RECORD OF ORDINANCES

Dayton Legal Blank, Inc. Form No. 30043

Ordinance No. 05-24 *Passed* _____, 20____

AMENDMENT TO SECTION 91.12 "OUTDOOR FEEDING PROHIBITED" OF THE CODIFIED ORDINANCES OF THE CITY OF DUBLIN

WHEREAS, the City of Dublin, Ohio recognizes the negative impact that residents feeding wild animals and/or animals at large can have, including the spread of disease and disruption of their natural foraging behaviors; and

WHEREAS, the feeding of wild animals and/or animals running at large has been proven to increase the concentration of that creature in a residential neighborhood, potentially leading to damage to landscape and vehicle-animal crashes; and

WHEREAS, animals accustomed to people and being near homes can lose their fear of people and become aggressive; and

WHEREAS, the United States Department of Agriculture and the Ohio Department of Natural Resources encourage property owners to avoid feeding wild animals and/or animals at large; and

WHEREAS, the City of Dublin finds that adopting an ordinance prohibiting feeding of wild animals and animals at large promotes a safer, healthier and more resilient community;

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Dublin, _____ of its elected members concurring, that:

Section 1. Chapter 91 Section 12 of the Codified Ordinances of the City of Dublin, "OUTDOOR FEEDING PROHIBITED" is hereby amended to read as follows:

§ 91.12 OUTDOOR FEEDING PROHIBITED.

(A) *Definitions.* For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) ***RUNNING AT LARGE.*** An animal off its owner's premises, without a leash, and without a person to control the animal.

(2) ***WILD ANIMAL.*** An animal not legally confined, acquired, or held by private ownership. Examples include, but are not limited to: squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes, but shall not include "companion animals" as defined in Chapter 91 Section 6 of the Codified Ordinances of the City of Dublin.

(3) ***FEED OR FEEDING.*** The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Section 2. This ordinance shall be effective on the earliest date permitted by law.

RECORD OF ORDINANCES

Dayton Legal Blank, Inc. Form No. 30043

Ordinance No. 05-24 *Passed* Page 2 of 2, *20*

Passed this 22nd day of April, 2024.

Mayor - Presiding Officer

ATTEST:

Clerk of Council

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Members of Dublin City Council

From: Megan D. O'Callaghan, P.E., City Manager

Date: November 21, 2023

Initiated By: Emily Goliver, Management Analyst
Barbara Ray, Nature Education Coordinator

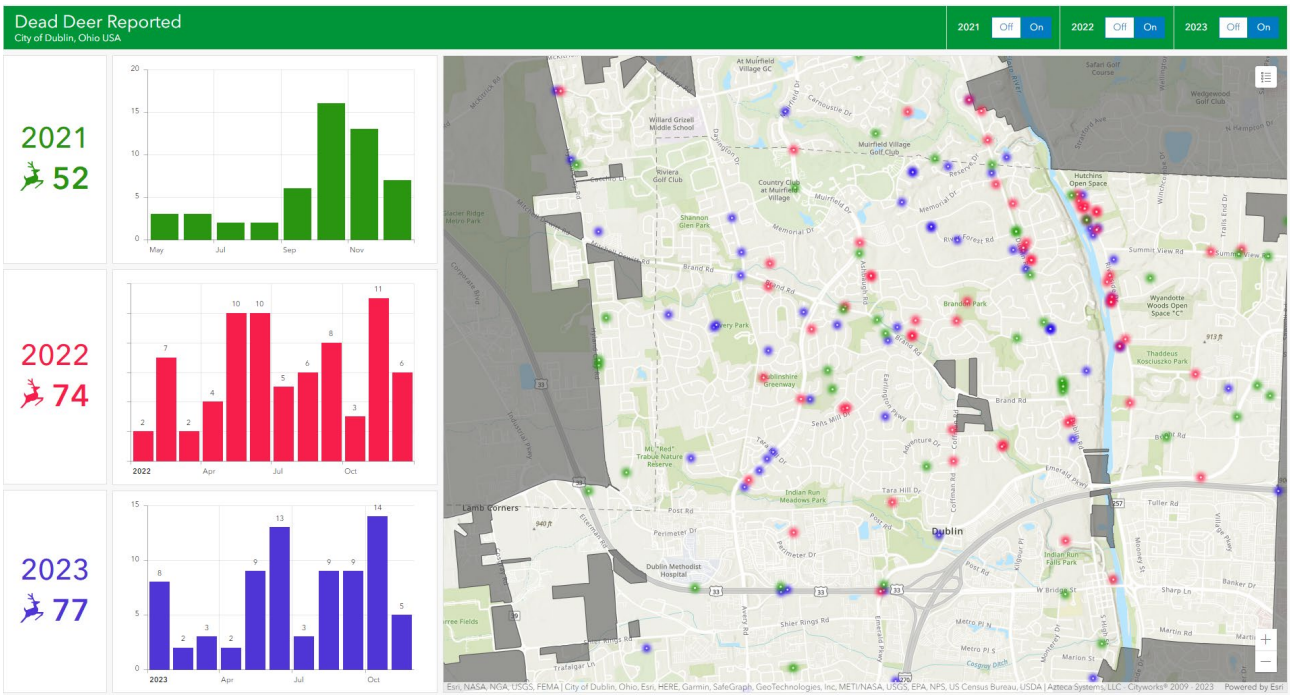
Re: Ordinance 47-23 – Amending Section 91.12 "Feeding of Waterfowl Prohibited" of the Codified Ordinances of the City of Dublin

Background
At the November 13, 2023 City Council meeting, Staff presented the first reading of Ordinance 47-23 Amending Section 91.12 "Feeding of Waterfowl Prohibited" of the Codified Ordinances of the City of Dublin. The Council requested additional information on the number of deer/vehicle accidents and the number of dead deer pick-ups the City makes annually.

Deer/Vehicle Collisions
The information below is compiled from police reports and is the best available data. Some drivers will only report an accident to the police department if there is damage or injury to support an insurance claim. Minor damage encompasses functional damage to vehicles, as reported by the responding officer. Significant damage is defined as disabling damage in the police reports. A map of collisions in 2023 is included for reference.

Year	Number of Collisions	# Resulting in Minor Damage	# Resulting in Significant Damage	# of Collisions Resulting in Injury
2015	11	10	1	2
2016	13	10	3	0
2017	13	11	2	2
2018	10	10	0	0
2019	10	8	2	2
2020	21	19	2	5
2021	12	8	4	1
2022	11	8	3	1
2023 (YTD)	7	7	0	1

Deer-related dead animal reports
Prior to 2022, the GoDublin app did not specify a deer carcass as part of the dead animal reporting tool. Staff filtered all dead animal pick-up requests from 2021 that included the word "deer" and concluded that there were 52 deer-related dead animal pick-ups. The dashboard below is the most up-to-date information on the location and number of deer carcasses reports the City has received.



This information is updated in real time and can be found here.

Recommendation
Staff recommends the adoption of Ordinance 47-23.

Ordinance XX-23

AMENDMENT TO SECTION 91.12 "FEEDING OF WATERFOWL PROHIBITED" OF THE CODIFIED ORDINANCES OF THE CITY OF DUBLIN

WHEREAS, the City of Dublin, Ohio recognizes the negative impact that residents feeding wild animals and/or animals at large can have, including the spread of disease and disruption of their natural foraging behaviors; and

WHEREAS, the feeding of wild animals and/or animals running at large has been proven to increase the concentration of that creature in a residential neighborhood, potentially leading to damage to landscape and vehicle-animal crashes; and

WHEREAS, animals accustomed to people and being near homes can lose their fear of people and become aggressive; and

WHEREAS, the United States Department of Agriculture and the Ohio Department of Natural Resources encourage property owners to avoid feeding wild animals and/or animals at large; and

WHEREAS, the City of Dublin finds that adopting an ordinance prohibiting feeding of wild animals and animals at large promotes a safer, healthier and more resilient community;

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Dublin, _____ of its elected members concurring, that:

Section 1. Chapter 91 Section 12 of the Codified Ordinances of the City of Dublin, "FEEDING OF WATERFOWL PROHIBITED" is hereby amended to read as follows:

§ 91.12 OUTDOOR FEEDING ~~OF WATERFOWL~~ PROHIBITED.

(A) *Definitions.* For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) ~~***DOMESTIC WATERFOWL.*** Non-native ducks, geese, swans, not retained in agricultural operations.~~ ***RUNNING AT LARGE.*** An animal off its owner's premises, without a leash, and without a person to control the animal.

(2) ***WILD ANIMAL.*** An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.

(3) ~~(2)~~ ***FEED OR FEEDING.*** The act of or the furnishing of food or other sustenance.

~~(3) ***MIGRATORY WATERFOWL.*** Migration occurs, and waterfowl is considered to be migratory, when large portions of a bird species make regular annual movements between two places. Often this migration occurs due to annual temperature changes, which affect food resources and breeding opportunities.~~

~~(4) ***NON-MIGRATORY WATERFOWL.*** Waterfowl that may fly large distances within a day, but return to a particular area by night. Such species can spend their entire lives in one area.~~

~~(5) ***RESIDENT CANADA GEESE.*** Canada Geese that nest within the conterminous United States and/or Canada Geese which reside within the conterminous United States during certain months of the year.~~

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at

large or wild from public property, public ways or private property not owned by the feeding person.
(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.
~~migratory waterfowl, non-migratory waterfowl, resident Canada Geese, or domestic waterfowl on any public property within the boundaries of the city. Exceptions to this will only be granted through city, state and/or federal permitting processes.~~

Section 2. This ordinance shall be effective on the earliest date permitted by law.

Passed this _____ day of _____, 2023.

_____
Mayor - Presiding Officer

ATTEST:

_____
Clerk of Council

City of Dublin
OHIO, USA

Ordinance 47-23 - Amending Section 91.12 “Feeding of Waterfowl Prohibited” of the Codified Ordinances of the City of Dublin

Emily Goliver, Management Analyst

November 27, 2023

Proposed Ordinance Language

(A) Definitions. For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) **RUNNING AT LARGE.** An animal off its owner's premises, without a leash, and without a person to control the animal.
(2) **WILD ANIMAL**. An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.
(3) **FEED OR FEEDING**. The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

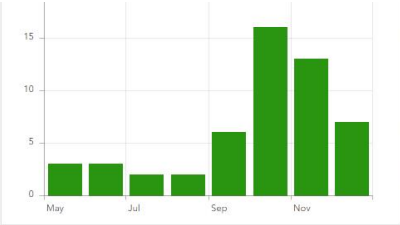
(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Deer/Vehicle Accidents

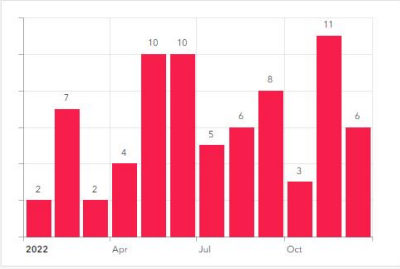
Year	Number of Collisions	# Resulting in Minor Damage	# Resulting in Significant Damage	# of Collisions Resulting in Injury
2015	11	10	1	2
2016	13	10	3	0
2017	13	11	2	2
2018	10	10	0	0
2019	10	8	2	2
2020	21	19	2	5
2021	12	8	4	1
2022	11	8	3	1
2023 (YTD)	7	7	0	1

