign roles.** Designate one or more person/s to watch for terrapins (**observer/s**) and one to record the data and navigate using their phone (**recorder**). If you only have one pair of binoculars, the observer should be the individual using these.

2. **Arrival.** Park in appropriate, designated spaces or areas. Try your best to avoid interfering with other's use of the launching area or boat ramp when setting up

3. **Begin entering survey information.** Have the recorder open the Survey123 app and press on the "Diamondback Dash" survey (Figure A).
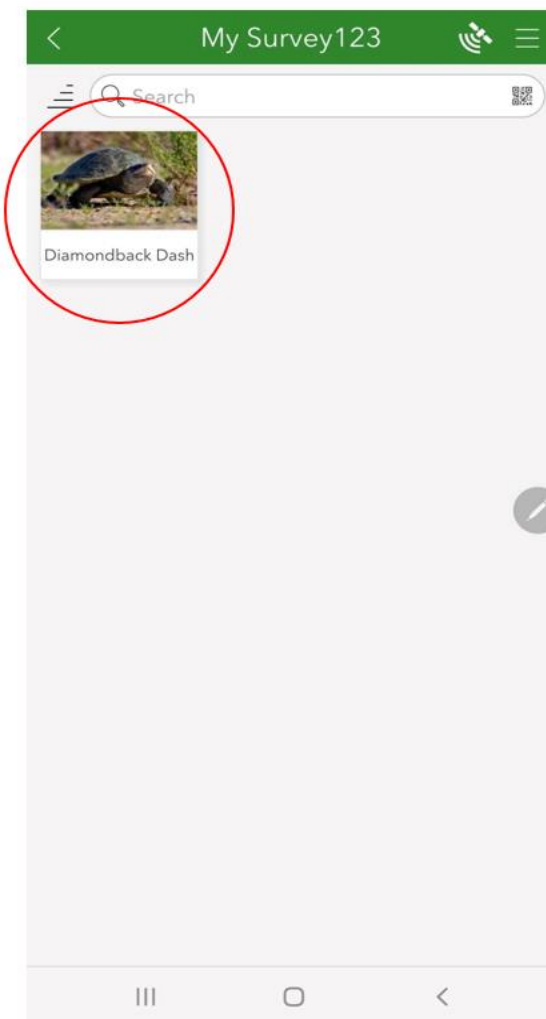   a. Press "Collect" at the bottom of the screen (Figure B). You are now in the survey!
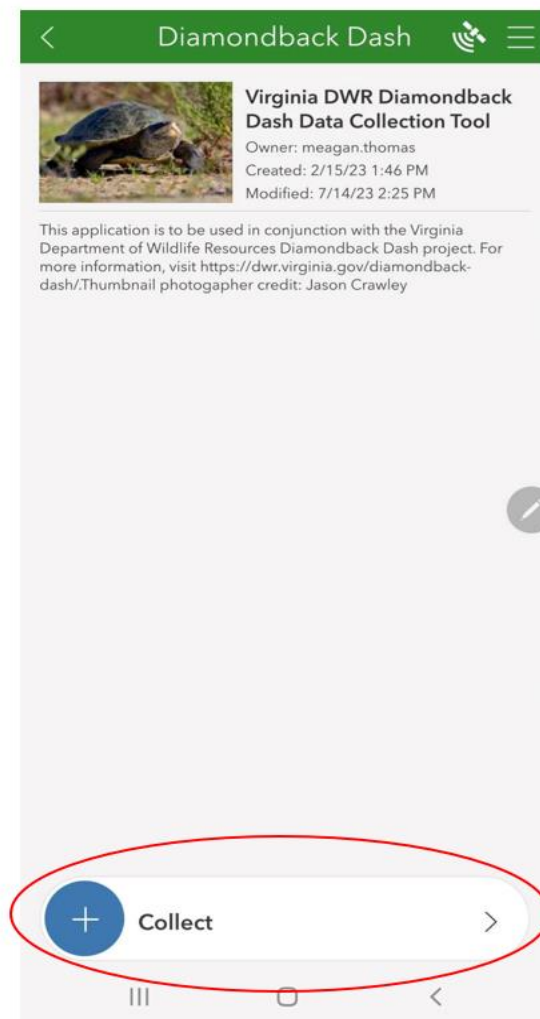

Figure A

Figure B

b. Once in the survey, click on the box under "Survey Date" to fill in the date and use the drop down arrows to easily fill in the information requested for "Primary Waterbody", "Launch Site", and "Loop ID". **If you forget this information, it is all located on your route map sent to you by DWR staff**.

c. Press the arrow at the bottom right of the screen (Figure C) to go to the next page **but do not make any additional selections or enter any additional information at this time.**

4. **Time to launch.**
   a. Do a quick check to confirm that your group has all of the equipment needed for sampling, and when ready, launch your vessels at the designated launch area. Try your best to avoid interfering with others' use of the launching area or boat ramp when you and your team launch your vessels.

   b. After launching, position yourself in a location where you can take a few moments to enter the needed survey start data, while staying out of the way of anyone else who is attempting to launch a vessel.

