

CAMERA TRAPS TO STUDY UNGULATES

MANUAL ON CAMERA TRAP DISTANCE
SAMPLING - FIELD EXERCISE



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INTRODUCTION

While a lot of mountain ungulates who live in herds can be well studied through methods like the double observer, it is difficult to monitor populations of elusive and solitary ungulates, such as Himalayan musk deer and Himalayan goral. Camera trap distance sampling (CTDS) is an advanced method used to estimate animal densities by combining the use of camera traps with distance sampling techniques. It gives the liberty to estimate animal densities without needing to individually identify each animal, thus helping with unmarked animals (Howe et. al., 2017; Pal et. al., 2021).

Unlike traditional distance sampling, here the camera traps become point observers, which are required to be placed random to animal movement in the designated study area.



FIELD PROTOCOL

- The study area has to be divided into grid cells to have representative sampling (3 to 4 km grids based on the species and study area)
- The sample size/total number of cameras placed in the study area should be at least 25-30 for better precision
- All camera traps ideally should be deployed at uniform distance from the ground; 1-1.5 feet
- Since we need the distance of the animal detection from the camera, we need to calibrate the image measurement that the camera will capture with actual measurements
- For this, a pole of known height, 1 m, has to be marked with measurements at every 20 cm, well enough so that the marks are visible
- Then, we need to take images in front of the camera with the pole held straight, at uniform distances in all the three directions in front of the field of view of the camera: center, right and left side. It is useful to take at least 9 points in total to have reliable calibration

- With the help of measuring tape, mark the points at every 1 metre in front of the camera in all the three directions, and then take image in front of the camera at every marked point, till the field of vision (the point of taking photos in the camera)
- Once the calibration is done, it is a good practice to check the images from the camera trap in the field itself to correct for any errors
- If the calibration images have been recorded properly, we need to check all the relevant settings of the camera, note the date/time and the distances that have been measured in front of the camera for reference. Following this, arm the camera





- Record the following data after deploying the camera:
- Location/Site Name-
- Date/Time-
- GPS coordinates and altitude-
- Animal signs- (if observed)
- Habitat-
(Ridgeline/cliff/trail/rocky outcrop/forest)
- Camera information:
- Serial No-
- Memory card label-
- Battery status-
- Name of staff deploying the camera-
- Distance points for the three directions which were measured-
- When going for retrieval, it is useful to calibrate and measure the actual distance once again in front of the camera before removing it
- Upon collecting the data, we need to measure the distance of the detected animal from the camera at specific time intervals (snapshot moments). By analyzing the distribution of detection distances at these snapshot moments, statistical models (like those used in distance sampling) are applied to estimate animal density.

NOTES

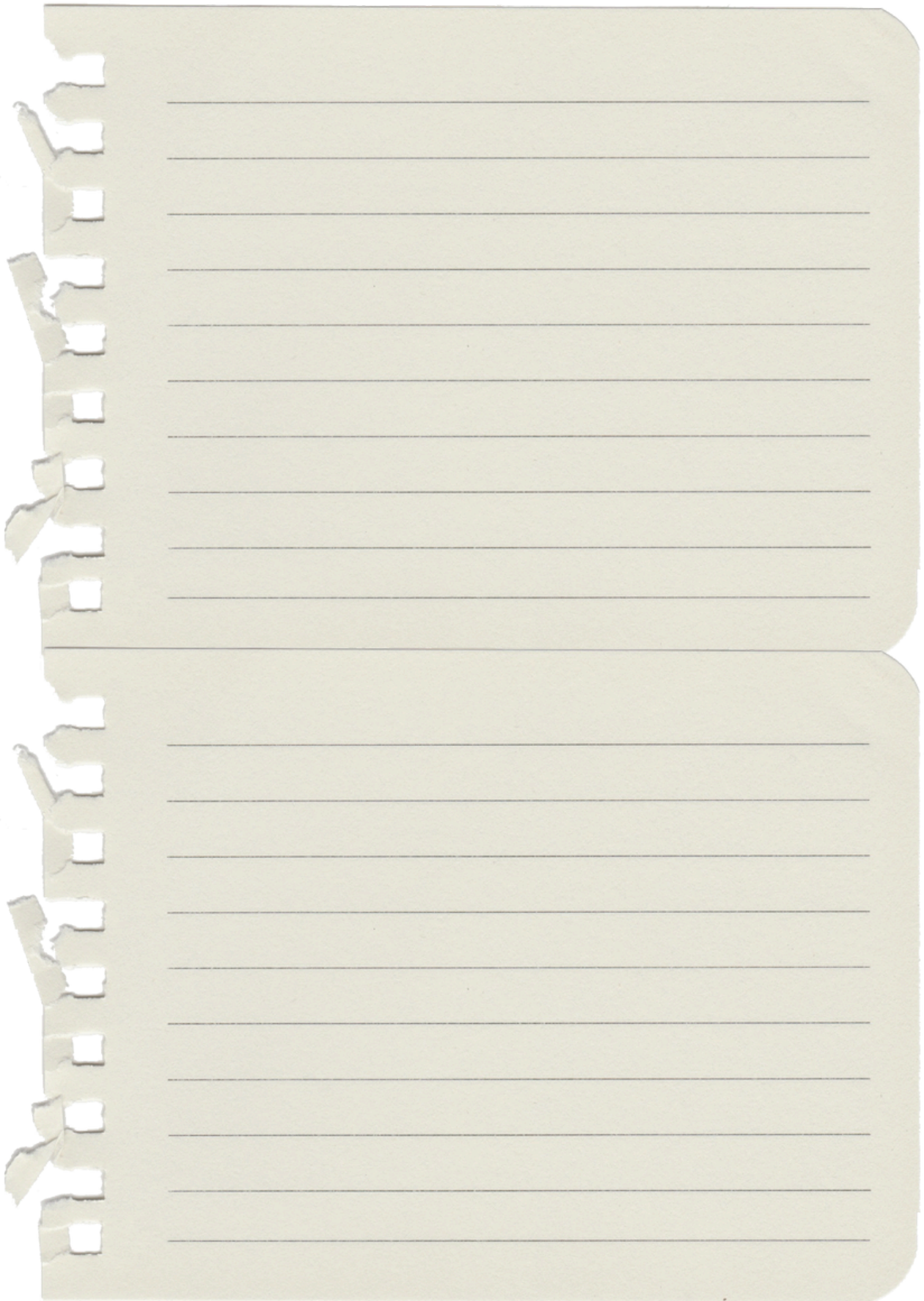




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