

# A Survey of Urban Deer Policies in 4 Southeastern States

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*Abstract:* In the 20th Century, white-tailed deer (*Odocoileus virginianus*) populations in the United States increased dramatically. In many states, management objectives for deer have changed from conserve and increase to control and decrease. Diversity among stakeholder's objectives for deer populations has made management difficult. Many states in the northeastern and midwestern United States began struggling with urban deer management in the 1980s, whereas southeastern states have only recently encountered this challenge. We reviewed written policies from Georgia, South Carolina, North Carolina, and Virginia to compare urban deer management programs among these states. Our review was conducted via requests for written policies, telephone interviews, and website searches. There was substantial variation among these states in their policies regarding urban deer. Georgia and Virginia have developed management plans specifically designed to deal with urban deer. South Carolina has established state-approved guidelines that require special urban deer management permits. North Carolina does not have an official policy or program specifically for urban deer management. Wildlife agencies will need to tailor their programs to reflect the values and needs of various communities, while understanding that no single option will satisfy everyone. Above all, we recommend that all southeastern fish and wildlife agencies develop a state-approved urban deer management policy.

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Once extirpated from much of the United States, the white-tailed deer (*Odocoileus virginianus*) has recently reached levels of overabundance in many areas (McShea et al. 1997, Warren 1997). Due primarily to uncontrolled market hunting and a lack of game laws, fewer than 500,000 deer were estimated in the United States (McCabe and McCabe 1984) less than a century ago. Wildlife management projects, changing agricultural practices, and suburbanization helped restore white-tailed deer populations to a level that far exceeds any historical density. Until the 1980s, the objective for deer management in the United States was primarily to increase popula-

tions. Today, deer populations need to be maintained at levels compatible with their own welfare and demand for deer-related recreation, as well as for competing land uses and ecosystem health (Warren 1991, Stromayer and Warren 1997).

White-tailed deer are one of the few species of wildlife whose overabundance can seriously degrade their own habitat and that of other species. Overabundance can also facilitate the outbreak of disease and parasites that may cause concern regarding human health (Decker and Gavin 1987). Lyme disease can be a concern for residents of urban and suburban areas. Although deer themselves are not reservoirs of tick-borne pathogens such as Lyme disease, their density affects the abundance and distribution of the disease vector, the black-legged tick (*Ixodes scapularis*) (Wilson and Childs 1997).

As society becomes more urbanized, developers are encouraged to produce more "green spaces" as a means of increasing the quality of life for humans and to benefit wildlife. Although most urban dwellers regard wildlife as a valued resource, few are willing to allow thousands of dollars spent on landscape shrubbery to be lost to deer browsing. Conover (1997) estimated that annual losses resulting from deer totaled \$251 million for private residences and homeowner landscaping. Another \$125 million was estimated to be spent by homeowners on preventive measures.

Deer-vehicle collisions represent both monetary and safety concerns in urban areas. It has been estimated that approximately 1.5 million deer-vehicle collisions occur annually in the United States with an average repair bill of \$1,500, totaling over \$1 billion in damages each year (Conover et al. 1995). Conover et al. (1995) also estimated that these collisions accounted for 29,000 injuries and 211 fatalities annually.

Thus, urban deer management is a complex issue. There are both economic benefits and hazards associated with deer in human-populated areas. Feelings toward deer can be extremely diverse among stakeholders (Decker and Richmond 1995). Stakeholders in the urban deer arena range from state agencies to hunters, animal activists, and average homeowners. With this diversity in constituents, it is evident that management is more difficult now than just a few years ago.

With the population of humans continuing to grow and land continuously being converted to residential areas, the challenge of managing deer in urban and suburban areas is increasingly problematic for state fish and wildlife agencies. Messmer et al. (1997) surveyed all 50 state fish and wildlife agencies in the United States; 76% of them indicated that urban deer were a problem in their states, but only 42% had implemented specific programs for urban deer management. Northeastern and mid-western states began struggling with urban deer management in the 1980s (McAninch 1995), whereas southeastern states have only recently encountered this challenge.

