Baltimore City Explores Deer Management Options to Protect Urban Forests

January 28, 2026

Gwynns Falls-Leakin Park and other city parklands implement plans to enhance green space access for city residents

White-tailed deer populations have risen in recent decades without hunting or management practices in place in Baltimore's urban forests. Photo by Ingrid Brown/2023 DNR Photo Contest.

For the first time, Baltimore City is examining white-tailed deer overpopulation and the issues that deer cause within its parklands and across several ecologically significant natural areas. Using a Maryland Department of Natural Resources Community Forestry Catalyst Fund grant, the city has laid the foundation to manage deer populations and spur forest regeneration within city limits to reduce the harm caused on forested land and private properties.

In October, Baltimore City Recreation and Parks deer program leader Shane Boehne led a walking tour near Winans Meadow at Gwynns Falls-Leakin Park in West Baltimore, revealing why better deer management within Baltimore City's parks could improve the city's overall ecosystem. The Maryland Department of Natural Resources is working with the City of Baltimore to establish a partnership park model for Gwynns Falls-Leakin Park to share resources and work together to improve the park.

"Community deer management can be challenging, but it's a worthwhile endeavor to address our growing deer-related problems in Baltimore City," said Boehne. "As the city's first Deer Management Program, our aim is to balance the needs of residents, deer, and the environment. To reach this goal, we are pairing science with community input to develop management prescriptions which has yielded the best, long-term success for other programs across the United States."

Boehne examines evidence of a recent “buck rub” in the Gwynns Falls-Leakin Park forest area. Antlered deer use these trees as scratching posts to aid in shedding the velvet from their antlers, while also leaving scent behind to alert other deer of their presence in the area. Maryland DNR photo.

While it may go unnoticed to the untrained eye, forested land within Gwynns Fall-Leakin Park has suffered long-term ecological decline in part due to the overabundance of deer and their feeding habits. Other contributing factors, such as dense overhead cover, inhibit forest regeneration due to the lack of sunlight penetrating the canopy and limiting understory growth.

Roughly 1,200 acres of forested land directly meet the boundaries of 25 Baltimore City neighborhoods – the largest urban natural area east of the Mississippi River. It provides fertile ground for old-growth tulip poplars, black walnut trees, oaks, and various other towering hardwoods. It also acts as a sanctuary for a robust herd of white-tailed deer, whose population has gone unchecked in recent decades without hunting pressure or other management practices.

The city’s deer program has taken measured steps throughout 2025 to lay the groundwork necessary to manage the City’s deer population. Through surveys, public information sessions, research, and community engagement, Boehne has gauged community buy-in on several management strategies. These techniques include precision sharpshooting, controlled hunting, traditional hunting, deer exclusion areas, and repellents, which have all proven to work well in nearby jurisdictions. These options are being evaluated for use in Gwynns Falls-Leakin Park and six other City parks.

One option – deer exclusion fences – are showing what a Baltimore City forest could look like without extensive deer browsing pressure. Atop a wooded ridge several hundred feet above Dead Run, a tributary of Gwynns Falls, researchers have installed a fenced-in deer exclusion area and

kept deer away for more than a year. Surrounded by plastic fencing six feet high, the understory of the Gwynns Falls-Leakin Park forest has made a remarkable rebound within the quarter-acre enclosure. Here, oak saplings, new-growth American Beech, shrubs, wildflowers, and other native plants flourish without the effects of deer browse.

It's a tale of two places, though, as outside the fence there is a stark contrast, where barren forest floor and the absence of understory characterizes the majority of the woodland. The forest's understory has been stripped bare by deer over-browsing, leaving few saplings to replace mature trees. The same vegetation being devoured by deer is one of the keys to the long-term regeneration of Gwynns Falls-Leakin Park forest.

This drone photo shows a birds-eye view of the Gwynns Falls-Leakin Park quarter-acre deer exclusion area which is enclosed with plastic fencing roughly six feet high. The red line marks the location of the fencing, showing how undergrowth vegetation can bounce back when deer can't freely browse the area. Photo by AJ Metcalf/DNR.