Figure C

5. **Have the Recorder enter the first survey point at the starting location.** Survey123 should be on the "Survey Data" screen (page 2 of 3 should read when looking at the bottom of the screen). This screen is where you will enter your starting location, the observations from your head count locations, and your ending location.

   a. The screen will auto-populate a map with your location already GPS-located. Tap the map to expand it to full size (Figure D).

   b. If the base map has not already been set, click the 'windowpane' icon on the right side and a selection of different map options should be displayed (Figure E).

   c. Select the Offline map that you previously downloaded. The map you select should correspond to the primary water body which your loop is associated with and will start with the words 'Field Use'. Do not use a map that does not start with the words 'Field Use'. In this example, we're using the 'Field Use 2024 James River' Map (Figure F)
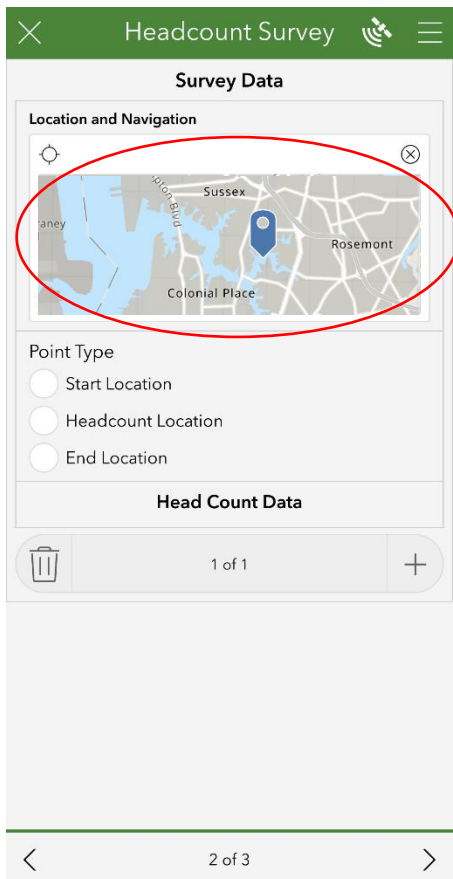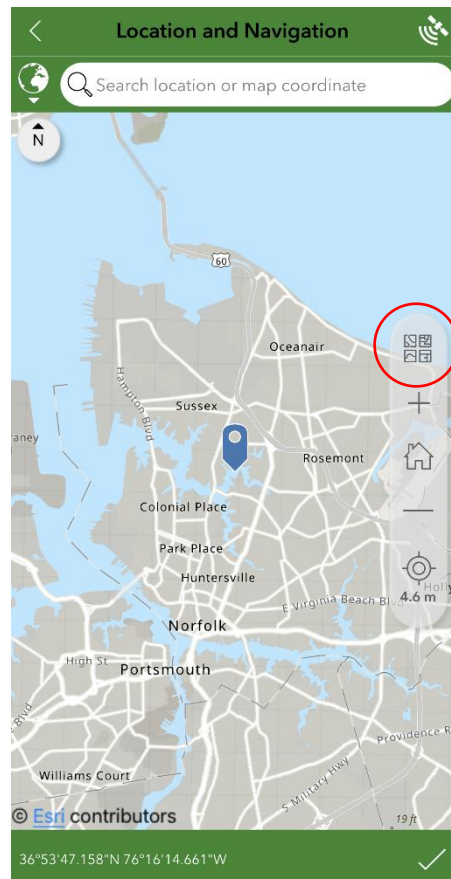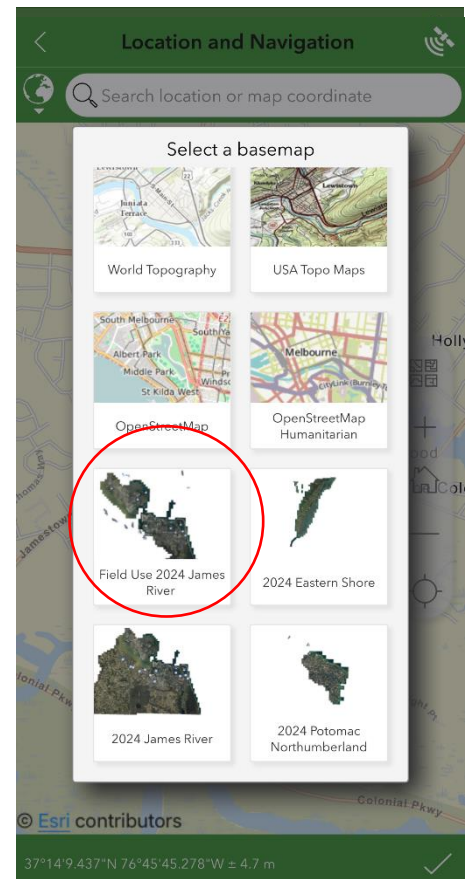

