

Conducting a White-tailed Deer Herd Survey

I) *Herd Survey*

- a) In order to gauge the success of herd management practices, it is important to obtain baseline population data to compare to future measures of herd condition. Some of the data calculated from a herd survey include: adult sex ratio, fawn recruitment, buck age structure, and approximate population. This information can come from annual herd surveys during August and/or January.
 - i) August is the best month to conduct a herd survey. During this month bucks are easily identified by antler characteristics, while forage is limited, allowing baited camera sites to photograph a large percentage of the deer herd.
 - ii) January is also a good month because animals taken during the hunting season are no longer part of the population. Again, forage quantity is limited during this month so baited camera sites work efficiently. A drawback is that some bucks may have already lost their antlers making identification of these bucks much harder.
- b) After becoming familiar with the setup and operation of the camera units, it is advisable to place the cameras in the field and perform a familiarization trial over bait or mineral stations. This will ensure that when the survey is implemented, no data will be lost due to errors in camera setup or operation.
- c) During the camera familiarization process set each camera's picture delay to one minute. The delay is the time elapsed between pictures. After 4 or 5 days photographing over a bait pile, view the pictures. If the camera's memory card is full it may be necessary to increase the picture delay to reduce the number of pictures taken. The ultimate goal during the survey is to identify each deer that enters the bait station as a particular buck or as a doe or fawn. Too many pictures slow the analysis while too few make the identification of individual bucks difficult and even impossible. Setting the camera to 3-shot mode (a deer triggers an initial picture then a second automatically occurs 10 seconds later and a third after 10 more seconds) often assists in getting several good pictures of each buck.
- d) Ten days of pre-baiting are usually required to establish bait stations using whole kernel corn (cracked corn will be consumed too quickly by non-target critters). Pre-baiting is necessary to attract and condition deer to feeding at each survey site. During this time set up the cameras and check them every 4 or 5 days to be sure the right number of pictures are being taken and the camera is functioning properly – facing the right direction, ample battery life, etc. Pictures taken during the pre-baiting period should not be used in the survey analysis.
- e) The survey should include one camera station per 60-100 acres, with the units equally spaced throughout the property. Equally divide the property into blocks and subjectively position a survey site nearest to the center of the block so that:
 - i) It is in an area likely to receive use by deer.
 - ii) It allows the camera to be positioned facing North (to avoid camera whiteout during the day) and preferably is in the timber (again to avoid camera whiteout).
- f) Once stations are established, replenish with corn as needed. Generally, 25-50 pounds of corn poured directly on the ground should be sufficient for 4-5 days, so add what you think is required to attract deer until the next time the cameras can

- be checked. Typically, camera sites are checked every 4-5 days but definitely not longer than a week. If the corn is completely consumed between visits then increase the amount. Do not become overly concerned if it is all consumed, as long as the amount is increased when checked.
- g) Some stations may not receive any use by deer during the pre-survey baiting period. If this is the case, then simply try another location within the same block until deer use occurs.
 - h) At each survey site, install an identifier plaque a few feet behind the bait pile. These can be small white plastic squares (like pieces of vinyl siding) with a black number. Use stencils to paint the number onto the plastic squares. Using non-reflective plastic squares and numbers will make reading numbers easier when the camera flashes. The plaques should be at least five feet off the ground so they are not blocked from the camera's view by deer or antlers. Identifier plaques are important for identifying camera sites, especially when looking at pictures from past surveys.
 - i) After establishing stations, and baiting for approximately 10 days, it is time to begin the 14-day herd survey. At this time, make sure all the cameras are functioning and contain an empty memory card.
 - j) When checking cameras replenish corn, batteries, and memory cards as needed. It is important that a memory card never become filled so that no activity at the bait station is missed.
 - k) Once the survey is complete, analyze all pictures. It is OK to delete non-target animals before starting the survey but do not delete any deer pictures as they are all required for the survey calculations.
 - i) Identify individual bucks and count the number of unique individuals.
 - (1) Bucks are identified by looking at individual antler characteristics. If antlers are similar look for other distinguishing marks like split ears, roman noses, etc.
 - ii) Count the total number of buck pictures (all bucks seen including repetitive sightings).
 - (1) This number includes every buck in every picture.
 - iii) Count the total number of doe and fawn pictures.
 - (1) This number includes every doe photographed and every fawn photographed. Keep doe and fawn counts separate.
 - iv) Calculate the number of does and fawns, sex ratios, and population estimate.
 - l) Example Calculations.
 - i) Acres sampled = 2,000
 - ii) Photographs of deer = 600
 - (1) Buck photographs = 100
 - (2) Doe photographs = 200
 - (3) Fawn photographs = 300
 - (4) Actual number of bucks that are identified as unique animals = 50
 - iii) Population estimate:
 - (1) Bucks = 50
 - (2) Does = $50 \times (200 \text{ divided by } 100) = 100$
 - (3) Fawns = $50 \times (300 \text{ divided by } 100) = 150$
 - (4) Total population (Bucks + Does + Fawns) = 300
 - (5) Acres/deer = $2,000/300 = 6.7$

- (6) Deer per square mile (640 acres) = $640/6.7 = 96$
- m) Remember, the data from this survey is only an index of the population structure that will better allow you to make sound management decisions.

