



WOODLAND  
PARK ZOO

## **Wild Wise:** **Coexisting with Carnivores**

Camera Trapping and eMammal Guide

WOODLAND PARK ZOO SAVES ANIMALS AND  
THEIR HABITATS THROUGH CONSERVATION  
LEADERSHIP AND ENGAGING EXPERIENCES,  
INSPIRING PEOPLE TO LEARN, CARE AND ACT.

ZOO.ORG

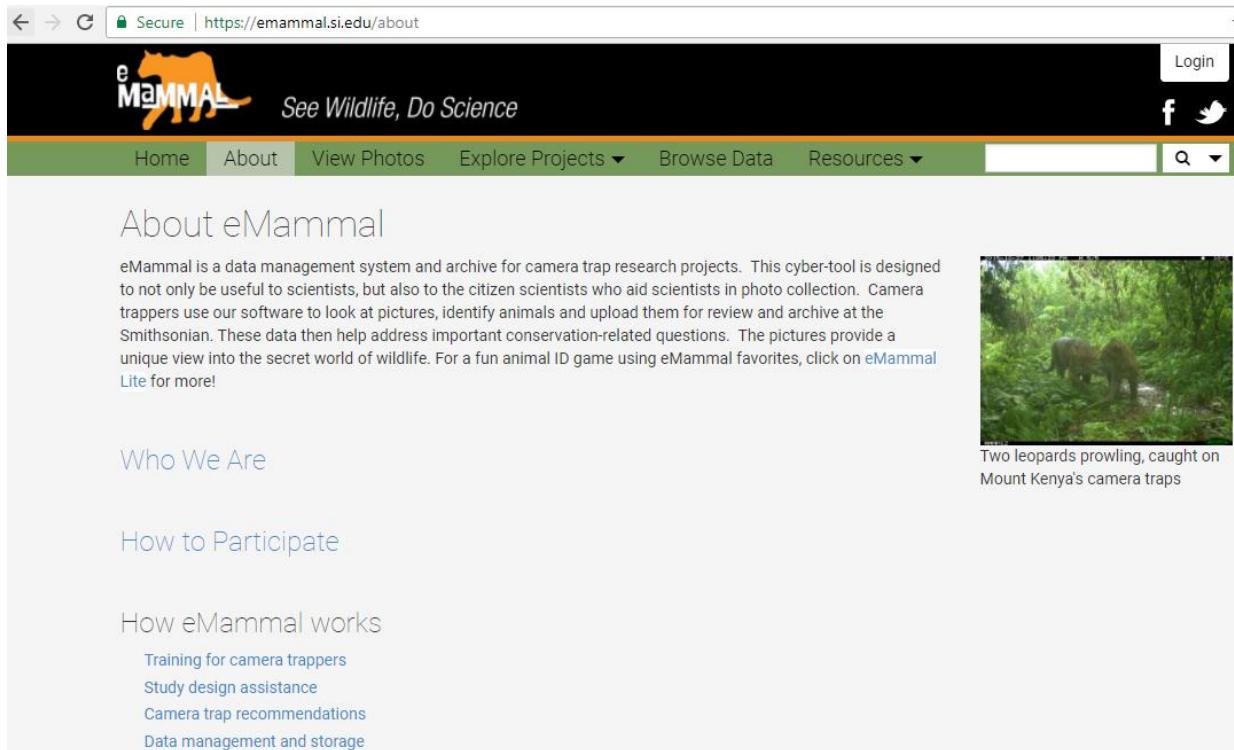
# Remote Camera Traps

**Remote camera traps** are cameras that can be set up to automatically take photographs when they sense motion and/or heat and are often used for monitoring wildlife.

Wildlife researchers use remote camera traps as a non-invasive method to help collect data to answer research questions about wildlife.



**eMammal** (<https://emammal.si.edu/about>) is a software and web-based tool used by researchers across the globe for organizing and archiving wildlife camera trap data and sharing results with each other and the public. These data help address important questions related to wildlife conservation.



