



City of Garden Ridge

"A way of life, not just a place to live"

AGENDA
WILDLIFE MANAGEMENT ADVISORY COMMISSION
REGULAR MEETING
MONDAY, NOVEMBER 19, 2018, 6:00 P.M.

The Wildlife Management Advisory Commission will meet in a regular meeting at 6:00 p.m., Monday, November 19, 2018, in the City Council Chambers, 9400 Municipal Parkway, Garden Ridge, Texas. This is an open meeting, open to the public, subject to the Open Meetings Law of the State of Texas. As required by law, notice is hereby posted on November 16, 2018, before 5:00 p.m., providing time, place, date and agenda thereof. The meeting facility is wheelchair accessible and accessible parking spaces are provided. Requests for accommodations or interpretive services must be made to the City Secretary 48 hours prior to this meeting.

1. **Call to Order**
2. **Roll Call**
3. **Pledge of Allegiance**
4. **Wildlife Management Advisory Commission Chair Statement**
5. **Citizen Comment Period – limited to 30 minutes total**

Rules for Citizens' Participation:

The Wildlife Management Advisory Commission welcomes citizen participation and comments at all Commission Meetings. The Commission offers citizens the opportunity to address them by signing up to speak prior to the meeting. If you speak, you follow these guidelines:

- a) **Respect and courtesy:**
 - i. Direct your comments to the entire Commission, not to an individual member, nor to the audience.
 - ii. Show the Commission the same respect that you would like to be shown.
 - iii. End your speaking at the time allotted below.
- b) **Speaking:**
 - i. **First citizen comment period**
 1. You are required to sign up to speak.
 2. You are limited to one 3 minute period.
 - ii. **Business item period**
 1. You are required to sign up to speak.
 2. You are limited to one 3 minute period.
 - iii. **Second citizen comment period**
 1. You are not required to sign up.
 2. You are limited to one 2 minute period.
 - iv. **State your name and address before your comments begin.**
 - v. **You are only allowed to speak once per topic, unless also speaking during a posted Public Hearing.**

NOTE: The Texas Open Meetings Act permits a member of the public or a member of the governmental body to raise a subject that has not been included in the notice for the meeting.

*However, any discussion of the subject **must be limited** to a proposal to place the subject on the agenda for a future meeting and any response to a question posed to the Commission is limited to either a statement of specific factual information or a recitation of existing policy. TEX. GOV'T CODE § 551.042.*

6. Business Items

The Commission may discuss, consider and/or take possible action on the following items:

- a) Education/Training Session – Wildlife in Garden Ridge by Commissioner McKinney (limited to 20 minutes total).
- b) TTT Opportunities (Segovia).
- c) Commission Question and Answer Session with Craig Hensley, Texas Parks and Wildlife Biologist for Comal and Kendall Counties, to discuss wildlife management in Garden Ridge.
- d) Approvals/Recommendations
 - i. Minutes for October 17, 2018, Wildlife Management Advisory Commission Regular Meeting.
- e) Discussions/Reports
 - i. Review and discuss wildlife and wildlife incidents within the City of Garden Ridge.
 1. Police
 2. Animal Control
 - ii. Wildlife Management Plan.
 1. Deer Survey/Counts.
 - a. Update on Texas Parks and Wildlife deer count calculations.
 - b. Discussion on frequency of mailout surveys (Kneupper).
 2. Discussion of Texas Parks and Wildlife permits.
 3. Feral cat issues within the City (Sullivan).
 4. Status update on selection of company for trapping and/or transporting of deer in accordance with TTP and TTT permits.
- f) Updates/Recommendations
 - i. Commissioner's Projects
 1. Update on research performed on non-drug birth control studies (Segovia).
 2. Streater Reflective System for deer/vehicle collision reduction, cost and permission from Texas Department of Transportation, State of Texas, and Comal County (Hatch).
 3. Research on processing facilities and recipient wildlife charities for consumption of processed deer meat (Hatch).
 4. Research on processing facilities and recipient of human charities for consumption of processed deer meat (Segovia).
 5. The Humane Society of the United States management plan (Hatch).
 6. Health of wildlife in Garden Ridge.
 7. Update on future education/training sessions and Grapevine articles.
 - ii. City Council Update/Report
 1. November 7, 2018, City Council Regular Meeting.
- g) Future Agenda Items.
 - i. Commissioner input.
 - ii. Announcement of next Wildlife Management Advisory Commission Regular Meeting (Monday, January 28, 2019, at 6 p.m. at City Hall).

7. **Citizen Comment Period** - limited to 20 minutes total
See "Rules for Citizens' Participation" under Item 5.
8. **Adjournment**

AGENDA NOTICES:

Decorum Required:

Any disruptive behavior, including shouting or derogatory statements or comments may be ruled out of order by the Presiding Officer. Continuation of this type of behavior could result in a request by the Presiding Officer that the individual leave the meeting, and if refused, an order of removal.

Action by Council Authorized:

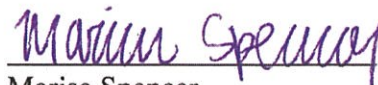
The Commission may vote or act upon any item within this Agenda. The Commission reserves the right to adjourn into closed session at any time during the course of this meeting to discuss any of the matters listed above, as authorized by Title 5, Chapter 551, of the Texas Government Code.

Executive Sessions Authorized:

This agenda has been reviewed and approved by the City's legal counsel and the presence of any subject in any Executive Session portion of the agenda constitutes a written interpretation of Texas Government Code Chapter 551 by legal counsel for the governmental body and constitutes an opinion by the attorney that the items discussed therein may be legally discussed in the closed portion of the meeting considering available opinions of a court of record and opinions of the Texas Attorney General known to the attorney. This provision has been added to this agenda with the intent to meet all elements necessary to satisfy Texas Government Code Chapter 551.144(c) and the meeting is conducted by all participants in reliance on this opinion.

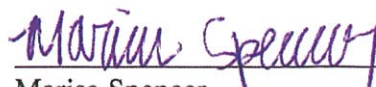
Attendance By Other Elected or Appointed Officials:

It is anticipated that members of the City Council, other city board, commissions and/or committees may attend the meeting in numbers that may constitute a quorum of the other city boards, commissions and/or committees. Notice is hereby given that the meeting, to the extent required by law, is also noticed as a meeting of the City Council, other boards, commissions and/or committees of the City, whose members may be in attendance. The members of the boards, commissions and/or committees may participate in discussions on the same items listed on the agenda, which occur at the meeting, but no action will be taken by such in attendance unless such item and action is specifically provided for on an agenda for that board, commission or committee subject to the Texas Open Meetings Act.



Marisa Spencer
Interim City Secretary

This is to certify that I, Marisa Spencer, posted this Agenda at 10:00 a.m. November 15, 2018, on the bulletin board located at the entrance to the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas.



Marisa Spencer
Interim City Secretary

From: [Craig Hensley](#)
To: [Jeremiah McKinney](#)
Subject: RE: Garden Ridge Phone Call
Date: Wednesday, October 17, 2018 10:10:41 AM

Jeremiah,

To address the issue of why not all the data submitted was used, the data form we use has enough room for 10 surveys, 14 were conducted. I fit in 10 – I did take a look at outliers and did not include them – the two low ones were so far out of normal they fell out – I had no idea who did them and it didn't matter to me – besides they were done within 24 hours of a previous one – I tried to pick those with some time in-between when possible. But to try and be consistent, I re-examined the survey data – surveys are to be conducted August and September into October ideally. With this in mind I threw out the two July surveys and started with 8.1.2018.

I then looked for the next survey that was at least seven days away, thus the second one used in the new formulation was 8.9.2018, I then went another seven days and took 8.16.2018, then took the next one at least seven days apart and that was 8.24.2018. I also included the 8.30.2018 survey – yes only six days away, so I calculated a number with it included and one without it included.

The results?

Not including 8.30.2018 the estimated population is 1,762. With 8.30.2018 included, the estimated population is 1,685, both higher than the calculation used for the presentation. Based on this, pro deer people should be upset because the numbers are even higher than my original calculation and those wanting to manage the deer should also be upset for the same reason. The bottom line is there are too many deer in the area and management must be considered.

There is no perfect survey methodology as you both know.

Naturally,

R. Craig Hensley

Wildlife Biologist, Comal & Kendall Counties
Texas Parks & Wildlife Department
140 City Park Road
Boerne, TX 78006
craig.hensley@tpwd.texas.gov
830.431.4102

DEER POPULATION SUMMARY

Ranch: Garden Ridge

Survey Technique: Spotlight & Herd Comp

County: Comal

Year: 2018

Survey Route/Pasture	Date	Deer Observed					Acres Sampled	Acres Per Deer	Deer Per 1,000 Ac.
		Bucks	Does	Fawns	Undet	Total			
Spotlight Survey	7.31.2018	18	44	16		78	198	2.54	393.7
Spotlight Survey	7.18.2018	3	44	36		83	198	2.39	418.4
Spotlight Survey	8.1.2018	16	71	62		149	198	1.33	751.9
Spotlight Survey	8.3.2018	17	62	39		118	198	1.68	595.2
Spotlight Survey	8.7.2018	4	43	32		79	198	2.51	398.4
Spotlight Survey	8.9.2018	13	59	47	3	122	198	1.62	617.3
Spotlight Survey	8.10.2018	15	64	44		123	198	1.61	621.1
Spotlight Survey	8.12.2018	11	62	34		107	198	1.85	540.5
Spotlight Survey	8.16.2018	6	70	47		123	198	1.61	621.1
Spotlight Survey	8.24.2018	11	56	41		108	198	1.83	546.4
Survey Totals		114	575	398	3	1,090	1,980	1.82	549.5
Incidental Observations									
Combined Totals		114	575	398		1,087			

Ranch Size (ac.): 2,780

Harvest Recommendation

Acres/Deer: 1.82

Does/Buck: 5.04

Fawns/Doe: 0.69

Antlered Bucks:

Composition -

Bucks: 10.5%

Does: 52.9%

Fawns: 36.6%

Antlerless Deer:

Deer/1,000Ac: 550.51

Adult/1,000Ac: 348.94

Acres/Adult: 2.87

Estimated Population -

Bucks: 160

Does: 809

Fawns: 561

Total: 1,530

Remarks:



City of Garden Ridge

"A way of life, not just a place to live"

MINUTES

WILDLIFE MANAGEMENT ADVISORY COMMISSION REGULAR MEETING

MONDAY, OCTOBER 15, 2018, 6:00 P.M.

Commissioners Present:

Chair David Krawczynski
Vice-Chair Cynthia Shanahan-Segovia
Commissioner Troy Bippert
Commissioner Dawn Hatch
Commissioner Jeremiah McKinney
Commissioner Ken Kneupper
Councilmember Robb Erickson (Ex-officio)

Commissioners Absent:

Commissioner Paul Sullivan (Voluntary Announced Absence)

City Staff Present:

Nancy Cain, City Administrator
Marisa Spencer, Interim City Secretary
Joe Thoemke, Patrol Officer

Other Appointed or Elected Officials in Attendance:

Mayor Pro-Tem John McCaw
Councilmember Bryan Lantzy
Councilmember Kay Bower
Dr. Jim Miller, Chair, Planning and Zoning Commission
David Ringle, Planning and Zoning Commissioner
Jesus Valdez, Water Commissioner

1. Call to Order

With a quorum of the Wildlife Management Advisory Commission members present, the regular meeting of the Garden Ridge Wildlife Management Advisory Commission was called to order by Chair Krawczynski at 6:01 p.m. on Monday, October 15, 2018, in the City Council Chambers of the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas 78266.

2. Roll Call

See above

3. Pledge of Allegiance

Chair Krawczynski led the Pledge of Allegiance.

4. Wildlife Management Advisory Commission Chair Statement.

Chair Krawczynski read a statement concerning Wildlife Management in the City (see attached). Chair Krawczynski also addressed that Craig Hensley, Texas Parks and Wildlife Biologist for Comal County, stated deer counts were conducted with spotlight surveys in Garden Ridge; however, all deer counts were uniformly conducted in daylight. Chair Krawczynski reiterated that the form used

was titled spotlight survey, which is why Mr. Hensley concluded the deer counts were conducted with spotlights.

5. Citizen Comment Period – limited to 30 minutes total

Lisa Connolly, 21559 Forest Waters Circle, spoke regarding feral cats in the City of Garden Ridge.

Terri Newsom, 25615 Lewis Ranch Road, spoke regarding feral cats and the method of trap, neuter, and return.

David Hatch, 8377 Twisted Oaks, spoke regarding the responsibilities of Texas Parks and Wildlife Department.

David Ringle, 9234 Blazing Star Trail, spoke regarding the use of contraception to manage wildlife in Texas.

Dr. Jim Miller, 9910 Marie Meadow, spoke regarding deer management. He also applauded the Commission for their efforts.

Linda Brossman, 9498 Cinchona Trail, spoke regarding the deer survey and deer management.

6. Business Items

The Commission may discuss, consider and/or take possible action on the following items:

a) Education/Training Session – “Birds that Bloom in the Texas Hill Country” by Patsy and Tom Inglet, Ornithology Specialists (limited to 30 minutes total) (Hatch)

Commissioner Hatch introduced Patsy and Tom Inglet and stated they are very happy to present the program called “Birds that Bloom in the Texas Hill Country” (see attached).

b) Approvals/Recommendations

i. Minutes for September 17, 2018, Wildlife Management Advisory Commission Regular Meeting.

Motion: A motion was made by Commissioner Kneupper, seconded by Vice-Chair Segovia, to approve the Minutes for the September 17, 2018, Wildlife Management Advisory Commission Regular Meeting. The Commission voted five (5) for and none (0) opposed. The motion carried unanimously.

ii. Receive recommendations and consideration of appointment of Wildlife Management Advisory Commission Chair and Vice Chair for a one-year term.

Motion: A motion was made by Commissioner Kneupper, seconded by Commissioner Bippert, to reappoint Commissioner David Krawczynski as Chair and Commissioner Cynthia Shanahan-Segovia as Vice-Chair of the Wildlife Management Advisory Commission for a one-year term. During the discussion of the motion, Chair Krawczynski stated he would like to step down as Chair and asked Vice-Chair Segovia if she would like to serve as Chair, adding that he would be open to serving as Vice-Chair. Vice-Chair Segovia stated she would be open to serving as Chair.

Motion Rescinded: Commissioner Kneupper and Commissioner Bippert rescinded their motion.

Motion: A motion was made by Commissioner Kneupper, seconded by Commissioner Bippert, to appoint Commissioner Cynthia Shanahan-Segovia as Chair and Commissioner David Krawczynski as Vice-Chair of the Wildlife Management Advisory Commission for a one-year term. The Commission voted five (5) for and none (0) opposed. The motion carried unanimously.

c) Discussions/Reports

i. Review and discuss wildlife and wildlife incidents within the City of Garden Ridge.

1. Police

2. Animal Control

Vice-Chair Segovia stated she spoke with Eric, Animal Services, and he reported that September was a light month regarding deer, but there has been an increase in October. She also spoke regarding bats in the elementary school, adding the bats were tested and none of them had rabies.

ii. Wildlife Management Plan.

1. Deer Survey/Counts.

a. Review of Texas Parks and Wildlife deer count calculations.

The Commission reviewed the Deer Population Summary provided by Texas Parks and Wildlife based on the deer counts conducted by Commissioners. Chair Krawczynski reminded everyone how this is just an estimate. Commissioner Hatch expressed concern on why the Deer Population Summary only included ten (10) deer counts when fourteen (14) deer counts were conducted. Councilmember Erickson stated that he and City administration would look into this area of concern.

2. Discussion of Texas Parks and Wildlife permits.

Chair Krawczynski stated the permits currently allowed by Texas Parks and Wildlife include: Trap, Transport, and Transplant (TTT), Trap, Transport, and Process (TTP) and a Research Permit.

3. Feral cat issues within the City (Sullivan).

Vice-Chair Segovia stated the City updated Ordinance 18 to comply with Texas regulations regarding feral cats.

4. Update on options available regarding trapping and/or transporting of deer.

Commissioner McKinney stated he looked into RMH Exotics' methods and design of trapping (see attached). He explained he is currently working on communicating with a property owner and Texas Parks and Wildlife regarding eligibility for Trap, Transport, and Transplant. Vice-Chair Segovia added they also spoke to Cherokee regarding trapping methods and costs. Chair Krawczynski thanked Commissioner McKinney and Vice-Chair Segovia for looking into these options.

Councilmember Erickson stated he would want to see more information regarding each company. Nancy Cain, City Administrator, stated a summary of services, costs, budget impact, and number of deer to be removed would be some examples of beneficial information to provide to City Council. Chair Krawczynski and Vice-Chair Segovia stated they would like to have more information on both companies before the November City Council meeting. The Commission discussed possible questions to ask each company.

Motion: A motion was made by Commissioner Kneupper, seconded by Commissioner McKinney, to recommend to City Council the use of RMH Exotics for the method of trapping deer. During the discussion of the motion, the Commission discussed the benefit of providing City Council with more than one option to choose from.

Motion Rescinded: Commissioner Kneupper and Commissioner McKinney rescinded their motion.

