

White-tailed Deer in the MetroParks Part II

Nick Derico
Natural Resources Manager

Last Edited: 03/10/23

The following presentation outlines:

Mill Creek MetroParks

- Our Mission
- o Our Master Plan
- Our Facilities

White-tailed Deer in MCMP (Review)

- Visual Confirmation
- Historical Data
- Current Data
- Carrying Capacity
- Critical Impacts
- We Are Not Alone

Public Input

- Survey Results
- Aerial Survey Accuracy

White-tailed Deer Management in MCMP

- o Past Efforts
- Management Authority in Ohio
- o Our Plan
- How to Learn More



Presentation Overview

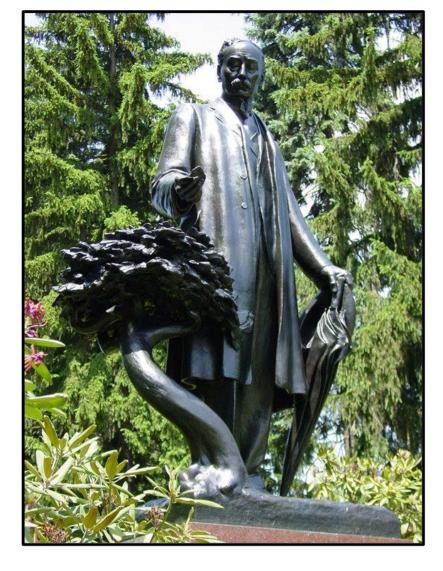
Mission Statement

The mission of Mill Creek
MetroParks is to provide park,
recreational, educational and open
space facilities of regional
significance. In fulfilling this mission
our objectives are:

- To be responsive to community needs
- To be environmentally sound
- To be adaptable
- To be economically feasible

Link to Mission Statement:

http://www.millcreekmetroparks.org/contact/about/mission-statement/







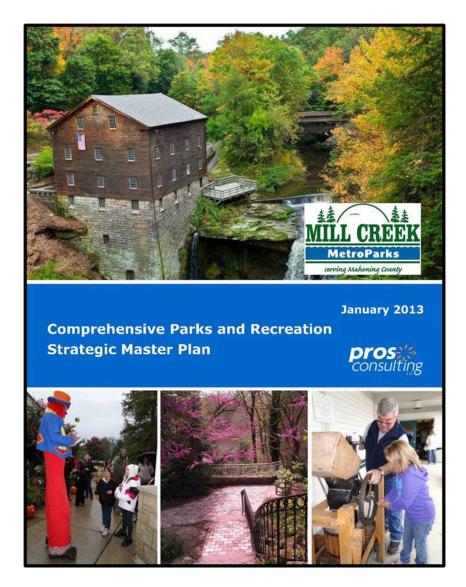
Strategic Master Plan

- Community Engagement
- Stewardship
- Our People
- Natural Resources
- Recreation & Education
- Infrastructure

Link to Strategic Master Plan:

http://www.millcreekmetroparks.org/wp-content/uploads/2013/11/Mill-Creek-MetroParks-Strategic-Master-Plan-FINAL.pdf





MCMP: Our Master Plan



- 1. MILL CREEK PARK
- 2. MILL CREEK PRESERVE
- 3. MILL CREEK WILDLIFE SANCTUARY
- 4. SAWMILL CREEK PRESERVE
- 5. VICKERS NATURE PRESERVE

- 6. METROPARKS FARM/METROPARKS ADMINISTRATION
- 7. YELLOW CREEK PARK
- 8. EGYPT SWAMP PRESERVE
- 9. CRANBERRY RUN HEADWATERS
- 10. SEBRING WOODS

- 11. McGUFFEY WILDLIFE PRESERVE
- 12. METROPARKS BIKEWAY
- 13. HAWKINS MARSH
- 14. SPRINGFIELD FOREST



MCMP: Our Locations

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Presentation Overview

Slide Taken From February 13, 2023 Presentation



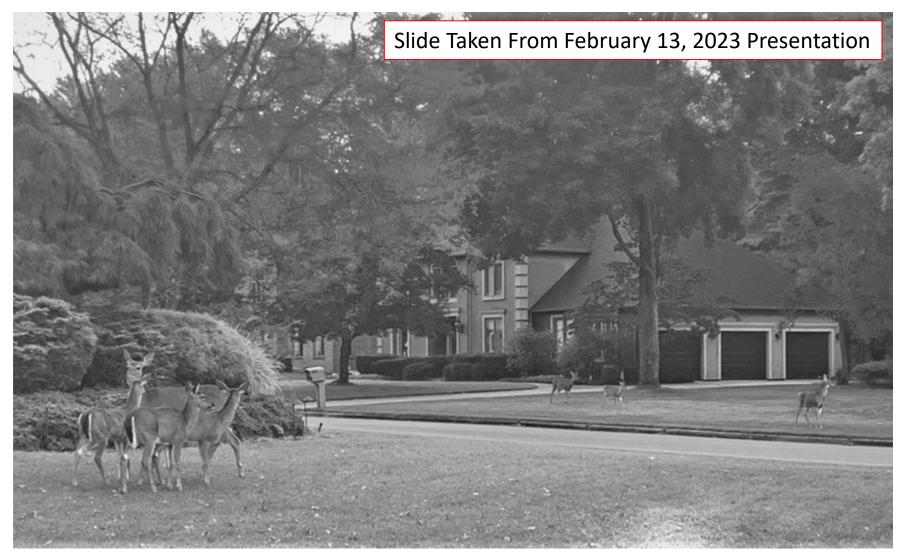
White-tailed Deer in Mill Creek MetroParks Part I