The screenshot shows the eMammal website interface. At the top, there is a navigation bar with the eMammal logo (an orange silhouette of a mammal) and the tagline "See Wildlife, Do Science". To the right of the logo is a "Login" button. Below the navigation bar is a green menu bar with links: Home, About, View Photos, Explore Projects (with a dropdown arrow), Browse Data, and Resources (with a dropdown arrow). A search bar is located to the right of the menu. The main content area has a heading "About eMammal" followed by a paragraph describing the system as a data management tool for camera trap research, designed for both scientists and citizen scientists. It mentions that data is archived at the Smithsonian and provides a unique view into wildlife. A link "eMammal Lite" is provided for more information. To the right of the text is a photograph of two leopards in a forest. Below the photo is a caption: "Two leopards prowling, caught on Mount Kenya's camera traps". Below the "About eMammal" section are links for "Who We Are", "How to Participate", and "How eMammal works". Under "How eMammal works" are four sub-links: "Training for camera trappers", "Study design assistance", "Camera trap recommendations", and "Data management and storage".

Secure | <https://emammal.si.edu/about>

**eMAMMAL** See Wildlife, Do Science Login

Home About View Photos Explore Projects Browse Data Resources

### About eMammal

eMammal is a data management system and archive for camera trap research projects. This cyber-tool is designed to not only be useful to scientists, but also to the citizen scientists who aid scientists in photo collection. Camera trappers use our software to look at pictures, identify animals and upload them for review and archive at the Smithsonian. These data then help address important conservation-related questions. The pictures provide a unique view into the secret world of wildlife. For a fun animal ID game using eMammal favorites, click on [eMammal Lite](#) for more!

Who We Are

How to Participate

How eMammal works

- [Training for camera trappers](#)
- [Study design assistance](#)
- [Camera trap recommendations](#)
- [Data management and storage](#)

Two leopards prowling, caught on Mount Kenya's camera traps

Each school should have up to four kits (provided by the district); with one kit per teacher.

Each kit includes the following items:

- 5 remote camera traps
- 40 AA batteries (8 batteries per camera)
- 10 16GB SD/SDHC memory cards (2 cards per camera)
- 5 python cable locks
- 5 small locks for camera case
- 3 field guides



**Check that each camera, memory card, camera lock/key and cable lock/key are marked with a code using this format:**

- **School (initials) – Teacher (first and last initial) – C+ camera number (1 through 5, one digit)**

**OR**

- **School (initials) – K + kit number (1 through 4, two digits) – C+ camera number (1 through 5, one digit)**

Because each camera has 2 memory cards, add an “a” and “b” to the label on the memory cards.

**Examples:**

Camera: **IMS-MD-C1**

Cards: **IMS-MD-C1a** and **IMS-MD-C1b**

**OR**

Camera: **IMS-KO1-C1**

Cards: **IMS-KO1-C1a** and **IMS-KO1b**

## Videos to review before you install a camera



**Review these videos, taking notes that will help you when you're setting up a camera:**

- **Getting to know your camera trap:**  
<https://www.youtube.com/watch?v=dRDyMm5eJe4&feature=youtu.be>
- **How to use a Bushnell camera:**  
<https://www.youtube.com/watch?v=Wym81bsy5Bc>
  - Your exact model might differ, but the basic functions will be similar.
    - Consult your camera manual as you follow along with this video.
  - See recommended Bushnell camera settings on slide 10.
- **Camera setup by eMammal:**  
<https://www.youtube.com/watch?v=aW3XGjq3l7A>



# eMammal Camera Trap Datasheet



Retrieve the Camera Trap Data Sheet from the WW:CWC teacher website at

[www.zoo.org/wwcwc](http://www.zoo.org/wwcwc)

Make copies of the data sheet to take when setting up and retrieving the camera.