Motion: A motion was made by Commissioner Bippert, seconded by Commissioner McKinney, to recommend to City Council the use of either Cherokee or RMH Exotics for the method of trapping deer. The Commission voted four (4) for and one (1) opposed (Commissioner Hatch). The motion passed by a vote of 4-1.

d) Updates/Recommendations

i. Commissioner's Projects

1. Update on research performed on non-drug birth control studies (Segovia).

Vice-Chair Segovia stated Craig Hensley is still working on providing contacts for this project. She also explained this project is not something that is quickly and easily accomplished.

2. Streater Reflective System for deer/vehicle collision reduction, cost and permission from Texas Department of Transportation, State of Texas, and Comal County (Hatch).

Commissioner Hatch stated she has not had time to obtain more information on this project.

3. Research on processing facilities and recipient wildlife charities for consumption of processed deer meat (Hatch).

Commissioner Hatch stated she has not had time to obtain more information on this project.

4. Research on processing facilities and recipient of human charities for consumption of processed deer meat (Segovia).

The Commission discussed how Cherokee will only use Trinity Oaks in this area. Commissioner Hatch stated she would provide permits from the 501(c)3 that she has researched.

5. Health of wildlife in Garden Ridge.

Vice-Chair Segovia stated Eric, Animal Services, advised to be cautious and watch for deer since they are moving around more due to the weather. Commissioner McKinney questioned if Trinity Oaks had data such as weight and age from when the City previously trapped to ascertain to the health of the deer. Commissioner McKinney suggested to obtain that kind of information from trappers/processors in the future in order to not be guessing about the health of deer and to have data to back up observations.

6. Update on future education/training sessions and Grapevine articles.

Commissioner McKinney stated he did not have an update right now for an education/training session to be conducted at the Commission's November meeting.

ii. City Council Update/Report

1. October 3, 2018 Regular Meeting.

a. Update on the requirements of Ordinance 210 (Commissioners must attend two (2) City Council meetings a year).

Chair Krawczynski stated some Commissioners have not met the requirements of Ordinance 210 and reminded Commissioners there are only two (2) City Council regular meetings left this year.

e) Future Agenda Items.

i. Commissioner input.

Commissioner Kneupper requested to discuss the frequency of mailout surveys.

Commissioner Bippert requested to obtain more information and detail from Eric, Animal Services, regarding the health of wildlife in Garden Ridge.

Commissioner Hatch requested to have an update/discussion on the deer counts and for the Commission to review and discuss the Humane Society's Management Plan.

ii. Set dates for January and February Regular Meetings due to scheduled holidays.

- 1. Reschedule Monday, January 21, 2019 Regular Meeting to either Tuesday, January 15, 2019, or Monday, January 28, 2019.**

The Wildlife Management Advisory Commission agreed by consensus to reschedule the Monday, January 21, 2019, regular meeting to Monday, January 28, 2019.

- 2. Reschedule Monday, February 18, 2019 Regular Meeting to either Monday, February 11, 2019, or Monday, February 25, 2019.**

The Wildlife Management Advisory Commission agreed by consensus to reschedule the Monday, February 18, 2019, regular meeting to Monday, February 25, 2019.

iii. Announcement of next Regular Meeting Monday, November 19, 2018, at 6 p.m. at City Hall.

Chair Krawczynski announced the next Wildlife Management Advisory Commission regular meeting will be held on Monday, November 19, 2018, at 6:00 p.m. at City Hall.

7. Citizen Comment Period - limited to 20 minutes total

See “Rules for Citizens’ Participation” under Item 5.

Councilmember Bryan Lantzy, 20515 Wahl Lane, thanked the Commission for their efforts in looking into other methods of trapping instead of the use of nets.

Deborah Dauer, 20001 Regency Run, thanked the Commission for providing education sessions and for looking into transporting sites.

Tony Frasco, 8802 Wild Wind Park, thanked the Commission for providing the presentation on birds and stated he did research on birth control (see attached).

Mary Rethman, 9450 Cinchona Trail, spoke regarding the trapping companies and the deer counts.

Marianne Sterling, 9006 Cinnabar Court, spoke regarding Texas Parks and Wildlife and the deer counts.

David Ringle, 9234 Blazing Star Trail, spoke regarding survey techniques and the deer counts.

Chris Easley, 9425 Blazing Star Trail, spoke regarding the deer counts.

Councilmember Kay Bower, 8947 Garden Ridge Drive, spoke regarding feral cats.

8. Adjournment

There being no further business, the Monday, October 15, 2018, Wildlife Management Advisory Commission regular meeting was adjourned at 8:41 p.m. by Chair Krawczynski.

David Krawczynski, Chair

ATTEST:

Marisa Spencer
Interim City Secretary

Opening Statement

Thank you all for coming out tonight. I would like to first start out by saying that every single person on this commission cares deeply about Wildlife and has volunteered their time, effort, weekends, weekdays and family time to make a difference here in Garden Ridge. This commission's duty is to be good stewards of wildlife within the city limits of Garden Ridge. This means identifying potential issues and making recommendations to City Council for their considerations. We all have different experiences with the deer here in Garden Ridge with some interactions being positive some negative. Some people see more deer than others depending upon the particular neighborhood they find themselves. These discrepancies will be considered in creating a management plan with, more focus on high population areas.

The below information outlines a summarization of some of the actions and recommendations that have occurred over the past year during our monthly meetings. This agenda item will become a living document whereby some action items from previous Wildlife and or City Council meetings can be added or adjusted in the future. There is a lot of information on social media specifically Facebook and Next Door that while well intentioned is not accurate. The goal of this agenda item is to create a level of understanding for everyone, whether it is their first time or 10th time to attend a Wildlife Management Advisory Commission Meeting.

- i. City Council has agreed to our recommendation to reduce the deer population in Garden Ridge at the April City Council Meeting
- ii. Subsequently City Council has also approved for the WMAC to proceed with putting together a Wildlife Management plan and set of actions to get the deer population from 1.96 acres per deer (2017 Population density) to 5 acres per deer
- iii. A \$50,000 budget has been approved for the upcoming fiscal year to hire a Wildlife Manager along with resources to manage Wildlife in the City.

The above recommendations were voted on and passed after months of discussions and presentations from Texas Parks and Wildlife biologists and subject matter experts on Urban Deer Management, input from citizens on the Wildlife survey, annual deer counts and carcass pickup numbers

Deer Reduction Scope

- i. A 1000 deer being removed is not happening this year and is not a number we have discussed. Extrapolating one year's worth activity or number of deer to be removed, does not indicate future numbers. Each year will be evaluated for environmental and cultural carrying capacities along with weather and climate patterns that may dictate alterations to the overall management plan.
- ii. Currently the number of deer being discussed for budgeting purposes is 300 however depending upon the deer counts, overall population numbers and City Council approval this number can be subject to change.
- iii. This is a proactive approach whereby the city has determined via Ordinance 196 along with assistance from TPWD for the last 3 years, that Garden Ridge has an

over population of whitetail deer within the city limits. For a reference point, the current acreage for Garden Ridge stands at 2780 acres with an estimated population of 1,418 whitetail deer. This gives us a deer per 1.96 acres per deer. However, this doesn't not include houses, driveways, 6ft fenced backyards, streets and other impervious structures. There is no current way to calculate the exact acreage that is usable habitat to whitetail deer in Garden Ridge but the acres per deer number is significantly closer to 1 to 1 when these factors are considered. TPWD has stated that the carrying capacity of for our region which is the hill country should be 12 to 18 acres per deer. Urban deer populations that other cities have found to be acceptable (cultural carrying capacity) is around 5 acres per deer.

- iv. Goals: These proposed proactive activities have a three-fold goal. 1. Prevent a significant increase in year over year population of deer within the city which CAN lead to diseases that can be passed to humans, die offs, lack of food and poor health. 2. Reduce the conflicts between deer and people to a cultural carrying capacity that is sustainable. These conflicts include: deer vehicle collisions, property damage i.e. fences, personal injury and disease. Furthermore, biodiversity and habitat degradation of other plants and animal species can be affected due to over population of one. Forb (trees, shrubs) species are particularly vulnerable to over population of Whitetail deer which can create a cascading affect for insects, birds, and other mammals. 3. Reduce the number of deer carcasses that the city picks up on yearly basis. In 2016, 171 deer carcasses were picked up and 162 were picked up in 2017. Other cities who are actively reducing the deer herd experience deer carcass removal numbers which are significantly less than Garden Ridge.
- v. There is no confirmed disease in our herd other than visual indicators of possible bottle jaw. No specimens have been collected which have led to confirmation of this particular disease. However, this type of disease indicate that an over population could exist.
- vi. No one has stated on the WMAC nor anyone on City Council has stated that plants being eaten and feces in citizens yard's is a deciding factor for removal of deer and these factors will not be considered in any management plans that will be presented to TPWD or City Council
- vii. No wildlife management plan has been presented to City Council for 2018-19 season

Guidelines

- i. The City of Garden Ridge may only use the options that Texas Parks and Wildlife (TPWD) to be utilized to reduce the deer population and manage wildlife in the City of Garden Ridge. The state of Texas owns the deer and dictates how and when the population can be reduced.
 - a. Peer reviewed journals along with websites, news articles and other common resources online are valuable to wildlife managers/biologists and citizens for

increasing their knowledge on wildlife management. However, the ideas, methods and procedures that the WMAC and the City of Garden Ridge are limited to, come directly from TPWD.

Limitations

- i. Sterilization is not something TPWD will endorse at this time to reduce deer populations in Texas
- ii. There are three capture methods approved by TPWD and any non-approved methods can result in fines and penalties
 - 1. Netting (Aerial or Drop Net)
 - 2. Corral or Pen
 - 3. Darting
- iii. Two permits are available for the 2018-19 season
 - 1. TTT- Trap Transfer and Transplant
 - 2. TTP- Trap Transfer and Process
 - 3. More information available at:
https://tpwd.texas.gov/business/permits/land/wildlife_management/trap_transport/

Survey Results

- i. Response Rate from Survey
 - a. The response rate was much higher than anticipated and gave the WMAC a great understanding of how the citizens perceived their city in regard to Wildlife
- ii. Wildlife survey results are available via the city website for all citizens.
- iii. The survey was a mechanism to gather information directly from citizens and use that feedback to make decisions that the WMAC presents to the City Council
- iv. Surveys were sent to all residents who have a water bill and this action was certified by the City
- v. Surveys were tabulated by election volunteers, watched by law enforcement and video recorded for security purposes

SIGN IN TO SPEAK AT THE OCTOBER 15, 2018 WILDLIFE MANAGEMENT ADVISORY COMMISSION REGULAR MEETING CITIZEN COMMENT PERIOD

Rules for Citizens' Participation:

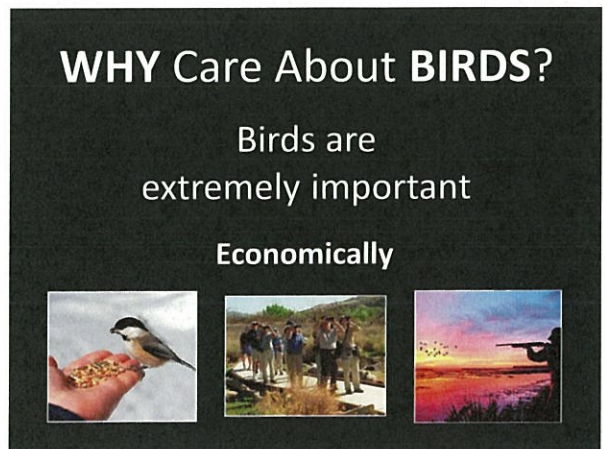
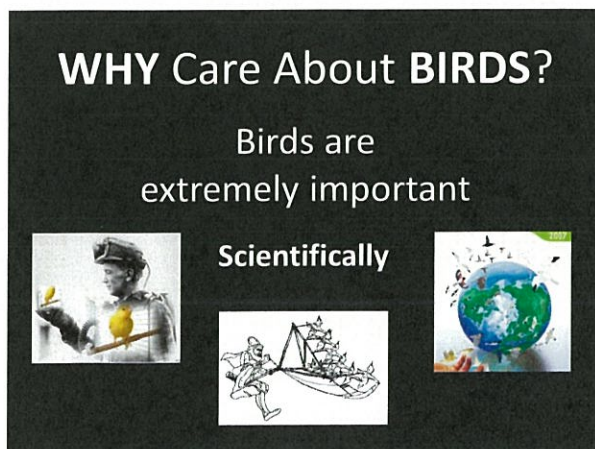
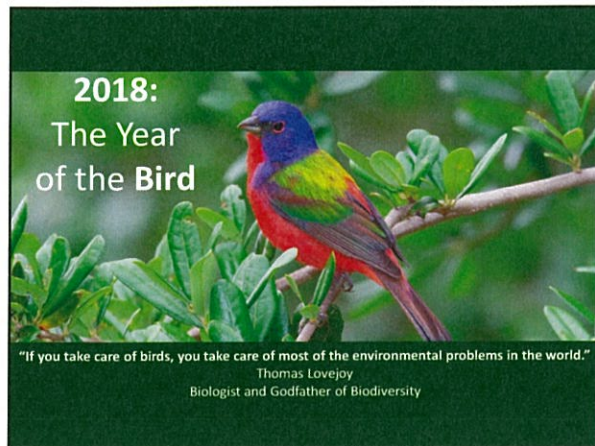
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 - iv. State your name and address before your comments begin.
 - v. You are only allowed to speak once per topic, unless also speaking during a posted Public Hearing.

NOTE: The Texas Open Meetings Act permits a member of the public or a member of the governmental body to raise a subject that has not been included in the notice for the meeting. However, any discussion of the subject must be limited to a proposal to place the subject on the agenda for a future meeting and any response to a question posed to the City Council is limited to either a statement of specific factual information or a recitation of existing policy. TEX. GOV'T CODE § 551.042

NAME	ADDRESS	SUBJECT
1. Lisa Connolly	21559 Forest Waters Cir	feral cats
2. Terri Newsom	25615 Lewis Park Rd	Feral Cats
3. David Hatch	8377 Twisted Oaks	Deer management
4. David Ringle	9234 Blasing Star Trl.	TX Legislation on Deer Management
5. Jim Miller	9900 Marie Meadow	DEER METHODOLOGY
6. Linda Brossman	9498 Cinchona Trl	Deer mgmt

7. _____
8. _____
9. _____
10. _____



WHY Care About BIRDS?

Birds are
extremely important

Ecologically



WHY Care About BIRDS?

Birds are
extremely important

Aesthetically
Scientifically
Economically
Ecologically

WHY Care About BIRDS?

Birds are **IN TROUBLE**
And Need Our Help



Save the Birds
Be Bird Friendly!

FOUR KEYS FOR BECOMING MORE BIRD FRIENDLY



- Get to know our cool local birds.
- Give them What they Need;
Protect them from what they **DON'T NEED**.
- Become a Bird Watcher. Record what you see and Report it.
- Spread the good word about Birds & Birding.

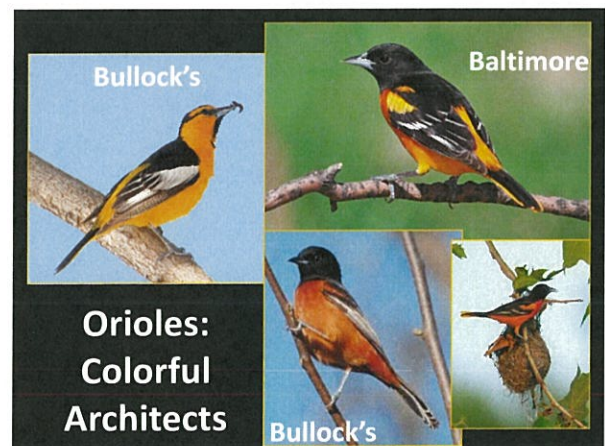
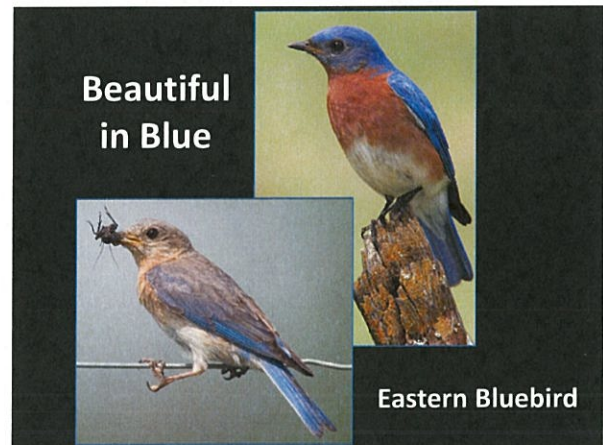
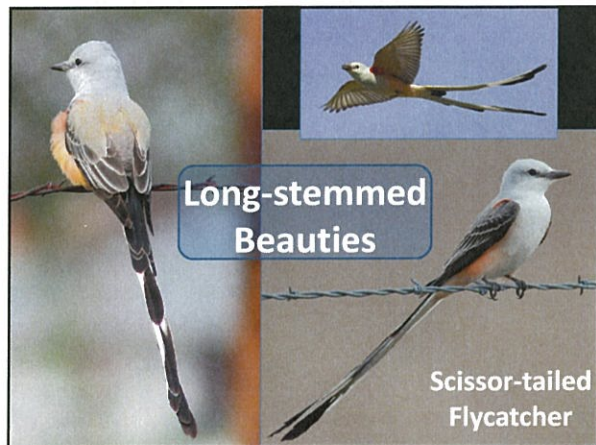
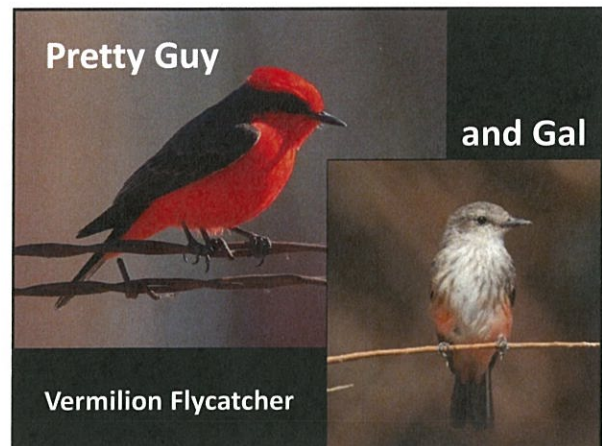
"Our ability to perceive quality in nature begins,
as in art, with the pretty. It expands through
successive stages of the beautiful to values as
yet uncaptured by language."