Dead Deer Reported

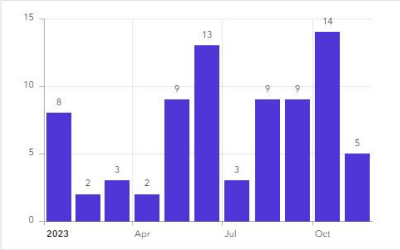
2021
52

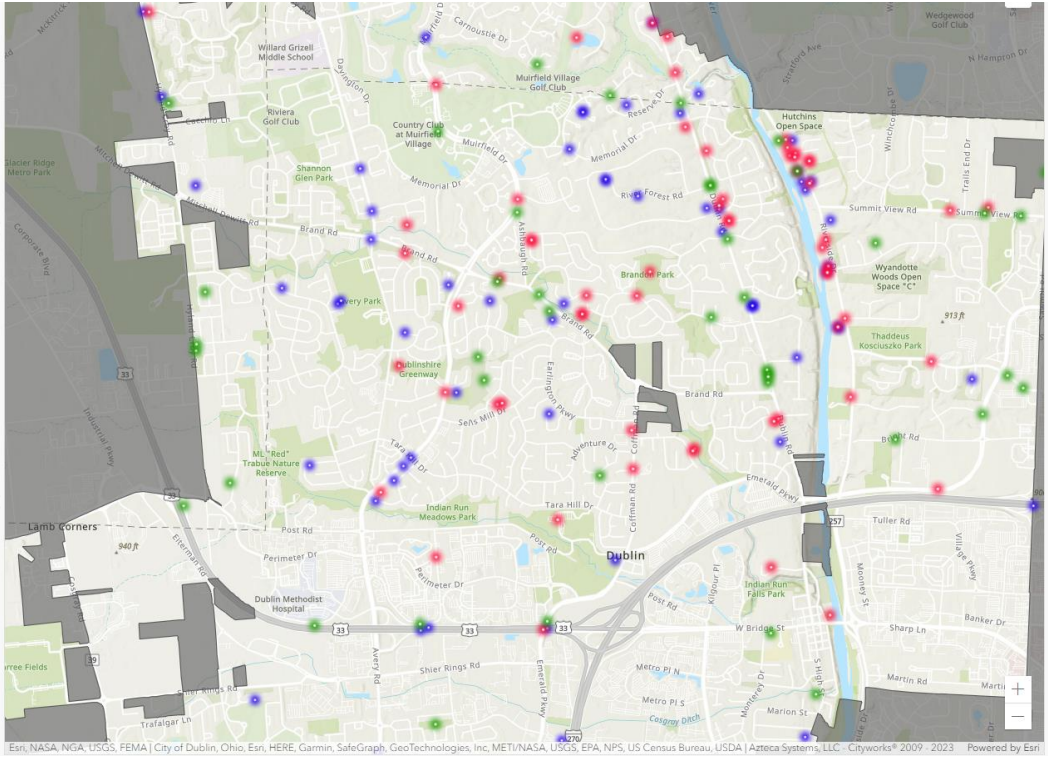


2022
74



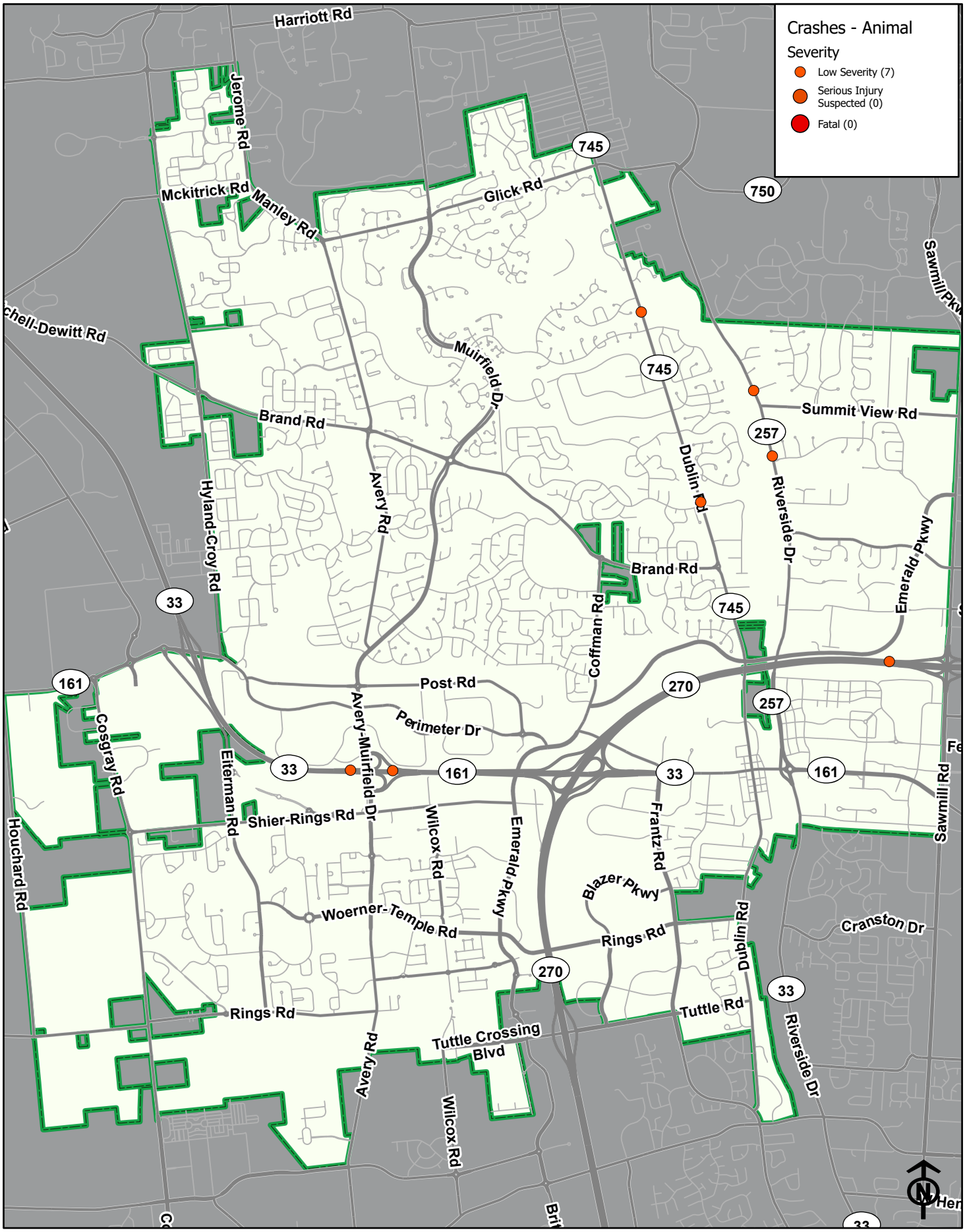
2023
77





Recommendation

Staff recommends the adoption of Ordinance 47-23 – Amending Section 91.12 "Feeding of Waterfowl Prohibited" of the Codified Ordinances of the City of Dublin.



Animal Crashes
Jan 1, 2023 through Nov 9, 2023

4,000 Feet

City of Dublin
OHIO, USA

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Members of Dublin City Council

From: Megan D. O'Callaghan, P.E., City Manager

Date: November 7, 2023

Initiated By: Emily Goliver, Management Analyst
Barbara Ray, Nature Education Coordinator

Re: Ordinance 47-23 – Amending Section 91.12 "Feeding of Waterfowl Prohibited" of the Codified Ordinances of the City of Dublin

Background
At the February 8, 2022 meeting of the Community Services Advisory Commission (CSAC), staff provided a presentation regarding the City's wildlife management program, including management of white-tailed deer. Since that time, staff has conducted additional research regarding deer management. A deer-specific update was provided at the February 14, 2023 CSAC meeting.

Staff partnered with The Ohio State University's School of Environmental and Natural Resources to conduct research during the weeks of May 9 through May 26, 2023. The purpose of this work was to establish a population estimate of the deer herd within the City of Dublin. The survey team conducted a field study during the week of May 15, which included road sightings and camera trap surveys, assessing the vegetation for signs of deer and creating a citizen survey to gather data on the community's attitude towards deer. Based on the data collected by the survey team, there are approximately 50 – 85 deer per square mile within Dublin. A healthy population of deer is around 20-25 per square mile. The community-wide survey received 297 responses. The public's sentiment was split on whether the population of white-tailed deer in Dublin is increasing and needs to be managed.

At the June 13, 2023 CSAC meeting, staff provided an update on the herd population survey. Staff returned to provide information on management options at the September 12, 2023 meeting of CSAC. Following discussion on lethal and non-lethal tactics, CSAC requested staff draft language for an outdoor feed ordinance. The Commission reviewed the language for a potential ordinance at the October 10, 2023 meeting. After reviewing the language, the CSAC recommended that City Council amend the City's Code of Ordinances to include a prohibition on outdoor feeding of wild animals or animals running at large. CSAC recommended that Council direct staff to draft an outdoor feed ordinance to be considered at a future City Council meeting.

At the October 23, 2023 City Council meeting, CSAC Chair Rex Pryor presented the CSAC recommendation to the Council. By motion, City Council voted unanimously to direct staff to prepare legislation as recommended by CSAC.

Summary
Other Ohio cities have adopted outdoor feed ordinances to prohibit the feeding of any wild animal or animal running at large (such as an outdoor cat). Dublin's Nature Education Coordinator anticipates that there may be observances of wild turkey, bobcats and black bears in the next decade, as these species may become more common in Columbus-area suburbs. An outdoor feed ordinance pre-emptively addresses those potential future concerns. Adopting a general regulation prohibiting the feeding of all wild animals on private property eliminates the need to pass animal-

specific no feed ordinances each time there is an increase in the population of a wild animal.

Section 91.12 of the City's Code of Ordinances Section prohibits feeding of waterfowl on public property and Section 96.17(C) prohibits feeding wildlife in parks but does not prohibit it on private property. The proposed amendment to Section 91.12 prohibits feeding any wild animals or animals running at large on private property.

Residents feeding wild animals on their property can lead to a higher concentration of wildlife in residential areas. Feeding animals can cause them to become comfortable in an area and frequently return, knowing there is food easily accessible. Additionally, more wildlife are drawn to the area by easily accessible food. Wild animals can become desensitized to people when they are close to them frequently, which can lead to them becoming aggressive with people and pets.

Not all feeding of wildlife is intentional. Improper care and maintenance of a bird feeder can lead to food dispersing on the ground, which will attract other wild animals. Some bird feeders can be altered to provide easier access to mammals, drawing wildlife to that yard. Properly maintained bird feeders are a welcome addition to any backyard to avoid unwanted wildlife.

In a discussion with the Ohio Department of Natural Resources (ODNR), staff members from ODNR recommended an outdoor feed ordinance as the most appropriate management tactic at this point. It is anticipated that by passing an outdoor feed ordinance, Dublin residents will see a decrease in the congregation of wildlife, specifically deer, in residential areas over the next year. As food becomes unavailable to deer, they will begin to look for alternate food sources, especially during fawning season.

As part of the enforcement of this ordinance, the GoDublin app will be updated to include "Outdoor Feeding" as a report type under the Code Enforcement section of the app. The City's Nature Education Coordinator will initiate the first conversation with the residents that are feeding wildlife to inform them of the issues caused by outdoor feeding. If a resident is found to be violating the ordinance beyond the initial educational conversations, Code Enforcement will become involved.

Communications and Public Information will launch a public education campaign to inform residents of the ordinance, should the Council adopt the ordinance. This will include current educational materials and videos to explain why feeding wildlife is problematic.

Recommendation
Staff recommends the adoption of Ordinance 47-23 at the second reading/public hearing on November 27, 2023.

RECORD OF ORDINANCES

Dayton Legal Blank, Inc. Form No. 30043

Ordinance No. 47-23 *Passed* _____, 20____

AMENDMENT TO SECTION 91.12 "FEEDING OF WATERFOWL PROHIBITED" OF THE CODIFIED ORDINANCES OF THE CITY OF DUBLIN

WHEREAS, the City of Dublin, Ohio recognizes the negative impact that residents feeding wild animals and/or animals at large can have, including the spread of disease and disruption of their natural foraging behaviors; and

WHEREAS, the feeding of wild animals and/or animals running at large has been proven to increase the concentration of that creature in a residential neighborhood, potentially leading to damage to landscape and vehicle-animal crashes; and

WHEREAS, animals accustomed to people and being near homes can lose their fear of people and become aggressive; and

WHEREAS, the United States Department of Agriculture and the Ohio Department of Natural Resources encourage property owners to avoid feeding wild animals and/or animals at large; and

WHEREAS, the City of Dublin finds that adopting an ordinance prohibiting feeding of wild animals and animals at large promotes a safer, healthier and more resilient community;

NOW, THEREFORE, BE IT ORDAINED by the Council of the City of Dublin, _____ of its elected members concurring, that:

Section 1. Chapter 91 Section 12 of the Codified Ordinances of the City of Dublin, "FEEDING OF WATERFOWL PROHIBITED" is hereby amended to read as follows:

§ 91.12 OUTDOOR FEEDING ~~OF WATERFOWL~~ PROHIBITED.

(A) *Definitions.* For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) ~~***DOMESTIC WATERFOWL.*** Non native ducks, geese, swans, not retained in agricultural operations.~~ ***RUNNING AT LARGE.*** An animal off its owner's premises, without a leash, and without a person to control the animal.

(2) ***WILD ANIMAL.*** An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.

(3) ~~(2)~~ ***FEED OR FEEDING.*** The act of or the furnishing of food or other sustenance.

~~(3) ***MIGRATORY WATERFOWL.*** Migration occurs, and waterfowl is considered to be migratory, when large portions of a bird species make regular annual movements between two places. Often this migration occurs due to annual temperature changes, which affect food resources and breeding opportunities.~~

~~(4) ***NON-MIGRATORY WATERFOWL.*** Waterfowl that may fly large distances within a day, but return to a particular area by night. Such species can spend their entire lives in one area.~~

~~(5) ***RESIDENT CANADA GEESE.*** Canada Geese that nest within the conterminous United States and/or Canada Geese which reside within the conterminous United States during certain months of the year.~~

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at

large or wild from public property, public ways or private property not owned by the feeding person.
(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.
~~migratory waterfowl, non-migratory waterfowl, resident Canada Geese, or domestic waterfowl on any public property within the boundaries of the city. Exceptions to this will only be granted through city, state and/or federal permitting processes.~~

Section 2. This ordinance shall be effective on the earliest date permitted by law.

Passed this _____ day of _____, 2023.

_____
Mayor - Presiding Officer

ATTEST:

_____
Clerk of Council

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Members of Dublin City Council

From: Members of the Community Services Advisory Commission

Date: October 17, 2023

Initiated By: Emily Goliver, Management Analyst
Barbara Ray, Nature Education Coordinator

Re: Outdoor Feed Ordinance - Community Services Advisory Commission Recommendation

Background

At the February 8, 2022 meeting of the Community Services Advisory Commission (CSAC), staff provided a presentation regarding the City's wildlife management program, including management of white-tailed deer. Since that time, staff has conducted additional research regarding deer management. A deer-specific update was provided at the February 14, 2023 CSAC meeting.

Staff partnered with The Ohio State University's School of Environmental and Natural Resources to conduct research during the weeks of May 9 through May 26, 2023. The purpose of this work was to establish a population estimate of the deer herd within the City of Dublin. The survey team conducted a field study during the week of May 15, which included road sightings and camera trap surveys, assessing the vegetation for signs of deer and creating a citizen survey to gather data on the community's attitude towards deer.

At the June 13, 2023 CSAC meeting, staff provided an update on the herd population survey. Staff returned to provide information on management options at the September 12, 2023 meeting of CSAC. The materials from each meeting are provided for reference.

Summary

Based on the data collected by the survey team, there are approximately 50 – 85 deer per square mile within Dublin. A healthy population of deer is around 20-25 per square mile. The community-wide survey received 297 responses. The public's sentiment was split on whether the population of white-tailed deer in Dublin is increasing and needs to be managed.

Several regional and statewide jurisdictions are also considering wildlife management tactics. Management tactics can be categorized as lethal and non-lethal. At the September meeting of CSAC, staff provided the commission a summary of the lethal and non-lethal options other cities across the state and country have implemented. CSAC was supportive of staff drafting an "Outdoor Feed" ordinance as an immediate management tactic the City can deploy. At the October 10, 2023 meeting, CSAC reviewed potential language to be included in the ordinance.