Our objectives were to consider the policy issues related to urban deer management programs in Georgia, South Carolina, North Carolina, and Virginia. We utilized both published guidelines and telephone interviews to gather data on current policies. We determined legislative and constitutional authority by accessing the website <http://www.findlaw.com>. We then used these data as a basis of developing recommendations for other southeastern state fish and wildlife agencies.

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## State Authority

In order to make and enforce laws pertaining to an entire state, authority must be granted to an agency, giving it explicit powers. Every state has a constitution. In the constitution, explicit authority is given to a state agency, usually the DNR, to provide laws and set penalties in relation to natural resources.

In Georgia, this constitutional power is given in Article III, Section VI, Paragraph II (a) (1). Article III pertains to the Legislative Branch and defines all powers thereof. Section VI is the exercise of powers and Paragraph II gives specific power to the General Assembly to create a DNR for the protection of natural resources belonging to the State. In South Carolina, these powers are given in Article XII (Functions of Government), Section 1. In North Carolina, authority is granted through Article XIV, Section 5, and in Virginia, Article XI, Section 1 gives authority to VDGIF.

The state constitutions grant authority over state-owned resources to these departments. Wild game, such as deer, is defined as State property through the State Codes of Georgia, South Carolina, North Carolina, and Virginia (OCGA 27-1-3; OCSC 50-1-10; NCGS 24-143-239; OCVA 10.1-1186, respectively). These statutes give the respective states "ownership of, jurisdiction over, and control of all wildlife" (OCGA 27-1-3).

## Urban Deer Management Options

There are 3 general options for urban deer management: lethal control, non-lethal control, and experimental fertility control (DeNicola et al. 2000). Several options may be available within a category and certain options may be classified into multiple categories. For example, contragestation (i.e., abortion) could be classified as both fertility control and lethal or non-lethal control. Although several options are available to management officials, cost, policy, and public input generally dictate specific courses of action pertaining to urban deer. For instance, there is increasing public support for non-lethal methods such as fertility control, but these techniques are impractical, costly to apply, and not yet approved by the U.S. Food and Drug Administration (FDA) for safe consumption of deer treated with fertility control agents.

There also are non-lethal options available to homeowners that do not involve controlling deer and, thus, do not require permits from state fish and wildlife agencies. These include fencing, deer-resistant plants, repellants, and other disincentives (DeNicola et al. 2000). Although no permit is required, these methods are usually not effective at completely deterring deer. In addition, some residential areas may have covenants that prevent the construction of fences.

### **Lethal Control**

Lethal control is the permanent removal of deer from an area via lethal means. Lethal control can include controlled public hunts, sharpshooting programs, and trap-and-kill programs (DeNicola et al. 2000).

### **Non-lethal Control**

Non-lethal control is the permanent removal of deer from an area via non-lethal means. This is traditionally executed through trap-and-relocate programs. Although trap-and-relocate programs are listed as non-lethal methods, high mortality rates due to stress are associated with this method (Witham and Jones 1990, Cromwell et al. 1999).

### **Experimental Fertility Control**

Fertility control is the manipulation of a population by controlling reproductive success. Fertility control may be via contraception (preventing pregnancy) or contragestation (inducing an abortion) (Warren 2000). Most of these methods are currently experimental and are not approved for routine management of urban deer herds. Routine application of fertility control to a large proportion of a deer population can be a tactical nightmare. Most applications of fertility control to urban deer herds have been conducted under scientific permits from both state and federal (FDA) agencies (DeNicola et al. 2000).

## **Urban Deer Policies**

In many states, public input from constituents is not only encouraged, it is required (Schoenbaum and Rosenberg 1996). The regulations and policies pertaining to urban deer must be made public for comment before enactment. Differing opinions regarding urban deer management options can make controlling deer in urban areas difficult. Biological science may no longer be the basis for management protocol (Doig 1995).