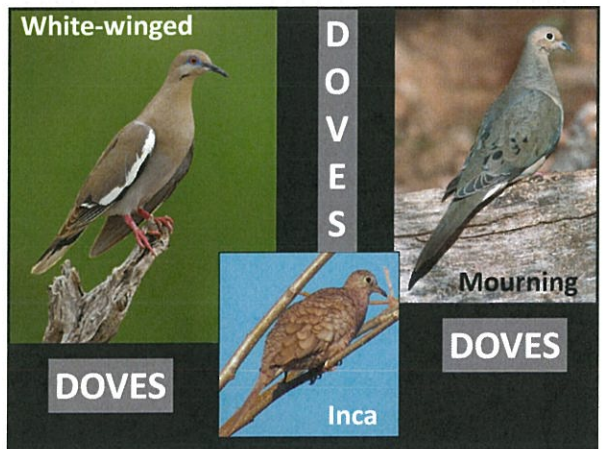
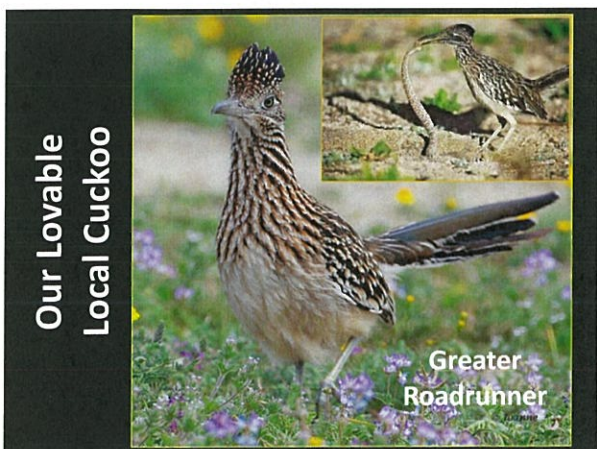
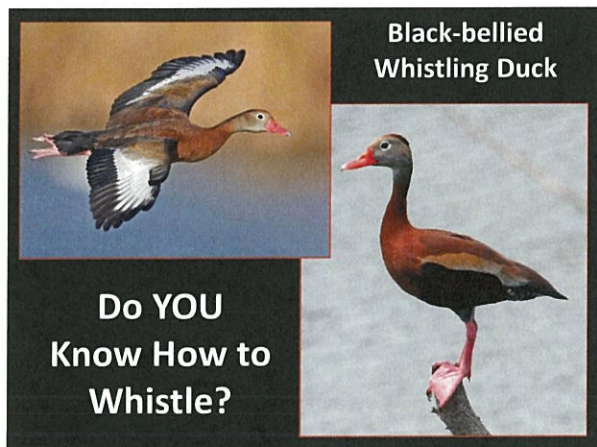
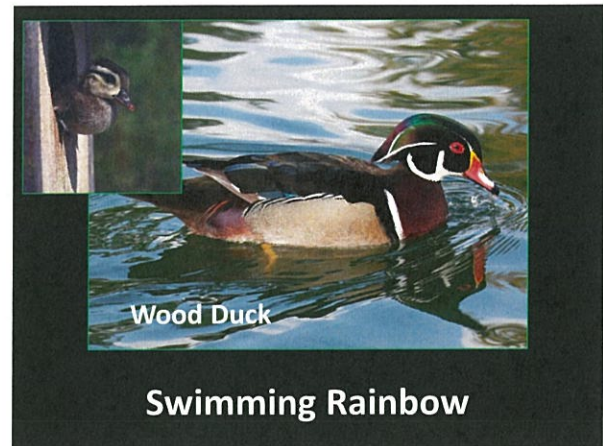
— Aldo Leopold (*A Sand County Almanac*)

"Redbirds"
Mr. and Mrs. C



Northern Cardinal





Look Similar—Sound Different



Carolina Wren



Bewick's Wren

Feeder Fanatics



Titmouse



Chickadee

Savannah



LBJs:



White-crowned

Sparrows



Vesper



Lark



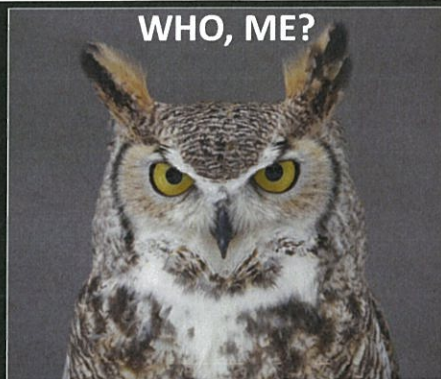
Meadowlark



Red-winged Blackbird

What a Sharp Beak You Have!

WHO, ME?



Great Horned Owl

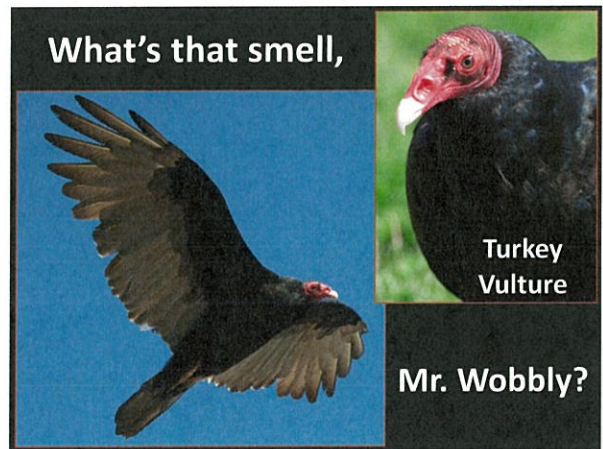
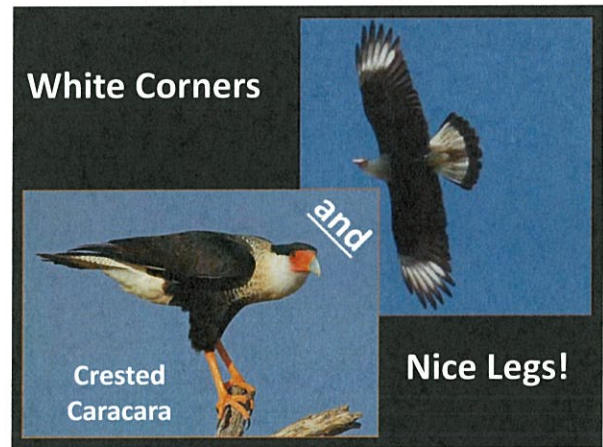


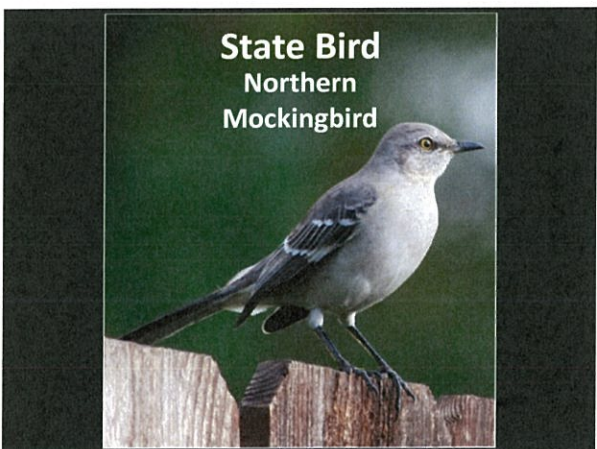
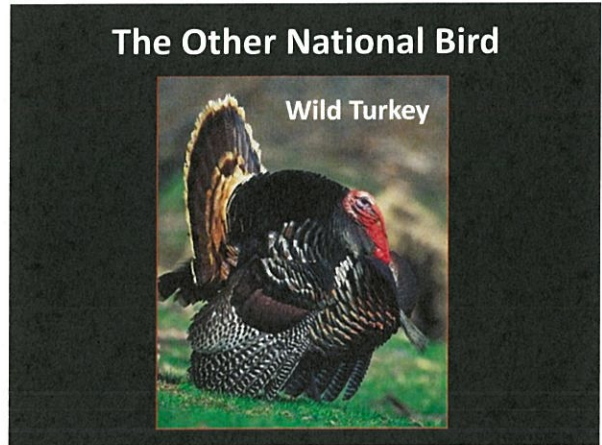
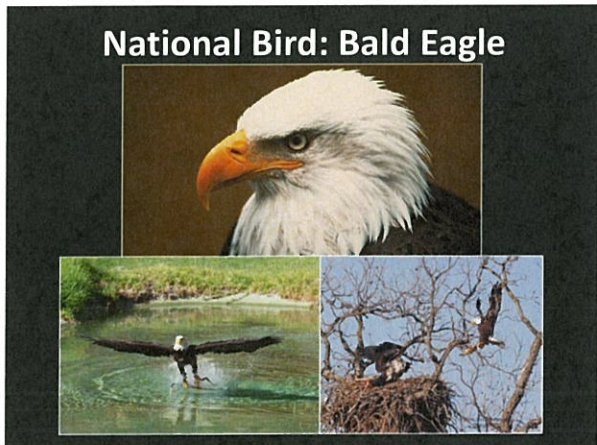
Barred Owl

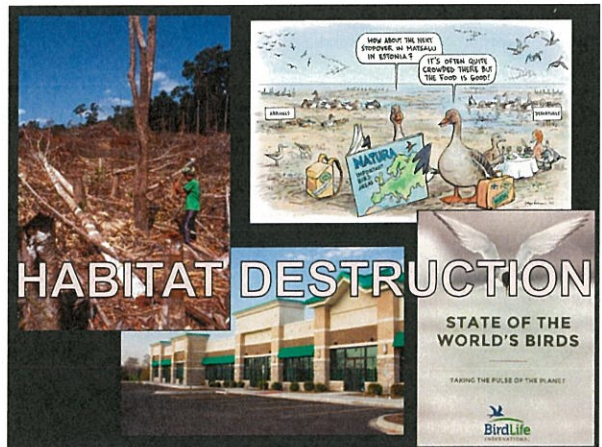
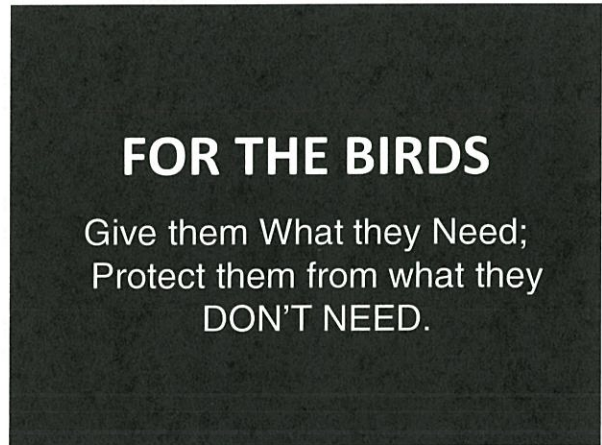
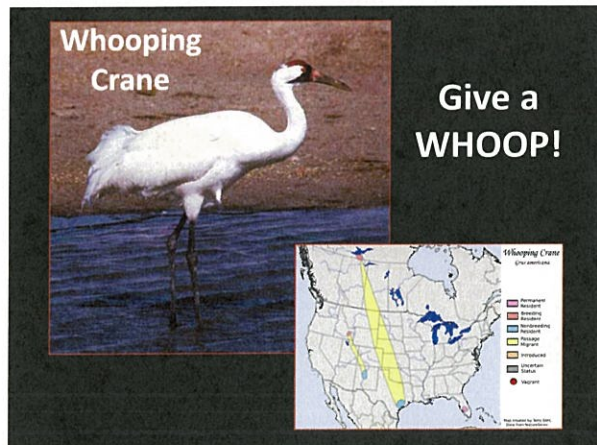


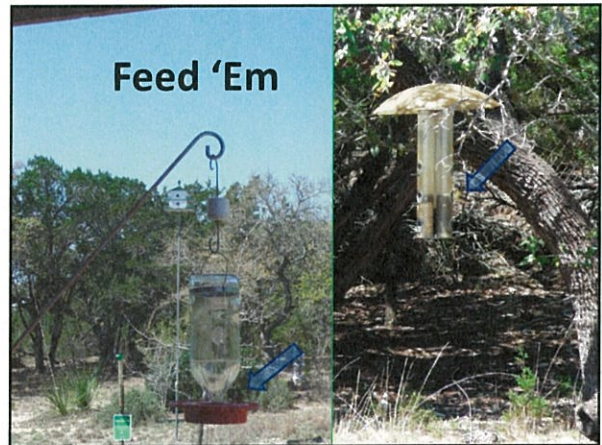
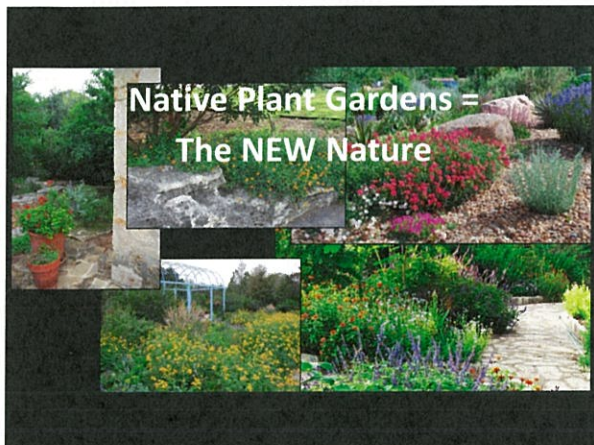
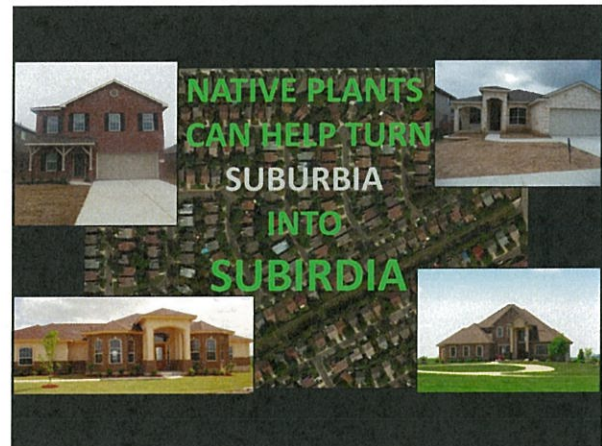
E. Screech-Owl

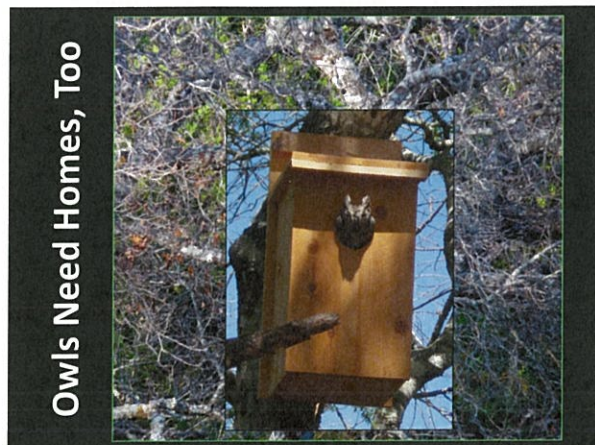
WHO, ME?