Figure D   **Figure E**   **Figure F**

d. You should now see your location relative to your route and the associated features like the launch site, navigation line, and headcount points all displayed on the map (you may need to pan or zoom around to see everything). If the map is not accurately displaying your current location, tap the cross hairs icon on the right side and the pin should update to your location (Figure G). Note that if you are not physically at the launch site, the map imagery may not appear for you. If you are unable to get the imagery to display while at the launch site, please contact DWR.

e. After confirming the appropriate location is showing on the map, click the check mark at the bottom right of the screen to lock in the pin location. Then, click the arrow at the top left to navigate back to the main data collection page (Figure G).

f. Select the 'Start Location' option as seen in (Figure H). And then enter the Paddle Start Time by clicking on the designated field. This box should autopopulate with the current time.
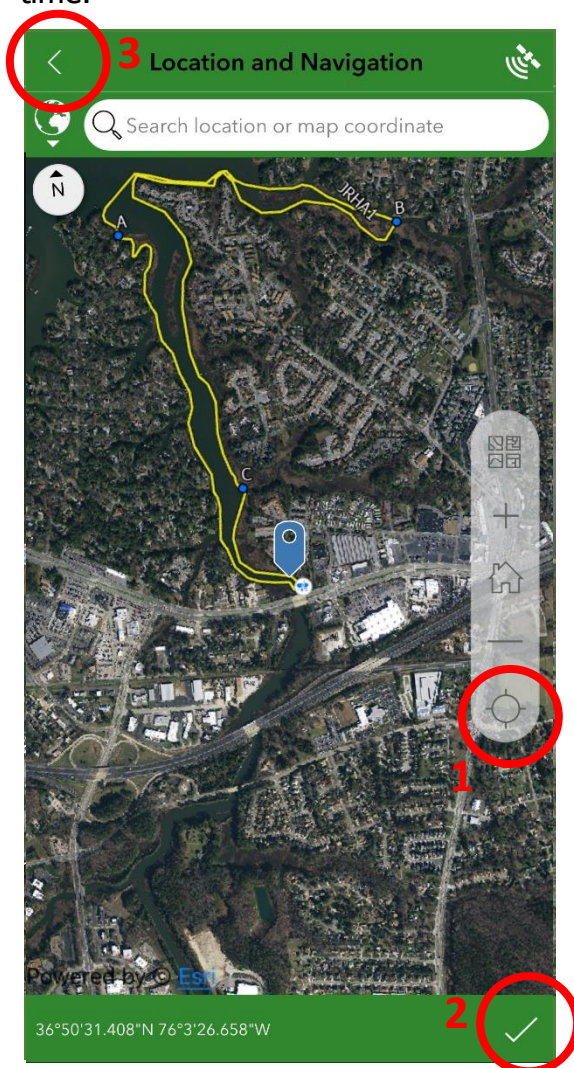

