



**TORTOISE GROUP
ROAD WARRIORS**

Roadkill Observation and Data System (ROaDS) DATA COLLECTION APP



CENTER
for
**LARGE LANDSCAPE
CONSERVATION**





ROaDS-Road Warriors Data Collection App



- **Developed in collaboration with:**
 - Center for Large Landscape Conservation
 - Western Transportation Institute
 - Tortoise Group
 - U.S. Fish and Wildlife Service
 - National Park Service
- **Citizen Science app for recording road mortality data, tortoise, and other animal observations within the range of the desert tortoise.**
 - **Can be downloaded and used by anyone!**
- **Survey123 based and customized for Mojave Desert species.**
- **Special data fields added to document raven observations, such as nesting, roosting, flying, predation, etc.**



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Introduction

Road mortality and raven predation are two of the most significant threats to recovery of the Mojave desert tortoise (*Gopherus agassizii*) in the wild. There are over 37,000 miles of major roads throughout the range of this species, not including legal and illegal OHV routes and other small roads. The desert tortoise is a high risk for road mortality due to their life history characteristics, movement distance, and behavior. It takes over 15-20 years for tortoises to reach reproductive maturity. Ravens primarily prey on hatchling and juvenile tortoises, resulting in low recruitment into the adult age class. The combined effects of adult road mortality and raven predation on younger age classes may cause steep declines in tortoise populations and increase the likelihood of local extirpation. To learn more about these threats, click on the link below to watch the “Road to Recovery” documentary:

<https://vimeo.com/526980854/9da53c724f>

Citizen science has become a valuable tool for wildlife conservation and management. As a citizen scientist, you can help us collect data we need to monitor road mortality for desert tortoises and other Mojave Desert species, raven activity, and any observations of tortoises or their carcasses you may observe in the wild while you’re out exploring and hiking. The data you collect using the app will help us identify areas where road mortality and/or raven activity may be occurring at high rates (hot-spots) and help inform development of management actions to address these issues.

The following instructions will guide you through downloading the **Road Warriors data collection app** and entering your observations. Thank you for your interest and support for conservation of the Mojave desert tortoise!



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SECTION A-Follow the instructions below to get set up with the Road Warriors App:

1. Go to the App Store on your smartphone
2. Search for the free "Survey123" App and Select "GET"
3. Once the App has downloaded, scan the QR code below (3b)
 - a. It may give you the option to submit an observation directly in your browser ('Open in Browser'), or to open the survey in the Survey123 app('Open in the Survey123 field app').
 - b. Select "Open in the Survey123 Field App", this will save the survey for you so that you only have to open the app and click on the survey to submit observations.
 - c. After selecting "Open in the Survey123 Field App" you should be looking at this page:
 - d. Select "Continue without signing in", and the app should start downloading and will pull up the survey

You're now ready to collect data!



QR:

Link: <https://arcg.is/1bOmDC>

Dashboard:

<https://www.arcgis.com/apps/dashboards/d03c35477a5b4a96afa13d5343421a95>



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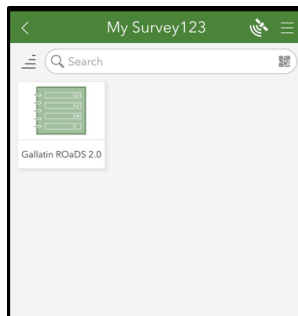
SECTION B Collecting Data

Once you have the app and survey downloaded, you can come back to the app when you have an observation to report at any time.

You do not need cell service to collect data with the app, it will use your smartphone's GPS capabilities, just be sure to select "Save in Outbox" once you complete the form- see section c below

To collect an observation:

1. Open the app, selecting again "Continue without signing in"
2. This should bring up the following screen ↓



3. Select "Road Warriors Public" and the following page will appear ↓





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Section B continued:

4. Select “Collect” at the bottom of the screen, and the survey should open up for you
5. Please fill out the form to the best of your ability, and add in any notes you may feel relevant
6. Once complete, select the check(✓) at the bottom right corner of your screen
7. If you are in service, select “Send now” and the data point will be available for you to view on the online dashboard within minutes!

