



COMMONWEALTH of VIRGINIA

Molly J. Ward
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

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The Virginia Department of Game and Inland Fisheries (DGIF) has a long and successful record of working with citizens and localities to manage deer populations in Northern Virginia. In our experience, hunting and sharp shooting have been the only practical means available for deer management in urban areas with high deer populations. Hunting with archery and firearms is successfully being utilized on almost 14,000 acres of county park lands in Fairfax County alone, with additional hunting taking place on federal lands, military facilities, and private property, resulting in real and noticeable deer population reductions.

Liberal deer hunting seasons have been applied to both private and public lands in Northern Virginia, resulting in a two-fold increase in harvest and a significant increase in harvest of does. Deer population levels are driven by the percent does in a population, so increased doe harvest is part of any strategy to reduce deer populations. Hunting in Fairfax County could be even more effective with increased access to private lands.

The Fairfax County Deer Management Program has seen outstanding results due in large part to the Archery Hunting Program instituted in 2009. Prior to 2009, the Deer Management Program only used sharpshooting and managed hunts. The total harvest in 2008 was 285 deer. The Archery Program was instituted in 2009 as a pilot study and expanded in the following years. In 2014, the total harvest was 1103 deer with the Archery Program accounting for 848 harvested deer with 69 percent being does. It is more impressive when you consider that the Archery Program and managed hunts use volunteers that are eager to participate and must abide by strict policies that ensure institutional control over the program. There are currently 786 archery hunters enrolled in the Archery Program, which includes over 60 parks.

Hunting is a proven and science-based wildlife management tool. Ellingwood and Caturano (1996) and the Northeast Deer Technical Committee (2009) evaluated a wide variety of deer management options, including non-lethal means and concluded that regulated hunting is the most practical and cost-effective means to control free-ranging deer populations. A number of studies have shown hunting to be effective and efficient at reducing and maintaining lower deer populations, both in rural and urban environments (McCullough 1979, Palmer et al. 1980, Deblinger et al. 1995, McDonald et al. 1998). More recently, Jenkins and others (2014) found that a multiple year hunting program in Indiana allowed forest lands to recover from the effects of over browsing that was present prior to the hunts. Kilpatrick, Labonte, and Stafford (2014) reported significant declines in tick abundance and Lyme disease in Connecticut when hunting was used to reduce the deer population from over 100 deer/mi² to 13 deer/mi². These studies, and many others, support the use of regulated hunting to control deer populations.

In many instances, non-lethal alternatives to hunting or sharpshooting have been proposed as a means to control deer populations. Research has shown that non-lethal methods are limited in applicability, prohibitively expensive, logistically impractical, and technically infeasible. For example, fertility control in deer remains largely experimental and appears to be useful only in closed populations, such as islands or fenced areas where deer are approachable and unable to disperse naturally. Immunocontraceptives like porcine zona

pellucida (PZP) and GonaCon have not been approved for general use in Virginia and the more widespread effects on other mammals and even humans is unknown. Surgical sterilization can be effective in small, closed deer populations, but deer capture and surgery makes this option cost-prohibitive for general use.

GonaCon and porcine zona pellucida (PZP) have also been investigated as non-lethal alternatives to lethal methods. GonaCon, approved in 2009 by the EPA, has been the only contraceptive agent approved for use in free-ranging wild deer. Although GonaCon was developed as a single-shot, multi-year agent, trials in Maryland and New Jersey showed that efficacy declined to insufficient levels two years post-treatment (Gionfriddo et al. 2009, 2011). PZP has shown some success in reducing deer populations on islands (e.g., Fire Island National Seashore in New York, Naugle et al. 2002; and Fripp Island, South Carolina, Rutberg et al. 2013) but has been less successful reducing a fenced deer herd at the National Institute of Standards and Technology in Gaithersburg, MD (Rutberg and Naugle 2012). In either case, PZP has not been shown to reduce a free-ranging deer population which is typical of the deer herd in Fairfax County. In addition, PZP causes female deer to experience multiple estrous cycles, extending the deer breeding season and potentially leading to more deer-vehicle collisions and winter mortality due to over-exertion (Miller et al. 2004). A new study of PZP began in 2014 in the Village of Hastings-on-Hudson, NY. This five year study will examine use of PZP to reduce the free-ranging deer population. Costs for this method are reported to be approximately \$500 per deer. Results are expected in 2019.

DGIF issued a scientific collection permit to White Buffalo, Inc. in 2014 to test the efficacy of the experimental, non-lethal, surgical sterilization approach to reduce localized deer populations during a 5 year project. This project was widely touted as the first non-lethal deer *management* program in Virginia but is instead a *scientific research* project to examine the usefulness of the method. The expected cost of sterilizing one doe is approximately \$1000 and is being paid for by donations. However, there was an additional cost of \$436 per deer in police overtime that the city had to absorb in 2014. Results are expected in 2019 and may inform future DGIF decisions about non-lethal management.

Media reports regarding the Fairfax City deer research project have included a generous dose of misinformation, often presenting false information as fact. Recently, a prominent newspaper indicated that a non-lethal research program in Maryland was a great success without any evidence of deer population reduction. Rather, the latest progress report from that study does not support the claim. These articles were also published online with direct links to animal rights websites that presented non-lethal methods as a proven tool, which they are not. Misinformation was also expanded by reader comments and grass root efforts spreading overly optimistic conclusions as fact. As a result, many residents have unreal expectations of what non-lethal methods can do and therefore find lethal management less acceptable. This is an unintended consequence of the Fairfax City deer sterilization research project and will be a factor considered for future permit requests in Virginia.

At this time, the use of non-lethal methods to manage free-ranging deer are unproven techniques. Programs using these methods are research projects to examine the use of these techniques. It is important to recognize that distinction between *research* into experimental methods such as sterilization and *management* using proven methods such as hunting and sharpshooting. The Department of Game and Inland Fisheries has issued permits for experiments with non-lethal methods, but the agency will not issue a permit to allow an unproven technique to be implemented as a management tool. Additionally, DGIF will monitor and evaluate the results of ongoing research into the use of surgical sterilization and immunocontraceptives in free-ranging deer populations before issuing additional permits for these activities.

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