

Griffy Lake Nature Preserve Deer Management Plan



2017

**Griffy Lake Nature Preserve
Deer Management Plan**

Table of Contents

- I. Introduction**
 - A. History of the conflict
 - B. Area description
- II. Deer Vehicle-Collisions**
- III. Ecological Damage**
- IV. Authority**
- V. Objectives**
- VI. Selected Control Measure**
- VII. Review of Alternatives**
 - A. No action
 - B. Fencing
 - C. Trap and relocate
 - D. Contraception
 - E. Sterilization
 - F. Predator reintroduction
 - G. Trap and kill
 - H. Hunting
- VIII. Logistics**
 - A. Number of deer to be culled
 - B. Timing
 - C. Personnel
 - D. Methods
 - E. Safety issues
 - F. Utilization plan
- IX. Long Term Management Plan**
- X. Public Information Plan**
 - A. Discussion of the problem
 - B. Implementation notification
- XI. Contact Information**
- XII. Literature Cited**

I. Introduction

History of the conflict

The historic extirpation of predators, an increase in suitable habitat and the prohibition of hunting have combined to allow the white-tailed deer population to increase to problematic levels in the Griffy Lake Nature Preserve and surrounding areas. The first attempt to reduce the size of the deer herd at Griffy Lake Nature Preserve with sharpshooting took place in 2014. This attempt was unsuccessful due to a large acorn crop that winter. The abundance of acorns interfered with the timing of the appearance of deer at the bait stations.

Area description

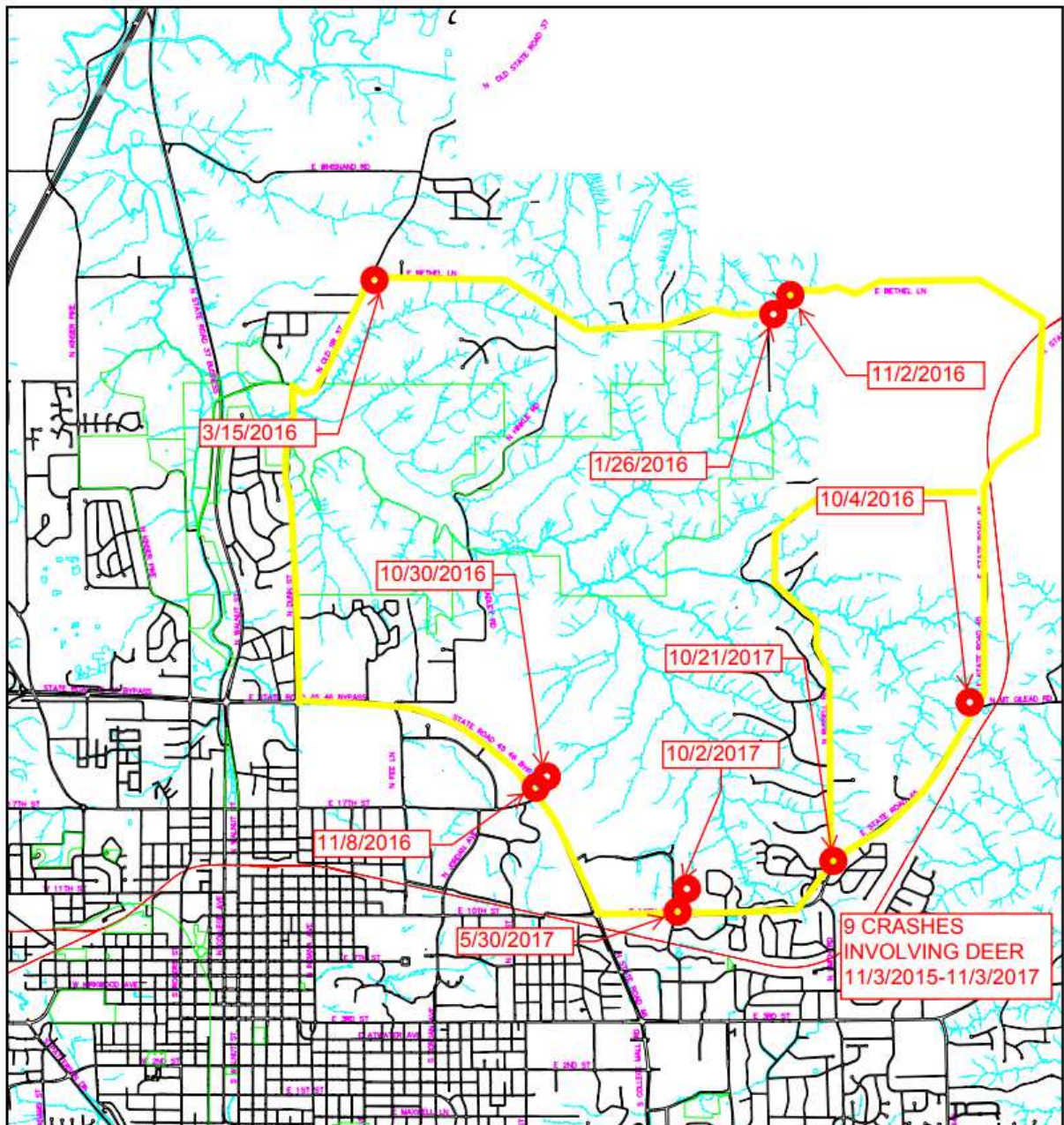
Griffy Lake Nature Preserve covers a total of 1,200 acres, including the 109-acre Griffy Lake, and was formed from more than 45 different property acquisitions between 1922 and 2007. It is located on the north side of the City of Bloomington, Indiana, at 3300 N. Headley Road. Adjacent to the property is the Indiana University Research and Teaching Preserve. Flat-topped narrow ridges, steep slopes, and deep V-shaped valleys characterize the Griffy Lake Nature Preserve area.

