Deer are a precious natural resource. They spellbind us with their grace. Their freedom to roam wild without boundaries reaches into our soul. But deer can spring without warning into the paths of oncoming vehicles, causing accidents that result in >1 billion dollars in damages annually. They extend their grazing into suburban yards, garden nurseries, orchards, and farms. They harbor the ticks that transmit pathogens that cause illnesses such as Lyme disease. The U.S. Centers for Disease Control and Prevention reported 23,763 cases of Lyme disease during 2002. Deer will even overeat their own food supply, causing them to face starvation. Deer will browse woodlands to the point that they threaten the future of the forests, and, hence, all other wildlife that depend on that habitat for survival.

With some exceptions, such as western areas of the United States where mule deer occur, deer populations are at record levels (Figure 1). According to a survey in 2004, a majority of states reported that deer damage complaints are increasing more than twice as fast as deer populations (Figure 2). During the past 5 years, state agencies’ expenditures to address deer damage have increased by an average of 23%, with 57% of the states reporting budget increases during a time when most states’ overall budgets have seen drastic cuts. Personnel-hours assigned to control deer damage have increased 22%. In addition, nearly 76% of wildlife agencies believe the public is becoming less tolerant of wildlife overpopulation issues. State agencies report that the greatest increases in deer populations occur where hunting is not allowed or public access to land is limited, such as urban and suburban communities. Wildlife managers consider both biological and cultural
elements when managing deer populations. Biologically, they try to keep deer populations at levels where habitat or other wildlife are not negatively affected. Culturally, they try to keep deer populations at acceptable levels where nuisance and human health issues are minimized. Through educational outreach efforts, state agencies try to work with and listen to the public and help people understand ways to minimize damages from deer. But when hunting is not allowed or public access to land is limited, deer populations continue to increase, and so do the complaints.

Left alone with no population control (natural predators, hunting, disease, etc.), deer will eventually destroy their own habitat. Their excessive browsing of underbrush and elimination of saplings of many desirable tree species in woodlands also reduce the populations of mammals and birds. Deer damage to forest ecosystems can become so great that the forest will not recover during the span of a person’s lifetime. In a Canadian study, Martin and Baltzinger concluded in 2002 that the regeneration of western red cedar is drastically reduced in the presence of unregulated, high deer populations. Cedar regeneration is better and browsing stress lower in areas where deer are more exposed to hunting.

Typically, in areas where deer populations need to expand, wildlife managers limit hunting to bucks (males) only. However, once managers find it necessary to stabilize or reduce deer populations, they decide on a number of does (females) that must be removed from the population. Therefore, many agencies continually increase the amount of does that hunters can take and lengthen hunting seasons to bring deer populations in line with their habitat.

Some communities have found out the hard way that deer populations cannot go uncontrolled. There are hundreds of examples throughout the country where an area at one time in its history did not allow hunting, and the white-tailed deer multiplied until they caused ecological disaster. Places like Harriman State Park in New York, Bluff Point Coastal Reserve in Connecticut, Ryerson Conservation Area in Illinois, Fontenelle Forest in Nebraska, Thousand Hills State Park in Missouri, and Boulder Mountain Park in Colorado have each experienced the effects of overpopulated white-tailed deer.

Unfortunately, protest groups continue to lead the public into thinking that there are substitutes for hunting. In the meantime, the controversy drags on and on, and communities lose the things they were trying to protect; the deer die of starvation or disease or the habitat is destroyed.

Following is a list of alternative methods to deal with deer overpopulation, but each is limited in value and has significant costs associated with it.

**Trap and transfer**
In the trap-and-transfer (or translocation) method, deer are trapped, often tranquilized, and taken to another location. While this method was a viable option at one time for selected populations, it is no longer a viable option because deer are now abundant throughout the United States, and there is no suitable place for excess deer to be released. Also, wildlife agencies at present are concerned about transporting deer across state lines because of the danger of spreading chronic wasting disease. Studies have shown that about half of all deer trapped and relocated die from capture-related stress and from wandering extensive distances after release, resulting in road mortality. Translocation is expensive, with costs ranging from $400 to $3,000 per deer.

**Contraception**
To date, birth control has not been effective in controlling population growth in free-ranging deer herds, and no birth control products are commercially available for managing wildlife populations. They are currently approved for research purposes only. A 3-year study (1997–1999) evaluating the effectiveness of birth control (immunocontraception) was conducted by the Humane Society of the United States in cooperation with the Connecticut Wildlife Division and the University of New Hampshire. The study, conducted on a deer herd in Groton, Connecticut, cost approximately $1,100 per deer treated during the first 2 years. Despite
the cost, the study demonstrated that even with good access to a relatively small isolated deer population (about 30 females), an adequate number of female deer could not be successfully treated to limit population growth.

**Sharpshooting**

Many state laws prevent the use of sharpshooters. Sharpshooting involves hiring a marksman who has special authorization from the state wildlife agency to remove overabundant deer. Sharpshooting has been successful in addressing small-scale deer problems, but would be impractical to manage free-ranging deer populations over large areas. Costs for recent sharpshooting programs have averaged about $300 per deer removed. To remove the 500,000 deer taken annually by hunters in Pennsylvania with sharp shooting techniques, the state would have to pay $150 million annually, an amount nearly twice as large as the Pennsylvania Game Commission's current budget.

New Jersey is one state that will provide permits to communities to utilize sharpshooters. About 6 communities in New Jersey use sharpshooters. Princeton Township uses a combination of methods to control its deer population, with costs in years that involved sharpshooting ranging from $100,000 to $150,000 annually. Other communities within New Jersey are welcoming hunters to their neighborhoods to prevent assuming additional costs. Communities can actually generate additional revenue by charging special access permits to hunters.

Connecticut’s suburban communities are also welcoming deer hunters. In Mumford Cove, a combination shotgun and archery hunt was conducted in 2000. Of the 39 landowners approached by a Mumford Cove volunteer resident committee, all agreed to waive the 500-foot restriction on discharging firearms to increase the amount of land available to hunters. Over 6 days, hunters removed the number of deer the community requested. No hunting accidents occurred, and there were no reports of wounded deer in the community. A post-hunt survey indicated that residents were satisfied with the success of the hunt; they observed fewer deer in the community and reported less damage to plantings. In addition, the number of residents who contracted Lyme disease in the community was greatly reduced the following year.

The Fontenelle Forest Nature Area in eastern Nebraska had maintained a hands-off policy with wildlife and basically let nature take its course for 30 years until it was ultimately recognized that a burgeoning population of white-tailed deer was severely degrading native plant communities. In 1995, members of a community task force implemented a regulated hunting plan that proved effective for deer population management.

The North American Conservation Model uses regulated deer hunting seasons and bag limits to help maintain a sustainable population of deer and minimize conflicts with humans. Hunting allows deer to remain a valued public resource instead of a pest. Hunters help bring millions of dollars into management programs instead of management programs requiring millions of taxpayer dollars for other control methods. The general consensus of states that completed the 2004 survey was that if hunting were ever lost as a management tool, deer populations would increase by 200%, and no increase in agency budgets could effectively replace the loss of hunting as the primary deer management tool.*