Figure G; **1**: the crosshairs icon to update your current location on the map. **2**: The check mark to confirm the dropped pin location. **3**: The arrow which returns to the Survey Data screen.
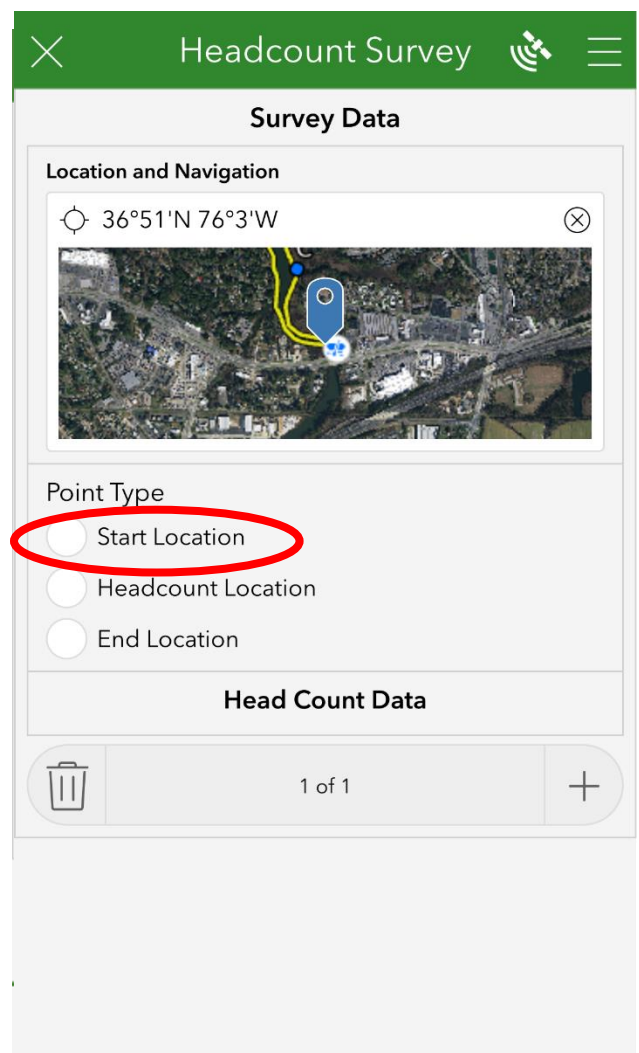
Figure H

g. Once the location and start time have been recorded. Click the **+** icon to submit the record (Figure I). This saves the record and generates a new point creation screen.