In the future, the city plans to construct a 15-acre enclosure with galvanized woven wire 10-feet high, tall enough to keep deer isolated and strong enough to protect from falling trees and branches. It's being done in hopes of showing city residents and the general public how vegetation can rebound when deer are kept out.

New growth – natural forest regeneration – is struggling to take root due to the overbrowsing. While native plants fall into decline, invasive and non-native plants such as wineberries and Japanese stiltgrass exploit the void left behind by the remnants of deer overbrowsing. The invasive species spread rapidly and choke out and overwhelm native forest strongholds. Deer often avoid eating these invasive species and tend to search for native plants unless the native species are not available.

A long-sought solution to the degradation of the forest are publicly-acceptable ways of reducing the overall population of the herd. A density of 20 deer per square mile or lower is the city's benchmark. This density provides a healthy, sustainable deer population that can coexist with a natural area without significant environmental damage.

Currently, Gwynns Falls-Leakin Park is home to approximately 69-86 deer per square mile – more than three to four times what's considered healthy. In other parks, the numbers are even more staggering. Druid Hill Park in northwest Baltimore has seen a 64 percent increase in deer density in the last 10 years, to about 120 deer per square mile, while Powder Mill Park in West Baltimore is estimated to hold the densest population of deer that Baltimore City Recreation and Parks has counted as of December 2025.

Damage to parklands and forested areas aren't the sole issues that the city is attempting to address. In a recent survey, Baltimore City residents list landscaping plant damage, garden plant damage, and deer-vehicle collisions as top deer-related problems. While reducing deer density is a top priority to restore native forest structure, Baltimore City's broader goals revolve around public safety and environmental resilience, including reducing deer-vehicle collisions and improving access to healthy green space in nearby neighborhoods.

A ridge near Winans Meadow shows visual evidence of the deer "browse line" which leaves the forest floor to approximately 4.5 feet high barren. Maryland DNR photo.

Maintaining wildlife habitat for small mammals, birds, reptiles, and insects, ensuring long-term forest regeneration, managing non-native invasive plants, and replanting native vegetation round out the city's other restoration efforts that are currently underway.

In coming years, Baltimore City is aiming to restore the Gwynns Falls-Leakin Park woodland into the rich, biodiverse setting it was before deer density skyrocketed in the late 1900s. It's a goal that the Department of Natural Resources shares with the city.

Maryland's statewide deer population has grown from an estimated 140,000 deer in the late 1980s to a fairly stable population of about 240,000 deer during the past 20 years. At the same time, overall deer harvests in the state have declined from a high of around 95,000 deer harvested in 2010 to about 75,000 in recent years, according to DNR data.

Licensed hunters in the state are also declining. In the late 1970s, DNR licensed about 180,000 hunters each year. Today, DNR is licensing about 110,000 hunters each year–a nearly 40 percent decline. Research has shown that societal factors such as increasing urbanization, rising costs for access to hunting grounds, and fewer mentors have resulted in fewer new hunters being developed.

However, DNR is pursuing changes to try to reverse this trend. Last year, DNR instituted a new licensing system–MD Outdoors–designed to make it easier for licensed hunters to buy and renew their licenses. DNR is also examining potential changes to laws and regulations that prevent

hunting on Sundays throughout the state, some of which have been in place since colonial times. The existing patchwork of Sunday hunting rules can make it difficult for existing hunters to harvest a deer or mentor new hunters when they may have free time on weekends in an increasingly busy world. Last year, Pennsylvania liberalized its Sunday hunting regulations as a way to reduce agricultural crop damage, attract out-of-state hunters that inject money into Pennsylvania's economy, and reduce habitat destruction.

DNR believes changes to Maryland's current Sunday hunting rules–while ensuring safety and general public access to natural areas–may produce similar benefits. In a 2018 DNR survey of the general public, only 29 percent of respondents were opposed to Sunday deer hunting, while 45 percent were in favor and 24 percent had no opinion. In a survey of licensed Maryland hunters, 43 percent of hunters said they would have been more likely to harvest a deer if there were more Sundays available to deer hunt in the state.