Outdoor Feed Ordinance

Other Ohio cities have adopted outdoor feed ordinances to prohibit the feeding of any wild animal or animal running at large (such as an outdoor cat). Dublin's Nature Education Coordinator anticipates that there may be observances of wild turkey, bobcats and black bears in the next decade, as these species may become more common in Columbus-area suburbs. An outdoor feed ordinance pre-emptively addresses those potential future concerns. To avoid the need to pass

animal-specific no feed ordinances each time the population of a wild animal increases, CSAC recommends adopting a general regulation prohibiting the feeding of all wild animals on private property.

Section 91.12 of the City's Code of Ordinances Section prohibits feeding of waterfowl on public property and Section 96.17(C) prohibits feeding wildlife in parks but does not prohibit it on private property.

Residents feeding wild animals on their property can lead to a higher concentration of wildlife in residential areas. Feeding animals can cause them to become comfortable in an area and frequently return, knowing there is food easily accessible. Additionally, more wildlife are drawn to the area by easily accessible food. Wild animals can become desensitized to people when they are close to them frequently, which can lead to them becoming aggressive with people and pets.

Not all feeding of wildlife is intentional. Improper care and maintenance of a bird feeder can lead to food dispersing on the ground, which will attract other wild animals. Some bird feeders can be altered to provide easier access to mammals, drawing wildlife to that yard. Properly maintained bird feeders are a welcome addition to any backyard as a way to avoid unwanted wildlife.

Below is an overview of the content reviewed by CSAC for an outdoor feed ordinance. CSAC is supportive of this language:

(A) *Definitions*. For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

> (1) **RUNNING AT LARGE.** An animal off its owner's premises, without a leash, and without a person to control the animal.
> (2) **WILD ANIMAL**. An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.
> (3) **FEED OR FEEDING**. The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Public Education

An outdoor feed ordinance must be coupled with community education programs to help residents understand the negative impacts caused by feeding wildlife. The City's Communications and Public Information team has already begun this messaging and plans to expand the efforts. The first episode of the "Dublin's Backyard with Barbara" series focused on deer management and stressed the importance of not feeding wild animals. This information has also been communicated through

the attached Frequently Asked Questions document and is available on the City's website. Nature education will also be a topic at the October 18, 2023 Neighborhood Leadership Meeting. This will be an opportunity for staff to provide neighborhood leaders with information on ways to limit the number of deer in their yard and stress the importance of not feeding any wildlife.

Recommendation

By a unanimous vote, the Community Services Advisory Commission recommend that City Council amend the City's Code of Ordinances to include a prohibition on outdoor feeding of wild animals or animals running at large. CSAC recommends that Council direct staff to draft an outdoor feed ordinance to be considered at a future City Council meeting.

City of Dublin
OHIO, USA

Outdoor Feed Ordinance – CSAC Recommendation

October 23, 2023

Rex Pryor, Chair, Community Services Advisory Committee

Background

- February 8, 2022 – Staff presented on the City's wildlife management program.
- February 14, 2023 – Staff provided an update specific to the deer management program.
- June 13, 2023 – Staff reported the results of a herd population assessment conducted by the Ohio State University.
- September 12, 2023 – Staff provided a summary of lethal and non-lethal options for deer management. CSAC requested staff draft a "Outdoor Feed" ordinance.
- October 10, 2023 – CSAC voted to recommend that City Council amend the City's Code of Ordinances to include an Outdoor Feed Ordinance

Herd Population Assessment

- The survey team estimates that there are approximately 50-85 deer per square mile in Dublin. A healthy amount is 20-25 per square mile
- The results of the community-wide survey indicated that resident's attitude towards deer population and management is mixed

Do you think the white-tailed deer population in Dublin is increasing and needs to be managed?	
The white-tailed deer population is increasing and should be managed	150
There is no need to manage the white-tailed deer herd in Dublin	147

Do you think there are too many white-tailed deer an acceptable number, or too little number in Dublin, Ohio?	
Acceptable amount of white-tailed deer	163
Too little white-tailed deer	8
Too many white-tailed deer	126

Summary

- Lethal vs. Non-lethal options
- Outdoor feed ordinance vs. no feed ordinance
- Dublin City Code Sections 91.12 and 96.17(C)
- Feeding wild animals can lead to:
  - A higher concentration of wildlife in that area
  - Increased comfortability of wildlife in that area
  - Desensitized animals in that area

Language Reviewed by CSAC

(A) Definitions. For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) **RUNNING AT LARGE.** An animal off its owner's premises, without a leash, and without a person to control the animal.
(2) **WILD ANIMAL**. An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.
(3) **FEED OR FEEDING**. The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Recommendation

By a unanimous vote, the Community Services Advisory Commission recommends that City Council amend the City's Code of Ordinances to include a prohibition on outdoor feeding of wild animals or animals running at large. CSAC recommends that the Council direct staff to draft an outdoor feed ordinance to be considered at a future City Council meeting.

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Community Services Advisory Commission Members

From: Megan D. O'Callaghan, P.E., City Manager

Date: October 4, 2023

Initiated By: Emily Goliver, Management Analyst
Re: Outdoor Feed Ordinance

Background

At the February 8, 2022 meeting of the Community Services Advisory Commission (CSAC), staff provided a presentation regarding the City's wildlife management program, including management of white-tailed deer. Since that time, staff has conducted additional research regarding deer management. A deer-specific update was provided at the February 14, 2023 CSAC meeting. At the June 13, 2023 CSAC meeting, staff provided an update on a herd population survey conducted by the Ohio State University (OSU). Staff returned to provide information on management options at the September 12, 2023 meeting of CSAC. The materials from each meeting are provided for the Commission's reference.

Based on the data collected through the report provided by OSU, there are approximately 50-85 deer per square mile within Dublin. Dubin is not the only central Ohio city that is examining potential management options. This topic is being considered regionally and statewide by numerous jurisdictions. Management options can be categorized as lethal and non-lethal. Staff provided CSAC with information on the pros and cons of lethal and non-lethal options that have been implemented in other cities across the state and country. CSAC was supportive of staff drafting a No Feed Ordinance as an immediate management tactic the City can deploy.

Summary

To avoid the need to pass animal-specific no feed ordinances each time the population of a wild animal increases, staff is proposing a general regulation prohibiting the feeding of all wild animals on private property. Outdoor feed ordinances have been adopted in other Ohio cities to prohibit the feeding of any wild animal or animal running at large (such as an outdoor cat). Dublin's Nature Education Coordinator anticipates that there will be observances of wild turkey, bobcats and black bears in the next decade, as these become more common in surrounding suburbs. An outdoor feed ordinance pre-emptively addresses those potential future concerns.

Chapter 96.17(C) of the City's Code of Ordinances prohibits feeding wildlife in parks but does not prohibit it on private property.

Residents feeding wild animals on their property can lead to a higher concentration of wildlife in residential areas. Feeding animals can cause them to become comfortable in that area and frequently return, knowing there is food available to them. As this continues, more wildlife will be drawn to the area. Wild animals can become desensitized to people when they are close to them frequently, which can lead to them becoming aggressive with people and pets.

Not all feeding of wildlife is intentional. Improper care and maintenance of a bird feeder can lead to food dispersing on the ground, which will attract other wild animals. Some bird feeders can be altered to provide easier access to mammals, drawing wildlife to that yard. Properly maintained

bird feeders are a welcome addition to any backyard as an opportunity.

Outdoor Feed Ordinance
Below is an overview of the content to be included in an outdoor feed ordinance, should that be the recommendation of CSAC:

(A) *Definitions*. For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) **RUNNING AT LARGE.** An animal off its owner's premises, without a leash, and without a person to control the animal.

(2) **WILD ANIMAL**. An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.

(3) **FEED OR FEEDING**. The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Public Education
In cities that have adopted a no feed or outdoor feed ordinance, the legislation typically defines "feeding" as intentionally feeding or causing to be fed. This is consistent with Chapter 91.12 of Dublin's code, which prohibits feeding waterfowl on public property. In many cases, violators are guilty of a minor misdemeanor. Each day is considered a new violation.

These ordinances must be coupled with community education programs to help residents understand the negative impacts that feeding wildlife can have. The City's Communications and Public Information team has already begun this messaging and has plans to expand the efforts. The first episode of the "Dublin's Backyard with Barbara" series focused on deer management and stressed the importance of not feeding the wild animals. This information has also been communicated through the attached Frequently Asked Questions document and is available on the City's website.

Dublin hosts a bi-annual information session with leaders of the local homeowners and civic associations. A topic for discussion at the Oct. 18, 2023 Neighborhood Leadership Meeting is nature education. Since it is a popular topic, the presentation will focus mainly on how residents can limit the number of deer in their yard and will stress the importance of not feeding any wildlife. This communication will continue should the Ordinance be adopted by City Council.

Recommendation
Staff requests a CSAC recommendation to the City Council to amend the City's Code to include a prohibition on outdoor feeding of wild animals or animals running at large.

DEER MANAGEMENT FAQ

The white-tailed deer is a common backyard visitor in Dublin. They typically feed on gardens, landscape plants and trees, and agricultural crops.

We certainly understand the frustration deer can cause regarding landscape damage, pet interactions and other associated issues. Herd management options are complex and the City is taking a comprehensive approach to determining the appropriate actions.

Below are answers to frequent questions we receive and tips on managing deer on your property.

HOW DO I STOP DEER FROM EATING MY PLANTS AND BIRDSEED?

Being proactive and using several strategies when managing deer on your property is essential. Deer are commonly interested in new plant growth in the spring but tend to be curious and "browse" year-round.

Protective structures often keep deer out of gardens or away from young or sensitive trees. Fencing is commonly used, though it is only effective if layered and angled short to tall at approximately 18, 26 and 36 inches. Temporary fencing, like chicken wire, can also be installed and should be 26 to 36 inches tall. Another option is laying a 3-foot wide strip of chicken wire or other mesh fencing flat on the ground. Flashing or amber holiday lights can also be plugged into a motion sensor.

Deer damage to ornamental plants is very frustrating. You can minimize the damage they can do by avoiding plants they prefer and instead use plants listed in the table at the bottom of this document that deer avoid due to toxicity, fragrance or texture.

Deer-proof bird feeders are suggested as an effective way to sway deer from eating birdseed. Opting for seeds with bitter or a spicy coating also deters deer but keeps the birds interested.

CAN I FEED THE DEER?

The City asks that residents please refrain from feeding the deer by any means. Deer are creatures of habit and will return to the same area. It is strongly suggested that neighbors work together to eliminate feeding activity and identify common areas that may entice the deer. Staff have found that deer can become aggressive and persistent when fed by humans.

While we understand some love deer and other wildlife, not feeding the animals is the most effective way to eliminate interactions now.

WHAT ARE OTHER WAYS TO MANAGE DEER ON MY PROPERTY?

Hazing is a method of frightening deer away from your yard with loud noises or movement. This is a short-term solution as deer quickly become used to the hazing unless techniques are rotated out. Common practices include:

- Motion-activated sprinklers
- "Predator Eyes" or motion-activated lights
- "Deer Scram," a granular repellent odor
- Menthol rub on leaves

Utilizing these and the other tips listed in this document will help reduce the number of deer entering your yard.

WHO SHOULD I CONTACT FOR MORE INFORMATION?

Our Nature Education Coordinator, Barbara Ray, is happy to meet with neighbors and the HOA to provide some advice and guidance on plant selection, repelling deer, keeping deer away from your yard and answering any questions.

Phone: 614.410.4730
Email: bray@dublin.oh.us

City of Dublin
OHIO, USA

Outdoor Feed Ordinance

October 10, 2023

Emily Goliver, Management Analyst

Background

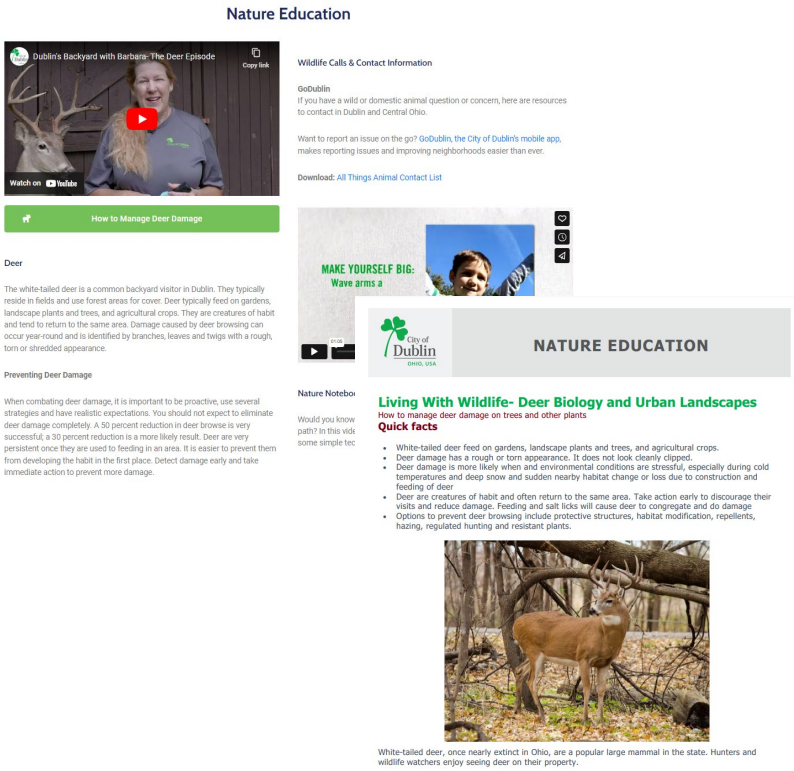
- February 8, 2022 – staff presented on the City's wildlife management program
- February 14, 2023 – staff provided an update specific to the deer management program
- June 13, 2023 – staff reported out on the results of a herd population assessment conducted by the Ohio State University
  - The survey team estimates that there are approximately 50-85 deer per square mile in Dublin. A healthy amount is 20-25 per square mile
  - The results of the community-wide survey indicated that resident's attitude towards deer population and management is mixed
- September 12, 2023 – staff provided a summary of lethal and non-lethal options for deer management. The CSAC requested staff draft a No Feed Ordinance

Summary

- Lethal vs. Non-lethal options
- Outdoor feed ordinance vs. no feed ordinance
- Chapter 96.17(C)
- Feeding wild animals can lead to:
  - A higher concentration of wildlife in that area
  - Increased comfortability of wildlife in that area
  - Desensitized animals in that area

Public Education

- Dublin's Backyard with Barbara [episode 1]
- Bi-annual Neighborhood Leadership Meeting on Oct. 18
- FAQ document
- Living with wildlife documents



Draft Language

(A) *Definitions*. For purposes of this section, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

(1) **RUNNING AT LARGE.** An animal off its owner's premises, without a leash, and without a person to control the animal.