Nick Derico
Natural Resources Manager

Last Edited: 02/10/23







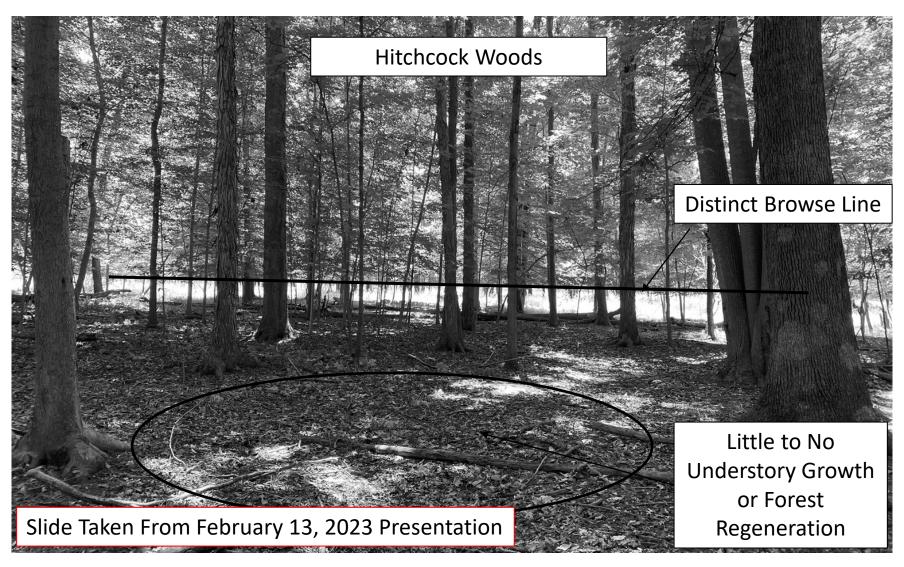














Slide Taken From February 13, 2023 Presentation

Historical Aerial Survey Data

Survey Area – Mill Creek Park (South of Shields Rd.), Huntington Woods, and Hitchcock Woods (~1660 Acres or 2.59 Sq Mi)

The MetroParks commissioned eleven (11) aerial surveys between February 1997 and January 2002 using both helicopter and fixed wing aircraft.

February 7, 2000 – Fixed Wing Aircraft (Infrared)

255 Deer Detected = 98.4 Deer/Mi²

Recommended Population Densities Are 10-20 Deer/Mi² to Remain Below Ecological Carrying Capacity

No Aerial Survey Data Available from January 2002 – January 2022





Deer in MCMP: Historical Data

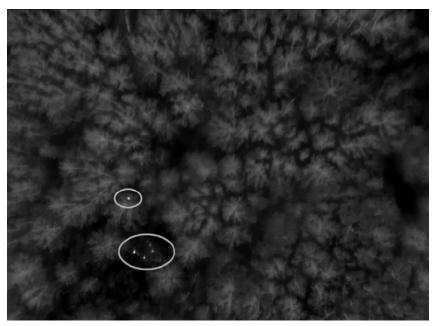
Slide Taken From February 13, 2023 Presentation

Aerial Infrared Survey:

In 2022, an aerial infrared survey was conducted on January 21st (Central Area) and January 26th (Regional Facilities) utilizing FLIR thermal imaging technology mounted to a fixed-wing aircraft.

- Snow Cover on Ground
- Sub 10 Degree Temperatures
- Lowest Possible Flight Altitude for Increased Resolution and Accuracy
- Total Survey Area Included (8,908) Acres.
- Survey Area Included All MCMP Properties Plus a 400' Buffer.
- Confidence Interval ≥ 85%





*Survey Footage is Reviewed in Video Format from Multiple Angles to Provide Increased Accuracy



Aerial Infrared Survey: Hitchcock Woods



- Each Pin Represents a Heat Signature Consistent with that of a Deer with a Confidence Interval ≥ 85%
- The Number Inside Each Pin Indicates the Number of Heat Signatures Present
- Pins Marked With "X" Fall Outside MCMP Boundaries but Within the 500' Buffer Area
- Pins Marked With "XX" Fall Outside of the Buffer Area and Are Not Included in the Population Estimate

689 Acres Surveyed (1.06 Mi²) 429 Deer Detected 398 Deer/Mi²



Aerial Infrared Survey: Mill Creek Park SR 224 to Shields



- Each Pin Represents a Heat
 Signature Consistent with that
 of a Deer with a Confidence
 Interval ≥ 85%
- The Number Inside Each Pin Indicates the Number of Heat Signatures Present
- Pins Marked With "X" Fall
 Outside MCMP Boundaries but
 Within the 500' Buffer Area
- Pins Marked With "XX" Fall
 Outside of the Buffer Area and
 Are Not Included in the
 Population Estimate

1626 Acres Surveyed (2.54 Mi²) 903 Deer Detected 355 Deer/Mi² (MCP Totals)



Aerial Infrared Survey: Mill Creek Wildlife Sanctuary



- Each Pin Represents a Heat
 Signature Consistent with that
 of a Deer with a Confidence
 Interval ≥ 85%
- The Number Inside Each Pin Indicates the Number of Heat Signatures Present
- Pins Marked With "X" Fall
 Outside MCMP Boundaries but
 Within the 500' Buffer Area
- Pins Marked With "XX" Fall
 Outside of the Buffer Area and
 Are Not Included in the
 Population Estimate