h. If you need to return to a previously saved record to make changes, you can do so by clicking on the arrow icon and shuffling back to the record you wish to edit (Figure J). Likewise, if you want to delete a record that you have already entered, you can hit the trash can icon which will delete the record that is currently displayed on the screen.
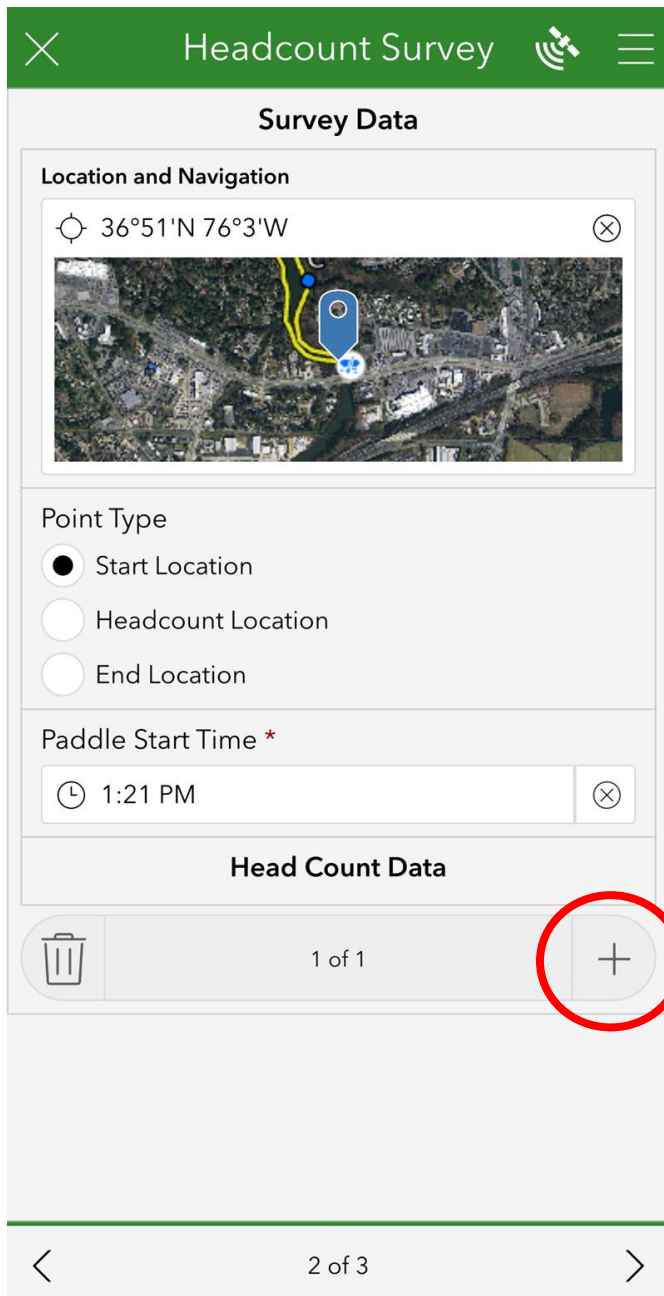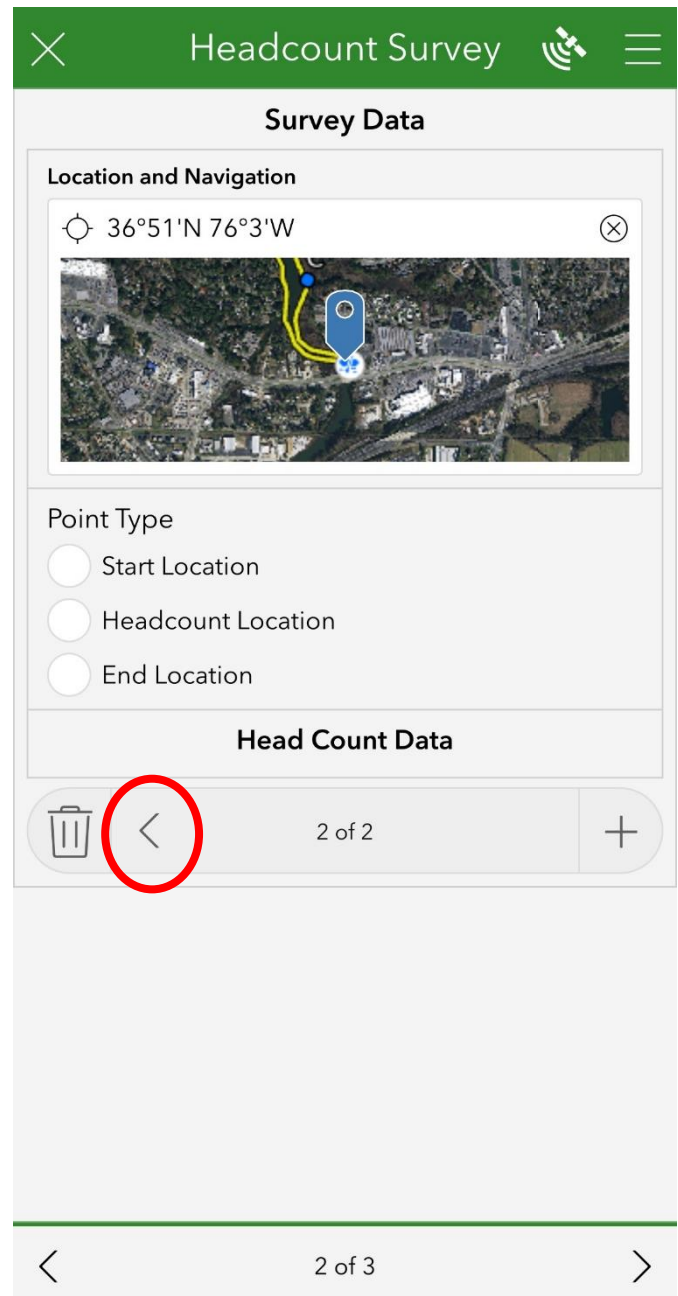

Figure I

Figure J

i. You are now ready to navigate to your first headcount location. Don't forget to have the observer keep track of the number of turtles and crab traps you see along the way. This can be done very easily through the utilization of a tally counter and is more thoroughly explained in the following instructions.

6. **Begin to navigate to the first Head Count Location**.
   a. Toggle back to the main map view by once again clicking on the rectangular map under 'Survey Data' to display a larger version of the basemap. Pan around the map and locate your first head count site along the route, which should be labeled A, and begin following the route to that location.

   b. To ensure that you are heading in the right direction, remember that you can press the crosshair icon at any time to refresh your current location along the route and confirm that you are headed in the right direction (shown above in Figure G).

   c. Please note that some launch sites have multiple routes associated with them. Please make sure that you are following the right route (i.e. the one that was assigned to you and matches the .PDF map that was previously emailed to you).