(2) **WILD ANIMAL**. An animal not legally confined or held by private ownership legally acquired and shall include, but not be limited to, feral cats, squirrels, chipmunks, ground hogs, raccoons, skunks, waterfowl, opossums, muskrats, deer, foxes, black bears, wild turkey, bobcats, and coyotes.

(3) **FEED OR FEEDING**. The act of or the furnishing of food or other sustenance.

(B) No person shall feed, cause to be fed or provide food for animals running at large or wild on any private or public property within the boundaries of the city. The feeding of one's own animal(s) or wild birds on their premises shall be the exception so long as the feed does not attract animals running at large or wild from public property, public ways or private property not owned by the feeding person.

(C) Whoever violates this section is guilty of a minor misdemeanor. Each day that a violation continues shall be deemed a separate offense.

Recommendation

Staff requests a CSAC recommendation to the City Council to amend the City's Code to include a prohibition on outdoor feeding of wild animals or animals running at large.

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Community Services Advisory Commission Members

From: Megan D. O'Callaghan, P.E., City Manager

Date: September 6, 2023

Initiated By: Emily Goliver, Management Analyst

Re: Deer Management Options

Background

At the February 8, 2022 meeting of the Community Services Advisory Commission (CSAC), staff provided a presentation regarding the City's wildlife management program, including management of white-tailed deer. Since that time, staff has conducted additional research regarding deer management. At the June 13, 2023 CSAC meeting, staff provided an update on a herd population survey conducted by the Ohio State University (OSU).

Based on the data collected by the students at OSU, the survey team estimates there are approximately 50-85 deer per square mile within Dublin. A healthy population of deer is around 20-25 per square mile. The report also indicates that the population of deer is negatively impacting reforestation. A community-wide survey was open for five days from May 19th to May 23rd and received 297 responses. The responses indicated that the community's attitudes towards the white-tailed deer population and management of it was mixed. The materials from both meetings, including the report, are provided for reference.

Summary

The City of Dublin is not the only central Ohio city considering this issue. The City of Worthington has a task force to address concerns related to its herd population. Additionally, according to representatives at the Ohio Department of Natural Resources, Franklin County has seen an increase in deer over the years. As a species, deer are transient animals. Thus, ODNR is working to increase education on potential management tactics for all cities. Potential options to manage the white-tailed deer population can be categorized as non-lethal and lethal.

Non-lethal Management Options

No-Feed Ordinance

A common non-lethal management option is instituting a No-Feed Ordinance. Residents feeding deer on their property can lead to higher deer concentration in residential areas. Additionally, feeding deer can lead to increased comfort for the deer in that area. In some cases of aggressive deer encounters, residents in the neighborhood have admitted to either leaving food out for the deer or not using deer-proof bird feeders. Chapter 96.17(C) of the City's Code of Ordinances prohibits feeding wildlife in parks but does not prohibit it on private property. The City also prohibits feeding geese and other waterfowl on public property within the boundaries of the city (Chapter 91.12).

In city's that have adopted a no-feed ordinance, the legislation typically defines "feeding" as intentionally feeding or causing to be fed. This is consistent with Chapter 91.12 of Dublin's code. In many cases, violators are guilty of a minor misdemeanor. Each day is considered a new violation. These practices could be implemented in a no-feed ordinance adapted for Dublin.

No-feed ordinances must be coupled with community education programs. It is important for residents to understand the purpose of the ordinance and the negative impact that feeding deer can have. Should a no-feed ordinance be passed, staff will work on an educational campaign with the City's Communications and Public Information Division.

Contraceptives
Another non-lethal option that is more difficult to implement is sterilization. This involves injecting females with infertility drugs or surgically sterilizing them. These programs have not been proven effective when implemented. A doe that does not have children lives longer than does that do. For example, the City of Columbus attempted this management tactic in the early 2000's and are still observing the sterilized does to this day. Additionally, when the fawn output decreases due to sterilization of half of the does, the other half will begin producing more offspring in one cycle. For instance, a typical doe has one or two fawns per year. If the fawn population decreases due to sterilization of does, the does will begin having litters of three or four to repopulate the herd.

Contraceptive programs are also expensive. It costs about $1,000 to surgically sterilize a doe or to immobilize a deer to administer the infertility drug. The ODNR will only permit this when it is coupled with a lethal option.

Relocation Programs
Trapping and relocation of a deer is not permitted by ODNR. Deer mortality rates of these practices are upwards of 60% due to the stress it causes the animal. Additionally, relocation can lead to disease spread in a new area, which is not desirable to the relocated or native deer.

Lethal Management Options
Below is a summary of two lethal options that have been implemented in other cities to manage the deer herd. Chapter 91.08 of the City's Code of Ordinances currently prohibits hunting of any animal within the city's boundaries. Any lethal options need to be seriously considered with the input of the Dublin Police Department (DPD). The safety of residents and visitors is a top priority. In the past, DPD has expressed concerns regarding lethal methods of deer management.

Urban Bow Hunting Program
An urban bow hunting program is one of the lethal management options that some cities, including Gahanna, OH, have implemented. Urban bow hunting programs are very restrictive. For instance, a common requirement in these programs is maintaining a suitable distance (200 feet, in many cases) from a school, walking path and residential neighborhood. These are typically implemented on public property but could be applied to private property with permission from the owner. Based on the location and size of many public lands in Dublin and the aforementioned restrictions, there would be very little space in Dublin that would be appropriate for an urban bow hunting program. Additionally, a program like this requires hunters to obtain permits through the State of Ohio, register with the police department, pass an archery proficiency test, and to submit a background check. These programs require staff resources, particularly through the police department, to screen applicants and monitor the hunters for compliance.

Sharpshooting Program
Some Ohio cities, particularly in northeast Ohio, have implemented sharpshooting programs to manage their deer herds. In order for this to be successful, the sharpshooting would occur overnight on specific properties with a high level of deer-related activity, typically a city park. This management option would require the city to hire a contractor to conduct the culling. These

programs typically cost over $60,000 for just the sharpshooting. Another cost related to sharpshooting programs is the cost the harvest the deer meat to be donated. This fee depends on the number of deer and the contractor hired to do this work.

South Euclid, OH has been given permission by ODNR to implement a sterilization program because it is being done in conjunction with a sharpshooting program. This is part of a research project that includes tracking the movements of deer after sterilization. The sterilized deer are tagged and prohibited from being culled.

Recommendation
Staff is seeking feedback from CSAC regarding management options.

City of Dublin
OHIO, USA

Deer Management Options

September 12, 2023

Emily Goliver, Management Analyst

Background

- February 8, 2022 – staff presented on the City's wildlife management program
- February 14, 2023 – staff provided an update specific to the deer management program
- June 13, 2023 – staff reported out on the results of a herd population assessment conducted by the Ohio State University
  - The survey team estimates that there are approximately 50-85 deer per square mile in Dublin. A healthy amount is 20-25 per square mile
  - The results of the community-wide survey indicated that resident's attitude towards deer population and management is mixed

Summary

- Deer population is an issue seen throughout the state, county and central Ohio region
- The Ohio Department of Natural Resources is working to increase education on potential management tactics for all cities

Non-Lethal Options

No-Feed Ordinance

- Residents feeding deer can lead to a higher population concentration in residential areas
- The City of Dublin currently prohibits feeding wildlife in parks and prohibits feeding waterfowl on public property
- No-Feed Ordinances must be coupled with educational campaigns to explain why it causes issues

Contraceptives

- Injections or surgical sterilization
- Approx. $1,000 surgically sterilize a doe or immobilize it for injection
- ODNR will not permit this unless it is coupled with a lethal option

Relocation Program

- Trapping and relocating deer is not permitted by ODNR due to the stress and high mortality rate it causes the deer

Lethal Options

Urban Bow Hunting Program

- Must be implemented in an area that is an appropriate distance from pedestrian facilities, homes and schools.
- Typically implemented on public property but could be on private property, with permission
- Hunters must obtain a permit through the State of Ohio, register with the police department, pass an archery proficiency test and submit a background check
- Requires significant staff resources. There are also very few locations in Dublin that would be appropriate, given the limitations

Sharpshooting Program

- Sharpshooting occurs overnight in areas with a high population density, typically on public parks
- The City of Dublin would hire a contractor – typically costs over $60,000
- Dublin's high-density areas are mainly in residential areas

No-Feed Ordinance

- Defines "feeding" as "intentionally feeding or causing to be fed"
- Violators are typically found guilty of a minor misdemeanor
- Each day is considered a new violation
- Implementation –
  - Code Enforcement violation
  - Worthington has an online complaint form

Recommendation

Staff is seeking feedback from CSAC regarding management options

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Community Services Advisory Commission Members

From: Megan D. O'Callaghan, P.E., City Manager

Date: June 7, 2023

Initiated By: Emily Goliver, Management Analyst
Re: Deer Management – Herd Population Report

Background
At the February 14, 2023 meeting of the Community Services Advisory Commission (CSAC), staff provided an update regarding the City's plans for conducting an analysis of the City's deer herd. This information was provided as a follow-up to the February 8, 2022 meeting of CSAC at which staff presented on the City's wildlife management program. The materials from both meetings are provided for reference.

Summary
Students from The Ohio State University's School of Environmental and Natural Resources conducted research during the weeks of May 9th through May 26th to establish a population estimate of the deer herd within the City of Dublin. The survey team conducted a field study the week of May 15th, which included road sighting and camera trap surveys, assessing the vegetation for signs of deer and creating a citizen survey to gather data on the community's attitude towards deer.

Based on the data, the survey team estimates there are approximately 50-85 deer per square mile within Dublin. A healthy population of deer is around 20-25 per square mile. The results of the vegetation assessment indicates that deer population is negatively impacting reforestation. The analysis indicates that the deer are eating trees and tree saplings, but there was little browsing to ground cover and invasive plants. The analysis indicates that the tree preferences of the deer herd are beech, maple and ash trees. In addition to eating the saplings and impacting reforestation, there were also signs of damage to trees due to scratching.

The community-wide survey was open for five days from May 19th to May 23rd. In total, 297 responses were recorded. The results of each question are listed below. The questions were adapted from the Wildlife Society Bulletin and phrased in a non-biased manner.

1. How would you describe your experience with white-tailed deer in the City of Dublin?

Response	Count of Responses
Negative	74
Neutral	73
Positive	150

2. Do you think there are too many white-tailed deer, an acceptable number, or too little number in Dublin, Ohio?

Response	Count of Responses
Acceptable amount of white-tailed deer	163
Too little white-tailed deer	8
Too many white-tailed deer	126

3. Do you think the white-tailed deer population in Dublin is increasing and needs to be managed?

Response	Count of Responses
The white-tailed deer population is increasing and should be managed.	150
There is no need to manage the white-tailed deer herd in Dublin	147

4. What negative experiences have you or a member of your household had with white-tailed deer in Dublin?

Response	Count of Responses
Deer/vehicle collision or almost collision	29
Lyme's Disease from Deer Tick	2
Other	47
Plant/Property Damage	219

5. Have you seen a white-tailed deer on your property?

Response	Count of Responses
No	17
Yes	279

Recommendation

Staff will continue to engage with The Ohio State School of Environmental and Natural Resources to determine the appropriate next steps based on the report. Staff will provide a report to CSAC regarding these efforts at a future meeting.

WHITE-TAILED DEER HERD OF DUBLIN, OHIO

A study determining population size, vegetation response, and public opinion of urban deer.

Willeke, Evan., Huddleston, Davina., Branch, Shannon.
The Ohio State University ENR 4900.02

The Ohio State University

School of Environmental and Natural Resources 2021 Coffey Road

Columbus, Ohio 43201

May 26 2023

Emily Goliver

Management Analyst

Dublin Service Center

6555 Shier Rings Road

Dublin, OH 43026

We would like to first say that it was a great pleasure working with you over these last few weeks to help the city of Dublin understand its deer population more. This letter includes the data analysis, and deer management recommendations for the City of Dublin. For the data analysis we set up camera traps, conducted road surveys, shared survey questions with the City of Dublin for its citizens, and assessed vegetation for foraging and rubs throughout Dublin.

During the week of May 15th to May 22nd data was collected by students from The Ohio State University, School of Environmental and Natural Resources for ENR 4900.02 Environmental & Natural Resources Management for Forestry, Fisheries, & Wildlife Capstone course. Data was collected from various green spaces throughout Dublin for the vegetation surveys and camera traps, the road surveys were conducted on the roads within the Dublin area. The methods for the surveys are outlined in the report and were chosen to collect accurate and relevant data during the week.

The purpose of this study is to provide Dublin with information about their deer population density and the impacts it has on the habitat and social carrying capacity. To get to that point we

had to establish a population estimate with cameras and road surveys. We also needed to understand how the deer are affecting the vegetation, so we conducted vegetation surveys throughout Dublin. We created questions for the citizens of Dublin, which were shared with the city's communications team, to get an understanding of how the citizens feel about the number of deer in their city. Finally, we provided education and outreach resources to citizens about deer and human interactions.

A healthy population of deer is around 20- 25 per square mile. With the data that we collected and analyzed we found a conservative estimate of 50-85 deer per square mile. The density is high enough that we believe that management actions need to be taken to help the City of Dublin, its citizens, and the health of the deer as well. The specifics on how we came to this number can be found in our report as well.

Thank you for the opportunity to work with you on this project and for taking our recommendations into consideration for the white-tailed deer population in Dublin. We hope that this data will provide you with valuable information when creating a management plan for the City of Dublin.

Sincerely,

Evan Willeke, Davina Huddleston, Shannon Branch

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Figure 8: A pie graph showing how many people have seen deer on their property.