Decker and Chase (1997) defined 5 approaches to characterize the ways wildlife managers address public input and involvement. The first approach is “authoritative.” In this case, the respective department has command over any decisions made pertaining to wildlife. The second approach is the “passive-receptive,” where managers are receptive to stakeholders input, but do not seek it systematically. The “inquisitive” approach seeks input from a broad array of stakeholders and utilizes polls such as surveys. The “transactional” approach encourages stakeholders to engage one another directly. Finally, the “delegatorial” approach is when agencies share or delegate authority for management to stakeholders.

### **Georgia**

Georgia’s approach would be classified as “passive-receptive.” Wildlife managers do not actively seek input from stakeholders, but when given, it is considered in

decision-making. Georgia DNR has developed general, statewide deer management plans, as well as specific urban deer management plans (Ga. Wildl. Resour. Div. 1994, Ga. White-tailed Deer Comm. 2001). On properties owned and managed by Georgia DNR, public hunting is utilized where possible with an emphasis on increasing doe harvest. This management option is also encouraged on public areas located within urban environments. Georgia DNR can be petitioned to modify hunting regulations for bow and gun hunting to encourage safe removal of deer. One example includes landowner contracting with civilian bowhunters to remove deer in privately owned urban areas with the approval of DNR.

Georgia DNR uses a Conflict Index to rate the potential for deer-human conflicts in all counties of Georgia. The agency uses a combination of the 1991 human population per square mile of timberland, the 1993 deer population per square mile of timberland (weighed by a factor of 15), and the 1993 ratio of people:deer. Future projections from these estimates are then added to yield the predicted Conflict Index for 2000. At a level of 1,000 and above, a high potential for conflict is indicated. As of 1994, 18 of Georgia's 164 counties (11%) exceed this level.

Using the current population estimates and optimum deer populations for the metropolitan Atlanta area, all 9 counties would need to reduce deer populations by 43%. This could pose a problem, considering the previous report (Ga. White-tailed Deer Comm. 1996) recommended a 17% reduction and was not accomplished. To achieve the goals, it is estimated that harvest should equal 50% of the population with does comprising 55%–60% of the harvest. With deer populations increasing and the numbers of hunters decreasing, meeting the goals of this plan could pose a daunting task.

### South Carolina

South Carolina has chosen to take the "delegatorial" approach, and places the primary burden of management decisions on the residential community. South Carolina DNR has developed state-approved guidelines for their Urban Deer Management Program (S.C. DNR 1999). These guidelines are available to interested communities to serve as a guide to developing an urban deer management program. South Carolina DNR staff will provide support at public meetings, give information, and furnish technical support. The community must decide the preferred option for control. Guidelines require communities to hire a wildlife professional to provide contractual deer depredation assistance within urban areas. The contracted wildlife professional must meet the certification standards of The Wildlife Society. Any decisions to use lethal means or other techniques involving the capture of deer require permits from South Carolina DNR.

In areas where legal hunter harvest of deer is not feasible or is not allowed, the community must follow these guidelines. The community must provide South Carolina DNR with documentation of the history of the problem (i.e., an environmental assessment). All lethal techniques must meet approval of the South Carolina DNR and the euthanasia standards of the American Veterinary Medical Association (AVMA 2000). Lethal removal of deer in any year will only be permitted during the

period of 15 September to 1 March, to avoid the period of fawning and lactation. Capture and relocation techniques are not permitted and permits for fertility control may be obtained only after submitting an approved scientific research proposal by a competent researcher.

The South Carolina DNR guidelines require that all interested parties in the community agree or meet a consensus. If no agreement can be made, then no action can be taken. While consensus is always desired, it may be very difficult to achieve in urban deer management. Consent to implement a management option may be the best possible outcome (Curtis and Hauber 1997).