## WILD WISE: COEXISTING WITH CARNIVORES CAMERA TRAP DATA SHEET

*Please fill in all sections when you set up a camera or collect photos from a camera*

### CAMERA SETUP CHECKLIST

- ☐ Secure camera tightly on tree or other structure between knee and waist height
- ☐ Input camera settings, check that the Date/Time are correct, record this on the data sheet
- ☐ Check that batteries are sufficient (at least 50%) by looking at battery symbol on set-up screen
- ☐ Clear vegetation or other obstructions from camera view
- ☐ Make sure the camera is pointing parallel with the ground – use sticks to change the angle if necessary
- ☐ Measure the distance from the camera to the "target" (a trail, a trash can, or other central point) – record this on the data sheet
- ☐ Arm the camera (move from SETUP to ON), close and lock it securely

### RECOMMENDED CAMERA SETTINGS:

**Mode:** Camera  
**Image size:** 8M Pixel  
**Image format:** Full Screen  
**Capture number:** 3 photos  
**LED Control:** Medium  
**Camera name:** skip  
**Video Size:** skip  
**Video Length:** skip  
**Interval:** 3S (seconds)  
**Sensor Level:** normal  
**NV Shutter:** Low  
**Camera Mode:** 24hrs  
**Time stamp:** on  
**Set Clock:** currenttime (24hr-format) and current date (Y/M/D)  
**Field Scan:** Off  
**Coordinate Input:** off (may input latitude and longitude, see manual)  
**Video sound:** On  
**Default Set:** Cancel