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Appendix A: The entire handout from the Mississippi FWRC regarding protocol and calculations for deer density.

Appendix B: List of camera trap numbers and their coordinates.

Appendix C: A collection of the raw data collected from the vegetation survey

Introduction

White-tailed deer are arguably one of the most recognizable of America's wild animals, and they happen to be adapted well to coexisting with humans in urban and suburban environments. In many places around the country, local governments are having to make decisions on what to do about the growing deer numbers within their borders. Making a decision on how to manage these populations is often difficult due to members of the public having differing opinions on the issue, and often times these are very strongly held opinions. The city of Dublin, located in central Ohio, has had a growing concern with the number of deer present within their city, the amount of negative human deer encounters, and for the health of the deer and health and safety of its citizens. The numbers of dead deer reported across the city have also been increasing, with 81 dead deer reported in the year 2022 (Goliver 2023). While not all were labeled as traffic deaths within the data, it is likely many were unreported traffic accidents due to the frequency of dead deer surrounding highly trafficked areas. The city's management team reached out to The Ohio State University for help in establishing a population estimate for the deer herd within their city. They were also seeking information related to what a healthy population number would be. Another goal of theirs was to get a sense of how their citizens felt about the local deer herd, and if they had negative experiences or seen deer on their property. Throughout the course of this short seven-day study window, we have compiled the data below.

Study Area

The city of Dublin is in Franklin, Delaware, and Union Counties in central Ohio (see Figure 1). The 24.91 square miles (15,000+ acres) are comprised of neighborhoods, business sections, golf courses and a series of very diverse parks and open spaces throughout the city.

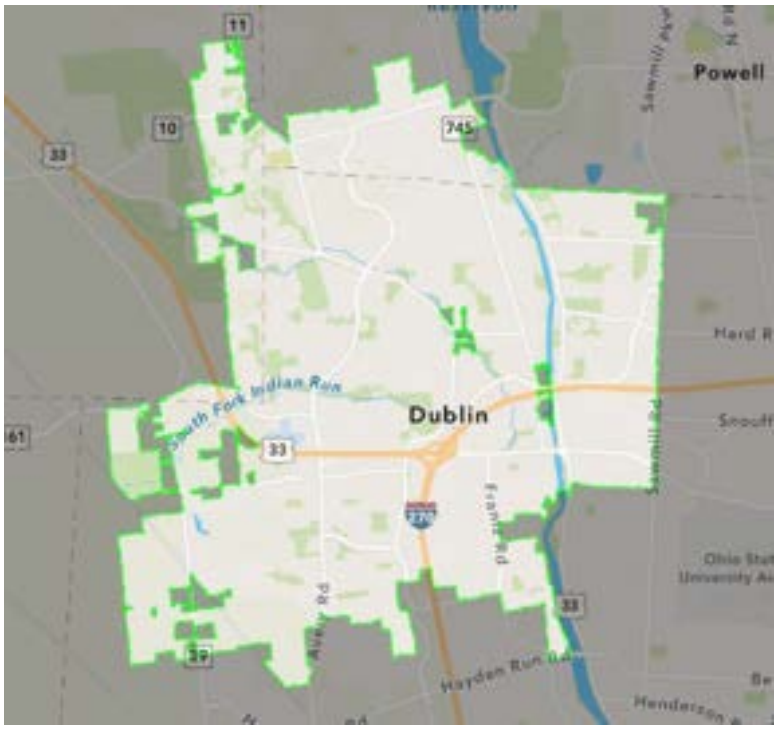


Figure 1: Map of Dublin, Ohio

Dublin has many different neighborhoods and many of them have large lawns that backup to or connect to parks or green spaces. Our study took place within the 949 acres of parks and open spaces, as well as along the roadways of the city.

Methods, Results, and Discussion

Objective 1: Find a Deer Population Estimate

Methods

To establish a population baseline, estimate of the white-tailed deer herd in the city of Dublin we completed road sighting surveys and camera trap surveys. To complete the road surveys, we divided the city of Dublin using Avery-Muirfield Drive, Muirfield Drive and Avery Road as our north and south running transects, and used Brand Road as our main east and west

transect. We targeted our road surveys to be conducted in the first two hours of daylight from 5:45 AM to 7:45 AM and the last two hours of daylight from 7:00 PM to 9:00 PM. To track each survey, a GPS tracking feature was used on the CalTopo mapping software starting at the beginning of the survey and finishing the track at the end of the survey. While driving locations were marked on the map and labeled with the number of deer and the time of each sighting.

For a second estimation, we followed a camera-based protocol provided by the Mississippi State Forest and Wildlife Resource Center (FWRC) for our study as closely as possible (FWRC 2000). We placed 10 camera traps at selectively randomized locations throughout the city of Dublin's many parks and open spaces which total 949 acres. The open space and parks consist of ball fields, walking paths, wood lots, and mowed grass fields. We selected our camera trap locations to be representative of three different vegetation classes: open space, intermediate woodland, and mature timber. We classified open space as having very few trees placed in the area or no trees present in the middle of the plot, intermediate woodland was identified by finding trees and shrubs that have not yet fully matured but more advanced than initial establishment. Mature timber was as the name describes. We distributed the camera traps throughout the different greenspaces across the city to cover as much of the municipality as possible. When selecting the locations, we entered habitat patches, categorized the patch into one of the 3 categories, and then randomly selected a tree to hang the camera on. We hung cameras three feet off of the ground depending on the surrounding vegetation; when necessary, we removed vegetation that would trigger the sensor or obstruct the view of the cameras. It is recommended to run camera traps on a 5- or 10-minute capture delay for the best data possible, if this is not done pictures must be deleted to reflect one per 5- or 10-minute interval; otherwise the amount of data becomes overwhelming, but detection of new unique individual deer does not appreciably increase. We then placed 10 pounds of corn in front of the cameras in a line roughly 5 meters from the camera. We allowed these cameras to sit and collect data for 7 days before we pulled each of them.

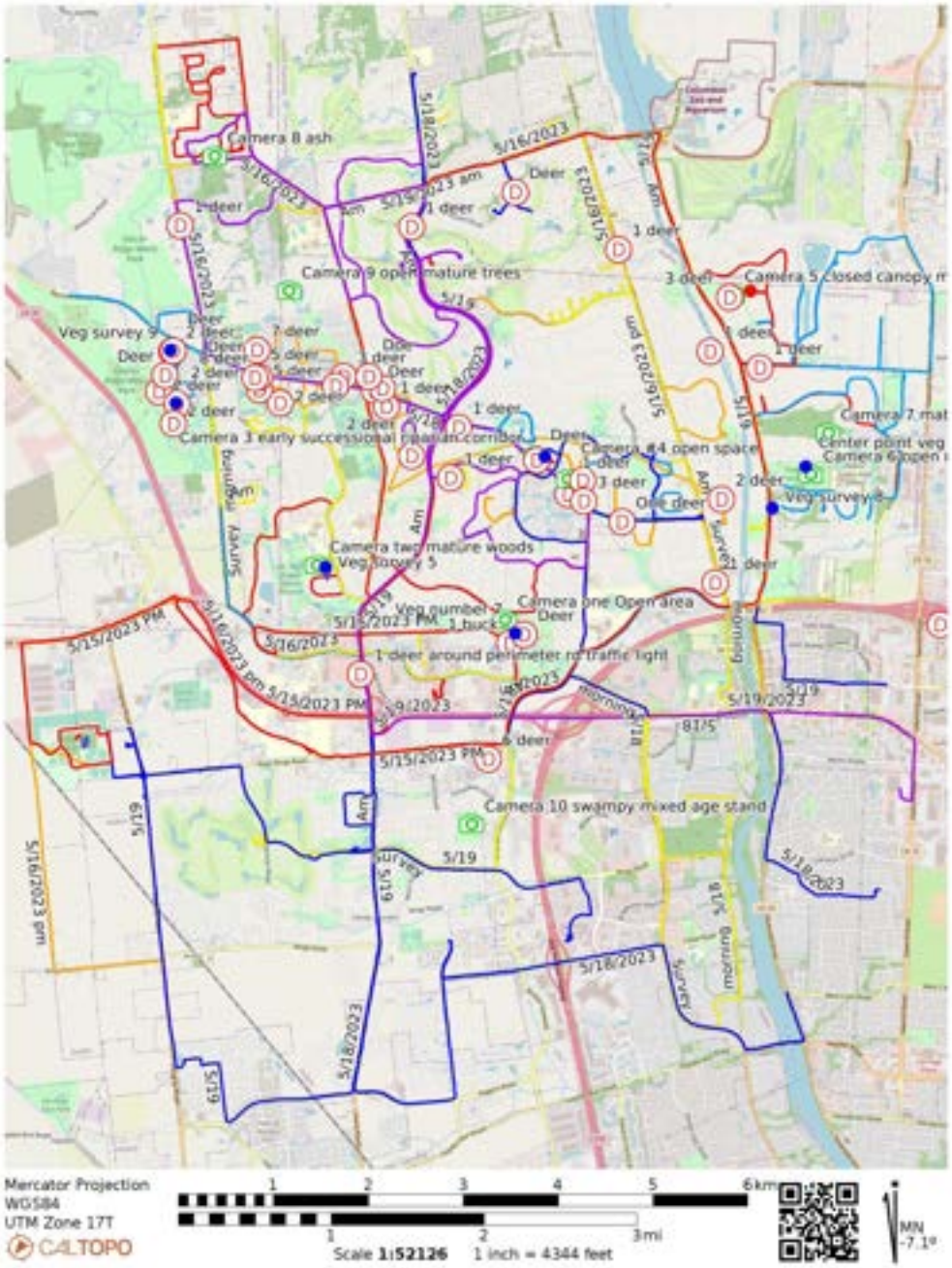


Figure 2: A map of Dublin with all of the areas that were surveyed. The lines along the roads are the drive surveys which were conducted at duck and dawn. The camera traps are marked with a green camera icon. The deer sighted are depicted by the red circle icon with a D in it. The vegetation survey areas are marked by a solid blue point.

Results

After removal of the SD cards, we filed all the photos with their respective camera and identified each unique buck on camera and placed every picture of that individual on a file. In order to identify different bucks, we kept records of each buck as it first appeared on camera and filed

that photo in its respective home. The different bucks were identified based off their unique antler growth, and we identified 18 unique bucks. We then counted the number of times each buck was photographed and divided by our total number of bucks against the total number of buck pictures to receive our population factor of .24. We multiplied .24 by our total number of does to reach 45.24 does, we then multiplied that number by our extrapolation factor which was 1.6667, that gives us 75.4 does. We found this number by determining our summer detection rates after a week to be around 60%; in other words, 6 out of every 10 deer within the survey window would be expected to be captured on camera during a 7-day survey. We came to this conclusion after studying the difference in detection rates in for winter and fall surveys provided in the literature. Detection probability is lower than the fall or winter due to increased cover from foliage, the increased availability of food (making deer less likely to be attracted to our baited cameras), and behavior of does to identify and hone in on parturition (birthing) sites for fawns. Based on the estimated 60% detection rate, we multiplied our total number of unique bucks by our detection factor to estimate a total of 30 bucks. Adding in the estimated 75.4 does gives us a total of 105.4 deer within the 949 acres surveyed. While this number is an estimate, this translates to around 50-85 deer per square mile.

Figure 3: Two bucks that were caught on one of the camera traps.

We observed 97 deer in the driving survey transects. Generating a reliable estimate based on vehicle-based observations, however, is difficult. First, the area surveyed is difficult to determine – exactly how wide is the surveyed visual driving route? Estimating the transect width is necessary to convert the 97 deer to a reliable *density* estimate. Furthermore, the risk of double counting deer between driving routes is considerable, adding more variation to the method.

Discussion

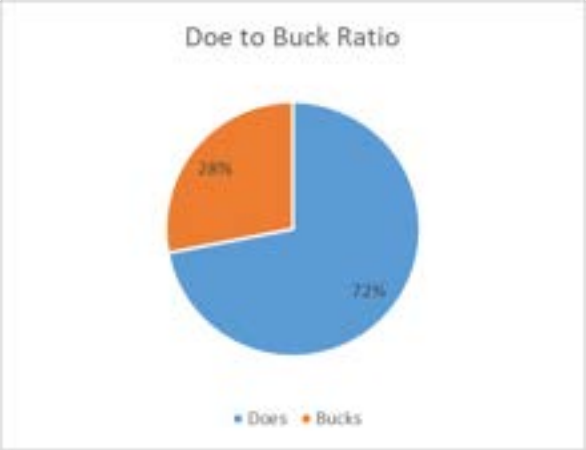


Figure 4: A pie graph showing the ratio of bucks to does in Dublin. Does can be seen in blue, and the bucks are seen in orange.

These numbers are very conservative estimates, and the population is likely even denser, the summer/spring conditions make getting an accurate representation of population size increasingly difficult. During this time of year does are shrinking their respective home ranges in anticipation of fawning which also leads to a lesser detection rate. In addition, fawning season is now active with does dropping an average of 1.9 fawns per year. This obviously adds a large number of deer to the herd, especially given other studies which have indicated fawn survival rates of 70% which is 30% higher than their rural counterparts (Carter 2017). It is worth noting that the camera surveys occurred within green spaces and parks; it is a tenuous assumption that deer densities within the more heavily residential or commercial areas of Dublin are as high as more natural habitats; however, urban white-tailed deer are extraordinarily adaptable and integrate into highly developed matrices easily. The frequency of vehicle-based observations that occurred in lawns and residential areas is proof of this. Glacier Ridge metro park which is roughly 1000 acres and comparable in size to our survey area counted 110 deer the year before starting culling program, but after three years of continued removal, have successfully lowered the number of deer within the park to 81 at the most recent count this February (Kasnyik 2023).

While the roadside counts do not provide a reliable estimate of density, they do show promise to track trends if roadside transects were established and repeated in a consistent manner through time. To advance this effort, an expanded camera survey in the autumn would be a good idea. For an even better though much more logistically-demanding and expensive estimate, employment of a helicopter to fly the municipality with snow cover during winter can provide highly reliable estimates; this method is currently being used to survey Glacier Ridge Metro Park.