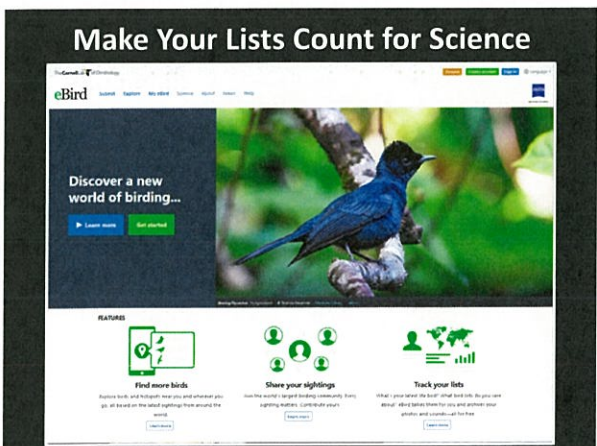
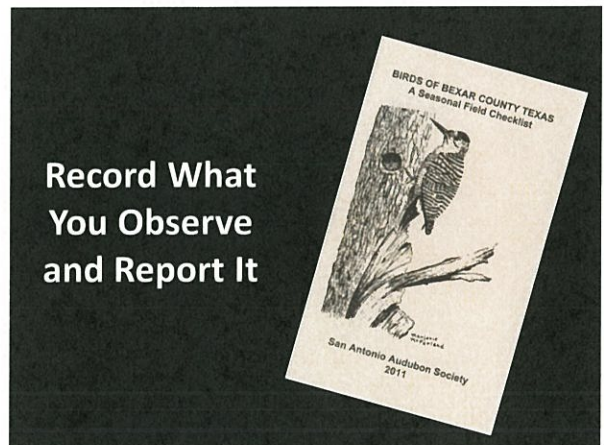






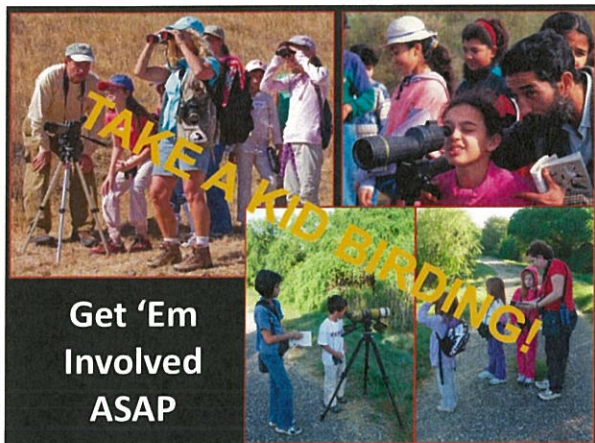








Spread the
good word about
Birds & Birding



Thanks for Being BIRD FRIENDLY!



Tom & Patsy Inglet
tplinglet@satx.rr.com

Record What
You Observe
and Report It



Thanks for Being BIRD FRIENDLY!

Tom and Patsy Inglet
tpinglet@satx.rr.com



RMH trap design



RMH trap



RMH trap once closed

	NAME	ADDRESS	SUBJECT
1.	Bryan Lantry	20515 Winkler	
2.	Deborah S. Damm	20003 Regency Run	
3.	Tony PRASCO	8802 Wild Wind Park	
4.	M. R. Yarnan	9453 Cinnamon	
5.	Marianne Sterling	9006 Cinnamon Ct	
6.	David C. Ringle	9234 Blazing Star Trail	
7.	Christine Easley	9425 Blazing Star	
8.	Kay Bremer	8947 Kauder Ridge Drive	
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			

Spayvac Contraception for White Tail Deer
Effectiveness of Spayvac® for Reducing White-tailed Deer Fertility Journal of Wildlife
Diseases, 43(4), 2007, pp. 726-730

Shawn L. Locke^{1,5}, Matthew W. Cook¹, Louis A. Harveson², Donald S. Davis³, Roel R.
Lopez¹, Nova J. Silvy¹ and Mark A. Fraker⁴

.. In 2003, efforts to control white-tailed deer numbers were initiated at the National Aeronautical and Space Agency's (NASA) Lyndon B. Johnson Space Center (JSC) in Houston, Texas, using the long-lasting, single-dose contraceptive SpayVac®. Between 2003 and 2004, we monitored 45 adult female deer (34 treated with SpayVac®, 11 controls treated with a placebo). Fawning rate over 2 yr for deer treated with SpayVac® >30 days prior to the rut was 0% (n=31), whereas the fawning rate for control deer was 78% (n=11). Inoculation 1 mo prior to the breeding season was sufficient time to achieve fertility control. We conclude that SpayVac® can effectively reduce the fertility of urban white-tailed deer.



In the name and by the authority of

The State of Texas

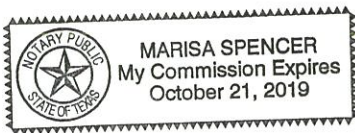
OATH OF OFFICE

I, Dawn Hatch, do solemnly swear, that I will faithfully execute the duties of the office of Wildlife Management Advisory Commissioner of the City of Garden Ridge, State of Texas, and will to the best of my ability preserve, protect, and defend the Constitution and laws of the United States and of this State, so help me God.

Dawn Hatch

Affiant

SWORN TO and subscribed before me by affiant on this 15th day of October, 2018.



(Seal)

Marisa Spencer

Signature of Person Administering Oath

Marisa Spencer

Printed Name

NOTARY PUBLIC

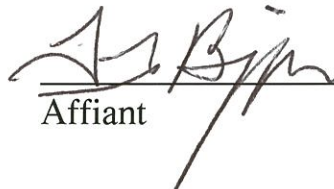
Title

In the name and by the authority of

The State of Texas

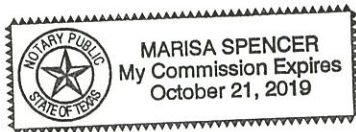
OATH OF OFFICE

I, Troy Bippert, do solemnly swear, that I will faithfully execute the duties of the office of Wildlife Management Advisory Commissioner of the City of Garden Ridge, State of Texas, and will to the best of my ability preserve, protect, and defend the Constitution and laws of the United States and of this State, so help me God.



Affiant

SWORN TO and subscribed before me by affiant on this 15th day of October, 2018.



(Seal)



Signature of Person Administering Oath

Marisa Spencer

Printed Name

NOTARY PUBLIC

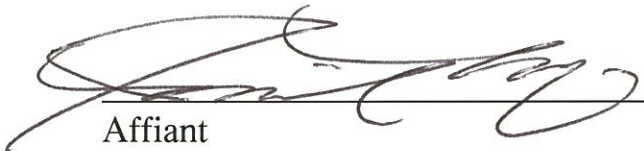
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In the name and by the authority of

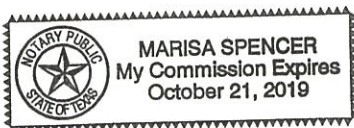
The State of Texas

OATH OF OFFICE

I, Jeremiah McKinney, do solemnly swear, that I will faithfully execute the duties of the office of Wildlife Management Advisory Commissioner of the City of Garden Ridge, State of Texas, and will to the best of my ability preserve, protect, and defend the Constitution and laws of the United States and of this State, so help me God.

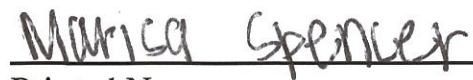

Affiant

SWORN TO and subscribed before me by affiant on this 15th day of October, 2018.



(Seal)


Signature of Person Administering Oath


Printed Name

NOTARY PUBLIC
Title

GARDEN RIDGE POLICE DEPARTMENT



MEMORANDUM

To: Wildlife Management Advisory Commission
City of Garden Ridge

From: Ron Eberhardt
Chief of Police
City of Garden Ridge

Date: 14 November 2018

Copies:

Reference: Monthly Wildlife Statistics

Members of the Commission,

Here is the data collected in the last 35 days regarding the Police Departments involvement with animal related calls. These numbers do not include any cases related to domestic dogs or cats.

9 October 2018 through 14 November 2018

- 2- Injured Deer by vehicle - Dispatched
- 2- Deer hit by vehicle / Dead / Removed
- 2 - Dead deer found in yards / Removed
- 3 - Deer hit by cars / Ran off upon officers approach
- 1 - Snake removed from pool
- 1 - Sick Fox / Dispatched



MONTHLY ANIMAL CONTROL REPORT

November 2018

Year to Date Wildlife Report

	Jan	Feb.	Mar	Apr.	May	Jun	Jul	Aug.	Sep.	Oct	Nov	Dec.	Total
Deer	14	23	14	7	8	15	14	9	3	27			134
Raccoons	5	3	3	4	2	4	1	6	3	2			33
Possums	1	3	4	6	3	5	2	1	3	7			35
Skunks	1	7	2	0	0	2	1	0	0	2			15
Wild hogs	0	0	0	1	0	0	2	0	0	0			3
Turtles	0	0	0	0	3	0	0	0	2	0			5
Squirrels	0	2	5	6	8	1	1	0	4	2			29
Foxes	0	0	0	0	0	1	0	0	0	2			3
Armadillos	0	0	0	2	3	6	4	4	0	2			21
Hawks	1	0	0	0	0	0	0	0	0	0			1
Bats	0	0	0	0	0	0	3	2	1	0			6
Coyotes	0	0	0	0	0	0	1	0	0	1			2
Buzzards	1	1	1	0	0	0	0	1	0	2			6
Ringtails	1	0	1	0	0	0	0	0	0	0			2
Snakes	0	0	0	0	0	1	2	0	1	1			5
Other	0	0	0	0	1	0	0	0	0	1			2
Total													
	24	39	30	26	28	35	31	23	17	49		YTD Total	302

Additional information

Information on the 27 deer picked up:

12 predator attacks

12 vehicle

3 natural causes/unknown

Information on the 1 Other:

1 Porcupine

From: [Craig Hensley](#)
To: [Jeremiah McKinney](#)
Subject: RE: Garden Ridge Phone Call
Date: Wednesday, October 17, 2018 10:10:41 AM

Jeremiah,

To address the issue of why not all the data submitted was used, the data form we use has enough room for 10 surveys, 14 were conducted. I fit in 10 – I did take a look at outliers and did not include them – the two low ones were so far out of normal they fell out – I had no idea who did them and it didn't matter to me – besides they were done within 24 hours of a previous one – I tried to pick those with some time in-between when possible. But to try and be consistent, I re-examined the survey data – surveys are to be conducted August and September into October ideally. With this in mind I threw out the two July surveys and started with 8.1.2018.

I then looked for the next survey that was at least seven days away, thus the second one used in the new formulation was 8.9.2018, I then went another seven days and took 8.16.2018, then took the next one at least seven days apart and that was 8.24.2018. I also included the 8.30.2018 survey – yes only six days away, so I calculated a number with it included and one without it included.

The results?

Not including 8.30.2018 the estimated population is 1,762. With 8.30.2018 included, the estimated population is 1,685, both higher than the calculation used for the presentation. Based on this, pro deer people should be upset because the numbers are even higher than my original calculation and those wanting to manage the deer should also be upset for the same reason. The bottom line is there are too many deer in the area and management must be considered.

There is no perfect survey methodology as you both know.

Naturally,

R. Craig Hensley

Wildlife Biologist, Comal & Kendall Counties
Texas Parks & Wildlife Department
140 City Park Road
Boerne, TX 78006
craig.hensley@tpwd.texas.gov
830.431.4102

DEER POPULATION SUMMARY

Ranch: Garden Ridge

Survey Technique: Spotlight & Herd Comp

County: Comal

Year: 2018

Survey Route/Pasture	Date	Deer Observed					Acres Sampled	Acres Per Deer	Deer Per 1,000 Ac.
		Bucks	Does	Fawns	Undet	Total			
Spotlight Survey	7.31.2018	18	44	16		78	198	2.54	393.7
Spotlight Survey	7.18.2018	3	44	36		83	198	2.39	418.4
Spotlight Survey	8.1.2018	16	71	62		149	198	1.33	751.9
Spotlight Survey	8.3.2018	17	62	39		118	198	1.68	595.2
Spotlight Survey	8.7.2018	4	43	32		79	198	2.51	398.4
Spotlight Survey	8.9.2018	13	59	47	3	122	198	1.62	617.3
Spotlight Survey	8.10.2018	15	64	44		123	198	1.61	621.1
Spotlight Survey	8.12.2018	11	62	34		107	198	1.85	540.5
Spotlight Survey	8.16.2018	6	70	47		123	198	1.61	621.1
Spotlight Survey	8.24.2018	11	56	41		108	198	1.83	546.4
Survey Totals		114	575	398	3	1,090	1,980	1.82	549.5
Incidental Observations									
Combined Totals		114	575	398		1,087			

Ranch Size (ac.): 2,780

Harvest Recommendation

Antlered Bucks:

Acres/Deer: 1.82

Does/Buck: 5.04

Fawns/Doe: 0.69

Composition -

Bucks: 10.5%

Does: 52.9%

Fawns: 36.6%

Antlerless Deer:

Deer/1,000Ac: 550.51

Adult/1,000Ac: 348.94

Acres/Adult: 2.87

Estimated Population -

Bucks: 160

Does: 809

Fawns: 561

Total: 1,530

Remarks:

1. Is the cost of feed used in the traps included in your cost estimate?
No, this is the responsibility for the cities that we work for.
2. Is any processing of the trapped animals included in your cost estimate?
No, this is the responsibility for the cities that we work for.
3. Is the cost for CWD testing included in your estimate?
No, the testing is also the responsibility of the cities. I will transport the samples to the veterinary clinic that I use for all the cities I work for.
4. Do you have any approved sites to TTT animals, and would you be handling the transport and transplant portion of that process?
I do not have any approved locations to TTT. And if it was to be TTT then there will be additional cost.
5. If you have not already provided it, could you please provide a per-deer cost within your estimated budget?
We will not do a cost by the deer but by the job.
6. What type of trapping methods are you proposing for this project (nets, pens or both)?
We are willing to put up 4 nets and possibly 1 pin. Any questions you have concerning the pins you can contact me and I will gladly answer any questions you have regarding this.
7. If you were selected for the project, when would you be able to start, and how long do you feel the project would take? Please account for the estimated trapping of 300 deer.
We could start as early as November if the permit is ready.
8. Do you carry liability insurance?
Yes. Liability, Commercial and Workmen's Comp Insurance. This is what I've carried for many years.
9. Is your company active in social media?
Yes. www.cherokeecapturingservices.com, Cherokee Capturing Services Facebook page, also I am listed on LinkedIn.

In addition to your answers to the questions above, please provide the following items which will also be presented to the city council for consideration.

1. A detailed cost estimate.
The cost for the job is \$30,000 (Thirty- thousand dollars). We will due up to 7 trappings consecutively unless weather prohibited otherwise. In the past, we charged \$200 per deer, that would be a cost of \$60,000 (Sixty-thousand dollars) based on moving 300 deer.
2. A list of references, if you have any, from similar projects.
If you want this program to be successful this city must put the equipment in the most populated areas where the deer are congregating, without that you will not have the success that you are looking for. I have worked for 25 years capturing live animals. I have worked 17 years in cities, HOA's, parks and wildlife programs and individuals with removing animals with

live capture. I have been very successful in live removal. I do recognize the challenges you are up against because of the similar cities I have worked in. If you have any additional questions too ask me, I will be happy to answer them.

REFERENCES:

1. Sun City Georgetown - Warren Bluntzer / Wildlife Biologist and Consultant.
#(512) 556-7027
2. City of Horseshoe Bay - Stan Farmers / City Manager
#(830) 598-8741
3. City of Lakeway - Charles Edwards / Deer Committee Adviser
#(512) 569-6488
4. City of Pecan Plantation - Daniel Vanlastic / Facility Operator
#(682) 936-6650
5. City of Codillera Ranch - Lenny Thomasiney / Facility Operator
#(210) 825-1391

I can provide to you additional references if needed.

After 30 days, with no response, this contract can change.

Thank You for considering Cherokee Capturing Services.

James Bonds

RMH Exotics

Ryan Murphy
RMHRanch@hotmail.com
234 W. Bandera Rd. #340
Boerne, Texas 78006
(512) 658-3527



The City Garden Ridge,

I look forward to the opportunity to earn this contract related to the trapping of whitetail deer within the City of Garden Ridge City limits. Below you will find our responses to the requested questions:

1. Is the cost of feed used in the traps included in your cost estimate?

Any and all costs associated with the different types of feed and bait we use to draw the animals into the traps is included in the cost estimate.

2. Is any processing of the trapped animals included in your cost estimate?

Any and all cost for processing and/or cleaning is included in the "per animal price." There will be no additional cost above and beyond the "per animal price" for processing.

3. Is the cost for CWD testing included in your estimate?

I have confirmed with the Comal County Game Warden that The City of Garden Ridge is not in the testing zone for CWD. CWD Testing outside of the Testing zone is optional, and I would strongly encourage you to deny allowing CWD testing.

4. Do you have any approved sites to TTT animals, and would you be handling the transport and transplant portion of that process?

I can place between 150-200 at a minimum at other ranches throughout Texas. Once I am awarded the contract, I would also contact many other ranches that would more than likely take some of the deer. All the costs associated with TTT as far as trapping, transport, and transplant is included in the "per animal cost." There will be no additional charges for placement of these deer to other ranches/properties. All TTT delivery locations are pending TPWD and the biologist's approval.

