



City of Garden Ridge

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

AGENDA
WILDLIFE MANAGEMENT ADVISORY COMMISSION
REGULAR MEETING
MONDAY, JULY 15, 2019, 6:00 P.M.

The Wildlife Management Advisory Commission will meet in a regular meeting at 6:00 p.m., Monday, July 15, 2019, 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 by July 12, 2019, before 6:00 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 must 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/business item period
 1. You are required to sign up to speak and you are limited to one 3-minute period.
 - ii. Second citizen comment period
 1. You are not required to sign up and you are limited to one 2-minute period.
 - iii. State your name and address before your comments begin.
 - iv. You are only allowed to speak once per topic, unless also speaking during a posted Public Hearing.

*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. TX GOVERNMENT CODE § 551.042.*

6. **Business Items**

The following items are for discussion and/or possible action, including recommendations.

- a) Education/Training Session – “Conducting Deer Surveys Garden Ridge, TX 2019” by Craig Hensley, Texas Parks and Wildlife Department Biologist (limited to 30 minutes total)

- b) Approvals
 - i. Minutes for June 17, 2019, Wildlife Management Advisory Commission Regular Meeting.
- c) Discussions/Reports
 - i. Wildlife and wildlife incidents within the City of Garden Ridge.
 - 1. Police Department
 - 2. Animal Services
- d) Updates/Recommendations
 - i. Development of comprehensive Wildlife Management Plan for Garden Ridge.
 - 1. Discuss and make possible recommendations regarding topics and/or items in the Wildlife Management Plan for Garden Ridge.
 - ii. Commissioner's Projects
 - 1. Brochure/mailer from New Braunfels (Sullivan).
 - 2. September 28th, 2019, Ribbon Cutting Event and Celebration (Segovia).
 - 3. Health of wildlife in Garden Ridge.
 - 4. Future education/training sessions and Grapevine articles.
 - iii. Meeting Updates/Reports
 - 1. July 2, 2019, City Council Regular Meeting.
 - 2. Parks Committee Monthly Meetings.
 - iv. Ordinance No. 210-022018 An Ordinance of the City Council of the City of Garden Ridge adopting board and commission policy and procedures; providing that this Ordinance shall be cumulative of all Ordinances; providing a severability clause; providing a savings clause; and providing an effective date.
 - 1. Discuss and make recommendations related to application of ordinance provisions to commission members, if needed.
- e) Future Agenda Items.
 - i. Commissioner input.
 - ii. Announcement of next Wildlife Management Advisory Commission Regular Meeting (Monday, August 19, 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 Commission 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.

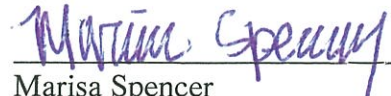
Executive Sessions Authorized:

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.

This is to certify that I, Marisa Spencer, posted this Agenda at 12:00 p.m. July 10, 2019, on the bulletin board located at the entrance to the Garden Ridge City Hall, 9400 Municipal Parkway, Garden Ridge, Texas.


Marisa Spencer
City Secretary

CONDUCTING DEER SURVEYS GARDEN RIDGE, TX 2019



Presented by:
Craig Hensley, Biologist
Texas Parks & Wildlife Department

BRIEF HISTORY

- **First Deer Survey Conducted in October (2) & December (1) of 2014**
- **Subsequent surveys conducted in 2016-18**
 - **2016: Nine (9) surveys conducted in July**
 - **2017: Nine (9) surveys conducted in August (2) & September (7)**
 - **2018: Fourteen (14) surveys conducted in July (2) & August (12)**

“The key is to sample the study area as well as possible and make sure it is representative of the habitat type the estimates will be used on. It must be recognized that censuses are estimates and, therefore, subject to some error.”

-Texas A&M publication

“The actual number of deer in a community is nearly impossible to determine and will change seasonally. Therefore, it is often sufficient to estimate the minimum size or approximate density of the deer population.”

-DeNicola, et. al. Managing White-tailed Deer in Suburban Environments

What is a deer spotlight survey?