If you are not in cell service, follow the “Section C-OPTIONAL” steps below.

SECTION C- OPTIONAL If you are filling out the survey in an area where you don’t have cell service:

Oftentimes, you will be observing wildlife in more remote areas, as that is where they tend to live! Luckily with the advanced technologies we have today, most smartphones have GPS capabilities that do not require cell service to determine your location.

To collect an observation when out of cell service complete the following steps:

1. Follow steps 1-6 in Section B above



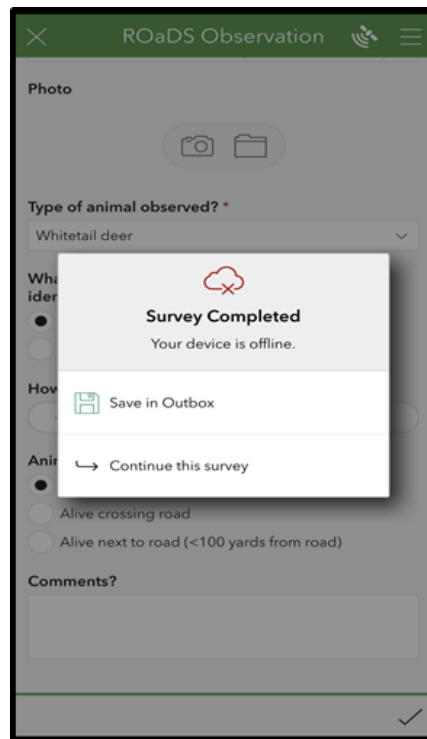
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SECTION C- OPTIONAL Continued

2. Once you have selected the check(✓) at the bottom right corner of your screen, the following screen will appear



3. Select "Save in Outbox"
4. Once you return to cell service, open the app and navigate to your outbox, select "Send" in the bottom right corner, and your observation will now be in the data system.

Please reach out to Tortoise Group or the Center for Large Landscapes with any questions:

info@tortoisegroup.org
info@largelandscapes.org



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Important Safety Information

Your safety is important to us! Please follow these guidelines for safely recording a road mortality observation:

- Pulling off the road onto the Right-of-Way (ROW):
 - Use turn signal 1st!!
 - Begin slowing down
 - Carefully pull off the road on to the ROW.
 - Park car at a safe distance from the road and turn on your flashers.
 - We recommend keeping a high-visibility safety vest in your vehicle and wearing it when you exit your vehicle to record a road mortality.
- Don't lock your keys in the car!! 😊
- Pulling back onto the road from the ROW:
 - Use turn signal 1st!!
 - Enter traffic only after vehicle traffic has safely passed your vehicle and oncoming traffic is far down the road.

SITUATIONAL AWARENESS IS CRITICAL TO SAFETY!!!



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What if I find an injured tortoise?

Please contact your local U.S. Fish and Wildlife Service office to report the injured tortoise and receive instructions for retrieving and transporting it to a qualified veterinarian.

California: Palm Springs Fish and Wildlife Office, 760-322-2070

Nevada: Southern Nevada Fish and Wildlife Office, 702-515-5230

Utah: Utah Ecological Services Field Office, 801- 975-3330

Arizona: Arizona Ecological Services Field Office-Phoenix, 602-242-0210

What if I see a tortoise trying to cross a road?

1. Put on the turn signal and pull over when it is safe to do so.
2. Park as far off the road as possible while avoiding parking on grass that may cause a fire.
3. Always look in both directions before entering the road.
4. Approach the tortoise on the road only when there is no immediate threat from traffic.
5. Continually keep an eye on traffic. If someone is with you, have them keep an eye on the road.
6. Gently pick up the tortoise facing it away from you and carry it as low to the ground as possible. Move the tortoise in the same direction it was headed across the road, and place it in habitat as far from the road as you safely can,