5. If you have not already provided it, could you please provide a per-deer cost within your estimated budget?

To simplify things the "per animal cost" includes everything that it takes to accomplish the job, which includes:

- *Meeting with The City, HOA, and land owners, should it be necessary*
- *Setting up/taking down traps*
- *Feed*
- *Loading and removal of animals*
- *Transport for TTT or TTP*
- *Any and all processing fees*
- *Coordinating with TPWD/ Game Warden for project*

- Clean Up of trapping sites
- \$175.00 is the ALL INCLUSIVE "per animal cost"*

6. What type of trapping methods are you proposing for this project (nets, pens or both)?

In a high visibility project like this, I would ONLY use panel traps. This provides the most humane way to capture animals while reducing stress on the animal. Panel traps work best in high visibility areas as they prevent the general public from seeing the animals once captured.

7. If you were selected for the project, when would you be able to start, and how long do you feel the project would take? Please account for the estimated trapping of 300 deer.

We would be able to start within 2 weeks of being awarded the project. The more locations within Garden Ridge we are able to set up traps, the quicker the process will go. I feel a realistic goal would be 3-6 months; however, we have goals on all our projects to get in and out as quickly as possible. I truly feel it could be accomplished within 3 months.

8. Do you carry liability insurance?

I currently carry a commercial general liability policy that at the commencement of this project we would add The City of Garden Ridge as an additional insured throughout the duration of the project.

9. Is your company active in social media?

We do have a presence on Facebook. Feel free to look us up at RMH Exotics. We keep it very professional, only posting animals that we are selling and/or releasing. We also post and/or are tagged in company related events.

RECENT REFERENCES:

The City of Boerne: Danny Zincke (Director of Community Services) 830-248-1506

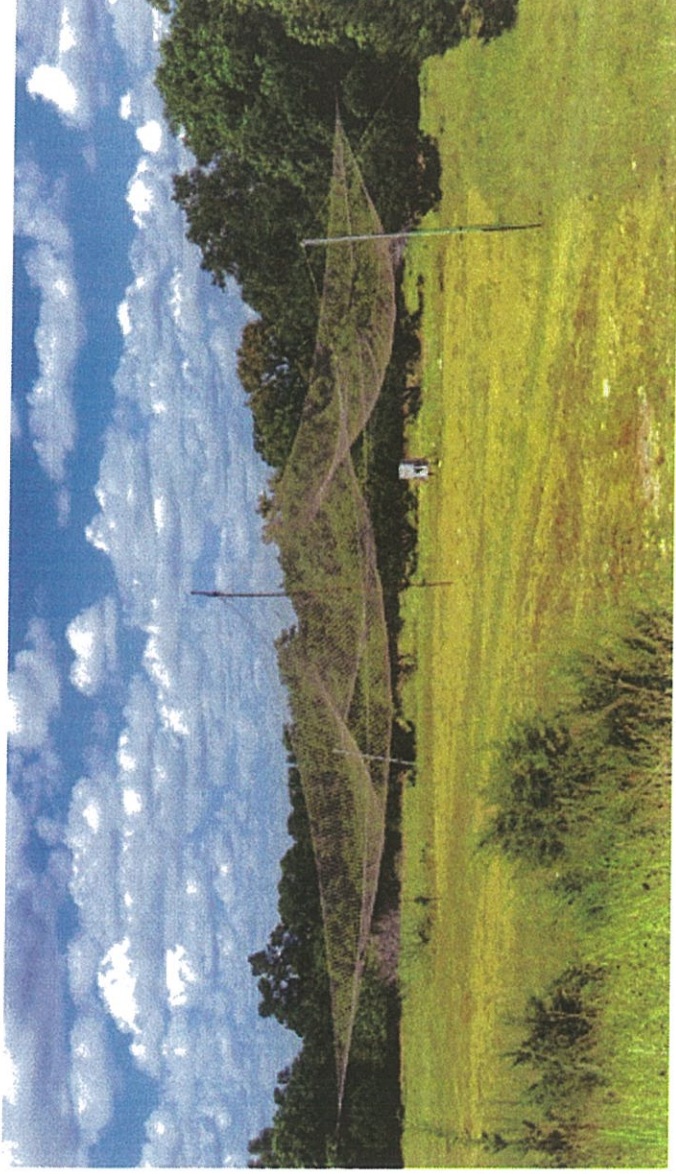
The City of Fair Oaks: Peter Lee (Raintree woods HOA President) 210-787-0679

The City of Brady: Rick Welch (Project Coordinator/Trapping Contact) 512-563-0482

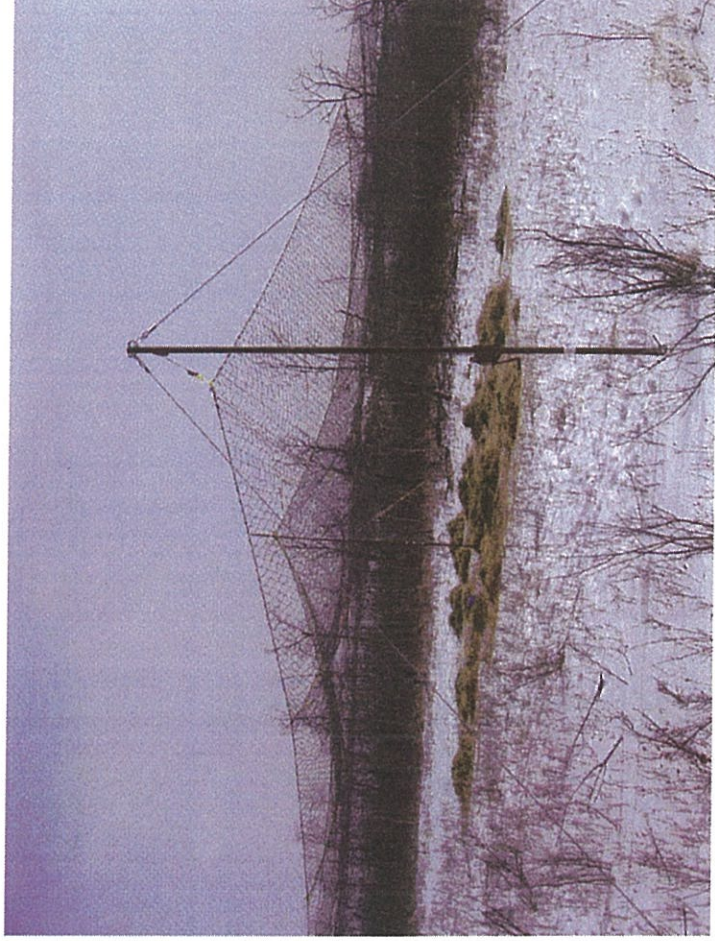
Waggener Ranch HOA (Spring Branch): Pat Brooks (Wildlife Committee Pres) 210-336-3340

Hunt on The River HOA (Hunt): William Joseph (HOA President) 512-799-2886

Drop net



Drop net

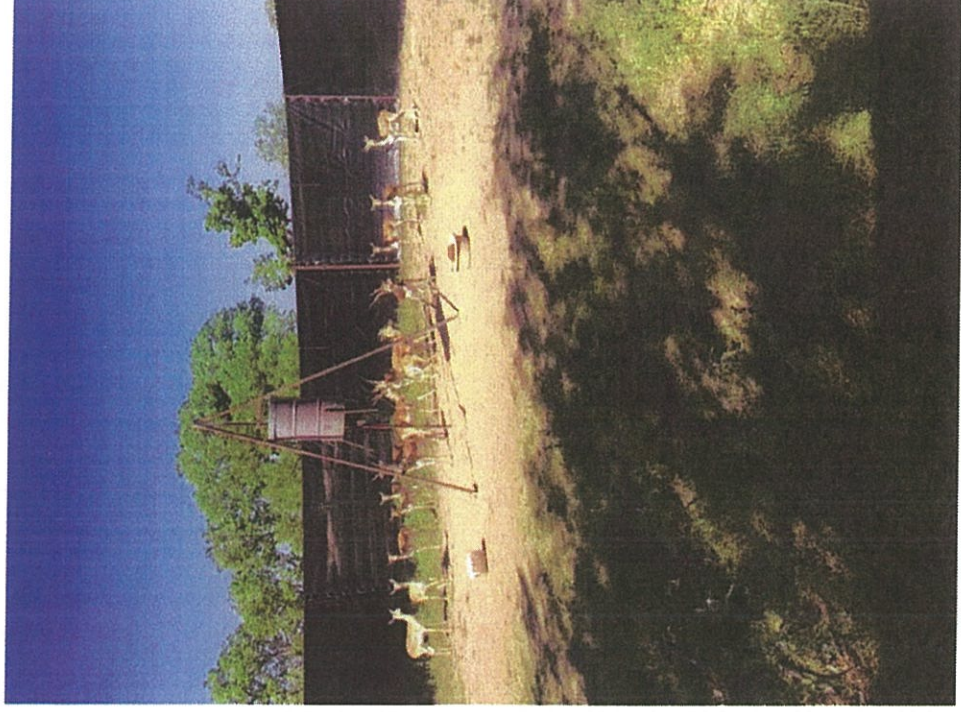




RMH trap design



RMH trap



RMH trap once closed



A Template Conflict Management and Co-Existence Plan for White-tailed Deer

Prepared by the Humane Society of the United States



How to Use this Deer Conflict Management & Coexistence Plan

This deer conflict management and coexistence plan has been prepared by The Humane Society of the United States (HSUS) for use by communities (including, but not limited to, cities, villages, towns, counties, homeowners associations, etc.) in humanely and effectively preventing and solving conflicts with white-tailed deer. The information in this plan has been gathered from scientific and peer-reviewed articles, from experts in the field of human-deer conflict resolution, and from successful deer conflict management models across the U.S. We invite you to use this plan as your own or modify it as necessary to suit the needs of your community.

Acknowledgements

The HSUS would like to specially thank Laura Simon for her expertise and work in the creation of this plan. We would also like to thank the following individuals for their expert review: John Hadidian, Allen Rutberg, and Colin Berry.

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Introduction

As cities and towns develop land and make changes to the landscape that make it more attractive to white-tailed deer, the inevitable result is a growing number of human-deer conflicts, ranging from garden and ornamental browse damage to roadway collisions. One of the most publicly supported and sustainable ways for communities to resolve these conflicts is by promoting policies of co-existence, which acknowledge the need to resolve conflicts while also encouraging appreciation of wildlife. Community leaders can and should promote ways to resolve conflicts with deer effectively and humanely, on both an individual and community level.

The goal of this deer conflict management plan is twofold: 1) to provide a framework for evaluating community issues with white-tailed deer and 2) to recommend step-by-step actions that address conflicts with deer through a comprehensive, practical, effective, science-based, humane, long-term and community-supported plan.

The end result of putting a plan in place is a community that's more knowledgeable and better equipped to co-exist with deer and other wildlife.

Biology of White-tailed Deer

White-tailed deer are North America's most abundant large herbivore, with a range extending from southern Canada down to South America. Because of their ability to adapt to human-dominated landscapes, white-tails are also the deer species most commonly encountered in urban and suburban areas. For this reason, this conflict-management plan focuses on white-tailed deer (referred to from here on as "deer"), although much of the content presented also applies to issues with other deer species.

Deer are most active around dawn and again at dusk but may be active at any time of day, traveling well-used trails to their preferred feeding and bedding areas. Their diet changes seasonally and varies locally based on what is available. As ruminants, their 4-chambered stomachs are very good at breaking down both high and low quality food, digesting a varied diet including leaves, buds, twigs, fruits and nuts, grass, corn, alfalfa, and even lichens and other fungi. They eat a wide variety of green succulent plants in spring and summer, and in the fall eager consumption of acorns, corn and other tree nuts allows them to build up a store of fat that enables them to

survive the winter season, when only low-quality foods such as the buds and twigs of woody plants are available.

Deer prefer "edge" habitat, the boundary between forest and field, where abundant browse is accessible. Because suburban landscapes mimic this desired type of habitat, providing food, water, and safe bedding sites close together, it's no wonder deer exist at high densities in suburbs.

Deer live in matrifocal family groups consisting of the doe and her female offspring from this and previous years. Bucks may aggregate at some times of the year in small groups, but during the mating season are more solitary. In places like Canada and the northern U.S. (which have long winters with high snow cover), deer may "yard up" temporarily in large groups to limit exposure to weather. A deer's home range is usually less than a square mile, sometimes considerably less for does living in suburbs.

Mating season (or "rut") begins in November in the northern parts of their range and in January or February in the southern parts of their range. This rutting behavior, combined with the onset of hunting season, means deer are on the move, resulting in increased roadway crossings at this time of year.

Deer are highly adaptable; they adjust easily and quickly to changing environmental conditions. In lean years, deer tend to have just one fawn or none, reabsorbing their embryos when their nutritional status is poor. When their food supply is good, twins or triplets may be born.

When fawns are born they are reddish-brown, weighing about as much as a small cat, with those classic white spots on their sides and back that serve to camouflage them. They need this camouflage because the doe "parks" her fawns somewhere (often a suburban backyard) and only visits her fawns twice a day to nurse them, usually around dawn and dusk.

At about a month old, the fawns will start traveling around with their mother, and imitate what she does. In this way, they learn the features of their habitat, what and where to browse, who their predators are, and how to avoid them. They are weaned sometime after ten weeks old. Male fawns usually leave after a year, but female offspring separate from their mothers over a couple of years and may share their mother's home range as adults.

Deer have quite a few predators, including coyotes, wolves, bobcats, dogs and people. They use speed and agility to outrun these predators, sprinting

up to 30 miles per hour and leaping as high as 10 feet and as far as 30 feet in a single bound. Although they are great jumpers, fences that are 8 feet or higher typically deter them.

Deer Conflicts and Solutions:

Root of Conflicts between Deer and People:

There are several root causes of conflicts between deer and people in urban and suburban areas:

- Suburban Development: Conversion of farmland and forest to suburbs brings people and deer together in an environment where both species thrive, inviting conflict. Suburbia's golf courses, parks, grassy lawns and tree-lined or hedge borders and the flowers, ornamentals, bird feeders and vegetable gardens in suburban backyards provide more food for deer in suburbia than mature woods where most vegetation is out of reach in the forest canopy. For the deer, good nutrition means excellent physical condition and a high reproductive rate; for people, proliferating deer in suburbs means browse lines, depleted gardens, and road hazards.
- Wildlife Feeding: Safe from harassment and hunting, suburban deer can quickly lose their fear of people and pets and make themselves at home in backyards and on playing fields. Intentional backyard feeding emboldens them even more, concentrating deer and worsening conflicts.
- Clashing values and perceptions: People vary in their values, perceptions and attitudes towards deer. Hunters, wildlife watchers, animal advocates and deer feeders see and relate to deer differently. As a result, residents will differ in their views on how deer issues should be handled, on what the deer conflict is, and even if one even exists! Their desires and perceptions may be incompatible, leading to discord and controversy.

Backyard and garden complaints:

Much to the displeasure of gardeners, deer enjoy browsing on many of the ornamental plants (such as tulips, roses, and hostas) commonly and widely used in urban and suburban landscaping. The best way to prevent deer damage to gardens is to replace plants attractive to deer with more deer-resistant native species and to protect highly desirable plants with repellents or fencing.

Solutions:

1. Alternative plantings: Encouraging residents to plant deer-resistant flowers and ornamental varieties will bring the best results. There is a wide variety of less tasty yet equally beautiful flower and ornamental options, and many gardening resources which your community website can link to, such as the local Cooperative Extension Service, nurseries, and deer-resistant gardening specialty lists (see Appendix E and Resources).
2. Repellents: A variety of repellent products, used singly (or better yet) in combination, can create a very effective multi-sensory deterrent to repel deer. Commercial repellents work by creating unpleasant tastes or odors, gastrointestinal discomfort, or a sense of pain (hot pepper or peppermint) when the active ingredient comes in contact with the eyes, nose, or mucous membranes of the deer. There are a variety of repellents on the market, yet some work better than others. Some of the more effective repellents contain a sulphurous odor (e.g., rotten eggs), believed to induce fear by giving off smells that deer associate with rotten meat or a predator. The trick is to not only choose the right repellent, but to also apply it diligently – which means every 2 weeks and after any heavy rains. (please see Appendix E for recommended repellents and application instructions)
3. Physical Barriers: There are many options for protecting garden and landscaping plants. An 8 foot woven wire fence will keep deer out of larger areas, plastic netting can be used over particular bushes, and individual protective “tubes” and fencing can be placed around prized seedlings until they grow out of reach of the deer. There are also various options with electric fences. Some contain scent attractants (to ensure quick contact with electrified material) or moveable polytape “fences,” which consist of nylon material with electric fibers running through it.
4. Scare-based devices: There are various scare-based products on the market, such as a motion-sensing “Scarecrow” sprinkler device that is hooked up to a hose and blasts any animal moving within a set range with a strong burst of water. Other devices pose a mild electric shock or emit deer distress calls. Although

deer may acclimate to scare devices over time, if moved around and put on an alternating schedule, the deterrent effect will last longer.

Deer - car collisions:

It is estimated that each year there are roughly 1.5 million deer/vehicle collisions on U.S. roadways.

