

MANAGING OHIO'S DEER HERD



Ohio's Whitetail

The white-tailed deer (*Odocoileus virginianus*) is Ohio's only big game animal. Beginning with incursions from neighboring states in the early 1930s, Ohio's deer herd has grown from an estimated 17,000 deer in 1970 to some 700,000 in 2005. Three factors made the return and remarkable growth possible. First was the improvement in range conditions, primarily a result of farm abandonment in eastern and southern Ohio in the 1930s and 1940s. Second was the implementation of a zone-based harvest management strategy based on sound biological principles. Third was effective game laws and law enforcement. Citizen interest and hunter participation has paralleled the growth in the deer herd. Estimated deer hunter numbers have increased from 19,000 in 1965 to an estimated 500,000 in 2005.



Management Goal

Although nearly everyone relishes the presence of the whitetail, when deer become abundant they also become controversial. Deer may be viewed as a superb game trophy by the sports person, a prized addition to the landscape by the nature enthusiast, a threat to crops by the for-ester and farmer, and a road hazard by the motorist. Accommodating these diverse interests

has been the responsibility of the Division of Wildlife since deer returned to the state in 1923. As Ohio's herd grew, so did interest in deer and with it came the need for a formal deer management goal. Since at least the late 1950s, that goal has been to maintain county deer populations at a level that provides maximum recreational opportunity including hunting, viewing, and photographing, while minimizing conflicts with agriculture, motor travel, and other areas of human endeavor. Citizen input via periodic (~5 years) surveys of hunters, farmers, and the non-hunting public, as well as deer-vehicle accident (DVA) rates define these levels. Our deer management goal has received broad public support. Surveys indicate that 75% of farmers, 88% of deer hunters, and 73% of rural non-farm land-owners agree with this management goal. In short, our goal is to provide enough deer to hunt and enjoy, but not so many that they cause undue human hardship.

Management Strategy

Realizing our deer management goals means that we must find a deer population level that is satisfactory to most and keep the herd at that level. To do so requires that we (1) evaluate public attitudes toward deer and deer herd size, (2) relate those attitudes to the status of the deer herd to determine a publicly acceptable or optimum population level, and (3) adjust deer herd size accordingly. Because of differences in the quality and quantity of deer range, intensity of agriculture, highway traffic, and human population levels, this process is completed for each county. In essence, deer management is a complex cost/benefit analysis, a decision making tool used by managers in many fields. At this point the similarity ends, however, because deer present management challenges that are unique. In the next few paragraphs we will identify some of these challenges and explain the management solutions.

Inventorying Deer

Because of the secretiveness and mobility of the white-tailed deer, which varies both seasonally and with the age and sex of the animal, harvests and DVAs are used in place of actual counts to monitor deer herd levels. While we must assume that changes in these indices (harvest and DVAs) reflect changes in the size of the actual deer herd, this may not always be the case. Therefore, where available, aerial counts are used to assess deer herd levels. Taken together, these data provide a fairly accurate picture of the status of each county's deer population relative to optimum or target population levels.

Optimum Deer Population Levels

Citizen input, as mandated by our deer management goal, is far and away the single most important factor that dictates optimum or target deer population levels. However, the decision to maintain a deer population at a given level is not made without considering the potential impact that such a decision might have on not only the whitetail, but also the environment. Technically speaking, that means finding a population level that neither exceeds the Cultural or Biological Carrying Capacity.

Cultural Carrying Capacity

While the Division of Wildlife recognizes that all Ohioans share the costs associated with deer, opinion surveys of farmers, hunters, and general citizens indicated that Ohio's farmers and motorists shouldered the greatest share of the burden. Therefore, beginning in 1979, and consistent with the minimum conflict deer population objective directed by the deer management goal, we began using periodic (~5 years) surveys of Ohio's farmers to aid us in defining optimum population levels in all but our heavily urbanized counties, where DVAs are used. The most recent survey, conducted in August of 2002, yielded some 1,200 responses from farmers across Ohio. Among other things, the survey participants were asked if they would like to see the size of the deer population increase, stay the same, or decrease in their area. Respondents who preferred either an increase or decrease were then asked by what percent would they like to see the deer

population change. An average percent change was computed for each survey region.

Optimum county deer densities or target population levels represent what we believe to be the most equitable solution to the complex problem of minimizing impacts and maximizing benefits derived from Ohio's whitetail resource. However, our strong reliance on survey input from farmers has drawn criticism by some who feel such an approach results in unnecessarily low levels of deer. Opponents argue that farmers generally hold a negative opinion of deer. However, we found that farmers generally value deer and hold opinions of deer that generally are pretty consistent with the general public. Between 40-50% of Ohio's farmers surveyed indicated that they enjoy seeing and having deer around and about the same percent enjoy deer, but worry about the problems they cause. Only a very small percentage of farmers regard deer as a nuisance. A 1996 study from The Ohio State University revealed that despite annual losses approaching \$50 million, of which deer are responsible for half, Ohio's farmers generally believe that the benefits of wildlife outweigh the costs. Thus, while farmers play the largest role in deciding when enough is enough, their decision is likely to be one most of us can live with.

