**Remote Camera Webinar June 12, 2020**

**Q & A**

1. To WildCam, ABMI, and Community of Practice

For projects that are already completed, are you looking for the excel spreadsheet databases with the photo information? Or are you looking for the images themselves? Or both?”

* WildTrax (ABMI) [www.wildtrax.ca](http://www.wildtrax.ca)– looking for images and tags
* WildCAM (wildcams.ca) – we don’t have a data management system like wildTrax. Focus to date has been on collecting information on who is doing what and where by having people submit to our project page online. Also, on promoting consistent metadata and developing products to meet user needs (e.g. guidelines, reference list etc.)

1. Has there been further insight into how to define "events" or the minimum time between images of the same species? So far, it has seemed highly subjective.
   * May differ amongst species to be biologically meaningful value. Would be good to standardize as much as possible.
   * Differs across project though 30 min. is commonly used

* wildCam has done some exploration looking at different time thresholds. We found the analysis is not very sensitive past a certain threshold.
* In Utah, we are using the REST (Random Encounter Staying Time) method. We are using a different approach in which we count photos with an animal present to determine cumulative time animal spent in front of camera.
* Spatial models are sensitive to animal movements. Can be helpful to have a segment of the population marked.

1. Could someone talk to the issues related to groups of animals (for example elk) and any advice or guidelines when trying to get density with REST?
   * In Utah, we are determining cumulative time spent in front in camera by counting images with animal and # individuals in photo. Grouping would highly increase variability in estimates but not bias estimates.
   * ABMI and others- we are counting all animals in image
2. How do the Spatial Capture (SC) and REST methods deal with individuals vs groups (like using the methods on moose vs bison for example)? I mean in terms of effectively "increasing" the detection distance.
   * ABMI has a model that estimates decay coefficient after 5 meters. ABMI counts every animal in image irrespective of distance from camera. So long as we are consistent, we can use to estimate relative density. Important to note- Measures are estimates of relative density vs absolute density. See <https://www.abmi.ca/home/publications/501-550/516>
   * For the REST method - 1 animal for 10 seconds counts the same as 5 animals for 2 seconds in the field of view
   * REST uses the number of individuals and counts them all when estimating density. I.e. all animals are counted
   * Not sure about REST models, but Richard Bischof has a paper that uses simulation to assess Spatial capture-recapture biases associated with animals that live in groups. It's an open area of research. Bischof, R., P. Dupont, C. Milleret, J. Chipperfield, and J. A. Royle. 2020. Consequences of ignoring group association in spatial capture–recapture analysis. Wildlife Biology 2020.
3. If an industry client has been collecting camera trap data with no intentional study design, is this data still useful?
   * It depends. In many cases it could be useful, provided the metadata are complete and you know how the data were collected (e.g. random design, camera information). May also be possible to address differences amongst projects in design through statistical means.
   * A good example of this is data collected by citizen science. If it’s lacking sampling design or metadata it is harder to turn presence data into numbers. But if you look at e-bird, it’s amazing what you can do with large data-sets. This is partially why wildCam is wanting to contribute to the iNaturalist citizen science site. Simple information on knowing that an animal occurred at a particular location at a given time can be useful supplementary data to validate models built on more systematic sampling.
4. **How are people addressing privacy and public notification questions around placing cameras on public land? Do you have specific protocols you follow when placing cameras in public areas?**

* This question comes up frequently in camera research. Responses vary based on organization, however, there has been discussion on developing a protocol to address this issue.
* Current approach at the Alberta Biodiversity Monitoring Institute (ABMI) differs based on camera location. ABMI does not post notices on public land. If a site is nearby an industry lease, they notify and get permissions from the environmental and operations reps. Trappers are sent notification letters of cameras in their Registered Fur Management Areas (RFMA). In provincial park sites, in accordance with parks permits, ABMI posts notices in the general area, not at the exact site. Cameras are labelled with ABMI name and contact number in case they’d like to ask for information about the program. All images of humans are screened out and deleted from the database.
* Most projects with Alberta Environment and Parks (AEP) have locations signed, however, locations outside protected areas are project specific and subject to the discretion of the individual. AEP does not have a standard protocol for signage. Images of humans on AEP cameras are not released. They may be used for enforcement if they capture illegal activity.

1. **What would it take to get ungulate population estimates and herd composition for ungulates in wildlife management units where visibility precludes aerial surveys? Is his feasible or are cameras better suited to small-scale more focused questions?** 
   * Yes, this is feasible although there would be a number of details to work through. The sampling effort required varies by species and according to the desired level of precision. The sampling effort required is also strongly determined by survey time (how long you leave cameras out)—the longer you leave the cameras out, the fewer you need.
   * Because of known violations of assumptions (eg. animal attraction to cameras) cameras provide relative abundance values.  Additional calibration would be necessary to convert those into reliable absolute densities.
   * We could provide adult male:female ratios, but additional investigation into detectability would be needed to report cow:calf ratios.