- Many factors contribute to deer car collisions, such as traffic volume and driver speed and distraction, extent to which roads bisect habitat, development patterns, extent of visual barriers, speed limit (below 45 MPH results in accident decline), to name a few–.

Fortunately, there are many humane and effective ways to reduce the number of collisions involving deer, ranging from increasing individual awareness and caution to implementing new technology and structures.

Solutions:

1. **Public Education:** Some of the best collision-reducing efforts focus on public education of both current and new drivers. The messaging should focus on the following points:
 - Be vigilant. Watch from side to side as you drive, especially in areas of low visibility or where shrubs or grasses are near the road.
 - Watch for group behavior. Deer often travel in groups. If one deer crosses the road, slow down and watch for more to follow. Females travel together in winter, and fawns follow their mothers in spring and summer.
 - Be extra cautious in the fall, when bucks are on the move due to rutting and hunting seasons, and in the spring (May to June), when yearlings are seeking new territories.
 - Be especially watchful at dusk and dawn, when deer tend to be more active.
 - Use your high beams at night and turn down interior lights to see farther ahead. Slow down and watch for the eye-shine of deer near road edges.

- Try to drive straight, avoiding swerving around wildlife; rather, try to brake firmly and blow your horn. Animals are easily confused. If you swerve, deer may run into the vehicle rather than away from it. And swerving could mean driving into another vehicle or off the road into poles or fences.
- Slow down!
- 2. Enforce speed limits in areas with deer. The lower the speed, the fewer collisions with deer.
- 3. Erect fences. One of the most successful techniques for alleviating deer/vehicle collisions is to use fencing to prevent deer from crossing roads. Fences must be at least 8 feet high to deter deer from jumping over.
- 4. Install wildlife crossing overpasses or underpasses to help deer and other wildlife safely cross busy roads and intersections.
- 5. Install devices that warn deer of oncoming cars:
 - Streiter Lite® reflectors, which reflect headlights to create an optical illusion of a fence and alert deer to oncoming vehicles, have been reported to reduce deer/vehicle collisions by 60 to 100 percent.
 - Deer Deter devices alert deer to oncoming vehicles by combining a strobe light effect with ultrasonic high-pitched sounds. (Learn more at <http://deerdeter.com>)
- 6. Place moveable, changeable message boards at accident hotspots to alert drivers to pending roadway dangers, and to broadcast seasonal tips such as when fawns are likely to be crossing the road behind their mothers, or during the November “rut” when bucks are on the move and likely to be crossing roadways in pursuit of does).

One community (Rochester Hills, MI) that implemented these solutions found a large drop in deer-car collisions in the first year, and has experienced success with a multi-faceted approach for approximately \$5000 a year (see Appendix D for more information).

Lyme disease:

Every year, 300,000 people in the United States contract Lyme disease. This tick-borne disease may begin by causing a telltale

"bullseye" rash and flu-like symptoms which can later lead to various debilitating conditions. The culprit in the spread of Lyme disease is *Ixodes scapularis*, the Black-legged tick. Originally, the tick was called a "deer tick," a misnomer that has perpetuated the false belief that deer alone are responsible for Lyme disease. In truth, Lyme disease has a complex ecology in which multiple hosts and varying landscapes affect both its presence and its impact on people.

This tick carries a disease-causing bacterium (*Borrelia burgdorferi*) in its bloodstream. The tick has 3 life stages; it transforms from a *larvae* into a *nymph* and then into an *adult* over a 2 year span. At each life stage, the tick takes a blood meal while injecting bacterium into a new host. Then the tick drops off and molts into the next life stage.

The black-legged tick is carried on many different species of birds, some lizards and all mammals. It seems to prefer a progressively larger host; small rodents like white-footed mice are the primary host for larvae and nymphs, while deer are a preferred host for adult ticks. The tick distributes itself widely through the movements of all these hosts. Birds help transport the tick, and therefore the disease, to new areas. Even though the black-legged tick has so many hosts, deer are the most visible, which led to the tick being mistakenly called the "deer tick." Communities often advocate for deer culls in an attempt to reduce the number of disease-spreading ticks.

However, there are reasons that killing deer doesn't reduce the population of Lyme-disease causing ticks:

1. The Black-legged tick has well over 100 hosts, including all mammals, lizards, and many popular songbirds.
2. Studies have shown that the removal of one host isn't enough to suppress the Lyme-disease causing tick (Ostfeld, 2011, Jordan et al, 2007). Even when a high proportion of deer are removed from a location, the ticks switch to other hosts or congregate in higher densities on the remaining deer.
3. Deer removal programs may also put the public more at risk by creating disease "hot spots" (S. Perkins et al, 2006; Ostfeld, 2011). That is, mature ticks that normally latch onto large hosts (i.e., deer) are more likely to end up on people and dogs after deer populations have been reduced.

There's good reason why the Centers for Disease Control (CDC) and health authorities don't recommend hunting to control Lyme disease - because it hasn't been shown to work.

Solutions:

- Public education campaign about the need to routinely check oneself and family members for ticks after being outdoors, taking precautions like wearing light-colored clothing, tucking in sleeves and socks, using tick-repelling products on your skin and insecticidal sprays on properties, doing habitat alteration to reduce tick and tick-host habitat, and consulting a doctor immediately when signs of Lyme disease or the characteristic rash occur. (see CDC website: www.cdc.gov/lyme/index.html)
- The 4-Poster: This device uses deer to kill ticks. It contains a corn bait to attract deer, and when they eat the corn, a chemical (10% permethrin) is applied (by rollers) to their necks and shoulders, killing 95%-98% of the adult ticks. This device has been tested by the USDA in a 5 state, 7 year research program and has proven extremely effective in reducing tick numbers (McGraw and McBride, 1991). A study done at the Goddard Flight Center also found that by using the 4-Poster system, adult ticks were completely eliminated by the 2nd year of the study; and all stages were reduced 91-100% by year 3 (Solberg et al, 2003). The advantages granted by this kind of device seem to outweigh any disadvantages stemming from the supplemental feeding of deer. This device is well suited to a community level approach.
- Damminix Tick Tubes consist of cardboard tubes filled with permethrin-treated cotton balls which mice use for nesting material. The ticks that feed on mice in the spring and fall are exposed to permethrin and killed. This product is commercially available and well suited to a property-level approach.

Aggressive deer:

Rarely, there have been cases of deer being aggressive towards dogs and people. The cause of this is often protectiveness over fawns, or sometimes humans going into enclosures where bucks are in rut. These incidents are very rare, not always verified, and often associated with different individual perceptions.

Solutions include educating the public about:

- Not approaching a deer with fawns
- Keeping dogs on a leash (particularly during fawn-rearing season, which occurs late spring to summer)
- Hazing methods such as approaching a deer and opening and closing an umbrella, clapping hands and yelling, or shaking an aluminum can with coins inside.

Biodiversity loss/forest regeneration:

Deer can certainly impact ecosystems and have a strong influence on forest biodiversity. However, many other factors impact forest biodiversity in largely invisible ways, such as acid rain, insect damage, parasitic organisms, invasive and other competing plant species, pollution, and weather extremes. In addition, the natural process of forest growth stages (i.e. succession) means that as forests grow, trees mature and their canopies shade out the slower growing plants below. The result is that forests become less diverse as they age. Sun-loving flowers may be shaded out of existence with or without deer.

While we may want to see a certain flower grow somewhere, this doesn't mean it "should" be there. There is no forest blueprint for what should grow. What we want to see in the natural world is influenced by our aesthetic preferences—which may not be grounded in any biological reality. It's vital that community leaders have baseline data collected so that deer impacts can be measured, and make sure any action plan is tailored to achieving very defined and realistic goals which can be reliably assessed.

Solutions:

There are various ways to increase biodiversity and forest regeneration. Borrowing from the field of forestry, one can utilize the following techniques: permanent or moveable fencing, overstory thinning, small patch cuts, liming, fertilization of soil, stem protectors, etc. The first step, however, is defining exactly what is to be achieved, and understanding the growing conditions and type/extent of habitat manipulation required for the desired plant species and assemblages.

The Comprehensive Approach

There is no one solution to conflicts with deer. A good deer conflict mitigation program will be comprehensive and multifaceted. The focus needs to be on managing deer *conflicts*, not deer numbers. Many communities get mired in arguments about how many deer they have and how many deer they want, and lose sight of more effective, less costly, and more publicly acceptable ways to manage deer conflicts.

The Problem with Numbers

One of the biggest challenges with focusing on deer numbers, rather than deer conflicts, is that it's extraordinarily difficult to determine how many deer "should" live in an ecosystem or community. Often, the terms "biological carrying capacity" and "cultural carrying capacity" are used, but what do those terms mean?

Biological carrying capacity (BCC) is the number of deer a given piece of land (or ecosystem) can support. If BCC is exceeded, that means there's not enough food for all and some deer will starve. Except in the most extreme and prolonged winters, adult deer rarely starve in suburbs; before deer populations reach that point, fawn production and survival drop off. However, the term is often misapplied. You may hear that "BCC has been exceeded" because people see localized signs of heavy browsing. However, this doesn't necessarily mean that the deer are in critical condition – or that they are anywhere near exceeding their biological carrying capacity. It may just mean that they are eating certain kinds of plants more heavily than others. Likewise, you may hear that 25 deer per square mile (or another number) is what your community "should have." This one-size-fits-all recommendation is a political judgment that has nothing to do with biology. Depending on the type and quality of food and cover, different kinds of habitats can support different numbers of deer –there's no one magical number that any community "should" have.

Cultural carrying capacity is the number of deer that is desired or tolerated by people in a given community. Yet this concept is impossible to define because no one level of deer will satisfy all residents. For a gardener, 2 deer may be too many, yet for a nature lover or hunter, 25 deer might be welcome. Surveys show us that

people tend to assume that wildlife numbers are parallel with conflict occurrence and severity. That is, people's desires for more or fewer deer are dependent on whether they're experiencing conflicts, and the severity of those conflicts. If the conflict is resolved without removing deer, their tolerance level goes up and they perceive there to be fewer deer, *even if the number of deer remains exactly the same*. Community leaders need to be aware of this phenomenon, and be careful to focus programs on reducing wildlife *conflicts*, rather than overly focusing on wild animal *numbers*.

Another problem with focusing solely on deer numbers, rather than conflicts, is that progress can be difficult to measure. Obtaining an accurate count of the number of deer in a community can be both expensive and difficult (with all survey methods involving biases and varying margins of error).

Crucial Elements of a Deer Conflict Mitigation Plan

The focus for an effective deer conflict management plan needs to be on addressing the root cause of conflicts with deer by using an adaptive management framework, i.e. one that is flexible and allows for modification as conflicts or unforeseen issues arise.

There are several elements that are crucial to the success of any deer conflict mitigation plan:

- **Collect site-specific data to indicate the localization and seriousness of the conflict.** The focus needs to be on assessing and defining your community's specific deer-related conflicts.
- **Set clear, achievable and measurable goals.** These goals need to be **tailored** to address specific conflicts and have clear benchmarks to assess program success.
- **Use strategies that are long-term and site specific.** Avoid "quick fix" strategies that don't provide long-term benefits.
- **Create an ongoing monitoring program.** A solid monitoring system is vital for assessing whether the program has achieved its goals, in addition to seeing what changes need to be made. This could be as simple as setting up a resident complaint and/or collision reporting system.

- **Clearly spell out the long term-costs and time-line.** The public needs to know how much public money is supporting the program, over what time period, and where and when certain activities will occur (including those which might impact them, such as park closings).
- **Public outreach, education and involvement are pivotal to program success & community support.** Make sure the public is part of the process, is solicited for their input, informed of all key meetings and decisions, is educated about how to co-exist with deer and resolve conflicts, and if possible directly involved in providing data and assessing outcomes. The community's web site and all other outreach and media avenues should be used to achieve this goal.

What Communities Can Do: A Step by Step Guide

The goal is to create a Deer Conflict Management Plan which clearly outlines the community's deer-related conflicts and attempts to resolve them in a site-specific manner. The focus needs to be on managing deer conflicts, not deer numbers!

Step 1: Gather Local Data:

- a. Conduct resident surveys: Surveys can be distributed through a town-wide mailing with either the survey itself attached (with a return envelope) or through a link to an online survey platform (such as SurveyMonkey). These surveys need to objectively measure residents' attitudes towards deer, the type and severity of their conflicts with deer, and their preferences regarding ways to manage these conflicts. Sample survey questions are included in Appendix B.
- b. Deer-car collision data should be collected through a robust accident-reporting system, with data collected by the Public Works or police department which includes date, time of day, exact location of accident, injuries (and severity), damage to vehicle, light conditions, etc. (see Appendix D- sample Collision Report form). Using this data, identify collision hotspots for warning sign/device placement and mitigation measures and flag the locations of roadway sightline barriers which need to be removed.
- c. A complaint reporting system is helpful for centralizing all deer-related complaints into one central source and logging them into a universal database which includes type of complaint (damage to garden/ ornamentals, collisions, orphaned fawn, deer sighting), level of severity, and exact location.
- d. Collect information on the location and type of deer attractants in town, such as location of public flower exhibits, roadside or roadway- divider floral beds and who maintains them (ex: Garden Club), and to what extent they contain deer preferred

flower species. Also record location of people who feed deer for follow-up visits.

- e. Deer habitat can be assessed by plotting on a map or Geographic Information System all parcels of public and private green space, noting areas of high deer density and possible deer corridors.
- f. Deer feeder locations and any areas where feeding stations have been reported should be identified.

Step 2: Do Map Overlays

Once all the above data is collected, map overlays can be created showing accident hotspots, location and type of complaints, location of deer feeding activities, and where certain attractants are that entice deer into roadways. Plotting this type of data will give you a clear picture of what and where your community's specific deer conflicts are, and where solutions can be applied in a site-specific manner.

Step 3: Create public input channels

The extent to which any deer program is accepted by residents mostly depends on their perception of how fair and open the process was and if their concerns were heard. To this end, the following can be done:

- a. Conduct resident survey (as outlined above)
- b. Set up a deer task force. To be effective and credible, this committee should be balanced, with all important stakeholder positions fairly represented.
- c. Have open public forums to discuss the deer situation. Residents should be encouraged to speak at these forums. Guest/expert speakers can also be very helpful, but again, credibility requires that diverse views are represented among speakers.
- d. Present easily accessible information to public: The town or city's website and other outreach/ media connections can be utilized to provide good information to the public about deer conflict management methods such as how to deer-proof your garden or yard and avoid collisions, and why not to feed deer. It can also be used to keep the public apprised about what the town is considering, any key meetings, and the work of its deer committee. Make sure that any report or information includes

long and short-term costs (direct, indirect) and a specific timeline. The media and other information distribution channels should be utilized to maximize public awareness, education and outreach.

Step 4: Create Action Plan: Utilize range of non-lethal options for site-specific application:

After completing the Evaluation phase, set out the Action Plan as approved by the Deer Task Force and community leaders, and based on public input. One designated person should be in charge of overseeing the deer program (i.e. serve as the Deer Program Coordinator). The Coordinator could develop a master list of volunteers who, after appropriate training, can speak to those residents who call with complaints, do site visits, and even give samples of repellents or information about deer-resistant plants for those who are having backyard deer issues. The deer program can and should be promoted as a source of community pride, as something that is achievable with some effort on the part of all residents, and something that can bring about a harmonious relationship between residents and their community wildlife. Components of the action plan should be specific, measurable, and specific to the root causes of conflicts with deer in the community:

A. Deer Damage to Gardens:

- a. Public Education: Put conflict-solving information on community website (including web links to local resources), and informative flyers in community mailings on where to find deer-resistant plant lists, repellents, and fencing options. Local Cable TV and news media, electric bill inserts, and other information distribution channels should be considered along with special public presentations given for residents on conflict-solving methods.
- b. Host deer-resistant gardening workshops for residents which are presented in the evening or on weekends by an expert and also include site visits to homes for private consultations.
- c. Promote deer-resistant flower and ornamental species in all community landscaping and floral displays. Collaborate with garden club and local beautification committees to ensure that all town floral displays contain deer-resistant species and use these to publicize preventative gardening strategies.
- d. Set up town study plots. Have a deer-resistant garden plot next to a deer-attracting garden plot, plus various plots to which certain repellants are applied (along with control plots for

comparison). Put photos of deer damage (or lack of) on website and use study plots to educate residents how to garden defensively.

- e. Host deer-proofing demonstration days – Utilize boy scouts and other local volunteer groups to put up fencing or tree guards at local parks and have “deer discount days” at local garden stores (i.e. where deer deterrent products are discounted on certain days, etc).

