Evaluating surgical sterilization as a management technique for overabundant suburban deer populations

DeNicola, A.J., DeNicola, V.L.

CONTACT: Tony DeNicola,*tony.denicola@whitebuffalo.org*

Overabundant suburban deer (Odocoileus spp.) are a source of human-wildlife conflict in many communities throughout the United States. Deer-vehicle collisions, tick-borne pathogens, impacts on local vegetation, and other negative interactions are the typical reasons cited for initiating a deer management program. Social attitudes, legal constraints and perceived safety concerns lead many communities to examine nonlethal management options. Surgical sterilization is currently the only nonlethal method available to permanently sterilize females with a single treatment. There are limited data demonstrating methods and outcomes in high percentage (>90%) surgical sterilization programs; particularly impacts of immigration on non-isolated populations. We present data from five surgical sterilization sites with open populations (not fenced or island environments) in California, Maryland, Ohio, Virginia, and New York, USA. From 2012 to 2017, we sterilized 403 deer via tubal ligation and ovariectomy. Annual or periodic population estimates were conducted using camera surveys, road-based distance sampling, and intensive field observations to assess population trends. We noted an average reduction in deer abundance of approximately 27% from Year 1 to Year 2. Initial populations ranged from approximately 38–404 deer/km2 (15–159 deer/mi2). On sites with 3-4 years of sterilization treatment, at sites that were active that long, we noted an average total reduction of ~49%, resulting in an estimated 20–221 deer/km2 (8-87 deer/mi2) at each location. These projects clearly demonstrate that significant reductions in local deer densities using high percentage surgical sterilization programs can be achieved. Finally, we provide an overview of these and other programs, site considerations, costs, immigration rates, and program maintenance strategies.