482 Acres Surveyed (0.75 Mi²) 267 Deer Detected 355 Deer/Mi²



Aerial Infrared Survey: Results for All Parks

Thermal Signatures Observed						
within Park Boundaries						

	Park	Park Size (acres)	Park size (sq miles)	Count	Acres per Deer	Deer per Acre	Deer per Sq Mile
Г	Mill Creek Park	1,626	2.54	903	1.80	0.56	355
_ =	Hitchcock Woods	689	1.08	429	1.61	0.62	398
entra	Huntington Woods	383	0.60	354	1.08	0.92	592
ŭ	Mill Creek Wildlife Sanctuary	482	0.75	267	1.81	0.55	355
	Collier Preserve	303	0.47	124	2.44	0.41	262
Г	McGuffey Wildlife Preserve	78	0.12	48	1.63	0.62	394
East	Yellow Creek	76	0.12	80	0.95	1.05	674
Ea	Springfield Forest	89	0.14	69	1.29	0.78	496
	Cranberry Run Headwaters	27	0.04	19	1.42	0.70	450
Г	Vickers Nature Preserve	262	0.41	116	2.26	0.44	283
	Sebring Woods	39	0.06	37	1.05	0.95	607
st	Egypt Swamp Preserve Sawmill Creek	75	0.12	54	1.39	0.72	461
Įš	Sawmill Creek	167	0.26	141	1.18	0.84	540
	MetroParks Farm	402	0.63	197	2.04	0.49	314
	Hawkins Marsh	161	0.25	97	1.66	0.60	386
	Totals and Averages:	4,859	7.59	2,935	1.66	0.60	387

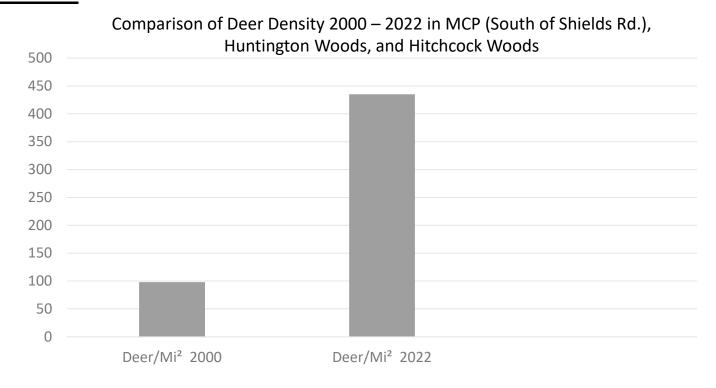
Recommended Population Densities Are 10-20 Deer/Mi² to Remain Below Ecological Carrying Capacity.

Our Results Average 387 Deer/Mi²



Then vs Now:

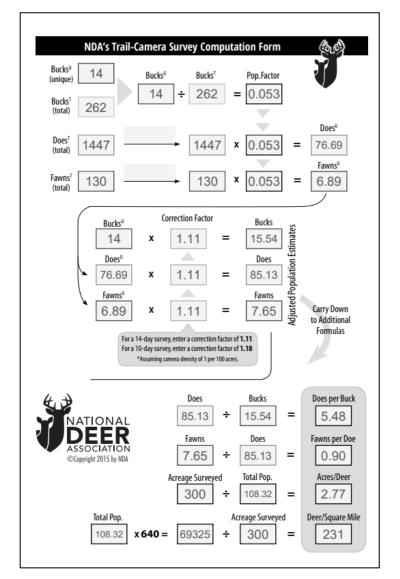
METROPARKS



~442% Increase in Population Density Over 22 Years

Current Population Densities are on Average More Than **19x Greater** Than the Generally Accepted Estimate of Ecological
Carrying Capacity (10-20 Deer/mi²) Across All MetroParks
Properties





Slide Taken From February 13, 2023 Presentation





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Carrying Capacity Defined:

Biological Carrying Capacity (BCC)

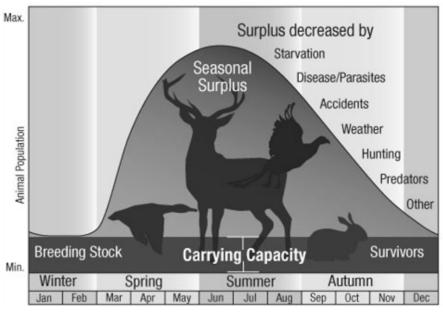
 The density in which a population (in this case white-tailed deer) can sustain themselves on the landscape over the long-term based upon available resources (food, water, shelter).

Ecological Carrying Capacity (ECC)

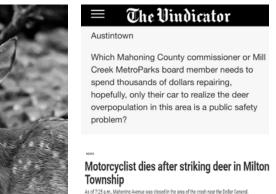
The density in which white-tailed deer populations have no negative impacts to their surrounding environment and allow for natural regeneration of flora.

Cultural Carrying Capacity (CCC)

 The density in which white-tailed deer populations are socially tolerated in a community, this figure can vary greatly based upon public opinion and commonly exceeds both biological and ecological carry capacities.









Deer in MCMP: Carrying Capacity

Ecological Damage:





Poor Herd Health:





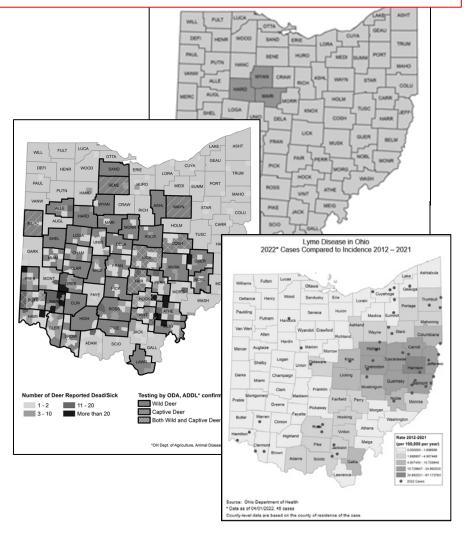


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Disease Concerns:

The overpopulation of any animal can lead to increased concern for the spread of disease and in the case of the white-tailed deer the primary concerns are:

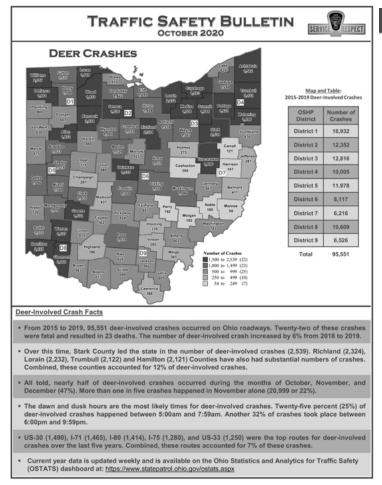
- Chronic Wasting Disease (CWD)
- Epizootic Hemorrhagic Disease (EHD)
- Lyme Disease
- Other Tick-Borne Pathogens

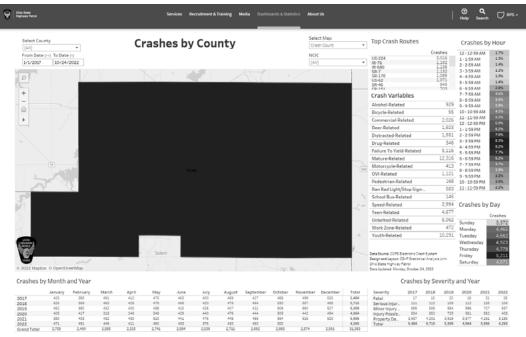




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Property Damage:





2015-2019 crash data from the Ohio State Highway Patrol shows Mahoning County as having a high incidence of deer-vehicle collisions ranking 15th out of 88 counties with a total of 1,696 collisions (~424 per year).

~\$4000 of Damage Caused per DVC



Community Concerns:

= The Vindicator

Austintown

Which Mahoning County commissioner or Mill Creek MetroParks board member needs to spend thousands of dollars repairing, hopefully, only their car to realize the deer overpopulation in this area is a public safety problem?



Motorcyclist dies after striking deer in Milton Township
As of 7:25 a.m., Mahoning Avenue was closed in the area of the crash near the Dollar General.



3 dead after SUV hits deer, then truck on Indiana
Toll Road
State police say three people died and two others were injured when an SUV struck a deer along the Indiana Toll

Tuesday, October 4th 2022, 5:57 AM EDT

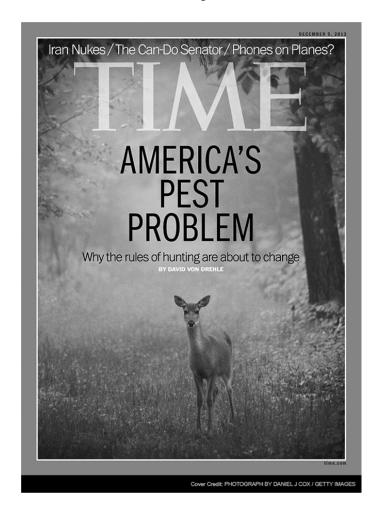
Road and crashed into an oncoming pickup truck.

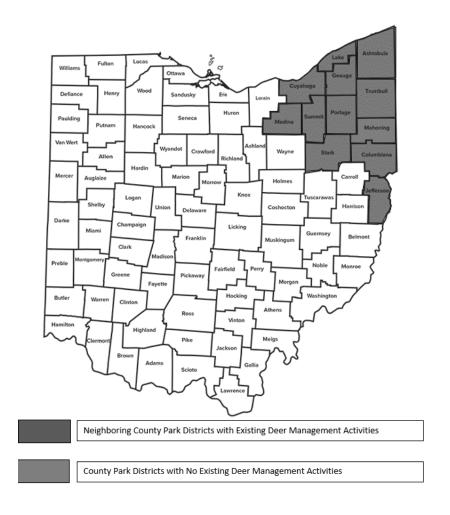


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MetroPark Systems Across Ohio:





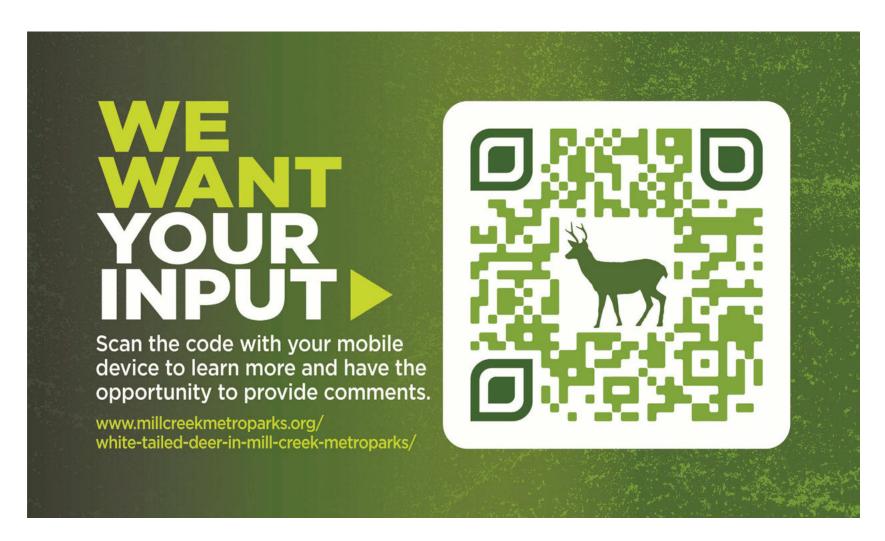
Deer in MCMP: We Are Not Alone

The following presentation outlines:

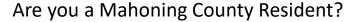
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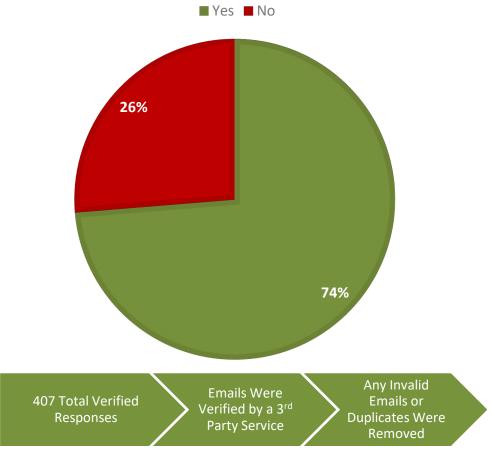


Presentation Overview



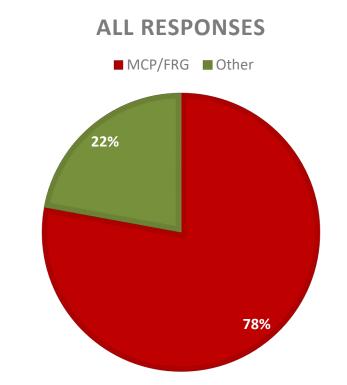




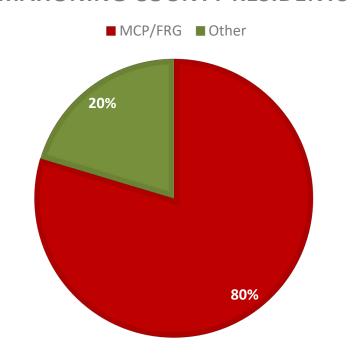




What MetroParks Property Do You Visit Most Often?



MAHONING COUNTY RESIDENTS

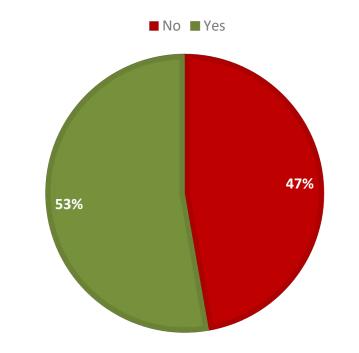




Based on what you've seen during your visits, do you believe there are too many deer in the MetroParks?

ALL RESPONSES No Yes 43%

MAHONING COUNTY RESIDENTS

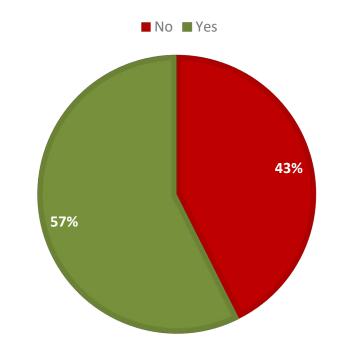




Do you think something needs to be done to address the deer population within the MetroParks?

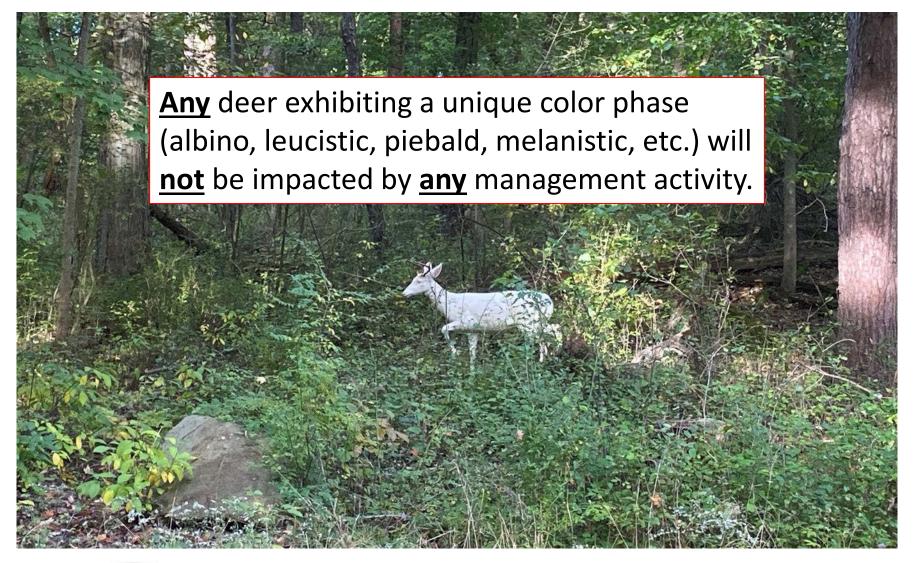
ALL RESPONSES No Yes 38%

MAHONING COUNTY RESIDENTS











Aerial Infrared Survey Accuracy: Results for All Parks

Therma	Signatures Observed
withi	n Park Boundaries

	Park	Park Size	Park size	Count	Acres per	Deer per	Deer per
_	NO 2012 2	(acres)	(sq miles)	1013072300	Deer	Acre	Sq Mile
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	Hawkins Marsh	161	0.25	97	1.66	0.60	386
	Totals and Averages:	4,859	7.59	2,935	1.66	0.60	387

85% Confidence Interval

Total Park Acreage Convert to Square Miles (Total Acres/640) Divide the Number of Sq Mi per Park by # of Deer Observed

Equals Deer/Mi² Figure



Aerial Survey Accuracy:

- The area behind
 Birch Hill Cabin was
 walked by Park Staff
 on 2/23/23 with 14
 deer being visibly
 seen and
 photographed.
- The results of the aerial survey indicated a total of 22 deer in this same area.
- 22 x 85% Confidence Interval = 18 Deer





Deer in MCMP: Public Input

Aerial Survey Accuracy:

- 6 8 deer are commonly seen at the Ford Nature Center, as shown in this photo.
- The results of the aerial survey indicated a total of 9 Deer in the immediate vicinity of FNC.
- 9 x 85% Confidence
 Interval = 7.65 Deer







Deer in MCMP: Public Input

Aerial Survey Accuracy:

- This picture taken at Lake Cohasset in March of 2022, shows a herd of 10 deer.
- The results of the aerial survey indicated a total of 11 deer in close proximity to this location.
- 11 x 85% Confidence Interval = 9.35 Deer







Deer in MCMP: Public Input

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Presentation Overview

Past Efforts:

1998-1999:

- Hitchcock Woods
- Huntington Woods

1999-2000:

- Hitchcock Woods
- Huntington Woods

2000-2001:

- Hitchcock Woods
- Huntington Woods
- Mill Creek Park (Shields Rd. to 224)

No Controlled Hunting Program or Other Active Management Since 2001

Controlled Bow Hunt in Hitchcock Woods

Hitchcock Woods, Mill Creek MetroParks' 1000-acre parcel of preserved open space south of Rt. 224 in Boardman, has suffered a severe degree of vegetation and habitat loss due to an overpopulation of white-tailed deer. In order to control the size of the deer herd, the Board of Park Commissioners has authorized a controlled bow hunt in Hitchcock Woods from October 31, 1999 through January 29, 2000.

A lottery will be held by the Park District at the Mahoning County Farm on September 22 at 4 p.m. to select qualified bowhunters. Hunters must meet the following requirements to be included in the lottery:

- · Be at least 18 years old
- Reside in Mahoning County
- Complete an International Bowhunter Education Course or a state-sponsored hunter education course
- · Pass an archery proficiency test to be held at the Lowellville Rod and Gun Club
- Obtain proper state hunting licenses along with a minimum of two antlerless tags (removal of a buck with the regular license will be permitted)

Hitchcock Woods will be closed to the public during hunting season. Only 25 hunters will be allowed in the Woods at any one time. Crossbows and baiting will be permitted. All hunters must use an approved tree stand and stay at least 150 yards from park property lines. All state game laws are to be observed.

Archery proficiency tests are scheduled at the Lowellville Rod & Gun Club on Quarry Road off U.S. Route 224 in Poland Township on the following dates:

Wednesday, July 21 from 4 - 8 p.m. Wednesday, August 18 from 4 - 8 p.m. Sunday, August 29 from 8 a.m. - 2 p.m. Wednesday, September 1 from 4 - 8 p.m.





Deer Management in MCMP: Past Efforts

Management Authority:

The Ohio Division of Wildlife is responsible for the statewide management of our wildlife resources, including the white-tailed deer.

All deer management programs in the State of Ohio are governed solely by the Ohio Division of Wildlife and any management actions must follow their guidelines.







Deer Management in MCMP: Authority

ODOW Approved Management Methods:

Controlled Hunting

- Proven to be an Effective Management Tool Over Time
- Considered to be an Ethical Means of Management
- Provides a Long-term and Sustainable Solution to Manage Deer Populations Provides Recreational Opportunity (334,736 Licensed Hunters Statewide in 2021, 2176 in Mahoning County)
- Unique Opportunity in Mahoning County

Targeted Removal

- Proven to be an Effective Management Tool in Both the Short and Long-term
- Considered to be an Ethical Means of Management
- Provides a Long-term and Sustainable Solution to Manage Deer Populations in Areas Where Traditional Hunting Practices are not Feasible.
- Allows for the Collection of Scientific Data (Weight, Sex, Age, Disease Testing, Etc.)
- Will Provide Over 200 Meals per Deer to the Community Through Local Food Banks and Other Outreach Programs.

OHIO SERVATIMENT OF NATURAL RESOURCES DIVISION OF WILDLIFE

Do Nothing

- Does Not Allow for the Sustainable Management of our Natural Resources
- Perpetuates the Continued Degradation of the Vegetative Community and Overall Health of our Wildlife



ODOW Non-Approved Management Methods:

Fertility Control

- Both Immunocontraception and Surgical Sterilization Have Been Extensively Studied by Numerous Organizations and have Proven to be Ineffective at Managing Deer Populations in Wild Free-Ranging Populations.
- Immunocontraception and Surgical Sterilization are <u>Not</u> Currently Permitted by the Ohio Division of Wildlife for use in Deer Management Programs – These Practices are <u>Only</u> Permitted for Use in Research Settings.
- Any Research Project Presented to the ODOW Must be Conducted by a Legitimate Research Institution, Have Clearly Defined Goals, and Must Research a Novel Idea.

Relocation

- The Relocation of White-tailed Deer is <u>Not</u> a Permitted Method of Management by the Ohio Division of Wildlife
- The Issue of White-tailed Deer Overpopulation is a Nation-Wide Problem – Where Would They Go?
- Disease Transmission Moving Animals From One Area to Another Drastically Increase the Risk of Spreading Disease Such as CWD.





Management Recommendations:

Controlled Hunting Program

 To reduce and manage white-tailed deer populations, the MetroParks is recommending the implementation of a controlled hunting program, beginning in the fall of 2023 in partnership with the Ohio Division of Natural Resources: Division of Wildlife at all Regional Facilities, where deemed safe and ecologically sound.