B. Deer-Car Collisions:

Once local deer collision data has been collected and analyzed, the following solutions can be applied. Coordinate a roadway maintenance plan which is overseen by a designated person:

- a. Do educational outreach (i.e. “Don’t Veer for Deer” campaign): put information on community web site, PSAs, local media. Focus on peak months (Nov-Dec rut and May-July fawn rearing). (See Appendix D for more information)
- b. New driver education: get driving tips and Don’t Veer for Deer campaign literature to all new driver education programs (partner with high school, driving school, programs for the elderly, etc).
- c. Reduce visual barriers on roadways: do vegetative management and brush removal to increase visibility on major roadways and negotiate with private landowners about reducing roadway brush on private property adjacent to major roads or accident hotspots.
- d. Treat collision hot spots, utilizing speed bumps, fencing, movable changeable message boards, warning devices (ex: Streiter lites, Deer Deter Wildlife Crossing Guard (<http://strieter-lite.com> ; <http://deerdeter.com>), and evaluating hot spots for possible lower speed limit designation
- e. Investigate possible salt replacement alternatives for winter.
- f. Set up and maintains accident-reporting system and continue mapping accident locations and other details.
- g. Use Rochester Hills MI “Don’t Veer for Deer” campaign as a model – see <http://www.rochesterhills.org/index.aspx?NID=569>

C. Deer feeders

- a. Develop educational literature, publicizing how feeding is not good *for the deer*.
- b. Encourage neighbor-to-neighbor sit-downs and have town personnel conduct diplomatic visits to offenders.
- c. A deer feeding ban ordinance can be passed to discourage the feeding of deer, and contact information provided for the reporting of violators.

D. Lyme disease

- a. Public education campaign focusing on personal prevention steps, including links on community website to CDC and other expert resources regarding disease prevention methods (personal protection measures, landscaping practices, etc).
- b. Tick Management: Consider drawing up community –based plan for strategic placement of *4-Posters* (see Lyme disease section for more information on 4-posters).

E. Biodiversity issues

- a. Seek out collaboration with local Natural Resource schools/universities to have college students do field survey work to objectively assess deer impacts and browsing levels on local flora and establish baseline data.
- b. Consider use of forestry methods (fertilizing, temporary or permanent fencing, stem protectors, etc) to protect valued plant communities.

F. Aggressive/Habituated deer

- a. Assessment: Have local animal care and control professional evaluate the situation.
- b. Educate residents about temporary and rare nature of aggressive deer situations, importance of keeping dogs and people away from fawns, and describe hazing methods they can use if a deer comes too close or becomes threatening.

G. Orphaned fawns

This topic should be included in all educational materials and in spring-summer media (See Appendix F for more information):

- That the vast majority of seemingly “orphaned fawns” are NOT orphaned and should be left alone.
- It is common to have fawns “parked” in yards and fields by their mother and as they rely on environmental camouflages for protection. The doe will nurse her fawn twice a day but stays away the rest of the time since her odor will attract predators (fawns are odorless). Once the fawn is about a month old, it will travel around with its mother.
- Only if the fawn is injured, wandering and vocalizing all day, and/or a dead lactating doe is found in the road should the fawn go to a licensed wildlife rehabilitator.
- If the fawn is picked up by a well-intentioned resident, the resident needs to be advised to quickly return the fawn to the original site for the mother to reclaim.

Step 5: Program Assessment and Monitoring:

1. Set up a robust resident complaint and deer-car collision reporting system and monitor over time to see if goals are achieved and if accidents and “nuisance” complaints decline over time (See Appendices B, C and G)
 - a. Resident complaints: record type, extent, duration, location of complaint, time and date
 - b. Collision reporting: accident location (exact), time of day, if injuries, damage to car(s), if just dead deer in road, etc.
2. Conduct resident survey every year to measure resident satisfaction with program, see if satisfaction ratings increase.

Lethal Removal

It is commonly assumed that hunting or organized deer culling will decrease the deer population; however, there are issues with this approach:

1. Increased reproduction: Deer are very adaptable, and their productivity is keenly tied to their food resource. When there are fewer deer in an area and abundant food, they will maximize their reproduction – i.e. having twins and triplets in the spring instead of a single fawn. This causes their numbers to rebound quickly after any deer removal. Therefore, even if deer numbers can be lowered, they don't stay at that level.
2. Immigration of new deer to area: Deer from the surrounding area may take advantage of any vacated niche. This, combined with a high reproductive rate, can lead to deer numbers bouncing back quickly after any depopulation effort.
3. Deer moving to sanctuary areas once hunting or professional culling commences: Deer will move into unhunted "safe" areas within their habitat (or even make long distance movements) in response to hunting or culling activities. Once lethal control has ceased, they move right back into their original territory.
4. Increased removal effort: Even if deer numbers are lower after lethal removal efforts, it then requires more effort by hunters or sharpshooters to take out the same number of deer (since the deer will be scarcer and warier) in subsequent years. Lower deer numbers also make the environment less attractive to hunters, and drive up costs for professional culling.
5. Recurring challenge: Getting deer numbers to a low level, and then keeping them at that level, can be extremely difficult and result in the need for perpetual annual hunts or culling activities.

Special challenges for community leaders to consider before initiating lethal control:

1. Inaccessible hunting areas: Many community hunts or culls are limited to larger public green space areas for safety reasons. This is particularly problematic in densely populated areas. Even where density is lower, some private landowners will not want hunters on their properties. These challenges of access, combined with localized deer home ranges in urban and suburban areas, mean

that deer killed in one area may not be the ones causing conflicts elsewhere.

2. Safety concerns: Residents in urban and suburban communities may be concerned about safety issues such as stray arrows or shotgun slugs going into their yards or homes, and panicked or wounded deer darting onto roadways.
3. Ethical concerns: Before instituting any lethal control program, it should be determined that there are no humane alternatives available that could be used instead. Lethal control should only be used when necessary to protect human safety and when no humane alternatives are available. If lethal control is deemed necessary, any control method should predictably and effectively cause the least amount of harm to the least amount of animals.
4. Controversy: Any sort of cull or hunt will result in a certain amount of controversy. In the worst cases, for example when wounded animals are seen by distressed citizens, the public can become divided and angry, drawing time and attention away from other issues of public concern.
5. Logistical issues: Wounded deer may run off huntable property onto private land. Therefore the town may need to consider:
 - Will adjoining landowners be asked to allow hunter trespass for blood trail tracking purposes?
 - Will public parks be closed during hunting periods?
 - Will other recreational activities be impeded?
 - Will set-back restrictions (pertaining to firearms discharge within a certain distance of a dwelling) be amended to allow for more hunter access?
6. Additional liability insurance – Town attorneys need to explore if the town or community is covered for all liability in regard to culling activity.
7. High direct and indirect costs: If sharpshooters are used, there will be a recurring annual cost. If public hunters are used, there are indirect costs for the community such as law enforcement staff time and overtime, and restricted use of town green space.
8. Use of public funds: Doing “something” (e.g. a deer cull) may appease those who want to see action taken, but if the conflicts aren’t solved, then it’s ultimately a waste of taxpayer dollars.

A Note on Deer Fertility Control

Deer fertility control is an innovative and advancing field with demonstrated applicability to suburban and urban deer populations. Options range from immunocontraception (using a vaccine that induces an immune response to block reproduction) to surgical sterilization (which involves surgically removing reproductive organs or interrupting the fertilization pathway).

Most of these tools are still in experimental phases, and thus are not available for general use at this writing. However, researchers are refining and field-testing deer fertility control methods, while policy managers pursue federal and state registration to allow for future management applications.

A more detailed description of fertility control methods is provided in Appendix I.

For more information about fertility control options or to further discuss the process of conducting a pilot project, please contact HSUS via email: wildlife@hsus.org.

Additional resources may also be found through The Botstiber Institute for Wildlife Fertility Control: www.wildlifefertilitycontrol.org, or through the Science and Conservation Center: www.sccpzp.org.

Sample Resolution

Appendix A

Resolution No. _____

A Resolution Approving a Deer Conflict Management Plan

WHEREAS the City of _____ has a duty and responsibility to protect their health, safety and welfare of its residents; and

WHEREAS it is recognized that deer are a natural part of the landscape and the ecology of the region, despite human encroachment upon their habitat; and

WHEREAS deer provide great pleasure to residents and are beneficial to the community as a whole, and

WHEREAS deer may create conflicts due to their browsing activities and movements and certain human activities may serve to unintentionally create or exacerbate such deer-human conflicts; and

WHEREAS due to the varied interests of persons and organizations regarding actions that can be taken in the management of deer, a written management plan is desirable to ensure that the varied interests are evaluated and considered when seeking to address conflicts with deer, and;

WHEREAS the purpose of the Deer Conflict Management & Coexistence Plan is to provide effective long term solutions to deer conflicts, including education, habitat modification, hazing, exclusion, repellent methods, and tolerance, to resolve and reduce human-deer conflicts within the City in a humane, ecologically sound, and effective manner; and

WHEREAS deer-related conflicts can be resolved through public education about deer-resistant gardening, defensive driving, tick-borne disease prevention, and feeding bans along with effective roadway signage and maintenance practices, among other recommended actions; and

WHEREAS the City is directed to prioritize nonlethal methods, including education and methods list within the Deer Management Plan, as primary methods in deer management; and ,

NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF _____
that the Deer Conflict Management Plan attached hereto and
incorporated herein by reference, is hereby approved. The resolution
shall be effective immediately.

Adopted and approved this _____ day of _____

Attest

Sample Public Survey

Appendix B

Name _____

Address _____

Phone (cell) _____ (home) _____

Email: _____

1. Do you enjoy seeing deer in the community?

- a) Yes
- b) No
- c) Sometimes

2. Are you experiencing any deer issues currently? ____Yes ____No

3. What deer-related issues are you/ have you experienced in the past year?

- a) Deer-auto collision
- b) Browsing of vegetable gardens
- c) Browsing on ornamentals/ flowers
- d) Browsing of crops
- e) Human-habituated "too tame" deer
- f) Neighbor feeding deer
- g) Other:

4. Rate the level of severity of any deer issue you've experienced in the past year:

Use a 1-5 scale here, with 1 being *caused no problem* to 5 being *caused a severe problem*:

- a) Deer-car collision ____
- b) Browsing on vegetable garden ____
- c) Browsing on ornamentals/ flowers ____
- d) Browsing of crops ____
- e) Human-habituated "too tame" deer ____
- f) Neighbor feeding deer ____
- g) Other: _____

5. Have you taken any actions to alleviate the deer issues? Yes No

6. What actions have you taken? (check all that apply, and indicate how successful the action was on a 1-5 scale—with 1 being *ineffective* and 5 being *highly effective*)
- a. Tolerance / no action ____
 - b. Switched to planting deer-resistant flower/ plant varieties ____
 - c. Used fencing / netting / barriers ____
 - d. Used repellents ____
 - e. Scare devices ____
 - f. Hazing – i.e. using scare tactics to re-instill natural fear of humans ____
 - g. Other: _____
7. What kind of deer conflict management program is acceptable to you?
- a) Prefer non-lethal (no killing of deer) options only
 - b) Prefer Lethal (killing of deer) options only
 - c) Combination of above
 - d) No opinion/Don't care
 - e) Other:
8. What specific actions are acceptable to you?
- a) Do nothing/ leave deer alone
 - b) Non-lethal population control measures –dart deer with contraception vaccine or use surgical sterilization
 - c) Non-lethal conflict mitigation measures – public education and workshops on deer resistant gardening, prevention of Lyme disease, preventing deer-vehicle collisions, etc.
 - d) Lethal measures – archery hunting
 - e) Lethal measures – shotgun hunting
 - f) Lethal measures –sharpshooting program
 - g) Other:
- 9) How do you feel about deer?
- a) I enjoy the presence of deer,
 - b) I enjoy the presence of deer, BUT I am experiencing some conflicts
 - c) I do not enjoy the presence of deer and regard them as nuisances
 - d) I'm concerned about collisions
 - e) I'm concerned about Lyme disease
 - f) Other:
9. How do you feel about expanding hunting in the community?
- a) I do not support additional hunting of deer locally
 - b) I support additional hunting of deer locally
 - c) No opinion / don't care either way

Sample Deer-Vehicle Collision Report Form

Appendix C

Date of accident (month/day/year):

Exact Location (street intersection or address):

Time of accident (specify a.m. or p.m.):

Type of vehicle:

Road conditions:

Wet

Dry

Dirt

Light conditions:

Dawn

Daylight hours

Dusk

Evening

Weather:

Dry

Rain

Snow

Ice

Windy

Injury severity:

Human injury

Human fatality

Deer Injury

Deer

Fatality

Vehicle Damage?

None

Minor

Significant

Severe

Deer Info:

Fawn

Adult (M or F)

Did driver hit deer _____ or swerve/ not hit deer _____?

Deer run off? _____ yes _____no

Any signage/warning device nearby?

Yes

No

Additional Information:

Tips for Avoiding Deer/Vehicle Collisions

APPENDIX D

This kind of information can be put into educational materials, posters, fliers and web site text to help residents reduce the likelihood of collisions with deer:

BE VIGILANT: When you drive, make a habit of watching from side to side, especially in areas of low visibility or where roadside shrubs or grasses are close to the road.

WATCH FOR GROUP BEHAVIOR: Deer tend to travel in groups. If one deer crosses the road, watch for more to follow. Female deer tend to stay together as "doe groups" in winter and have young fawns following them in the spring.

BE AWARE OF SEASONS: In the fall (Nov –Dec), bucks are on the move due to rutting and hunting seasons. In spring (May- June), fawns are following their mothers. Be extra careful driving at these peak times of year.

BE AWARE OF TIME OF DAY: Deer are most active at dusk and dawn. Be watchful, especially during early morning and evening, when wildlife may be moving across roads.

USE HIGH BEAMS: At night, use your high beams to see farther ahead. Slow down and watch for the eye-shine of deer near the road edges.

DRIVE STRAIGHT! Do not swerve to avoid wildlife but stay in your lane, brake firmly, and blow your horn. Animals are easily confused. If you swerve, you may collide with another car, telephone pole, fence or other roadside object. Also deer may run into the vehicle rather than away from it.

IF YOU HIT A DEER: Pull off the roadway. Turn on the vehicle hazard flashers, and be careful of other traffic when you leave your car. Don't attempt to drag a deer off the roadway unless you know it's dead and it's safe to do so. An injured deer can cause serious injury.

See: <http://www.rochesterhills.org/index.aspx?NID=569> and www.deercrash.org for more information and http://www.michigandeercrash.com/Deer_Crash_Brochure.pdf for a sample brochure

Repellents & Scare Devices

APPENDIX E

Repellents are products that are meant to disrupt and reduce deer browsing. However, deer are very adaptable. Therefore, the effectiveness of repellents will depend on a number of factors:

- Seasonal changes in plant palatability
- Local deer taste preferences
- Availability of alternative foods
- Time of year
- Deer density
- Type of repellent and concentration of active ingredients
- Durability of the repellent and how often it is applied

Plants are most vulnerable in winter when snow cover or extreme cold reduces food availability, and in early spring when young, succulent spring growth on ornamentals may occur before native plants. In addition, most repellents require reapplication at regular 2-3 week intervals and after heavy rains. This is why people may consider repellents to be labor-intensive and not always cost-effective, particularly over larger acreage. On the more positive side, repellents are easy to apply and invisible, thus having much aesthetic appeal.

What Makes Some Repellents More Effective than Others?

Odor-Based Repellents: The most effective deer repellents tend to be those that produce sulfurous odors and are considered "fear-inducing." These repellents depend completely on detection through odor. It is believed that deer associate a sulphur smell with the presence (or carnage) of a predator or spoiled food. Not all sulphurous odors are equally effective, however. For example, compounds containing garlic seem to be less effective than sulphur compounds in urine.

Aside from fear-inducing odors, repellents use other modes of action (some repellents combine several modes of action) which include:

- Taste: these include bitter ingredients that presumably create a bad flavor. Taste receptors in deer are different from those in humans; some compounds which are very bitter to people don't bother deer at

all. Taste-based repellents must be continually applied to the growing parts of plants. Taste-based repellents seem to have a shorter duration of effectiveness than odor-based. This may be due to the lack of an associated odor cue, so deer repeatedly sample growing plants and quickly notice if the hot pepper flavor is absent from any plant parts.

- Pain: these include ingredients like hot pepper (capsaicin) or ammonia, which cause irritation on contact with the mucous membranes, eyes, mouth, nose or gut.
- Conditioned aversion: these products cause animals to form an association between the treated item and a feeling of sickness, usually gastrointestinal.

Tips for Successful Repellent Application:

1. All repellents work best if applied before the deer's feeding pattern becomes established. This means applying repellents before bud-break and as new growth appears. The goal is not to break a browsing habit, but rather to prevent one from forming!
2. Repellents need to be reapplied after heavy rains. Routine reapplication every 2-3 weeks is vital so that new, growing plant parts are protected as well.
3. Deer may become accustomed to the same repellent and ignore it over time. Alternating repellents may help to keep the deer confused and more wary.
4. At the height of growing season, choose an odor repellent over a taste-based one. Taste-based repellents need to be constantly applied to any new growth to keep the whole plant tasting bad.

How Do I Choose a Repellent?

Many repellents are stocked by local garden, farm supply or hardware store, and it's a good idea to ask what seems to be working best in your area.

NON-COMMERCIAL REPELLENTS:

Soap Bars: Hanging a bar of soap from a bush or tree will help protect it. Be sure to leave the soap wrapper ON and drill a hole through the center of the soap and suspend it with a string. The brand of soap must be high in tallow

fatty acid, like *Irish Spring*. Glycerin and coconut-based fatty acid soaps do NOT seem to repel deer well. Disadvantage: the sphere of protection is limited to the immediate area around the tree/bush. Be sure to hang the soap bars no more than 3 feet apart, up to a height of 6 feet, all around the tree/bush.

