



QUALITY DEER MANAGEMENT ASSOCIATION

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Fawn Recruitment Rates

Herd monitoring is an important but often overlooked QDM Cornerstone. Some managers neglect to collect the appropriate data because they're not sure how to use it for management purposes. With a little help in analysis and interpretation, managers can use the data they collect to assess the status of their management program within their respective state, as well as compare how well they stack up to other states and/or regions. To provide a comparison among states, QDMA surveyed state agencies and collected information from 1998 and 2008 on four important management program indices. This article focuses solely on one of those indices, fawn recruitment rates, and future articles will cover the others. With respect to our survey, all states didn't provide the requested information, but most did and the data provided for meaningful comparisons among states and between years.

Fawn recruitment rate is a measure of the number of fawns per adult doe (1.5 years and older) alive in the fall pre-hunt population. Basically, this index records the number of fawns that survive to approximately six months of age and expresses that number in relation to the number of adult does in the population. The fawn recruitment rate is lower than the number of fetuses per doe and the number of fawns born in the spring, since not all fetuses survive to become fawns and not all fawns survive until fall. This rate is a good measure of a deer herd's productivity, and it is an important factor when determining the biologically appropriate number of does to harvest. Monitoring the fawn recruitment rate also provides insight into herd health, and it alerts managers to potential problems such as high fawn predation rates.

Our survey revealed several states do not calculate this valuable index. For those that do calculate it, most states' recruitment rates remained similar or declined slightly from an average of 0.88 fawns per adult doe in 1998 to 0.83 in 2008. This means less than one fawn was recruited for every adult doe in both years, and it explains why the old adage, "When you shoot a doe you're really killing three deer" is a myth. The fact that actual recruitment rates are lower than many hunters envision can be a difficult concept to grasp because we know healthy, mature does tend to have twins, and they can even have triplets in high-quality habitats. However, some fawns will die before they're recruited into the fall population. They may succumb to disease, be abandoned by their mother, get hit by a car, or be killed by a predator.

Also, the definition of fawn recruitment rate is the number of fawns per adult doe (1.5 years and older). Yearling does are included in this figure, but many yearlings do not have any fawns. Obviously, yearlings with fawns were bred as fawns. In areas such as Iowa, the majority of doe fawns breed and can have fawns as yearlings. Some fawns in Iowa even give birth to twins! However, in other areas such as Delaware or South Carolina, less than 10% of the doe fawns breed. That means over 90% of the yearling does in Delaware and South Carolina have zero fawns, and that dramatically reduces the fawn recruitment rate. Let's use the following hypothetical data as an example:

DEER HERD A

No. Does	Age (yr.)	No. Fawns Recruited	Fawns per Doe
5	1.5	1	0.2 fawns
10	2.5 and older	12	1.2 fawns
15	All does	13	0.87 fawns

Fawn Recruitment Rate = 13 fawns per 15 adult does or 0.87 fawns per adult doe

DEER HERD B

No. Does	Age (yr.)	No. Fawns Recruited	Fawns per Doe
5	1.5	3	0.6 fawns
10	2.5 and older	12	1.2 fawns
15	All does	15	1.0 fawns

Fawn Recruitment Rate = 15 fawns per 15 adult does or 1.0 fawns per adult doe

Continued.

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and the preservation of the deer-hunting heritage.*

In this realistic example, Deer Herd B has a higher recruitment rate simply because a higher percentage of its yearlings had fawns. Notice the 2.5 years and older does recruited the same number of fawns in both herds. If you expand this recruitment rate to larger herds, the difference between 0.87 and 1.0 fawns per adult doe will have significant implications in the rate at which a deer herd will grow and/or for the number of deer that you can harvest annually.

Getting back to the survey; many states have worked to balance deer herds with their habitat and to improve habitat quality during the past decade, so you would expect the 2008 average recruitment rate to be higher than it was in 1998. Since it was lower, it begs the question, "What impact are predators having on fawn recruitment rates?" In some areas predators may have little impact, but recent research in Alabama, Georgia and South Carolina confirms that bobcats and coyotes can significantly reduce fawn recruitment rates.

We asked for statewide averages in our survey, but it is important to remember the average recruitment rate can vary widely within a state. This is especially true for large states with diverse habitats, deer management programs, and snow or rainfall rates. Our survey revealed there is much variation in recruitment rates across the whitetail's range. In 2008, fawn recruitment rates varied from less than 0.5 in Arizona and Oklahoma to 1.2 fawns per adult doe in Illinois and Iowa. That means the average doe in Illinois and Iowa recruits nearly 2.5 times as many fawns per year as the average doe in Arizona and Oklahoma! Given this information, it is not surprising the productive Midwest grows so many bucks and requires such high antlerless harvest rates to keep deer herds in balance with their habitat.

Sportsmen and women can estimate the fawn recruitment rate on the property they hunt/manage with observation data, spotlight counts, and/or scouting camera surveys. Each technique has biases associated with it, but it's more important to estimate this index in the same manner each year so you can monitor trends in the data over time. Compare your estimate to the range reported above, and then closely examine the direction your trend is moving. Increasing fawn recruitment rates suggest herd health is improving and may permit higher harvest rates. Decreasing recruitment rates suggest herd health is declining and/or fawn mortality is increasing. These figures can help fine tune your annual target doe harvest and help you achieve success in your management program.

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