#### North Carolina

North Carolina would be classified as “authoritative.” North Carolina approaches urban deer management on a case-by-case basis. In situations where conflicts occur, information on options is discussed with relevant parties and a unique management plan is implemented. North Carolina currently has no written policy or state-approved program that specifically deals with urban deer management. Without an approved policy, some individuals may believe that decisions are reached arbitrarily. In the absence of an approved urban deer policy, some stakeholders could contend that their interests were not represented. Stakeholder dissatisfaction could lead to possible legal or political action against the department. For example, New York hunters disagreed with management decisions made by state wildlife biologists regarding population objectives in the 1970s. State biologists did not take these opinions into account. The hunters then worked through their state representatives to effectively relieve the agency of authority over that region of the state (Decker and Chase 1997).

#### Virginia

Virginia would be classified as in transition from “passive-receptive” to “delegatorial.” Virginia has developed a general, statewide deer management plan that addresses urban deer (Deer Manage. Planning Comm. 1999). On properties owned and managed by VDGIF, public hunting is utilized where possible. This management option is also used on public areas located within urban environments. The VDGIF is currently developing a management program for areas where traditional regulated deer hunting is deemed inappropriate or unacceptable. Within this program (expected by 2004), standard departmental protocol/procedures for addressing urban deer management issues are being developed. Technical assistance and site-specific deer management programs will be implemented. As proposed, Virginia’s Urban Deer Management Program will be drafted with the aid of a citizen’s task force comprised of all community stakeholders, with the exclusion of government officials and departmental staff. A local wildlife biologist would serve as technical advisor to the group.

This approach addresses the variety of views among stakeholders. By placing the authority in the hands of the stakeholders, state biologists are relieved of the burden of trying to deal with all interests. This approach also protects state agencies

from potential legal or political challenges that certain public interests are not being represented. For example, a citizen task force was formed in Rochester, New York, during fall 1991 to address overpopulation of deer in the area. Agreement was reached on a majority of the recommendations. One member decided not to support a portion of the final recommendations which included a deer cull and resigned from the group. Animal welfare groups then filed for a legal injunction to delay the removal of deer from the area. However, New York State's Appellate Court unanimously overturned the injunction because they felt all public interests had been represented in developing the recommendation (Curtis and Hauber 1997).

## Summary and Recommendations

The management of deer in urban and suburban areas is increasingly difficult for wildlife biologists. As problems have increased throughout the country, states, and their respective governing wildlife agencies, have had to adopt specific policies pertaining to this issue. Not all states have chosen the same approach to the management issue. Not all states have developed specific programs.

Some questions seem to be rooted in the regulations, themselves. Can Georgia actually reduce deer herds substantially by hunting alone? Can South Carolina expect communities to be informed enough to make the appropriate management decision (if they can come to a decision at all)? The issues are complex and so likely will be the solutions.

Current trends favor the likelihood of increased urbanization, and thus, increased deer-human conflicts. Most states have realized there is an urban deer problem, but many have not yet taken steps toward its solution (Messmer et al. 1997). Wildlife agencies will need to tailor programs to reflect the values and needs of the communities, while realizing that no single option will satisfy everyone. The best approach likely will involve public education on the benefits and costs of various management options. Only through an educated public will productive discussions and decisions result.

Northeastern and midwestern states have dealt with urban deer management issues for longer than southeastern states (McAninch 1995). Experiences from these states have shown that the delegatorial approach to urban deer policy has been most successful. Minnesota has had much success with citizen task forces (McAninch and Parker 1991), as has New York (Curtis and Hauber 1997, Decker and Chase 1997). Stakeholder groups have designed innovative, creative, and integrated management programs (McAninch and Parker 1991). However, state wildlife agencies should not only use stakeholder preferences as the basis for decisions. Wildlife agencies are public servants, but should not become serventile to public opinion. Professional judgment and responsibility should not be devalued (Decker and Chase 1997). States should look at the management plans in surrounding areas that have and have not been effective. Citizen task forces can be a valuable tool for the wildlife manager, but there is no panacea or single technique that will work for every situation. The best solution seems to be adopting an approach that is flexible enough to incorporate a vari-

ety of interests, and one that can be changed, when necessary. Most importantly, all southeastern fish and wildlife agencies should have a state-approved urban deer management policy in place.

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