Human Hair: Although hanging sachets of human hair costs very little, it does not consistently repel deer. Hair can be obtained from beauty salons and barbershops quite easily, however. Hair should be bagged in 1/8-inch mesh bags or nylon stockings, and contain at least 2 handfuls of hair apiece. Bags should be hung at least 3 feet apart from each other and up to a height of 6 feet if the tree/bush to be protected has a wide diameter. Refresh the bags monthly with fresh hair.

HOMEMADE SOLUTIONS:

- Mix 3 eggs well in a blender. Mix with 1 gallon of water. Spray on plants. Reapply after heavy rains. Disadvantage: this solution may clog sprayer.
- Mix 4 eggs, 2 oz. red pepper sauce, 2 oz. chopped garlic. Blend with enough water to make 1 quart. Strain and apply with spray can.

A SAMPLING OF COMMERCIAL REPELLENTS:

Deer Away Big Game Repellent (BGR): This product comes in both a powder and liquid) and has scored well in repellent studies. BGR is an odor-based repellent comprised mostly of putrescent egg solids. It is usually available in garden stores.

Miller's Hot Sauce and *Deer Away Deer and Rabbit Repellent*: Both of these products rely on trigeminal nerve irritation in the mouth caused by the hot pepper sensation. The effectiveness of any capsaicin-based (hot pepper) product appears to depend largely on the concentration of capsaicin used and that the product be reapplied every 2-3 weeks (or less) so that any new plant growth is covered.

Hinder: This is an odor deterrent, based on ammonium soaps high in fatty acid. This is one of the few products that can be used on garden vegetables. It is usually available in garden stores.

Milorganite: This human sewage-based fertilizer is primarily an odor deterrent, available at most garden stores. Recommendation: Spread in a wide band around the perimeter of a garden, reapply as directed and after heavy rains. It is usually available in garden stores.

SCARE DEVICES:

Another way to deter deer is to scare them. However, deer tend to habituate to most scare devices over time. Their initial fear of a device that looks, moves, or sounds strangely may even result in curiosity followed by rapid habituation as the deer learns that the device is not harmful. Here are some examples but this list is not all-inclusive:

- Scarecrow Motion Activated Sprinkler: This is a motion sensor combined with a sprinkler that attaches to a spray hose. When a deer comes into its adjustable, motion detecting range, a sharp burst of water is sprayed at the animal. By combining a physical sensation with a startling stimulus, this device appears to be more effective than other devices that rely on sights or sounds alone. This device reportedly is effective for other mammals that may come into gardens.
- Havahart #5250 "Electronic Deer Repellent": This highly portable "repellent" consists of 3 stake-like devices, cotton and a scent lure and is aesthetically colored to blend into the environment. The deer are attracted to the lure and receive a mild electric shock when they reach it. The concept is to train them, through aversive conditioning, to stay away from gardens. This 3-post device covers 1200 square feet of garden, according to the company. The current produced by this device has very low amperage and duration of only a few milliseconds.
- Ultrasonic Devices: There are several devices which are intended to repel wildlife by producing high-frequency, short-wave ultrasonic sounds that are inaudible to people but are heard by the target animals. While ultrasonic devices placed in yards and other outdoor areas can be effective for keeping deer away, devices like "deer

whistles” meant to be affixed to car bumpers to prevent deer-auto collisions have not been shown to be effective.

Handling Orphaned Fawn Calls

APPENDIX F

In late Spring and Summer, residents may see a helpless-looking fawn curled up in their yard. They often assume the fawn is orphaned, and grab the animal. They don't realize that this is the worst thing they can possibly do.

What's happened is that the mother deer has "parked" her fawn somewhere that seemed safe in the night. The fawn is completely dependent on her spotted coat (blends into the landscape) and on being scent-less to avoid detection by dogs, coyotes, and other sources of danger.

Only when the fawn is a month old will she start traveling around with her mother. Until then, she stays put –more or less—and waits for her mother to come back and nurse her 2-3 times a day – usually in the early morning or at night. The doe does not stay with her fawn because she doesn't want to attract predators.

People don't realize this, and instead "kidnap" many healthy fawns, mistakenly thinking they're orphaned. They don't realize the mother is frantically looking for her baby, and that the fawn needs to be raised by its mother in order to learn vital survival skills.

If the caller has already picked up the fawn, they should be instructed to:

- *Promptly return the fawn to exactly where she was found. (Let the caller know that, contrary to popular myth, the doe will not abandon her fawn due to human scent.)*
- Do not stay at the site or the mother will stay away.

ONLY under the following circumstances should the caller be instructed to take the fawn to a licensed wildlife rehabilitator:

1. If the mother is definitely dead (ex: if roadstruck – the undersides can be checked for signs of lactation).
2. If the fawn has been crying and wandering around all day.
3. If the fawn is definitely injured (i.e. broken leg --- not to be confused with their normal wobbly stage when they first start moving around.)

Rehabilitators can be located by going to:

www.humanesociety.org/wildliferehab

Sample Public Complaint Form

APPENDIX G

Name _____ Date: _____

Address _____ City: _____

Email _____

Phone _____

Is complaint at your home? If not, location:

COMPLAINT TYPES:

- **Actual Damage / Conflict:**

- ☐ Browsing flowers
- ☐ Browsing vegetable garden
- ☐ Browsing trees/ ornamental
- ☐ Collision with own vehicle
- ☐ Collision with other vehicle
- ☐ Caught in netting or fence
- ☐ Came into house or dwelling
- ☐ At birdfeeder
- ☐ Aggressive to pet

ADDITIONAL INFORMATION:

- ☐ Aggressive to person
- ☐ Neighbor feeding deer

- **Concerns** (no actual conflict)

- ☐ Concern about having collision
- ☐ Concern about Lyme disease
- ☐ "Too many deer"
- ☐ Concern for deer welfare
- ☐ Orphaned fawn
- ☐ Want to hunt in town
- ☐ Don't want hunting in town

Deer Fertility Control

Appendix H

Overview

The first step for a community considering the use of fertility control to manage deer population numbers is to closely evaluate whether it is justified based on the characteristics and severity of deer conflicts. It is important to determine whether fertility control will really address your community's particular concerns. Once this has been discussed, and your community's plan seeks to include a fertility control component, the next step would be to contact a fertility control researcher or service provider to further discuss your community's goals, problems, and possible solutions and learn about what options might be practical and logistically feasible. At this time, most fertility control programs for deer are multi-year research-based projects and require significant scientific justification and oversight in order to be carried out in the field.

Fertility control options may be initially expensive and labor intensive, but because these options result in few or no fawns being born, they provide a long-lasting effect and prevent that "bounce back" in deer numbers that would otherwise occur every spring fawning season. Laboratory and field researchers continue to develop, test, and refine deer fertility control tools and techniques. The following material will provide additional information on different methods and applications of current deer fertility control efforts.

Immunocontraception

Immunocontraception is a fertility control method that uses the body's immune response to prevent pregnancy. There are multiple immunocontraceptive products being utilized, researched, refined, and field-tested for use in deer.

The most extensively tested immunocontraceptive is **porcine zona pellucida** (PZP), a protein based vaccine that is given to females via intramuscular injection (either by hand or with a dart delivered via CO₂-powered dart gun or blowpipe). This injection causes her to produce antibodies that bind to her egg coating and block sperm attachment, thereby blocking fertilization during breeding. Currently, PZP is being tested on deer in the field under state-issued scientific use permits.

Currently developed PZP formulations utilized include:

- Native (PZP) –Provides a year of contraception with two initial treatments. Contraception is extended for one or more years with annual boosters. May be delivered by dart or by hand. Native PZP is EPA-Registered for use in deer as ***ZonaStat-D, but is pending final revisions; state registrations, which will be needed for management use, are pending.*** Native PZP is manufactured at the Science and Conservation Center in Billings, MT. <http://www.sccpzp.org/>

PZP- 22 – Combines the native PZP vaccine with a set of controlled-release PZP pellets that extend contraception to approximately 2 years or more with a single injection. Past studies in deer have documented the success of hand-injections. Field studies testing effectiveness and longevity of remotely delivered PZP-22 booster treatments are underway . PZP-22 is not yet registered with the EPA, nor with any individual states.

- SpayVac® - Is a PZP vaccine produced by Immuno Vaccine Technologies, Nova Scotia, Canada which has demonstrated multi-year effectivity with a single dose. The mechanism of action of SpayVac® may differ somewhat from that of native PZP and PZP-22. SpayVac® is not yet registered with the EPA, nor with any individual states.

Another immunocontraceptive agent that has been effectively used in deer fertility control programs is **GonaCon™**. In contrast to PZP-based vaccines, GonaCon™ works by specifically targeting the hormone GnRH (gonadotropin releasing hormone). GnRH is a normally occurring hormone that stimulates and regulates the production of sex hormones in males and females. Antibodies produced in response to GonaCon™ injections neutralize naturally-occurring GnRH and block the release of these sex hormones, resulting in infertility. Because the steroid hormones blocked by *GonaCon™ influence behavior and many physiological processes, it should be applied with caution until more field testing has been completed. In particular, use on males should be avoided because of its demonstrated effects on antler growth.*

- GonaCon™ - was developed by the USDA/APHIS National Wildlife Research Center in Fort Collins, Colorado, and registered by the EPA

for use in white-tailed deer in 2009. In captive studies, this vaccine has also demonstrated multi-year fertility control in female deer (approximately 2 to 4 years) with a single injection.

Surgical Sterilization

Surgical sterilization involves a much more invasive process than immunocontraception, but once performed is permanent. Like other methods of fertility control, surgical sterilization is still in the experimental stages (with the exception of the state of Maryland, where this method is permitted for deer management outside of research). This method requires the management team to have specific expertise in both chemical capture (sedation darting) and veterinary anesthesia and surgery.

Though sex-specific, there are multiple methods of surgical sterilization procedures being applied in the field, all of which are performed under anesthesia by a licensed veterinarian with adequate training in such techniques.

For female deer:

Ovariectomy - ovaries are surgically removed. This procedure yields permanent infertility, as animals cannot reproduce without ovaries and eggs present for impregnation.

Tubal Ligation -Fallopian tubes are clamped and separated so eggs won't travel from the ovary into the uterus. This method is commonly referred to as getting one's "tubes tied", and since the sex organs that produce and house eggs are still present, there is a very small chance that an egg could still find its way into the uterus and the animal could become pregnant. Therefore, since a pregnancy can technically still occur (although rare), this method does not guarantee permanent infertility 100% of the time.

For Male Deer:

Vasectomy- the vas deferens are clamped and separated to avoid the advance of sperm from the testicles into the seminal stream. Similar to tubal ligation, since the sex organs (testes) that produce and house sperm are still present, there is a very small chance that sperm could still find its way into the seminal stream. Therefore, since release of sperm can technically still occur (although rare), this method does not

guarantee permanent infertility 100% of the time. Castration, or removal of both testes, is NOT recommended in deer. Given the role that testosterone plays in deer behavior and antler growth, the testes should remain in the body to avoid potentially life threatening side effects related to inhibited antler development.

Fertility Control Field Research Requirements

At this time, most fertility control methods are only permitted for use under the auspices of research by field scientists. Regardless of the method of fertility control, research projects require sound scientific study design, where the purpose and outcomes will contribute to the existing body of research and knowledge within the field. Research permits are awarded at the discretion of the individual state's wildlife and natural resource authorities, who generally require a full research proposal be submitted. Additional review and permissions from Institutional Animal Care and Use Committees may be required under the Animal Welfare Act and other applicable laws. Depending on the technology being tested, EPA authorization may also be needed.

For management applications, fertility control project plans must still be reviewed and permitted by the state wildlife authority. Each state wildlife authority will impose requirements that they see fit for their individual state's requirements and needs.

For more information about fertility control options or to further discuss the process of conducting a pilot project, please contact HSUS Staff via email: wildlife@hsus.org

Additional Fertility Control Resources

- **Botstiber Institute for Wildlife Fertility Control: www.wildlifefertilitycontrol.org**
- **Science and Conservation Center: www.sccpzp.org**

Resources

Deer-Vehicle Collisions:

- www.deercrash.com - put together by various DOTs with methods and reviews
- www.michigandeercrash.com/Deer_Crash_Brochure.pdf - sample brochure

Deer –Resistant Plants:

- hwww.deerresistantplants.com
- www.easywildflowers.com – great native flower resource
- wildlifehotline.org/deer.html
- www.humanesociety.org/deer
- www.deerproofyourgarden.com –gardening expert Sandy Baker is available to give public presentations, private landowner garden assessments, and make deer-proofing recommendations for communities
- Local garden stores
- Local Cooperative Extension Service – for listing of native deer-resistant plants

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Wildlife Management Advisory Commission

	2/19/18 Regular Meeting	02/27/2018 Special Meeting	3/19/18 Regular Meeting	4/16/18 Regular Meeting	5/14/18 Regular Meeting	6/18/18 Regular Meeting	7/16/18 Regular Meeting	8/20/18 Regular Meeting	9/17/18 Regular Meeting	10/15/18 Regular Meeting	11/19/18 Regular Meeting	12/17/18 Regular Meeting
Commissioner												
Krawczynski	P	P	P	P	P	P	P	P	P	P		
Segovia	P	P	P	P	P	P	P	P	P	P		
McKinney												
Kneupper	P	P	P	P	P	P	P	P	P	P		
Hatch												
Bippert	VAA	P	P	P	VAA	P	P	P	P	P		
Sullivan	P	E	P	VAA	P	P	P	P	P	VAA		

P	Present
	Present but quorum not met
P-QNM	Excused for reasons allowed in Ord. 210
E	Voluntary Announced Absence
VAA	Unannounced Absence
UA	Not member yet

Wildlife Management Advisory Commission's Attendance at City Council Regular Meeting

[illegible]

Future Agenda Items

Wildlife Management Advisory Commission

December 17, 2018 Regular Meeting

- | | | |
|-------------------------------|------------|---|
| 14 days before Meeting | (12/03/18) | Commission and Staff items are due |
| 10 days before Meeting | (12/07/18) | City Administrator and Chair review agenda. City Attorney is sent the agenda for approval. |
| 7 days before Meeting | (12/10/18) | Post Agenda on bulletin board and Commission will receive packet
(allowing a day and half for corrections and to request additional information to be added) |
| 4 days before Meeting | (12/13/18) | Post Agenda Packet to City Website |
| 3 days before Meeting | (12/14/18) | (72 hours) – Local Government Code requirement for posting |

City Council = Red
 Impact Fee Committee = Pink
 Quarry Commission = Purple
 Planning & Zoning = Green
 Water Commission = Blue
 Wildlife Management Advisory Commission = Brown
 Christmas Eve/Christmas Day Holiday= City Events
 New Year's Eve Holiday= City Events

Sun	Mon	Tues	Wed	Thur	Fri	Sat
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Approval

1. Minutes 11-19-18

Petition/Public Hearings/Recommendation

Discussion/Reports

1. Health of the wildlife in Garden Ridge
2. Police Wildlife Report
3. Animal Control Report
4. City Council Update
5. Future Agenda Items
 - a. Commissioners' input
 - b. Announce next meeting (if necessary) January 28, 2019, at 6pm (January 21 is a holiday)

Training Session

1. TBA (Bippert)

Executive Session

January 28, 2019

Regular Meeting

14 days before Meeting	(01/14/19)	Commission and Staff items are due
10 days before Meeting	(01/18/19)	City Administrator and Chair review agenda. City Attorney is sent the agenda for approval.
6 days before Meeting	(01/22/19)	Post Agenda on bulletin board and Commission will receive packet (allowing a day and half for corrections and to request additional information to be added)
4 days before Meeting	(01/24/19)	Post Agenda Packet to City Website
3 days before Meeting	(01/25/19)	(72 hours) – Local Government Code requirement for posting

City Council = Red

Impact Fee Committee = Pink

Quarry Commission = Purple

Planning & Zoning = Green

Water Commission = Blue

Wildlife Management Advisory Commission = Brown

New Year's Day Holiday= City Events

MLK Holiday= City Events

Sun	Mon	Tues	Wed	Thur	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Approval

1. Minutes 12-17-18

Petition/Public Hearings/Recommendation

Discussion/Reports

1. Health of the wildlife in Garden Ridge
2. Police Wildlife Report
3. Animal Control Report
4. City Council Update
5. Future Agenda Items
 - c. Commissioners' input
 - d. Announce next meeting (if necessary) February 25, 2019 at 6pm

Training Session

Executive Session

PENDING FUTURE AGENDA ITEMS

- Hunting on Hanson Quarry
- Identify signs of wildlife
- Discussion on future surveys to include surveys for adult children who live at home and are over 18 years of age (Kneupper)
- Netting Options
- Cost and provider for autopsy of a deer showing signs of Bottleneck (Krawczynski)

UPCOMING EDUCATION/TRAINING SESSIONS