### DATASHEET

#### RESEARCH TEAM INFORMATION

SCHOOL NAME: \_\_\_\_\_

TEACHER LAST NAME: \_\_\_\_\_

CLASS PERIOD: \_\_\_\_\_

STUDENT FIRST NAME(S): \_\_\_\_\_

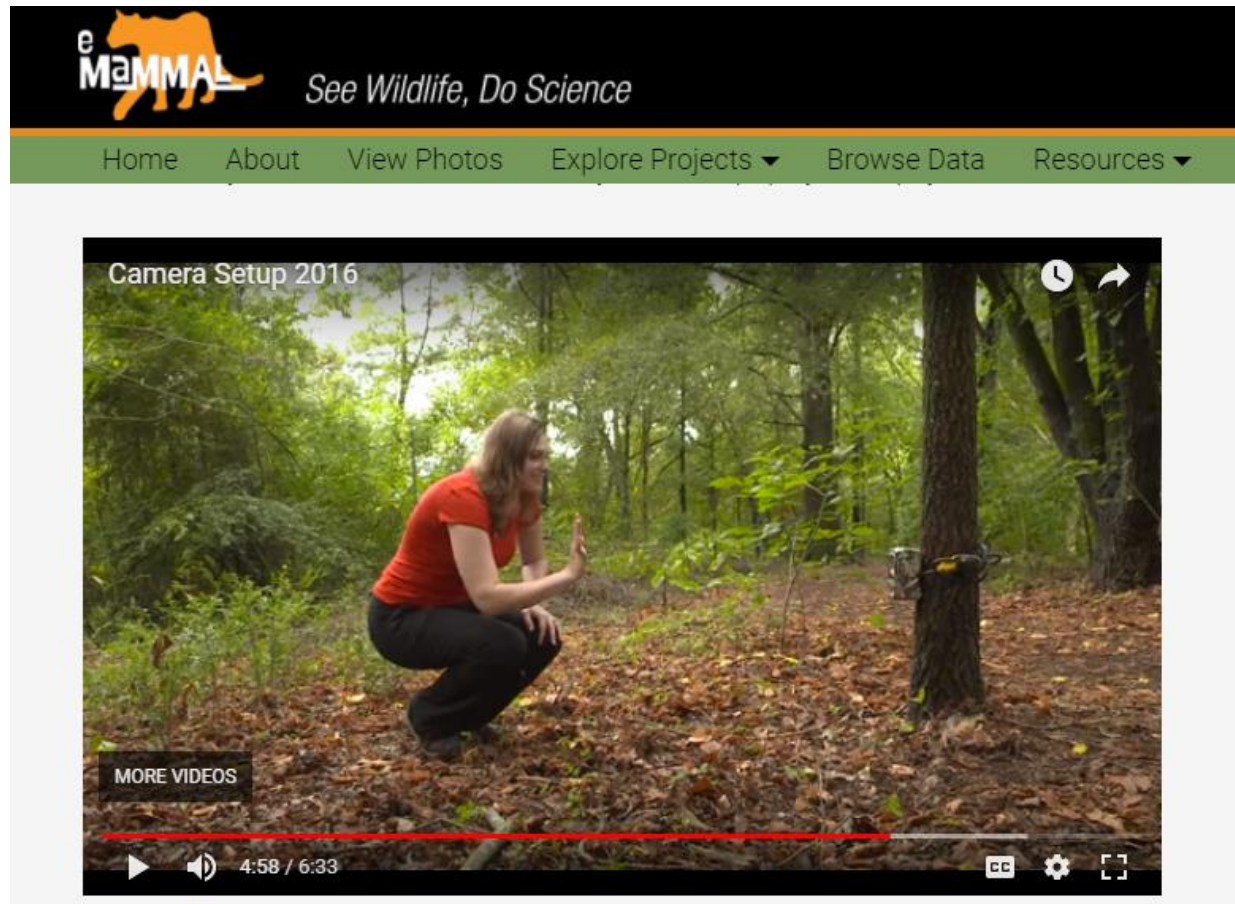
CLASS RESEARCH QUESTION: \_\_\_\_\_

\_\_\_\_\_

## In the field – Initial installation



Bring a copy of the **WW:CWC Camera Trapping & eMammal Teacher Guide** with you into the field, as well as your notes from reviewing the “how to” videos – consult these materials as you choose your location and set up your camera. Be sure to **fill out your Data Sheet!**





# Recommended Camera Settings

Push button to **SETUP** and use **Menu** to input settings:

- **Mode:** Camera
- **Image size:** 8M Pixel
- **Image format:** Full Screen
- **Capture number:** 3 photos
- **LED Control:** Medium
- **Camera name:** skip
- **Video Size:** skip
- **Video Length:** skip
- **Interval:** 3S (seconds)
- **Sensor Level:** normal
- **NV Shutter:** Low
- **Camera Mode:** 24hrs
- **Time stamp:** on
- **Set Clock:** current time (24hr-format) and current date (Y/M/D)
- **Field Scan:** Off
- **Coordinate Input:** off (may input latitude and longitude, see manual)
- **Video sound:** On
- **Default Set:** Cancel



# Securing your Camera



You may use both the included strap and the cable lock to ensure your camera is secure on the tree. Note that the cable lock feeds in through the wider “back” of the cable lock and out through the narrow “front” of the cable lock (like the tongue of a python, hence the name “python lock”!)

## In the field – Check and deployment

**After your camera has been setup for a few days**, visit the camera and review the photos (if any) to ensure that your camera location and setup will result in good quality camera trap images. (Consult your camera manual for instructions on how to review the photos.)

A few things to check:

- Make sure your camera is taking **still images** and not video.
- See if there are any tree branches, other vegetation or people/car traffic that are causing many **“false triggers”**.
- Ensure the images are **level** (not tilted like this!).



Then, after double checking the camera settings are on the recommended settings (including correct date and time), set your camera to ON, lock the camera housing lock and the cable lock, and leave your camera running, ideally for **three weeks**.



Bring a blank copy of the **Camera Trap Data Sheet** with you.

To retrieve the camera and photos, first walk in front of the camera to capture an “end of deployment” photo.

Unlock the cable lock and camera housing, note the number of photos (record on the data sheet), and turn camera to OFF. Take all equipment with you.