Objective 2 Assess Vegetation for Signs of Deer

Methods

The vegetation survey sites were chosen based on selective randomization. The areas needed to survey included high deer traffic area, high human traffic area, riparian forest, mature forest stand, young forest stand, honeysuckle thicket, and forest edge. To understand what a control situation would be, the deer exclosures at Glacier Ridge Metro Park (McBride) were visited. The vegetation began to have a lot of sapling growth, whereas outside the exclosure there were no saplings.

Once the areas were chosen a range finder was used to make a 10-meter radius around a center point. The center point was marked on Caltopo for record, and the coordinates were also recorded on paper. The edges were marked with flagging tape in four directions. Using plant identification apps, the plants within the circle were recorded and sorted into the type of plant it was which included ground cover (GC), shrubs (S), and trees (T). After identifying all the plants, the percent makeup of the plants was determined within each plant group, if there were 5 GC plants then the density makeup of those plants would add up to one hundred percent, the same for the shrubs and trees (see table 1).

Table 1: A table used in one of the vegetation surveys. The score meanings are listed below.

Observer Name: Group					
Center Point: 40.12156, -83.10384					
Date: 5/17/23					
Species	**% Makeup**	**Score**	**Other Comments**		**Type**
Sedge	5	3			GC
Virginia Creeper	15	0			GC
Poison Ivy	5	2			GC
Cudweed	5	2			GC
White Avens	10	1			GC
Japanese Honeysuckle	60	0			S
Amur Honeysuckle	20	1			S
Privet	60	1			S
Multiflora Rose	5	0			S
Grapevine	15	0			S
Elm	80	1			T
Dogwood	15	2			T
Maple	5	2			T

Score	Description
0	No impact
1	Low impact 1-25% browsed.
2	Low-moderate impact 26-50% foliage browsed, stem or rubbing damage.
3	Moderate-high impact 51-75%, multiple stem breakage or severe rubbing damage
4	High impact 76-100% foliage browsed or extreme rubbing damage.

The amount of deer damage or browsing would be assessed according to the National Feral Deer Action Plan (NSFAP 2022); the meaning of these scores can also be found under table 1. Deer damage included rubbing which is the action of a buck scratching his antlers on a tree which will leave a mark (see figure 6), and the severity of deer browsing was also considered (see figure 7). Vegetation assessments were conducted ten times in different locations spread throughout Dublin, the areas chosen needed to be within the open spaces and parks. It was necessary to have varying kinds of habitat, these kinds included riparian corridors, mature forest stand, young forest stand, high deer traffic areas, high human traffic areas, and honeysuckle thickets. A mature forest stand would be a forest that has trees of varying ages but there are many large trees that would be old, and a developed understory. A young forest would have trees that are likely close in age and are rapidly growing, the understory has not had much time to develop yet. High deer traffic areas were depicted by areas that had many deer tracks where "highways" (repeatedly used areas that deer use to walk) have developed. High human traffic areas included areas that were close to neighborhoods, sidewalks, trails, roads, or any combination of these characteristics. Finally, a honeysuckle thicket was characterized by an area

that had so many honeysuckle bushes that the area was hard to get into and there are not many other species growing in that area because the honeysuckle is too established to let them grow. Having a diverse habitat selection like this would provide data on the kind of vegetation the deer would eat in different environments and situational settings.

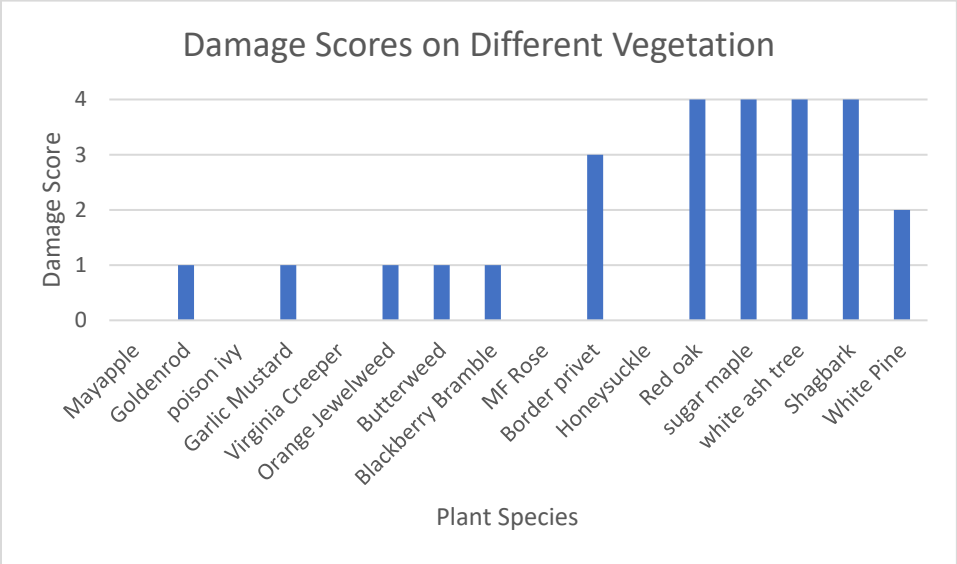


Figure 5: A graph showing the damage scores for each of the plants in this survey area (this graph is in a different area from the vegetation survey table). Ground cover had the least amount of damage, shrubs had a medium amount of damage, and trees had the most.

Results

When comparing to the control site area located in Glacier Ridge Metro Park, it was found that there was evidence of browsing to the vegetation by deer in all ten areas surveyed. There was a significant browse line that could be seen in almost every survey plot excluding the honeysuckle thicket which did not have many deer in it; another reason the thicket was left alone was because the deer showed a preference to not eat the invasives, and Amur honeysuckle is one of them. In most of the areas surveyed there was a significant amount of browsing to the plants, most of their browsing was focused on the trees and tree saplings, there was some browsing to the shrubs and little browsing to the ground cover (see figure 5). Other than the deer eating the vegetation (see Figure 7), there was significant damage to the smaller trees where bucks were

Figure 6: A picture of a rub mark on a beech tree in Thaddeus Kosciuszko Park that had been used by bucks to scratch their antlers. These marks show severe damage and is likely from several different bucks.

rubbing their antlers on trunks (see figure 6). The plants that are being selected the most by the deer are beech, maple, and ash trees; most of the impacts came from the deer eating the saplings, but they also were scratching the trees which was accounted for as damage as well.

Discussion

The deer are creating significant impacts on the plants, so much so that most saplings are suppressed and stunted which impacts forest regeneration, plant diversity, and the health of the green spaces in Dublin. The invasive species like Amur honeysuckle, multiflora rose, privet, and grapevine, which are within the deer's preferred browsing area of six feet and below, are mostly being left alone by the deer. The ash trees are not a preferred source of food by deer, but as seen in figure 5, they are being browsed a lot even in the presence of other tree species that they prefer more, such as maple and oak. This evidence indicates that deer are becoming more desperate for a food source which yet another indicatorthat there are too many deer in the area to healthily support them all without ill consequences on the environment. Excessive rubbing on trees, especially when many bucks are rubbing on the same tree can leave an open wound on the trees which can make them more susceptible to diseases and pests killing the tree. Bucks will choose to rub only on the thinner trees because they are able to fit their antlers around them, thinner trees are also younger. Since the deer are not eating the invasive plants and only eating and rubbing on the native plants, a synergistic negative effect of white-tailed deer with invasive plant species expansion and establishment is likely occurring. With fewer deer in Dublin, that would give the native plants more of a chance at survival and combined with the efforts of invasive removal then the results would increase their chances even more. By both decreasing the deer

population and the invasive plants, the biodiversity of the forests will increase, and the native

Figure 7: Butterweed plant that had been browsed on by deer.

plants will have the best chance at survival.

Objective 3: Establish a Citizen Survey Based Upon Experience and Opinion of Deer

Methods

Survey questions were written in a non-biased tone to ask the citizens of Dublin what their opinions of the deer population were. Some questions were reused and revised from the Wildlife Society Bulletin (Kilpatrick 1997). The specific questions asked can be found in the appendences below. The questions were sent to Dublin's communications team conducted the survey, how their team conducted the survey is unknown. The survey was active for five days.

Results

There were 297 responses from the citizens of Dublin after the five days it was out. From those results it was found that fifty percent have negative or neutral experiences with the deer. Fifty percent said the population needs to be managed. Forty-two percent said there are too many deer. About seventy-five percent have seen property/plant damage from the deer. Finally, ninety-five percent have seen a deer on their property (see figure 8). There were some people who had left additional comments on the behavior of the deer such as one person remarking that the deer

Figure 8: A pie graph showing the number of citizens who have seen a deer on their property. The people who said yes are shown in orange, and for those who said no, they are shown in blue.

in Thaddeus Kosciuszko Park as being very aggressive. Another person stated that they have had does leave their fawns in their bushes and two people said that the does are very aggressive.

Discussion

Many of the citizens assumed that management only meant hunting the herd, which is an option, but it is not the only one. Having hunting and culling programs can be completed without the greater public knowing. When meeting with Kevin Kasnyik, Columbus Metro Parks Head of Resource Management, he said that they publicly inform the people that the raffle for their hunting program is open (Kasnyik, 2023). Dr. Karns, who lives next to Sharon Woods metro park, said that he had no idea that deer culling occurs until he was told so by the park manager related to another project (Karns, 2023). Public transparency can help a highly controlled hunting

program or culling operation succeed without creating too much attention in the occasion that some of the public are apprehensive about a culling or hunting program.

Another option for managing the herd would be using contraceptives on the does which would prevent the herd from growing. This option would take time to see results from, rather than an immediate response from hunting. By decreasing the birth rate for Dublin and the death rate staying the same it will take time since the deer would be dying from old age, disease, and possibly car collisions, the population will steadily decrease. Contraceptives are expensive since they require the actual contraceptives, conducting live captures, and reapplying the contraceptives to new deer, which will all add up quickly. Although this route would likely to be supported by the public the most due to the amount of concern about hunting, the only issue may be is if the public is willing to pay for the contraceptives and the work that goes into applying them.

The public seem to have split opinions on whether they would like action to be taken to manage the deer herd or to leave them alone. Many of the citizens have shown that there are many negative experiences that they have experienced and if the deer herd was managed these concerns would decrease. Some of the citizens voiced concern about having less deer and how much they enjoy them, but even if the herd is managed there will still be deer for them to enjoy. Despite what management action is taken it is important that an action plan must be started because the public are seeing a lot of damages to their property, their vehicles, and even themselves when some deer become hostile.

Conclusion

The deer herd in Dublin, Ohio is overpopulated and the data that was collected for this report proves just that. The camera traps helped find an estimate of 50-85 deer per square mile and a healthy number is between 20-25 deer per square mile. And these numbers are likely conservative. The tree saplings are all being eaten by the deer and the invasives are not, so biodiversity is likely decreasing. The deer are showing that they are becoming more desperate for food by eating vegetation that they would usually not eat. The public seems split on wanting the herd to be managed, although many have agreed that they have taken damage to their property or vehicles. All that being said, the city of Dublin needs to continue gathering

information on their deer herd, on the health of the habitat, and on public attitudes and they begin discussion of potential management action. Whether a culling or hunting program or using contraceptives on does, all evidence points to an overabundant white-tailed deer population. Without action. the deer population will continue grow leading to increased amounts of negative citizen-deer interactions and habitat degradation.

Literature Cited

Goliver, Emily. 2023. Personal interview. Interview conducted by Willeke, Evan., Huddleston, Davina., Branch, Shannon. Interview conducted on May 11th, 2023.

Jacobson, Harry., McKinley, William., Demarais, Stephen. 2000. Using Infared-triggered Cameras to Survey White-Tailed Deer in Mississippi. Research Advances: Forest & Wildlife Research Center. Vol. 5, No. 3. https://mrmpros.com/wp-content/uploads/2012/07/Using-Cameras-to-Survey-Whitetailed-Deer-in-Mississippi.pdf

Karns, Gabriel. 2023. Personal interview. Conducted by Willeke, Evan., Huddleston, Davina., and Branch, Shannon. Interview conducted May 21st, 2023.

Kasnyik, Kevin. 2023. Personal interview. Conducted by Willeke, Evan., Huddleston, Davina., Branch, Shannon. Interview conducted on May 16th, 2023.

Kilpatrick, H. J., and W. D. Walter. 1997*a*. Urban Deer Management: A Community Vote. Wildlife Society Bulletin (1973-2006) 25:388–391.

