TESTING DIFFERENT METHODS OF BAITING TRAIL CAMERAS FOR MOHAVE GROUND SQUIRRELS

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Trail cameras have been used to detect Mohave ground squirrels (MGS) since 2009. It is critical to employ some form of bait to attract these animals to the cameras. Several baiting methods have been used, but there has been no field test comparing their effectiveness. Here are the types of bait and the presentation methods that have been used to date:

1) Four-way livestock feed (mixture of grains including corn, oats, barley with molasses coating) placed in front of the camera in a loose pile, often with peanut butter. Because both diurnal and nocturnal rodents remove the bait, it's necessary to replace it daily usually at or near dawn. There are 2 disadvantages to this method. It is quite labor intensive and the loose bait often attracts ravens, thus endangering other animals at the camera site and providing a food subsidy to the ravens.
2) Four-way livestock feed dispensed automatically one or more times a day from a commercial deer feeder. This method doesn't require as much labor since the feeder can operate without maintenance for many days. However, loose bait spread on the ground can still attract ravens and the apparatus is relatively more visible and could attract human thieves or vandals.
3) Four-way livestock feed loaded into a closed length of PVC pipe that has been perforated with holes that allow the odor of the bait to escape. Peanut butter can be added to increase the odor attractant. When this method has been used, it does attract ground squirrels, but its effectiveness as compared to the open bait presentation has never been tested. It does not appear to be attractive to ravens. Again, the bait tube can reduce the amount of labor required to maintain the set-up.
4) Feed blocks of various types can be placed in front of the camera. There seem to be at least 2 sizes of these blocks (5-7 lbs and 20-25 lbs). This method has been used by several investigators and can definitely attract ground squirrels. Arizona's Best Quail block (21 lbs) lasts the longest, however, Purina Wildlife block (21 lbs) is preferred by squirrels. These blocks may be cut in half for a shorter camera session. It may also attract ravens and other predators. It has the advantage of reducing the labor required to maintain the camera set-up.

We propose to field test several of these methods of bait presentation this spring. The basic plan is to place camera traps in the field in several locations in the Little Dixie Wash area southwest of Inyokern. This area has in the past supported good populations of MGS. We would select perhaps 6 sites near 3 live trapping grids that will be sampled in March. Each site would be equipped with 3 cameras arranged at the apices of a triangle 50 m on a side. An arrangement of these dimensions should be within the home range of an individual MGS. Each

Comment [A1]: Or use Ed LaRue cage/box?

Comment [A2]: 100 m? 150 m? Need the bait presentations/camera stations to be independent.

of the 3 cameras would be baited by a different method. One camera would have loose bait provided by a human or mechanical dispenser (deer feeder or similar device). A second camera would have bait secured in a PVC tube. The third camera would be equipped with a bait block.

Several different measures of effectiveness would be documented. The photo data would be reviewed to determine:

1) The time to first detection of an MGS
2) The number of MGS detections and elapsed time that MGS were at the camera
3) The time to first detection of a raven or other potential predator
4) The number of raven detections and elapsed time that ravens were at the camera.
5) The length of time which bait tubes and feed blocks will remain effective at attracting squirrels.

If it seems worthwhile, this experiment could be repeated at 3 different sites in the Coolgardie Mesa area north of Barstow in April. A report will be prepared and shared with TAG members for their evaluation.