II. Deer-vehicle Collisions

Deer-vehicle collisions are a danger to drivers in the vicinity of the Griffy Lake Nature Preserve. Over the past two years 9 deer vehicle collisions have occurred on the roads closest to the boundaries of the Nature Preserve. Hunting is not allowed in the Nature Preserve and on most of the surrounding properties. The area to the south of the Preserve is owned by Indiana University where hunting is not permitted. The western boundary of the Preserve is within the municipality of Bloomington, where the discharge of firearms is prohibited. Residential development to the north and east of the property have reduced hunting opportunities in the area. In effect, the Griffy Lake Nature Preserve, and the University property to the south, have become an unintentional sanctuary for deer.

Deer-vehicle collisions in Monroe County have nearly doubled between 2006 (73) and 2016 (140). Many drivers visit the north side of Bloomington in the fall to attend Indiana University football games and to see the leaves change colors. The threat to public safety posed by deer-vehicle collisions is evident on the map below. The green lines east of Old State Rd. 37 indicate the Griffy Lake Nature Preserve boundaries. (Figure 1).

Figure 1. Locations of deer-vehicle collisions from 11/3/2105 to 11/03/17.



III. *Ecological damage*

In addition to the property damage and threat to human safety caused by deer-vehicle collisions, the Bloomington Parks and Recreation Department is concerned that the deer population at Griffy Lake Nature Preserve is reducing biodiversity within the Nature Preserve. The Griffy Lake Nature Preserve Master Plan raised the issue when it was published in 2008. In 2010, the Joint City of Bloomington-Monroe County Deer Task Force, an 11-member citizen group, was created by local government in response to concerns expressed by ecologists and residents about deer damage in Griffy Lake Nature Preserve.

The Joint City of Bloomington-Monroe County Deer Task Force summarized two years of meetings and research on the effects of deer browse in their final report. The recommendations of the task force, in the executive summary of *Common Ground: Toward Balance and Stewardship*, stated:

"When it comes to deer at Griffy Woods, clear evidence points to ecosystem damage by deer-native tree seedlings are not regenerating; herbaceous plant species are severely compromised and possibly going locally extinct; invasive species are taking over some areas; the forest understory is unnaturally open; and understory-reliant birds and other animals are losing habitat."

