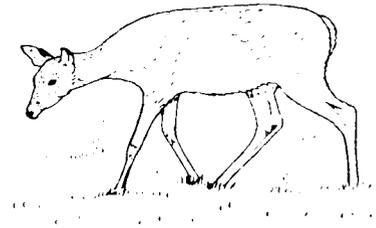


Deer and Agriculture In West Virginia



Fundamentals of Deer Management

Publication No. 806

THE BASIC CONSIDERATIONS

The first step in deer management, and one often overlooked, is the establishment of a clear, well-defined objective. Deciding on what is to be accomplished is essential because there is no single ideal deer management program. Different objectives may require totally different management actions. For example, if the objective is to increase the number of deer in an area where there are few or no deer, absolute protection from all causes of mortality is the most important management action. If the objective is to produce trophy quality bucks, important management actions are to keep the herd in balance with food supplies through adequate harvest of antlerless deer, to protect yearling bucks until they reach an older age when antler development is maximum, and possibly to initiate habitat improvements that increase available food. Where the objective is to reduce serious damage in agricultural crops, important management actions are to increase harvest of antlerless deer and to arrange for adequate hunter access to insure that enough deer are harvested.

All of the examples cited are simplified versions of basic deer management programs. Each has a definite objective and each requires different management actions. Thus, the proper management activities are dependent solely on the objective or objectives. Different deer management objectives, such as crop damage control and trophy management, at times may be compatible. Key elements of both are to have high antlerless harvest rates and to maintain relatively low deer population levels. Other potential objectives, such as crop damage reduction and providing maximum opportunity for the public to view or photograph deer, would not be as compatible.

The aforementioned examples also contain the three major components of deer management programs. These are 1) deer population regulation, 2) habitat manipulation, and 3) people management. Almost all deer management programs contain some aspect of each of these three components. The most troublesome component is the latter, people management,

since different people have different objectives and differing attitudes toward deer. Some want more deer, some want fewer deer, some are opposed to deer hunting, and so forth. On a biologic basis, enough is known about deer to successfully achieve various management objectives; however, on a sociologic basis conflicts can arise. Solution of the sociologic aspects of deer management can come only from understanding the opposing viewpoint and cooperation.

THE PRINCIPAL TOOL

The major component of most deer management programs is **deer population regulation**, and the **only** economically practical method of population regulation is hunting. The number and type of deer harvested by hunting can be adjusted through imposition of various hunting regulations including restrictions on the sex of deer harvested, types of legal equipment, season starting dates, and season lengths. Historically in all states, including West Virginia, hunting regulations have been restrictive during the period of deer restoration with mainly short buck-only seasons to protect does and encourage deer population growth. As deer become more abundant, more liberal hunting regulations including antlerless harvests are required to limit population growth.

THE FACTS AND FIGURES

To understand why not only the number but more importantly the sex of deer harvested is critical to population regulation, some basic facts of deer population dynamics must be examined. First, bucks are polygamous and will mate with many does. Unless they are malnourished, virtually every doe two years old or older will produce offspring each year of their lives. Older does more often have twins and younger does more often have single fawns. Average fawn production for healthy adult does is approximately 1.7 fawns per doe per year. Does rarely breed during their

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first fall, with no more than one in every 4 producing a fawn at one year of age. Male and female fawns are born in equal numbers, and thus, the ratio of bucks to does in the fawn segment of the population begins at 1 to 1. The ratio of adult bucks to adult does tends to remain near 1 to 1 in unhunted populations. In contrast, does predominate in most hunted populations, especially those with heavy buck-only hunting. Ratios commonly range from 1 adult buck to 2 to 4 adult does. If fawns are taken into consideration, the ratio of antlered to antlerless deer will range from 1 to 2 or 3 in non- or lightly hunted populations to as high as 1 to 8 in populations receiving heavy buck-only hunting pressure.

Since it is virtually impossible to harvest enough bucks to prevent nearly all does from being bred, then from a practical standpoint, population growth is dependent primarily on the number of does in the population. Under normal conditions, deer populations have the potential to increase at a rate approaching 40 percent per year. Clearly buck-only hunting, which usually removes only about 10 to 15 percent of the population, will not control population growth. Harvest of antlerless deer, therefore, is **mandatory** to stabilize or reduce populations.

To stabilize a deer population at any particular level, the total number of deaths each year from all causes must equal the number of births. Herds generally can be stabilized by harvesting equal numbers of antlered and antlerless deer so long as total annual mortality approaches the number of fawns born. Removal of more antlerless than antlered deer is required to reduce population levels.

When considering a deer management program, the size of the area or the "management unit" is important. The typical home range for does is slightly under 1 square mile, while it is usually 2 to 3 square miles for bucks. This means that population regulation *cannot* be accomplished effectively on a single small tract of land because of the interchange of deer from adjoining properties. Generally, the management unit needs to be at least 5,000 acres for effective population

regulation. Neighboring landowners with common deer management objectives can form larger "management units."

A second important consideration is the amount of hunting pressure. For hunting to be an effective tool for population regulation, there must be sufficient hunting pressure and hunter access to reach desired harvest levels. Normally one hunter per 20 acres will produce adequate buck harvests. Hunter success rates for modern firearms hunting average 1 in 6 for buck-only seasons and 1 in 3 for antlerless seasons. Many hunters are willing to pay for hunting privileges, and this should be considered a potential source of income by landowners.

A final aspect of a successful deer management program, and one which is all too often neglected, is the compilation of records on harvests. These records provide the data required to make future harvest recommendations and are essential in gauging the success of the program.

GUIDELINES FOR APPLICATION

Provided that adequate hunting pressure is applied to an area, the following harvest ratios can be used as a rule of thumb for achieving population regulation goals through hunting. For every 10 antlered bucks harvested, if the goal is for the population to:

- 1) increase rapidly then harvest no antlerless deer;
- 2) increase slowly then harvest 5 antlerless deer;
- 3) stabilize at current level then harvest 10 antlerless deer;
- 4) decrease slowly then harvest 12 antlerless deer;
- 5) decrease rapidly then harvest 15 antlerless deer.

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