The deer hunter also provides important input into the management of Ohio's deer herd. In addition to voluntary comments, we poll a representative sample of deer hunters about once every 5 years. Over 5,000 hunters representing every Ohio county are included in the survey, which provides information on opinions and attitudes toward season length, legal hunting devices, bag limit, hunting pressure, and deer population levels. Where appropriate, we incorporate this information into the deer management process.

Biological Carrying Capacity

As populations approach Biological Carrying Capacity, both deer and their habitat suffer. Evidence that this is occurring might include a distinct browse line, the replacement of highly nutritious and preferred plant species with less palatable and nutritious ones, and a decline in the condition of the animals themselves, as measured by any number of means. Data collected since the early 1970s suggest that, while deer herd condition (as indicated by yearling (1.5-

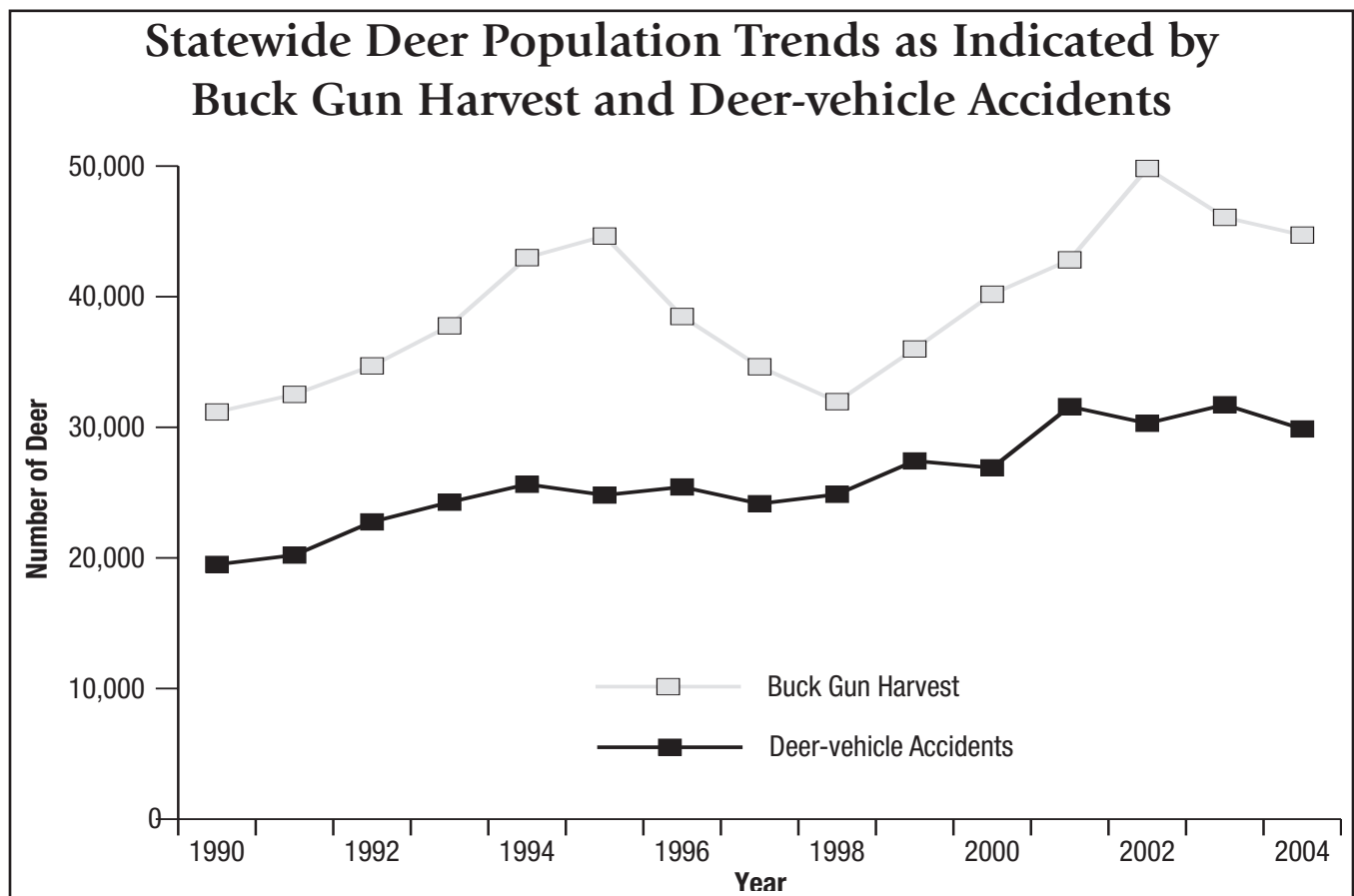
years old) antler beam data) in western Ohio remains unchanged, it appears to be declining in portions of eastern Ohio. Furthermore, a comparison of deer weights collected in the late 1990s with similar data from 1982 revealed that deer in some eastern Ohio counties are significantly lighter now. Thus, in addition to exceeding the Cultural Carrying Capacity, there are early warning signs that deer herd condition in southeastern Ohio is declining, an inevitable consequence of 2 simultaneous events - aging of the forests and continued deer herd growth.