McBride, Benjamin., Schumacher, Christian., Tran, Lucas., Burack, Nick. May 2021. Deer Exclosure Study. The Ohio State University, ENR 4900.02. https://osu.instructure.com/courses/143892/files/54474710?wrap=1

NFDAP. 2022. Field manual for assessing deer density and impacts on forested vegetation. National Feral Deer Action Plan. https://feraldeerplan.org.au/wp-content/uploads/2022/03/Assess-deer-density-and-impacts_Field-survey-protocol.pdf

Timothy C. Carter. 2017 Seasonal and annual space use of white-tailed deer in urban and rural southern Indiana. https://cardinalscholar.bsu.edu/handle/123456789/201070

Witmer, Gary W., DeCalesta, David S.. 1991. The Need and Difficulty of Bringing the Pennsylvania Deer Herd Under Control. *Digital Commons @ University of Nebraska – Lincoln* https://digitalcommons.unl.edu/ewdcc5/45?utm_source=digitalcommons.unl.edu%2Fewdcc5%2F45&utm_medium=PDF&utm_campaign=PDFCoverPages

Appendix

Appendix A: The detailed methods and procedures provided by Mississippi FWRC
https://mrmpros.com/wp-content/uploads/2012/07/Using-Cameras-to-Survey-Whitetailed-Deer-in-Mississippi.pdf

Appendix B: Camera trap numbers and their respective locations
https://docs.google.com/spreadsheets/d/1M9yetv9Dv44_8BOtWqvyDz0IZKsf-93yb-CEaZShX5Q/edit?usp=sharing

Appendix C: The vegetation survey records that includes the coordinates, species seen, percent makeup of those species, the impact score from the deer, and other comments on the area. There are also graphs of each area that include the species and the deer impact score.
https://drive.google.com/file/d/1Oks8fgSTEYhFbwzBtK3gnehCBrnE6GsD/view?usp=drive_link

City of Dublin
OHIO, USA

Deer Management – Herd Population Report

June 13, 2023

Emily Goliver, Management Analyst

Background

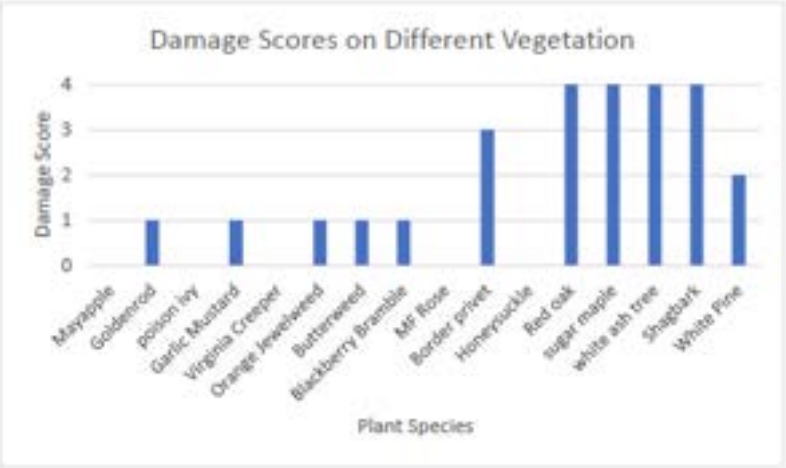
- February 8, 2022 – staff presented on the City's wildlife management program
- February 14, 2023 – staff provided an update specific to the deer management program
- May 9th through May 26th – students at Ohio State conducted a survey to determine the size of Dublin's deer heard

Field Survey

- Road sightings at dawn and dusk
  - Divided the city using Avery-Muirfield Dr., Muirfield Dr. and Avery Rd. as the north/south transect and Brand Rd. as the main east/west transect
- Camera traps
  - 10 camera traps throughout the city (Coffman Park, Trabue, Brandon Open Space "A" and "B", Wedgewood Hills Park, Thaddeus Kosciuszko Park, Wyandotte Woods Open Space "C", Tartan Ridge Open Space "E", Riveria Reserve D2 and Heather Glen Park)
  - Identify unique bucks based on antler growth and number of times each was photographed

Vegetation Assessment

- Focused on areas of high deer traffic, high human traffic, riparian forest, mature forest stand, young forest stand, honeysuckle thicket and forest edge
- Compared results to a control study ongoing at Glacier Ridge Metro Park



Community Survey

How would you describe your experience with white-tailed deer in the City of Dublin?	
Negative	74
Neutral	73
Positive	150

Do you think the white-tailed deer population in Dublin is increasing and needs to be managed?	
The white-tailed deer population is increasing and should be managed	150
There is no need to manage the white-tailed deer herd in Dublin	147

Have you seen a white-tailed deer on your property?	
No	17
Yes	219

Do you think there are too many white-tailed deer an acceptable number, or too little number in Dublin, Ohio?	
Acceptable amount of white-tailed deer	163
Too little white-tailed deer	8
Too many white-tailed deer	126

What negative experiences have you or a member of your household had with white-tailed deer in Dublin?	
Deer/vehicle collision or almost collission	29
Lyme's Disease from Deer Tick	2
Other	47
Plant/Property Damage	219

Results

- The survey team estimates that there are approximately 50-85 deer per square mile in Dublin. A healthy amount is 20-25 per square mile
- Deer browsing is having a negative impact on the forests by stunting regeneration and damaging mature trees

Recommendation

Staff will continue to engage with OSU to determine the appropriate next steps based on the report. Staff will provide a report to CSAC regarding these efforts at a future meeting.

City of Dublin

Office of the City Manager
5555 Perimeter Drive • Dublin, OH 43017
Phone: 614.410.4400

Memo

To: Members of the Community Services Advisory Commission

From: Robert E. Ranc, Jr., Deputy City Manager
Emily Goliver, Management Analyst
Barbara Ray, Nature Education Coordinator

Date: February 7, 2023

Re: Deer Population Management Update

Background

At the February 8, 2022 meeting of the Community Services Advisory Committee (CSAC), staff provided a presentation regarding the City's wildlife management program. The memo and presentation from that meeting are attached for reference. Since that time, staff has conducted additional research regarding deer management specifically. This memo provides a summary of staff's additional research and steps moving forward.

Summary

To understand the current state of the deer herd and potential next steps, staff researched the following points:

1. The historic trend of deer/vehicle accidents in the last 5 years
2. Historic trend of deer-related complaints in the last 5 years
3. Map of the 2022 deer-related accidents
4. The cost and logistics of a deer population assessment

Historic trend of deer/vehicle accidents in the last 5 years

The information below is compiled from police reports. The data may not accurately reflect the total number of collisions. Some drivers only report the accident to the police department if there is damage or injury in order to support a car insurance claim. Minor damage in the chart below encompasses functional and minor damage to vehicles, as reported by the responding officer. Significant damage is defined as disabling damage in the police reports.

Year	Number of Collisions	# Resulting in Minor Damage	# Resulting in Significant Damage	# of Collisions Resulting in Injury
2015	11	10	1	2
2016	13	10	3	0
2017	13	11	2	2
2018	10	10	0	0
2019	10	8	2	2
2020	21	19	2	5
2021	12	8	4	1
2022	11	8	3	1
TOTAL	**101**	**84**	**17**	**13**

The number of collisions increased significantly in 2020, which is in line with the overall spike in crashes across the country that year. Due to the pandemic, the number of drivers on the road at any given time was lower. The reduced traffic led to motorist driving faster, limiting their ability to control their vehicle and avoid hitting a deer.

Historic trend of deer-related complaints in the last 5 years
In an attempt to determine the density, staff analyzed GoDublin requests for dead animal removal in 2022. 85 deer-related dead animal reports have been received this year. A map of the deer-related dead animal reports can be found here:
https://dublinohio.maps.arcgis.com/apps/dashboards/54168123d29d400bad87b89aa0d9a88c

Based on the above map, staff has determined that the heard is well distributed throughout the city. There is no one area where the heard is more dense.

Map of the 2022 deer-related accidents
A map of animal crashes in 2022 is attached. This map was provided by the division of Transportation and Mobility based on their crash report data. Though the crash reports that T&M receives are generally animal related and not specific to deer, the locations identified match the locations on the deer-related police accident reports.

The cost and logistics of a deer population assessment
Hiring a consultant to conduct a population assessment can be expensive. As an alternative to hiring a consultant, staff engaged with The Ohio State University School of Environment and Natural Resources (OSU School of ENR) to determine if they have the ability to determine the density of the deer herd in Dublin. OSU's School of ENR hosts a Maymester capstone course each year in which the students partner with organizations to provide solutions to real-world problems. The OSU School of ENR has agreed to work with the City to provide an analysis of the City's deer herd. Students in the 3-week course will work with the City to provide population estimates for Dublin's herd. This assessment is free to the City.

In order to collect the field data, the students will use two industry standard methods. The first is a pellet count survey, which consists of tracking down deer droppings and using industry data to estimate the population and density of the herd. Additionally, the students will conduct a trail camera survey. The survey consists of setting up cameras in various locations around the city and review the footage to count unique deer that pass by.

The first week of the course will consist of the students conducting interviews with key stakeholders from city staff, establishing goals for the project, and drafting an action plan for data collection. The second week will be used for data collection in the field. During the final week, the students will draft a report and present their findings. The course's professor will review and edit the reports, which will then be shared with the City.

Recommendation

This memo is for information only. Staff will provide an additional follow-up report to CSAC after reviewing the findings from The Ohio State University's study.

Animal Crashes
Jan 1, 2022 through Nov 30, 2022

4,000 Feet

City of Dublin
OHIO, USA

City of Dublin

Department of Public Service
6555 Shier Rings Road • Dublin, OH 43016
Phone: 614.410.4404

Memo

To: Community Services Advisory Commission

From: Dana L. McDaniel, City Manager

Date: February 1, 2022

Initiated By Robert E. Ranc, Jr., Deputy City Manager/Chief Operating Officer
Christine Nardecchia, Director of Outreach and Engagement
Barbara Ray, Nature Education Coordinator

Re: Nature Education Overview and Wildlife Management

Background

At its January 11, 2022 meeting, the Community Services Advisory Commission (CSAC) requested City Council to refer several items for CSAC's review. One of the items was the City's wildlife management program. At its January 24, 2022 meeting, City Council referred the wildlife management program for CSAC's review. Accordingly, City staff will provide an outline of the City's nature education and wildlife management program, with a focus on recent issues, current trends, solutions, and successes of the program.

Established as a position in 2003, the City's Nature Education Coordinator fulfills a multi-faceted role that encompasses 1) educating the public and staff on nature and wildlife through classes and educational materials, 2) serving as the liaison for the City's contractual relationship with the Ohio Wildlife Center and SCRAM!, 3) overseeing Dublin's Community Wildlife Habitat Certification, including the Community Gardens at Darree Fields, and 4) advising, advocating for, and expanding programs that promote the peaceful co-existence with native wildlife. Nature Education Coordinator Barbara Ray works collaboratively with all work units within the City, particularly Parks and Recreation, Code Enforcement, Police, Public Service, Communications and Public Information, Recreation Services, and Outreach and Engagement. She also works with numerous volunteer initiatives in conjunction with the Outreach and Engagement Division, including water quality monitoring, bluebird trail monitoring, park ambassadors, and corporate, civic, and scouting groups serving the City's parks and waterways.

A key function of this position is wildlife monitoring and management. The Nature Education Coordinator works with residents, neighborhoods, and staff to observe, keep data, report patterns, and find solutions to numerous issues involving wildlife. The coordinator also responds to phone calls, e-mails, social media inquiries, and in-person requests for wildlife understanding and assistance. The City's wildlife management program currently focuses on preventing unwanted or dangerous interactions with wildlife through public education. Attached to this memo are five examples of educational materials that assist Dublin residents in understanding how best to live with wildlife in the community.

Recommendation

This information is provided as background material to understand the City's current nature education and wildlife management efforts. Staff will address any questions and recommendations CSAC may have regarding the City's efforts in these areas.

Please contact Barbara Ray, Nature Education Coordinator at 614-410-4730 or bray@dublin.oh.us for further information or with any questions.

Attachments:

- 7 Steps of Coyote Behavior and Alert
- Living with Wildlife – Deer
- Living With Wildlife – Fox
- Living With Wildlife – Preventing Wildlife Invaders
- Living With Wildlife – Skunks

City of Dublin
OHIO, USA

WILDLIFE MANAGEMENT IN THE CITY OF DUBLIN

NATURE EDUCATION COORDINATOR

FEBRUARY 8, 2022

NATURE EDUCATION HISTORY

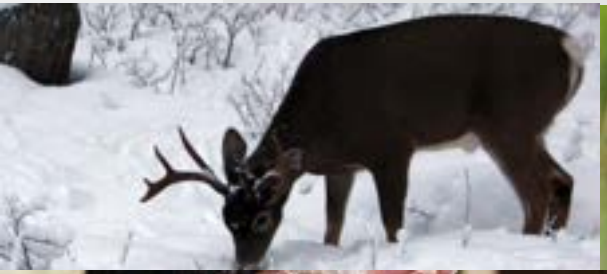
NATURE EDUCATION HISTORY

- Position established in 2003
- Works closely with community volunteers and Dublin residents
- Works collaboratively with several City work units
  - Parks & Recreation
  - Public Service
  - Police
  - Code Enforcement
  - Recreation Services
  - Communication & Public Information
  - Outreach & Engagement
- Housed in the City of Dublin Service Center, 6555 Shier Rings Road, Dublin OH, 43016

NATURE EDUCATION HISTORY

- Established the Ohio Community Wildlife Cooperative with OSU
- Established SCRAM! contract for Goose Control in 2004
- Received the NWF Community Wildlife Habitat Certification in 2011
- Bluebird Trail and Water Quality Monitoring and Park Ambassadors Volunteer programs

NATURE EDUCATION PURPOSE



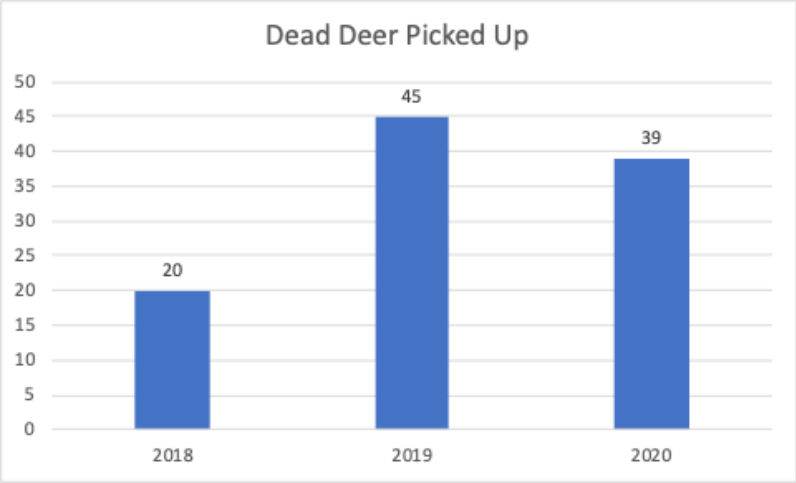
NATURE EDUCATION PURPOSE

- Environmental education programs
- Lead special activities- Scioto River Clean Up, Earth Month, Fishing Derby
- Wildlife information and management recommendations
- Data monitoring for water quality, bluebirds and various flora and fauna
- Coordinates the City's contractual relationship with The Ohio Wildlife Center and SCRAM!
- Promote peaceful co-existence with native wildlife through programs, events, HOA's, schools, social media