Deer enclosure studies have been conducted on the adjacent Indiana University Research and Teaching Preserve. Vegetation monitoring within the Griffy Lake Nature Preserve began in 2014.

Research by Dr. A. L. Shelton et. al. from the Indiana University Department of Biology, "Effects of abundant white-tailed deer on vegetation, animals, mycorrhizal fungi, and soils", (Forest Ecology and Management, February 19, 2014) indicated:

"We found strong effects of deer exclusion on all aspects of understory vegetation measured. The complete lack of native tree recruitment in control plots is particularly dramatic given that deer had been excluded from the plots for only two or three years in 13 of 15 plots. The only woody plant recruitment in the control plots was by invasive shrubs and unpalatable native shrubs."

Recent comparative vegetation surveys completed between April 28, 2017 and May 12, 2017 showed that 6 native plant species, considered good indicators of deer browse pressure, are shorter in Griffy Lake Nature Preserve than in two similar nearby forests. False Solomon's seal, Jack-in-the-pulpit, recurved trillium, Solomon's seal, sweet Cicely, and white baneberry were measured in research plots at Griffy Lake Nature Preserve, Morgan-Monroe State Forest (MMSF) and Brown County State Park (BCSP). Deer hunting is allowed on the MMSF and periodic deer hunts are conducted at BCSP to maintain the deer herd at a sustainable size.

Additionally, numerous State Rare and State Watch List plant species have been identified within the Griffy Lake Nature Preserve (Table 1).

Table 1. ETR/Watch list plant species observed at Griffy Lake Nature Preserve (GLNP Master Plan, 2008).

Scientific Name	Common Name	Conservation Status
<i>Acalypha deamii</i>	Large-seeded mercury	State Rare
<i>Catalpa speciosa</i>	Cigar tree	State Rare
<i>Chamaecrista nictitans</i>	Wild sensitive plant	State Watch List
<i>Chimaphila maculata</i>	Spotted wintergreen	State Watch List
<i>Hydrastis canadensis</i>	Golden seal	State Watch List
<i>Juglans cinerea</i>	Butternut	State Watch List
<i>Oxalis illinoensis</i>	Illinois wood sorrel	State Watch List
<i>Panax quinquefolius</i>	Ginseng	State Watch List
<i>Pinus strobus</i>	White pine	State Rare
<i>Pinus virginiana</i>	Scrub pine	State Watch List
<i>Spiranthes ovalis</i> v. <i>erostellata</i>	Oval ladies' tresses	State Watch List
<i>Synandra hispidula</i>	Synandra	State Watch List
<i>Trichostema dichotoma</i>	Blue curls	State Rare
<i>Viola pubescens</i>	Downy yellow violet	State Watch List
<i>Zannichellia palustris</i>	Horned pondweed	State Rare

IV. Authority

The property is owned by the City of Bloomington and is managed by the Bloomington Parks and Recreation Department under separate agreements between the Board of Park Commissioners and the Utilities Services Board and the Indiana Department of Natural Resources Division of Nature Preserves.

Licensing of City Properties Agreement - A management agreement between the Bloomington Board of Public works and the Bloomington Board of Parks and Recreation initially signed in 1971 gives the Bloomington Parks and Recreation license to enter upon, develop, operate, and maintain for recreational purposes the Griffy Lake reservoir properties.

The Griffy Woods Nature Preserve was state-dedicated in conjunction with the Indiana Department of Natural Resources Division of Nature Preserves. The Master Plan for the Griffy Woods Nature Preserve, approved by the City of Bloomington Parks and Recreation Department and the State of Indiana Natural Resources Commission, specifically states:

"... the Nature Preserve shall be managed to maintain and/or restore it to natural ecological conditions ... in the case of this Nature Preserve, the main purpose of the dedication is to preserve and restore natural forest communities and the associated rare native plants".