7. **Scan for terrapins and crab pots along the way.**
   a. Paddle along the route slowly and quietly, maintaining a steady pace. Terrapins are "shy" and may be more likely to hide from noisy paddlers and boats.

   b. Focus on the area directly in front and to the side of your vessel up to a field of 180° (Figure K). Look for terrapins heads poking out of the water as they typically raise their head above water to breathe or look around (Figure L). Sometimes they can look like sticks bobbing in the water, and may or may not resurface.

   c. Keep track of the number of terrapin heads you see between the start location and your destination (Head Count Point A) as you will be asked to record this information after arriving at the point. Using a tally counter can be incredibly helpful for keeping track of the number of turtles observed between points.

   d. Crab pots can be easily identified based on the presence of a float at the water surface. Typically the float is the only thing you will see unless the tide is low and the pot is exposed. Floats/buoys can very in shape and color.
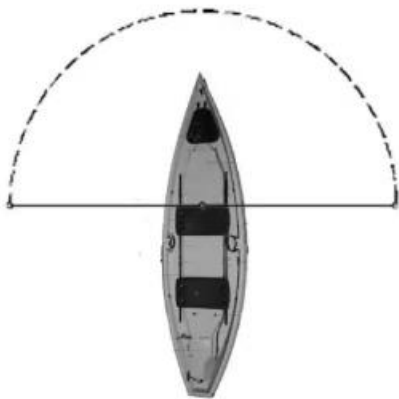

Figure K

**Figure L; Above- multiple terrapins.
Below- a single terrapin**

8. Conduct the first Head Count Survey

a. Once you have arrived at the location of the headcount survey marked 'A', toggle back to the survey data screen by clicking the arrow in the top left corner. In the event that you are unable to access the location of the survey point for any reason (e.g. low water levels, barrier blocking access, etc.), get as close to the location of this point as possible, and conduct the head count survey there.

b. Similar to when you entered the start location, confirm that the location of the pin accurately reflects your current location, hit the check mark at the bottom right of the screen, then toggle back to the data entry page. Select the 'Headcount Location' option from the 'Point Type' section.

c. Select the letter associated with the head count location, in this case is should be 'A' seeing as this is the first survey spot.

d. Record the total number of terrapin heads and crab pots you saw between the starting location and your current location.

You are now ready to conduct your first standardized head count survey. Each survey should last for five minutes and will require you to remain in a stationary location and counting the number of terrapins you observe within that time period.

i. Do your best to remain in the same spot during this time and only paddle if it is to keep your vessel in the same location.

ii. Focus on the area directly in front and to the side of your vessel up to a field of 180°. If you can, arrange your kayaks so they are facing in opposite directions and as such, can position your group to have a 360° view of the surrounding water.

e. Once you have completed your survey, submit the record by clicking on the **+** icon (Figure M).

Figure M

9. **Continue on to the additional head count locations along your route.** These should be visited in alphabetical order, i.e. go from location A to location B, and Location B to Location C, etc. If you had only one head count location (Location A) continue on to Instruction 10.

   a. Repeat the steps outlined in instruction 8 to complete each additional head count survey associated with your route.

   b. Don't forget to be tallying the number of terrapins and crab pots observed BETWEEN locations. You should restart the tally of turtle heads and crab pots between locations each time you begin navigating to a new stop. That is, do not add on to the previous tally, instead, start a new one.

10. **Once you have completed a head count survey at each of the head count locations along your route, you can navigate back to the location where you initially launched.**

    a. You will be asked to record the number of terrapins and crab pots observed during your return paddle from the last head count location to the launch site. Remember that you should restart the tally of turtle heads and crab pots. That is, do not add on the previous tally, instead, start a new one.

    b. Once you have returned to the launching area, return to the Survey Data screen, and add an 'End Location' Point by dropping a point and select 'End Location' as the point type. Record the number of turtle heads and crab pots that you counted between the last head count point point and your current location.

    c. Add the 'Paddle End Time' and then submit your record by clicking the plus icon.

    d. Proceed to the next screen by clicking the arrow on the bottom right of the page, but do not enter any information just yet.

11. **Retreive your equipment from the water and reload it on/in your vehicle. Contact your on-shore contact to let them know that you have returned safely.** Try your best to avoid interfering with others' use of the launching area or boat ramp when you and your team launch your vessels.

12. **Once your equipment has been loaded, it is time to enter the remainder of the neccesary survey information.**

    a. If you would like to record any notes or additional information about the survey and what you encountered, for DWR staff to review, please do so here (Figure N).