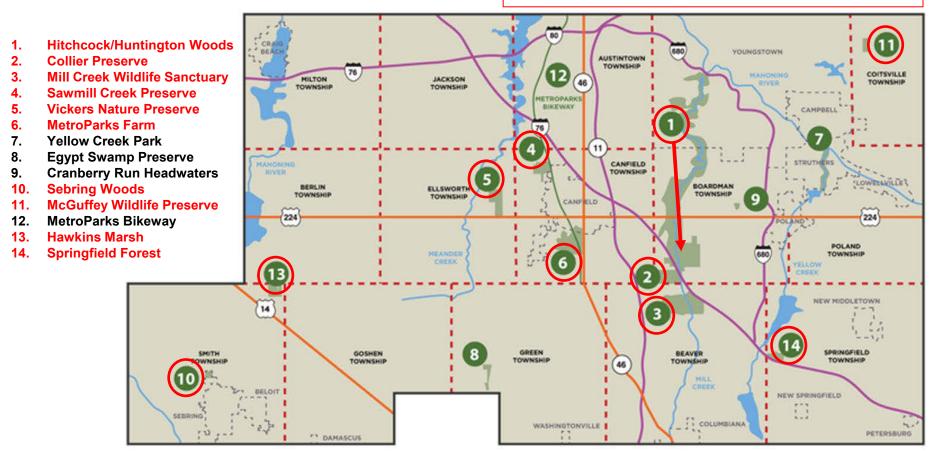
Targeted Removal Program

 Several areas throughout the MetroParks are not suited for hunting due to safety concerns based upon public usage of the facility and the total available acreage. To safely and effective meet management goals in these areas the MetroParks is recommending a targeted removal program be implemented in partnership with USDA Wildlife Services.





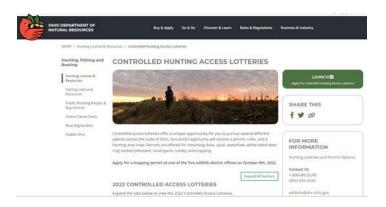
No Hunting Will Take Place in Mill Creek Park (North of 224) or Yellow Creek Park

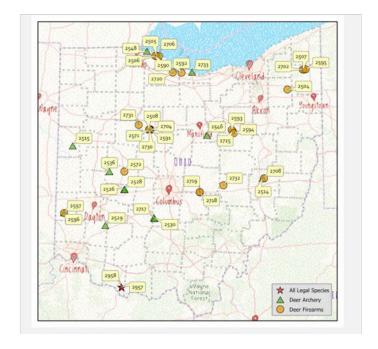




Participants of the controlled hunting program will be chosen at random through a lottery conducted by the Ohio Division of Wildlife.

- Permit holders will be subject to both a list of MetroParks provided rules and regulations, and the statewide hunting regulations defined by ODOW – all of which will be <u>enforceable by law</u>.
- A \$3.00 application fee will be collected by the Ohio
 Division of Wildlife to cover administration costs
 associated with conducting the lottery these
 proceeds will <u>not</u> benefit the MetroParks.
- Application Period: July 1 July 31
- Permit Award Notifications: Mid-August
- Controlled Hunting Opportunities Will be Primarily Archery-Only, however Additional Firearm Hunting Opportunities Will be Incorporated at <u>Select</u> Regional Facilities







Only white-tailed deer may be harvested as part of this controlled hunt.

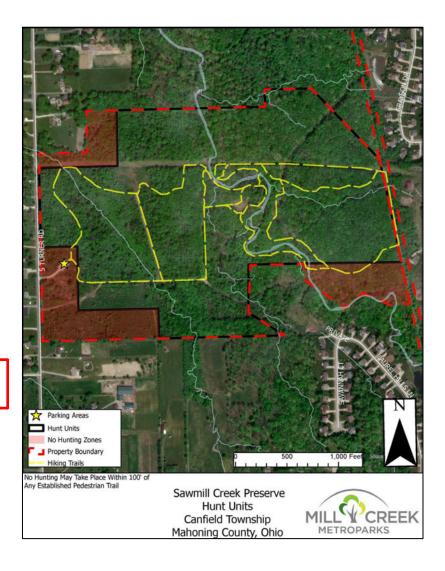
The number of hunters per property will be limited based upon available acreage with ~50 acres per permit – in total, there will never be more than 38 permit holders at any given time across all properties.

Permitted hunters may bring one (1) guest per day during their permit period.

Hunters are encouraged to harvest <u>antierless deer</u> to effectively reduce overall population levels.

Hunters are **not permitted** to harvest any deer exhibiting a unique color phase (albino, leucistic, piebald, melanistic, etc.).

Failure to abide by <u>any</u> of the rules and regulations provided will result in the <u>immediate revocation</u> of the individuals controlled hunting permit and appropriate <u>law enforcement action</u> will be taken as required by MCMP Police and/or the County Wildlife Officer.





- Archery-Only Permit Windows Will Begin on September 23rd and Will Continue Until February 3rd and Will Correspond with the Statewide Archery Season at Select Facilities.
- Archery-Only Permit Windows Will Be 1-Week in Length, Beginning on a Sunday and Ending on the Following Saturday.
- In Total, This Structure Will Provide Opportunity for 582 Archery Hunters and their Partners Throughout the Season.
- All Facilities Will Remain Open to the Public During Archery-Only Permit Windows, With Hunters Not Being Permitted to Actively Pursue Game Within 100' of a Marked Trail.
- Signage Will be Installed at Each Facility, Notifying the Public That Permitted Archery Hunting is Taking Place.