V. Objectives

The goal of the sharpshooting effort is to improve public safety by removing enough deer to reduce the risk of deer-vehicle collisions on the roadways surrounding the Griffy Lake Nature Preserve. Staff will evaluate the success of the program by tracking deer-vehicle collision data from the area. Another objective of the proposed cull is to reduce the deer browse pressure on understory plant species and seedling trees at the Griffy Lake Nature Preserve. The re-establishment of indicator plant species and the presence and abundance of endangered, threatened and rare plant species, are also desired outcomes.

VI. Selected Control Measure

After consulting with ecologists, researchers and biologists from both the State and federal Government, the Task Force recommended that deer should be managed through a local government financed sharpshooting effort for immediate, substantial and humane reduction. To increase safety for vehicle drivers and passengers, and to restore the ecological integrity of Griffy, a substantial number of deer need to be culled. Sharpshooting is the most efficient way to cull the greatest number of deer in the most humane way possible. All deer culled in this effort will be donated to the local food bank.

VII. Review of Alternatives

Other alternatives below have been discussed and determined to be impractical at this time:

No Action

Due to ample food, water, cover and the absence of predators, deer have high survival rates and a robust reproductive capacity. Non-intervention means the deer herd would continue to grow and the risk of deer-vehicle collisions would remain high in the area. The ecological problems associated with deer overbrowsing plants in the forest understory would also not be addressed.

Fencing

Griffy Lake is nearly two square miles in size. Installing and maintaining fencing around the perimeter of the property to prevent the movement of deer on to and off of the property would be cost prohibitive and impractical. Fencing would also interfere with the movement of many other species into and out of the nature preserve.

Trap and relocate

This alternative is not approved by the Indiana Department of Natural Resources in free-ranging deer. It is cost prohibitive, and there is low availability of release sites. This option is also very traumatic for the deer.

Contraception

This alternative is not endorsed by the Indiana Department of Natural Resources in free-ranging deer and is cost prohibitive. Contraception does not reduce overabundant deer populations. Treated deer would continue to wander onto nearby roadways for the remainder of their lives.

Sterilization

This alternative is not approved by the Indiana Department of Natural Resources in free-ranging deer. It is cost prohibitive, and ineffective in non-isolated areas.

Predator reintroduction

This alternative is not approved by the Indiana Department of Natural Resources. Predator numbers would have to be relatively high to impact deer population.

Trap and kill

This option is a less humane method than sharpshooting because of capture stress.

Hunting

There are safety concerns with permitting hunting deer with firearms in the Griffy Lake Nature Preserve area, which is a public park and popular recreation area, with numerous human habitation locations at the property's perimeter. Archery hunting is less efficient and effective than sharpshooting, which could result in a delay in the reduction of the size of the deer herd. After the initial cull the Parks Department will explore the possibility of allowing archery hunting within the preserve to maintain the population.

VIII. Logistics

Number of deer to be culled

The contract allows for the removal of up to 100 deer. Although removing adult and juvenile females will take priority, males of reproductive age will also be taken.

Timing

The proposed sharpshooting period is from December 13 to February 28, 2018. The exact timing of the sharpshooting activities will depend on weather conditions, wind direction, and the availability of the deer's food sources. Sharpshooting will take place from the late afternoon until late evening on the days when weather, the successful establishment of baited sites, and other factors are most suitable for a successful effort.

Personnel

Sharpshooting will be conducted by White Buffalo, Inc., a leading expert in population control of white-tailed deer in urban areas. Two staff members from this organization, with extensive sharpshooting training, will assist with the planning, organization, and implementation of the sharpshooting program. This firm was selected based on their familiarity with Midwestern forest ecosystems, their research knowledge and complete understanding of the ecology of white-tailed deer, and their flawless safety record.

Methods

Sharpshooters will utilize suppressed Remington 700 bolt-action rifles and .223 cartridges. Sharpshooters will set up in elevated stands, in both tree stands and in stationary vehicles, and will shoot over stations baited with whole-kernel corn using advanced tactical lighting and night vision devices to maximize success rates.