Figure N

b. Enter the name of the volunteer who served in the 'Recorder' role. As a reminder there should be one recorder with all other participants acting as observers.

c. Enter the remaining information about the participants who conducted the survey. You will be asked to complete this information for the Loop Adopter first (Figure O.1). After completing the Loop Adopter section, you can select the number of sampling volunteers that accompanied the Adopter on the trip (Figure O.2). This will generate a corresponding series of questions which should be completed for each accompanying sampling volunteer (Figure O.3).

   i. When entering the hours worked by each volunteer, please include any time the individual spent driving to and from the launch location in order to complete the survey.
   ii. Hours should be entered in increments of .25 (e.g. .25, .50, .75 or 1 hour) where every .25 hours would equal 15 minutes.
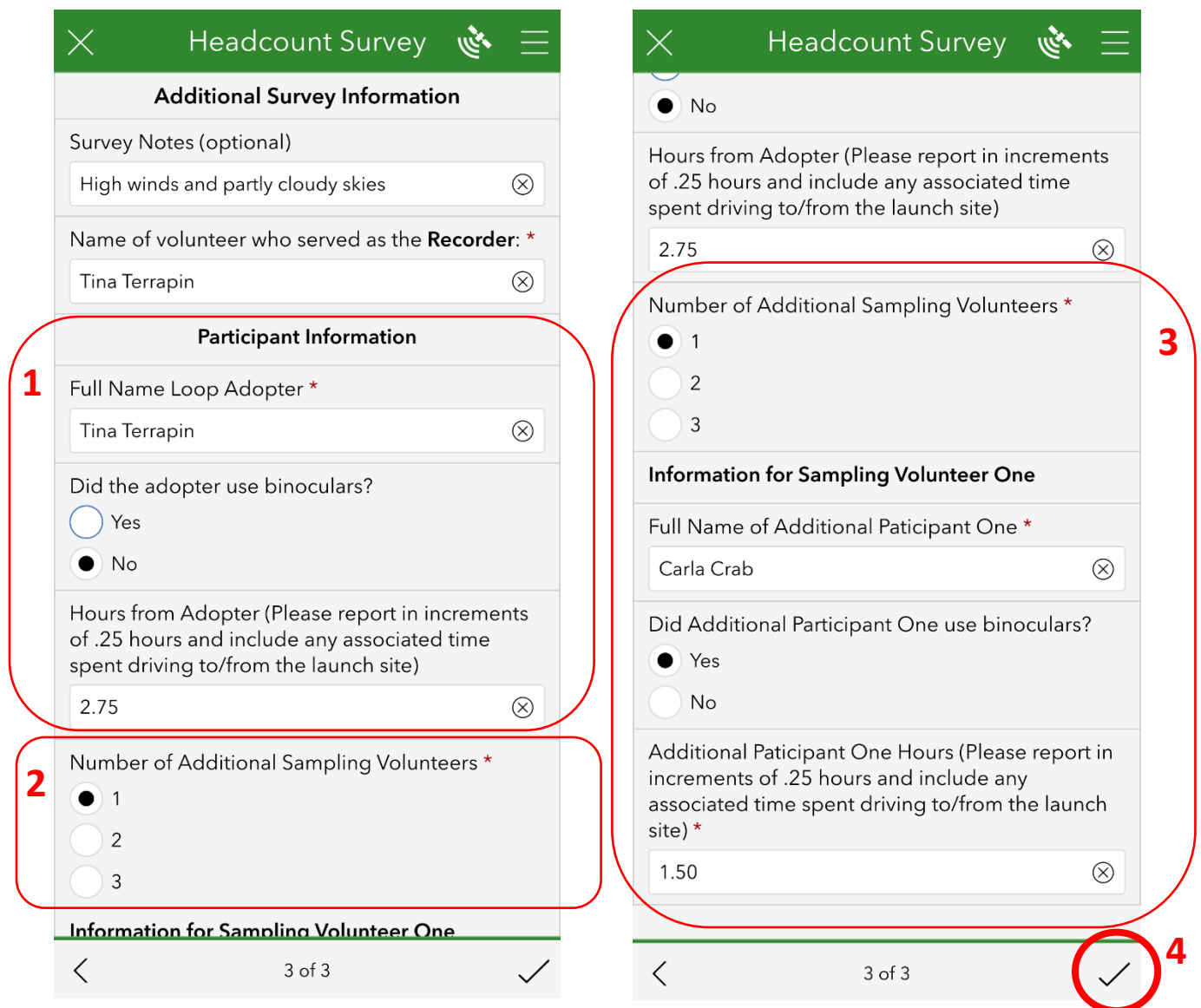

Figure O; 1. Information pertaining to the Loop Adopter only **2.** Place to select the number of sampling volunteers (other than the Loop Adopter) who participated in the survey **3.** Information pertaining to each additional Sampling Volunteer **4.** Icon to submit the survey upon its completion.