You can either retrieve the memory card and put it in a safe place to bring back to the classroom, or leave it in the camera and take it out back in the classroom.





Find the **WW:CWC eMammal METADATA spreadsheet** in the WW:CWC teacher website at [www.zoo.org/wwcwc](http://www.zoo.org/wwcwc) and enter the data from your data sheets into this file.

[illegible]



## eMammal – uploading photos



You can complete this step or have Woodland Park Zoo staff complete this step for you (please email [wild.wise@zoo.org](mailto:wild.wise@zoo.org) to request assistance).

If you wish to complete this step, you will need

- 1) an eMammal account, and
  - 2) the eMammal Desktop App
- see instructions in your Teacher Guide for details.

Use the following video to learn how to find your deployment and upload your photos:

### **eMammal – How to upload photos with the desktop app**

<https://www.youtube.com/watch?v=3x4JwHEMtFg>

**Project:** Coexisting with Carnivores

**Subproject:** select the Subproject that best fits the question your students are investigating, such as Trail, Trash, Fence, Water, etc. If your students' research question does not fit well into one of the Subproject types available, please email [wild.wise@zoo.org](mailto:wild.wise@zoo.org) to request a new Subproject.

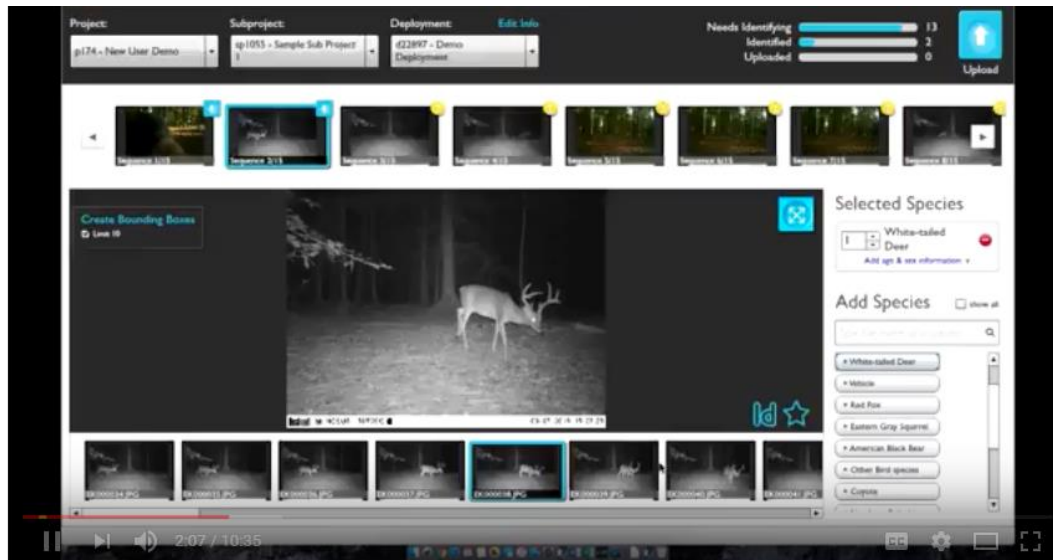
**Deployment:** select the Deployment name that matches your Year-School-Teacher-Period-Camera #-SiteDesignation (e.g. 18-IMS-MD-3-C4-A)

# eMammal - identifying animals



View this video to learn how to identify and tag your photos with animal IDs:  
**eMammal – How to identify animals with the desktop app**

<https://www.youtube.com/watch?v=uC743kBwElg>



After you have uploaded your photos, Woodland Park Zoo staff will verify that your students' identifications are correct, and your students' data will contribute to the body of knowledge about animals gleaned by using camera traps around the US and the world!

**Further resources for teaching with eMammal:**

<https://emammal.si.edu/content/emammal-academy-teach>

Thank you and best of luck with your  
camera trapping!