In summary, we determine optimum population levels for each county based on either farmer preferences or DVA rates. Information on deer herd condition provides supplementary data that relates to habitat conditions. We believe that such an approach goes the furthest toward achieving Ohio's publicly approved deer management goal. The concept of optimum population levels is an important one because it provides the Division of Wildlife with management direction.

Harvest Management

The high quality of Ohio's deer range and virtual absence of natural predators, coupled with the whitetail's remarkable reproductive poten-

tial, dictate harvest management as the most practical means of maintaining deer populations at target. Regulations can be effectively used to increase, decrease, or maintain harvests of either or both the antlered and antlerless segments of the population depending on where the population is relative to target. For instance, a conservative buck-only harvest regulation was used from 1965-73 to foster deer herd growth. In 1973 antlerless (does and fawn bucks) permits were issued in limited numbers to slow herd growth in portions of the state. By 1979, all of Ohio's 88 counties were open to gun hunting and in 1984, an either-sex regulation replaced limited antlerless permits in many counties to further slow herd growth. Despite these changes, Ohio's deer herd continued to grow. In 1991, bag limit increases from 1 to 2 deer (the additional deer was antlerless) were instituted in many counties. Other tools have been used as well including season length extensions, new seasons, and special hunting zones and bag limits. The status of the deer population relative to target, as well as experience with past harvest regulations, determine which tools are used in a given county each year. In counties where data indicate that populations exceed optimum levels, more liberal har-



vest regulations are used to reduce populations. Conversely, in counties where deer populations are below goal, more restrictive regulations are used to allow herd growth. Ultimately, population levels are controlled by regulating the harvest of females, which typically represent about 75% of the antlerless harvest.

The effectiveness of our harvest management system will vary somewhat from year to year depending on the accuracy of population data, demand for deer, and weather during the firearms seasons. These variables and many others that influence harvest are often difficult or impossible to predict. Consequently, an over or under harvest in a particular county is a fact of life. However, this can be compensated for in subsequent years by adjusting the harvest regulations accordingly. We expect that over the long-term, the number of deer in the state (and in most counties) can be maintained near the desired level with such a system. However, only with your cooperation can this system work.

Successful management of Ohio's deer herd will require a cooperative effort among Ohio's hunters and landowners to eliminate obstacles that currently limit the effectiveness of our current management approach. These obstacles include a reluctance on the part of hunters to abandon traditional sites and seek areas with lower access and higher deer densities and a reluctance on the part of landowners to grant access to their lands. Sports people must work harder to cultivate positive landowner-hunter relationships. Landowners can help by allowing deer hunting and actively recruiting good deer hunters. A good rule-of-thumb is that landowners annually need to harvest 50% of the deer they believe are on their property and about 75% of these should be antlerless. By doing this, landowners will be managing for stable deer populations. By harvesting anything less than this, they are managing for increasing herd size.

Special Management Techniques for Urban and Agricultural Problems

By managing for optimum deer population levels on a county basis, we expect to prevent or eliminate widespread agricultural problems with deer. However, some localized crop damage is

still likely to occur. Even with a county population at the desired level, deer will move to and concentrate in areas of good habitat. Farm fields and orchards in close proximity to good deer cover are especially vulnerable.

Two special programs are available to help landowners in such situations. One offers technical advice on deer repellents and deer proof fencing and the other allows farmers, landowners, or their agents experiencing deer damage to shoot nuisance deer. Permits are required, however. In most situations, landowners experiencing damage would be eligible for Hunting Season Control Permits which, as their name suggests, are valid only during the hunting season and may be used to harvest antlerless deer only. If conditions warrant, landowners may be issued Deer Damage Control Permits which are valid for specified periods outside the hunting season. These too are valid for antlerless deer only. Additional information about these programs can be obtained from the local state wildlife officer or by writing to the Division of Wildlife, Wildlife Management and Research, 2045 Morse Road, Columbus, Ohio 43229-6693.

In response to increasing numbers of DVAs and low harvests, the Division of Wildlife established 5 Urban Deer Zones encompassing all or portions of 19 urban counties in 1994. Local ordinances permitting, hunters could harvest 2 additional antlerless deer within the Urban Deer Zones. In 1995, the bag limit was increased to 4 and the cost of the Urban permit reduced. Permit sales and antlerless harvest increased 378% and 28%, respectively, as a result. The antlerless harvest outside the Urban Deer Zones increased only 3.4%, however. The establishment of the Urban Deer Zones grew out of the need to reduce the size of the deer herds in and around our major urban centers. If increases in antlerless harvests continue at present rates, that goal may become a reality.

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