13. **When you're ready to submit, select the checkmark in the bottom righthand corner (Figure O.4).**

    a. If your device **has adequate service** or a wifi connection, you will be prompted to 'Send Now', click this button and the application will return you to the Survey123 homepage following your submission (Figure P).
    b. If your device **does not have adequate service** or a wifi connection, you will receive a prompt that states your device is offline (Figure Q). At this point you should seek out a wifi or cellular signal, then hit Continue this Survey and try again to submit the information. If the signal is adequate, you should now have the option to 'Send Now' (Figure P) which when tapped, will submit the survey.
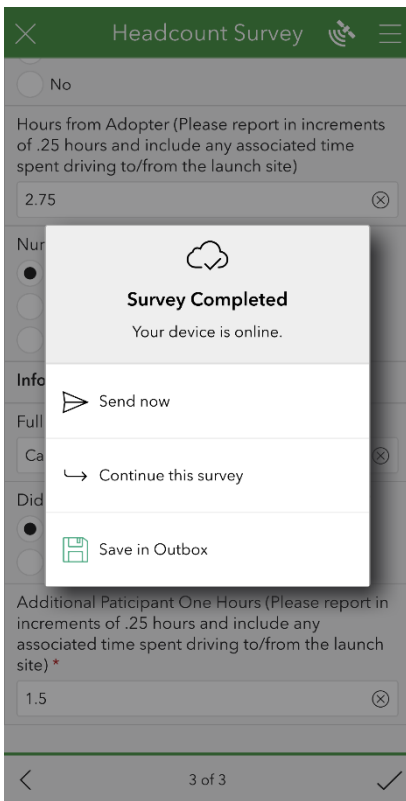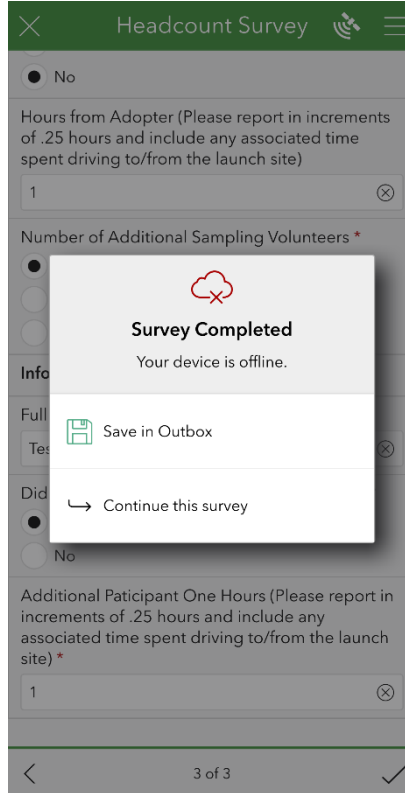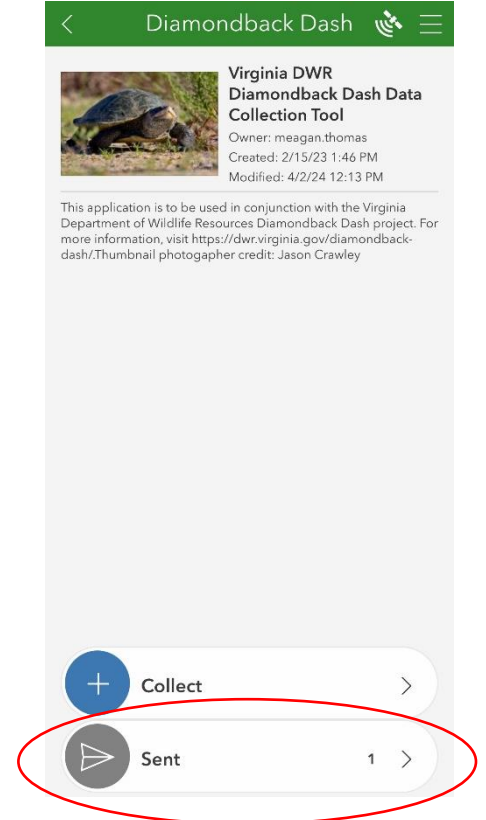
Figure P	Figure Q	Figure R

14. **Verify that your submission went through**. A good way to test that your survey went through is to then click on the Diamondback Dash Project once again. You should now see a Sent icon at the bottom of the screen which will display the number of surveys that have been sucsessfully contributed to the project in 2024 (Figure R). If there is an 'Outbox' displayed, any surveys within this outbox have not been submitted to the project.

    a. If you have any questions or concerns that your survey was not sumitted, please contact Meagan.Thomas@DWR.Virginia.gov