NATURE EDUCATION BY THE NUMBERS

NATURE EDUCATION BY THE NUMBERS: 2021

- 97 GoDublin Service Requests for wildlife issues
- 227 Wildlife Call Inquiries
- 38 Community Garden Inquiries
- 415 Deceased Animal Requests (98% pick ups by Public Works)
  - 91 Deceased Deer Pick Ups
- 673 Injured, sick, orphaned animals to OWC from Dublin
- 126 Animals to Crows Hollow Wildlife Care (Union County) from Dublin



WILDLIFE MANAGEMENT

DEFINING URBAN WILDLIFE MANAGEMENT

- **A Complex Process**
- Wildlife management typically includes:
  - Developing goals and policies
  - Setting objectives
  - Choosing and implementing actions
  - Monitoring and evaluating outcomes
  - Revisiting goals, policies, and objectives with new insights derived from evaluation.
- Involving partners and other stakeholders contributes to the complexity of the wildlife management

WILDLIFE CONFLICTS 2021: DEER, COYOTE, BEAVER

- **41 Deer Vehicle Accidents (DVA)**
  - Per PD records – up from 32 in 2020
  - 2 DVA listed as resulting in injuries
- **16 Deer damage complaints**
  - i.e. gardens, trees, etc.
- **3 Deer feeding complaints**
- **3 Coyote complaints**
  - Coyote acting tame or approaching dogs
- **28 Beaver Complaints**
  - Tree damage, flooding, dams.
  - Commonly in Riviera, Tartan West, Belvedere, and Kiwanis Park
  - Parks receives many additional complaints and is currently managing deterrents and dam removal

WILDLIFE MANAGEMENT IN ACTION: DEER

Dublin Responds When:

- Deer collisions occur (PD responds)
- Deceased deer pick ups (through GoDublin)
- Resident inquiries about fawns, deer approaching dogs or humans, deer attacks on dogs, deer observed to be injured or ill, deer observed entrapped
- Resident complaints about landscape damage
- Resident complaints about neighbors feeding deer
- Requests for deterrent ideas and landscape methods

DEER MANAGEMENT PLAN

- **Determine IF there is a "deer problem"**
- Monitor the 2 key indicators of a true "deer problem" in a city:
  - 1 – Public Tolerance
  - 2 – Habitat Integrity

- **Tolerance** is measured through numbers of deer damage and safety complaints/amounts and Deer Vehicle Accident numbers
- **Habitat** is assessed by deer damage to habitat, browse line, deer condition and reproduction

DEER MANAGEMENT PLAN

Why Not Population Assessment?

- Can be done if necessary
- Expensive, not completely accurate and open community experiences emigration and immigration
- Multiple methods but best options are infrared arial survey
- Thermal imaging cameras, grid surveys, trail cams – much less accurate and not as useful as habitat assessment

DEER MANAGEMENT PLAN

- **Dublin focuses on public education and co-existence practices**
  - Deer signage, plantings, deterrents, hazing, NO Feeding
  - Staff will also be working with Performance Analytics to map deer accidents and coyote sightings to track trends
- **Physical Control Methods**
  - An array of physical methods may be used if actual deer population increases to the point of intolerance or increased safety issues
  - Dublin does not use physical control methods at this time
- Dublin hosted the Deer Management Workshop in 2018 and the 2022 workshop is planned for the Dayton area in April

WILDLIFE MANAGEMENT IN ACTION: COYOTE

- **Prevention: SMART Coyote Education**
- Monitor and map coyote sightings
- Investigate reports of abnormal behavior
- Alter human behavior (lights, leashes, accompany pets at dusk and dawn)
- Hazing
- Signage and barriers; leash reminders for parks and open space
- Assess with ODNR and removal of an individual coyote if determined to be a genuine threat to pets or people

WILDLIFE MANAGEMENT IN ACTION: BEAVER

- **Currently, beaver are more of an issue in Dublin than deer or coyote**
- Complaints and inquiries several times per week
- Plants and trees damaged and downed on private property and city property
- Dams rebuilt within 3 days of taking them down
- Flooding of yards and sump pump issues in some residences
- Running water cues beaver to create dams to stop water flow

WILDLIFE MANAGEMENT IN ACTION: BEAVER

- **Living with beaver:**
- Wrap or paint key trees
- Remove cut plants and tree limbs (to prevent food and food stores)
- Remove dams
- Stop sound of flowing water- turn off pond fountains for a few weeks; underwater piping underneath beaver dams
- Beaver usually move on to new areas every 2-3 months
- Scioto River is source of constant beaver traffic

LIVING WITH WILDLIFE

- Dublin has extensive wildlife education resources for the community:
  - Living With Wildlife help sheets
  - Website information and VIDEOS such as Wildlife Encounters safety training and What to do about Skunks
  - In-person and virtual programs
  - All Animal Resource Phone List
  - Barbara Ray- phone or email!

City of Dublin
OHIO, USA

THANK YOU!

Living with Wildlife: Deer

Although browsing deer are fun to watch, they can cause damage by feeding on plants and rubbing antlers against trees. In urban areas, home landscapes may become an appealing source of food. Damage is most commonly noticed in spring on new growth. Because deer lack upper incisors, browsed twigs and stems show a rough, shredded surface. Damage caused by rabbits, on the other hand, has a neat, sharp 45-degree cut. Rodents leave narrow teeth marks when feeding on branches.

Management Strategies

Spooking deer with flashing light, sprinklers or dogs in the yard typically provides only temporary relief. More practical management strategies include selecting plants unattractive to deer, treating plants with deer repellents, netting and tubing, and fencing.

Placement and Selection of Plants

The placement of plants in part determines the extent of damage. Plant more susceptible species near the home, in a fenced area, or inside a protective ring of less-preferred species. Table 1 lists plants and their susceptibility to deer damage. A hungry deer will find almost any plant palatable, so no plant is "deer proof." Also, a plant species may be damaged rarely in one area but damaged severely in another.

Repellents

The two types of deer repellents are contact repellents and area repellents. Contact repellents are applied directly to plants, causing them to taste bad. Area repellents are placed in a problem area and repel by their foul odor. Repellents are more effective on less preferred plants.

Apply repellents on a dry day with temperatures above freezing. Treat young trees completely. Older trees treated only on their new growth. Treat to a height about 6 feet. Deer browse from the top down. Hang or apply repellents at the bud or new growth level of the plants you wish to protect.

A spray of 20 percent whole egg yolk and 80 percent water is one of the most effective repellents. (To prevent the sprayer from clogging, remove the chalaza or white membrane attached to the yolk before mixing the eggs.) The egg mixture is weather resistant but must be reapplied in about 30 days.

Netting and Tubing

Tubes of Vexar netting around individual seedlings are an effective method to reduce deer damage to small trees. These tubes can protect just the growing terminals or can completely enclose small trees. Attach tubes to a support stake to keep them upright.

Tubes placed around the trunks of larger trees will help prevent trunk damage. Tubes may not, however, protect trunks from damage when bucks use the trees to scrape the velvet off their antlers. Fencing may be required.

Fencing

Adequate fencing to exclude deer is the only sure way to control deer damage. Fencing in urban neighborhoods is used most frequently as a temporary structure in summer to protect vegetable gardens. The conventional deer-proof fence is 8 feet high and made of woven wire. Electric fences also can be used. Electric fences should be of triple-galvanized, high-tensile, 13.5-gauge wire carrying a current of 35 milliamps and 3,000 to 4,500 volts. Several configurations of electric fences are used: Slanted three to five-wire and single strand for example.
Single-wire, electric fences should be baited with peanut butter. Attach 3-4" squares of aluminum foil smeared with peanut butter. The baited wire attracts deer to the fence instead of what's inside the fence. They administer a safe correction that trains the deer to stay away. They are effective for small gardens, nurseries and orchards (up to 3 to 4 acres) that are subject to moderate deer pressure. Deer are attracted by the peanut butter and encouraged to make nose-to-fence contact. Deer, like many wild animals, seem to respect and respond better to electric fencing after they become familiar with the fenced area.

Table 1. Plants and their relative susceptibility to deer browsing.

Often browsed	Sometimes browsed	Rarely browsed
Flowers		
Geranium, wild (*Geranium fremontii*)	Lupine, silver (*Lupinus argenteus*)	Black-eyed susan (*Rudbeckia* sp.)
Low sunflower (*Helianthus pumilus*)	Pasque flower (*Pulsatilla patens*)	California fuchsia (*Zauschneria* sp.)
Nodding onion (*Allium cernuum*)	Prairie coneflower (*Ratibida columnifera*)	Daffodils (*Narcissus* sp.)
Penstemon, low (*Penstemon virens*)	Salvia (*Salvia reflexa*)	Gaillardia/blanketflower (*Gaillardia aristata*)
Phlox, common (*Phlox multiflora*)	Scarlet gilia (*Ipomopsis aggregata*)	Gayflower (*Liatris punctata*)

Pussytoes, rose (*Antennaria rosea*)	Tall coneflower (*Rudbeckia lacinata*)	Grape hyacinth (*Cynoglossum officinale*)
Strawberry (*Fragaria* sp.)	Western wallflower (*Erysimum asperus*)	Larkspur (*Delphinium nelsonii)*
Tulips (*Tulipa* sp.)	Wild iris (*Iris missouriensis*)	Lavender (*Ravandula* sp.)
		Mariposa lily (*Calochortus gunnisonii*)
		Mountain harebell (*Campanula rotundifolia*)
		Pearly everlasting (*Anaphalis margaritacea*)
		Purple coneflower (*Echinacea purpurea*)
		Russian sage (*Perovskia atriplicifolia*)
		Thyme (*Thymus* sp.)
		Yarrow (*Achillea* sp.)
Vines		
Grapes (*Vitis* spp.)	English ivy (*Hedera helix* var.)	Virginia creeper (*Parthenocissus quinquefolia*)
Trees and shrubs		
Apples (*Malus* sp.)	Alder (*Alnus tenuifolia*)	Apache plume (*Fallugia paradoxa*)
Aspen (*Populus tremuloides*)	Golden currant (*Ribes aureum*)	Blue mist spiraea (*Caryopteris x clandonensis*)
Mugo pine (*Pinus mugo mughus*)	Mountain maple (*Acer glabrum*)	Common juniper (*Juniperus communis*)

Rocky Mountain juniper (*Juniperus copulorus*)	Ninebark (*Physocarpus monogynus*)	Douglas-fir (*Pseudotsuga menziesii*)
Roses (most) (*Rosea* spp.)	Oregon grape (*Mahonia repens*)	Hawthorn (*Crataegus* sp.)
Wild red raspberry (*Rubus idaeus*)	Wild plum (*Prunus americana*)	Mountain mahogany (*Cercocarpus montanus*)
		Oregon grape (*Mahonia repens*)
		Pinon pine (*Pinus edulis*)
		Potentilla/cinquefoil (*Potentilla* spp.)
		Rabbit brush (*Chrysothamnus* sp.)

Table 2. Relative effectiveness of repellents tested on hungry, captive mule deer and elk in Colorado during 1989, 1991 and 1992. (Compiled by W.F. Andelt et al.)

Material	Deer	Elk
Hot Sauce® 6.2% hot sauce	High	Very High
Hot Sauce® 0.62% hot sauce	Medium	Medium
Hot Sauce® .062% hot sauce	Low – failure	Failure
Deer Away – same as Big Game Repellent	High	High
Chicken eggs (20% eggs, 80% water)	High	Medium
Coyote urine (100% urine)	High	High
Habanero peppers (8% pepper, 92% water)	Medium	Not reported
Tabasco sauce (50% Tabasco, 50% water)	Medium	Not reported
Thiram (labeled concentration)	Medium	Medium
Hinder (labeled concentration)	Medium	Medium
Soap (Lifebuoy)	Low-medium	Not reported
Ro-pel® (denatonium benzoate)	Failure	Failure

Ani-spray (denatonium benzoate, 3 x label) [a]	Failure	Not reported
[a] Products should not be used at rates above the labeled concentration.		

References

- Andelt, W.F. *Managing Deer in Colorado*. Outline for Master Gardener training in wildlife damage management. Department of Fishery & Wildlife Biology, Colorado State University.
- Craven, S.R. & Hygnstrom, S.E. Deer. 1994. *Prevention and Control of Wildlife Damage*. Extension, University of Nebraska.
- Jett, J.W. *Resistance of Ornamentals to Deer Damage*. Center for Agricultural & Natural Resources Development, Western Virginia University Extension Service.
- Krahmer, R.W. 1993. Reducing Deer Damage to Conifer Seedlings. *Hortus Northwest* 4:1-3.
- Mesner, H.E., Dietz, D.R. & Garrett, E.C. 1973. "A Modification of the Slanting Deer Fence." *Journal of Range Management* 26(3):233-235.
- Wiles, J. 1998. "Deer Management Options." *Landscape Management*, January, p. 16.

City of Dublin

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Memo

To: Members of Dublin City Council

From: Megan D. O'Callaghan, P.E., City Manager

Date: March 19, 2024

Initiated By: Philip K. Hartmann, Assistant Law Director
Emily Goliver, Management Analyst
Barbara Ray, Nature Education Coordinator

Re: Ordinance 05-24 – Amending Section 91.12 "Outdoor Feeding Prohibited" of the Codified Ordinances of the City of Dublin

Background

At the November 27, 2023 City Council meeting, Council approved Ordinance 47-23, an amendment to Section 91.12 of the City's codified ordinances. The purpose of the amendment was to address the deer population and density in residential areas. Upon further review of the language of the code, it has been determined that there is a narrow conflict with Section 91.06 of the code of ordinances. Section 91.06 defines a cat, regardless of where it is kept, as a companion animal. Thus, it is protected as such under the City's code.

To rectify this discrepancy, a revised version of the code amendment, which removes the reference to feral cats and excludes "companion animals" from the meaning of "wild animal" is attached.

Recommendation

To avoid conflicts within the Codified Ordinances of the City of Dublin, Staff recommends the adoption of Ordinance 05-24 at the second reading/public hearing on April 22, 2024. Staff will continue to refrain from enforcing this conflicting portion of Section 91.12.