Safety Issues

Safety is the first priority of the deer herd reduction effort, and takes precedence over all other considerations. Deer-vehicle collision can result in property damage, vehicle occupant injury or even death. Reducing the number of deer in the Nature Preserve will increase safety on nearby roadways. Sharpshooting will take place from elevated stands so the trajectory of bullets will be down and into the ground. Where possible, baited stations will be located away from human habitation and beside earthen backstops. Bullets to be used are lead, which are frangible and will fragment upon entering the deer, minimizing the possibility of ricochet.

A private security firm will be hired by the city to patrol the area surrounding Griffy Lake Nature Preserve, and to advise members of the public of the temporary closure of the property during the sharpshooting activities. Security personnel will be in contact with White Buffalo at all times to inform them of potential conflicts with property users. Signs placed conspicuously at parking areas and trail heads will inform the public of the closure of the property during sharpshooting activities.

Utilization Plan

All deer taken during sharpshooting efforts will be processed by K.W. Custom Deer Processing in Bloomington, Indiana and the venison donated to the Hoosier Hills Food Bank. Carcasses will be transported to the processor immediately following each day's sharpshooting efforts.

IX. Long Term Management Plan

Maintaining the deer herd in numbers that will reduce the number of deer-vehicle collisions is the desired goal of the proposed cull. Bloomington Parks and Recreation staff will monitor the number of deer-vehicle collisions each year to determine if and when additional herd control

efforts will be required. The presence and height of forest understory plants, including tree seedlings, will also be monitored. Vegetation data collected in future growing seasons will also help determine whether or not additional deer need to be removed.

Bloomington Parks and Recreation is exploring the possibility of participating in the Community Hunting Access Program (CHAP) to control the deer population in the future at Griffy Lake Nature Preserve. The program is designed to increase hunting opportunities for white-tailed deer in urban environments and help alleviate human/deer conflicts. The program provides partners with financial and technical assistance to administer hunting programs in their communities. Public education efforts will focus on discouraging citizens from feeding deer.

X. Public Information Plan

Discussion of the problem

Studies of the deer population in Bloomington officially began with the establishment of the Joint City of Bloomington-Monroe County Deer Task Force, a citizen group created by local government in response to concerns from residents, and from ecologists and residents about deer damage in Griffy Woods. The task force conducted community outreach meetings to gather input and collect information from local residents on June 28, July 11, July 14, July 21 and July 23, 2011. In addition, the task force collected 742 electronic opinion surveys about the deer issue from local residents during 2011. The Deer Task Force submitted their official report of findings in 2012, and the report was formally accepted as an advisory document by the Common Council on December 12, 2012.

Current deer reduction plans for Griffy Lake Nature Preserve were discussed at public meetings on July 18, 2017 (special deer management meeting), August 1, 2017 (deer management panel discussion) and August 22, 2017 (Board of Park Commissioners meeting.)

Implementation notification

The Griffy Lake Nature Preserve may be periodically closed for short periods of time. Conspicuous signs at the two main parking areas (at the Griffy Lake boathouse, and at the dam on Dunn Street) will inform park users of temporary closure of the property. Closure signs will also be placed at commonly used trailheads on the perimeter of the property. These closures will take place intermittently during the allotted sharpshooting activity window (November-February) when property use is fairly low, so park users will be minimally inconvenienced.

Bloomington Parks and Recreation will also communicate with staff from the Indiana University Research and Teaching Preserve (IURTP) to coordinate notification about property closures. While sharpshooting activities will not take place on IURTP-owned property, some hiking trails cross property boundaries.

XI. Contact Information

Steve Cotter, Natural Resources Manager

Address: P.O. Box 848, Bloomington, IN 47405

Email: cotters@bloomington.in.gov

Office phone: (812) 349-3736

XII. Literature Cited

Joint City of Bloomington-Monroe County Deer Task Force. 2012. *Common Ground: Toward Balance and Stewardship*. Bloomington, IN.

Peel, S. 2008. *Griffy Lake Nature Preserve Master Plan*. Walkerton, IN: JFNew.

Shelton, A. L., J. A. Henning, P. Schultz, and K. Clay. 2014. "Effects of abundant white-tailed deer on vegetation, animals, mycorrhizal fungi, and soils." *Forest Ecology and Management* 320: 39-49.