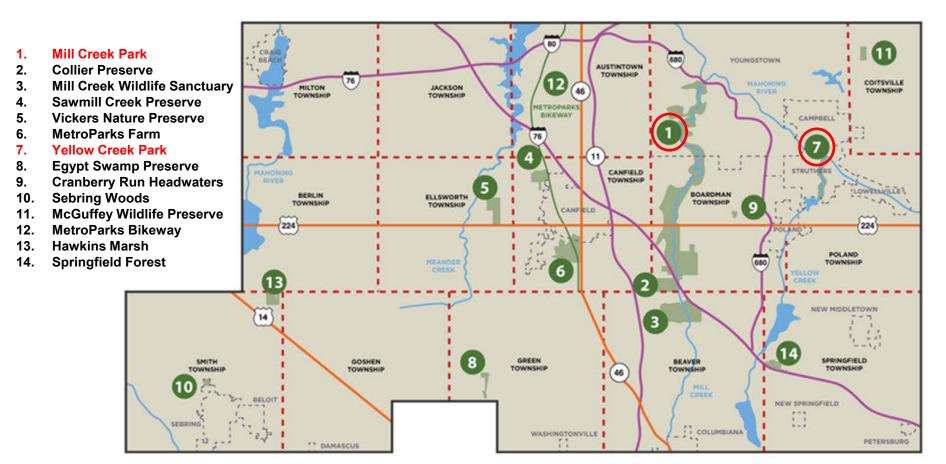


- Firearm Permit Windows Will Take Place Outside of the Statewide Firearm Hunting Season at <u>Select</u>
 Facilities.
- Firearm Permit Windows Will be 1-day in Length with Three (3) Separate Blocks of Time Being Dedicated to Firearm Hunting:
 - 11/12-11/18
 - 12/4-12/9
 - 1/14-1/20
- In Total, This Structure Will Provide Opportunity for 680 Firearm Hunters and their Partners Throughout the Season.
- All Applicable Facilities Will be Closed to the Public During Firearm Permit Windows.
- Signage Will be Installed at Each Facility, Notifying the Public of the Facility Closure.





Targeted Removal Program:





Targeted Removal Program:

A targeted removal program operates outside of typical hunting regulations, utilizing deer damage permits issued by the Ohio Division of Wildlife to effectively reduce deer populations to meet management goals in urban/suburban areas where safe hunting practices may not be achievable.

Targeted removal may also be used to supplement controlled hunting efforts at various locations, as needed.

Timing: October – March, Depending Upon Weather Conditions and Staff Availability

Operations will typically begin at dusk and continue into the night.







Targeted Removal Program:

Applicable portions of Park will be **closed** to the public during **all** targeted removal operations – the public will be notified in advance and appropriate signage will be in place.

Deer will be harvested by federally employed professional marksmen using suppressed firearms and night vision and/or thermal imaging technology.

Use of a firearm is considered an <u>ethical</u> means of euthanasia by the American Veterinary Medical Association (AVMA).

<u>All</u> venison from USDA harvested deer will be processed and <u>donated</u> to the community through local food banks and community outreach programs. On average a single mature deer will provide over 200 (1/4 pound) servings of high-quality meat to families in need.

Any deer exhibiting a unique color phase (albino, leucistic, piebald, melanistic, etc.). Will **not** be targeted during **any** management operations.







Goals:

Short-Term

Restore ecological balance by reducing population densities of white-tailed deer on MetroParks properties to within recommended carrying capacity using best management practices.

Enhance and restore areas previously damaged by overbrowsing and other negative impacts associated with an overabundance of white-tailed deer through sound habitat management practices.

Timeline: 5-10 Years

Long-Term

Manage white-tailed deer populations on MetroParks property in a sustainable fashion, within ecological carrying capacity in perpetuity.

Maintain a balanced and diverse ecosystem, focused on the biodiversity of native plants and wildlife.

Timeline: 10+ Years



Manage White-tailed Deer Populations at Sustainable Levels to Ensure a Healthy and Thriving Herd

Recovery of Our Forest Ecosystems, Leading to Increased Biodiversity of Both Plant and Animal Species



Monitoring Progress:

An integrated survey program has been established to continue monitoring our deer herd and the health of our forest ecosystems as we move forward.

Survey Methods

- Continued Aerial Infrared Surveys
- Helicopter Surveys (Non-Infrared)
- Trail Camera Monitoring
- Browse Surveys
- Vegetation Surveys

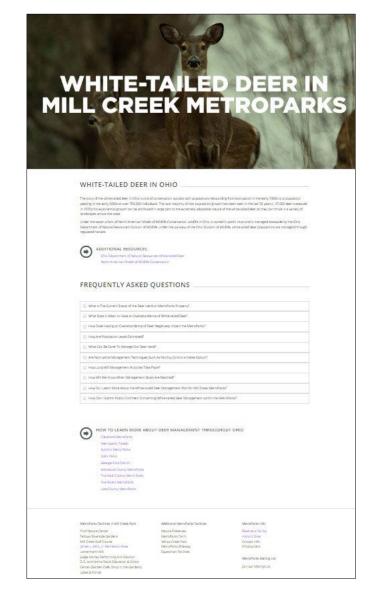




Education and Communication:

Education and communication will be key components in both the short and long-term to the success of the Mill Creek MetroParks: White-tailed Deer Management Plan.

- A dedicated webpage to deer management within the MetroParks, with all relevant information being available to the public.
- Educational programming surrounding the ecology of the white-tailed deer and the impact they have on their local ecosystems.
- An annual report of management activities will be provided to the Board and will be made available on the webpage.





Education and Communication:

Additional Resources:

An Integrated Approach for Managing White-Tailed Deer in Suburban Environments: The Cornell University Study

https://deeradvisor.dnr.cornell.edu/sites/default/files/resources/IntegratedApproachForManagingWTDeerInSuburbanEnvironments-28ax086.pdf

Managing White-Tailed Deer in Suburban Environments: A Technical Guide

• https://deeradvisor.dnr.cornell.edu/resource/managing-white-tailed-deer-suburban-environments-technical-guide

Association of Fish and Wildlife Agencies: Methods for Managing Deer in Populated Areas

https://www.fishwildlife.org/application/files/7315/3745/9637/AFWA Deer Mngmt Pop Areas August 31 2018 version.pdf

Cuyahoga National Park: Final White-tailed Deer Management Plan EIS

 https://parkplanning.nps.gov/showFile.cfm?projectID=10817&MIMEType=application%252Fpdf&filename=CUVA%20Final%20W hite%2Dtailed%20Deer%20Management%20Plan%20EIS%2Epdf&sfid=197719

An Annual Summary of Ohio's Deer Program

https://ohiodnr.gov/static/documents/wildlife/wildlife-management/Ohio+Deer+Summary+2021.pdf





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