Interpreting Deer Harvest Data

By Kip Adams

Most QDMA members realize the importance of collecting harvest data. As an organization, the QDMA has stressed the importance of this since its inception. Hunters arguably collect more harvest data today than ever before, however, much of this data goes unused. Some people never take the time to analyze or interpret the information they’ve collected. The intent of this article is to teach you how to analyze and interpret some key pieces of harvest data that you have hopefully been collecting and then to use those interpretations to improve your management program.

If you aren’t collecting data from harvested deer, the information you should be gathering will include the date, location, sex, weight, antler measurements of bucks, and lactation status of does (whether milk is present in the udder at the time of harvest). Additionally, you should remove, tag and save a lower jawbone from each deer, and you should also collect the fetuses from does harvested one to two months after the rut. These should be measured using a fetal scale to determine the conception date, and the date should be recorded in your log book.

Once you collect this information from every deer harvested on a property, it’s time to analyze the data. Begin by aging each jawbone by toothwear and replacement or by sending an incisor to a commercial lab for aging by cementum annuli. Next, graph the harvest by: 1) sex by age class, 2) weight by age class, 3) antler data by age class (number of points, spread, beam circumference, beam length, Boone & Crockett score), 4) lactation status by age class, and 5) conception dates for fetuses, if possible.

You should interpret the above data within and across seasons to monitor trends. Each piece of data you collect is analogous to a piece of a jigsaw puzzle. Individual pieces tell you little, but multiple pieces collectively provide a clearer picture of the deer population. Also, some data can be influenced by multiple factors, so be sure to collect data from every harvested deer.

Now let’s look at how to interpret this data and what you can learn from your efforts.

Target and Actual Buck Harvest

This is a measure of harvest success. Knowing the total number of deer taken is important, but you also need to understand the factors affecting that number. For example, in this chart of fiction harvest data, fewer bucks were taken in 2006 because the target harvest was lower. The lower target may be due to a severe winter or spring drought that reduced fawn recruitment, a disease outbreak, or the desire to allow more bucks to reach older age classes. Just seeing the actual harvest suggests a reduced deer herd or possibly reduced hunter effort, but seeing that the target harvest was achieved suggests the management program’s goals were met.
**Percent Doe Harvest by Age Class**

This is a measure of harvest intensity and fawn recruitment. In this set of actual data from my family’s land in Pennsylvania, does were harvested across all age classes. Intense harvest rates allow fewer animals to reach the older age classes and thus skew this data toward the younger age classes. A sharp decline in the yearling (1½) age class during a given year may signify a reduction in fawn recruitment the prior year. The data shown here suggests the deer herd is getting younger at a slow rate, and there hasn’t been a major problem with fawn recruitment during these years.

**Percent Adult Does 4½ or Older in the Harvest**

In this chart, “adult” does are all those 1½ or older. This is also a measure of harvest intensity on the deer herd. As a general rule, the percentage of adult does in the harvest that are 4½ or older should be at least 25 to 30 percent. Lower percentages indicate a younger age structure and suggest a higher removal rate on the population. Higher percentages indicate an older age structure and suggest a less intense removal rate. Higher percentages can also result from the absence of a younger age class caused by the loss of a fawn crop in a prior year. This is one reason you should also record observation rates on the number of does, fawns and bucks seen during hunting season.

**Average Weight by Age Class for Harvested Does**

This is a measure of herd health. This index is especially sensitive to mast crops and is why multiple years of data are most valuable. What is a “healthy” weight for a doe of any given age? The actual number varies across habitat types and deer populations, so ask a local wildlife biologist to provide you with the optimum weight range for your region.

This chart suggests the health of the deer herd has remained steady on my family’s land. However, during this time we have been reducing the deer population. Since we have only seen moderate increases in body weights, it is likely the deer herd would benefit from increased forage quality and quantity.

**Percent Adult Does (2½ or Older) With Milk**

This is a measure of herd health. This is why it is important to collect a jawbone and the lactation status from every doe. This is also why it is important to cut into the udders of does to accurately determine their lactation status. This data suggests the health of the local deer herd is improving. In most areas of the whitetail’s range, a lactation rate of 70 to 80 percent or higher for all does 2½ and older is considered good.

**Percent Yearling Does (1½ years) With Milk**

This is a measure of herd health. Lactating yearlings were bred as fawns, and the percentage of fawns that breed is a good index of herd health. Doe fawns reach sexual maturity and will breed during their first fall if they reach approximately 80 pounds, so a higher percentage of lactating yearlings indicates greater herd health. Fawn breeding rates vary from zero to more than 50 percent across their range. In Iowa, 10 percent of the fawns that breed produce twins! The data shown here suggests the deer herd is being exposed to additional nutrition and is becoming healthier.

**Breeding Dates**

This is a measure of rut timing and is determined by measuring the length of fetus(es) on a fetal scale. This is only practical for late antlerless seasons or winter/spring-killed does, because fetuses need to be at least 40 days old to be long enough to be measured on the fetal scale. You can overlay this data to regional data from your state wildlife agency to see how the rut compares in your area. Ideally, the rut should be relatively short and intense. This situation is best for the deer herd and for hunters. The chart shown here indicates does were bred from October through January, with peak breeding occurring during the third week in November. This means peak fawn drop will be during late May and early June, and should correspond perfectly with spring green-up and the flush of high-quality forage.

Proper collection, analysis and interpretation of harvest data allows for proper recommendations in a deer management program. This minimizes mistakes and the amount of time necessary to achieve maximum results from your management program. Be sure to collect data from every deer, and use that data to build your roadmap to success.

**About the Author:** Kip Adams of Pennsylvania is a certified wildlife biologist and QDMA’s Director of Education & Outreach in the North.