- ❖ A deer spotlight survey is a method of sampling a given area of land and the density of deer found there.
- ❖ Area is expressed as the number of visible acres, which is determined by taking a series of visibility readings along the designated route at 1/10- mile intervals.
- ❖ Data collected on a deer spotlight survey is expressed as the number of acres per deer.
- ❖ Three or more counts are normally required on the designated route for reliable information on deer density.

County: ComalLine Name: Garden RidgeLength (mi.): 5.9 (10,384 yds.)Date: 9/30/2014Observers: Liz B., Todd A.

Begin Data Entry

Resume Data

Number Readings: 60Sum of Readings: 5,530 yds.Average Width: 92.17 yds.Calculated Visibility: 198 ac.

MILE	LEFT	RIGHT	TOTAL
START	98	83	181
0.1	16	80	96
0.2	43	45	88
0.3	31	32	63
0.4	53	44	97
0.5	23	64	87
0.6	17	41	58
0.7	31	79	110
0.8	43	38	81
0.9	58	35	93
1.0	50	34	84
TOTAL			1,038
1.1	19	28	47
1.2	43	62	105
1.3	47	42	89
1.4	43	39	82
1.5	164	10	174
1.6	72	53	125
1.7	71	30	101
1.8	34	37	71
1.9	31	24	55
2.0	25	54	79
TOTAL			928
2.1	36	30	66
2.2	34	35	69
2.3	37	22	59
2.4	28	26	54
2.5	55	28	83
2.6	37	106	143
2.7	24	107	131
2.8	38	37	75
2.9	68	126	194
3.0	47	35	82
TOTAL			956

MILE	LEFT	RIGHT	TOTAL
3.1	24	34	58
3.2	41	59	100
3.3	47	43	90
3.4	111	115	226
3.5	42	105	147
3.6	56	64	120
3.7	40	64	104
3.8	42	32	74
3.9	37	36	73
4.0	42	52	94
TOTAL			1,086
4.1	90	26	116
4.2	42	51	93
4.3	14	5	19
4.4	26	48	74
4.5	27	31	58
4.6	47	44	91
4.7	41	38	79
4.8	37	32	69
4.9	19	32	51
5.0	39	28	67
TOTAL			717
5.1	23	45	68
5.2	48	78	126
5.3	43	59	102
5.4	48	52	100
5.5	32	38	70
5.6	47	41	88
5.7	50	51	101
5.8	49	44	93
5.9	20	37	57
6.0			
TOTAL			805

MILE	LEFT	RIGHT	TOTAL
6.1			
6.2			
6.3			
6.4			
6.5			
6.6			
6.7			
6.8			
6.9			
7.0			
TOTAL			
7.1			
7.2			
7.3			
7.4			
7.5			
7.6			
7.7			
7.8			
7.9			
8.0			
TOTAL			
8.1			
8.2			
8.3			
8.4			
8.5			
8.6			
8.7			
8.8			
8.9			
9.0			
TOTAL			

MILE	LEFT	RIGHT	TOTAL
9.1			
9.2			
9.3			
9.4			
9.5			
9.6			
9.7			
9.8			
9.9			
10.0			
TOTAL			
10.1			
10.2			
10.3			
10.4			
10.5			
10.6			
10.7			
10.8			
10.9			
11.0			
TOTAL			
11.1			
11.2			
11.3			
11.4			
11.5			
11.6			
11.7			
11.8			
11.9			
12.0			
TOTAL			

MILE	LEFT	RIGHT	TOTAL
12.1			
12.2			
12.3			
12.4			
12.5			
12.6			
12.7			
12.8			
12.9			
13.0			
TOTAL			
13.1			
13.2			
13.3			
13.4			
13.5			
13.6			
13.7			
13.8			
13.9			
14.0			
TOTAL			
14.1			
14.2			
14.3			
14.4			
14.5			
14.6			
14.7			
14.8			
14.9			
15.0			
TOTAL			

Under what weather conditions should a survey be conducted?

- ❖ Winds should be less than 20 mph.
- ❖ Cloud cover less than 50%.
- ❖ Relative humidity should be less than 70%.
- ❖ No rain.

When should spotlight surveys be conducted?

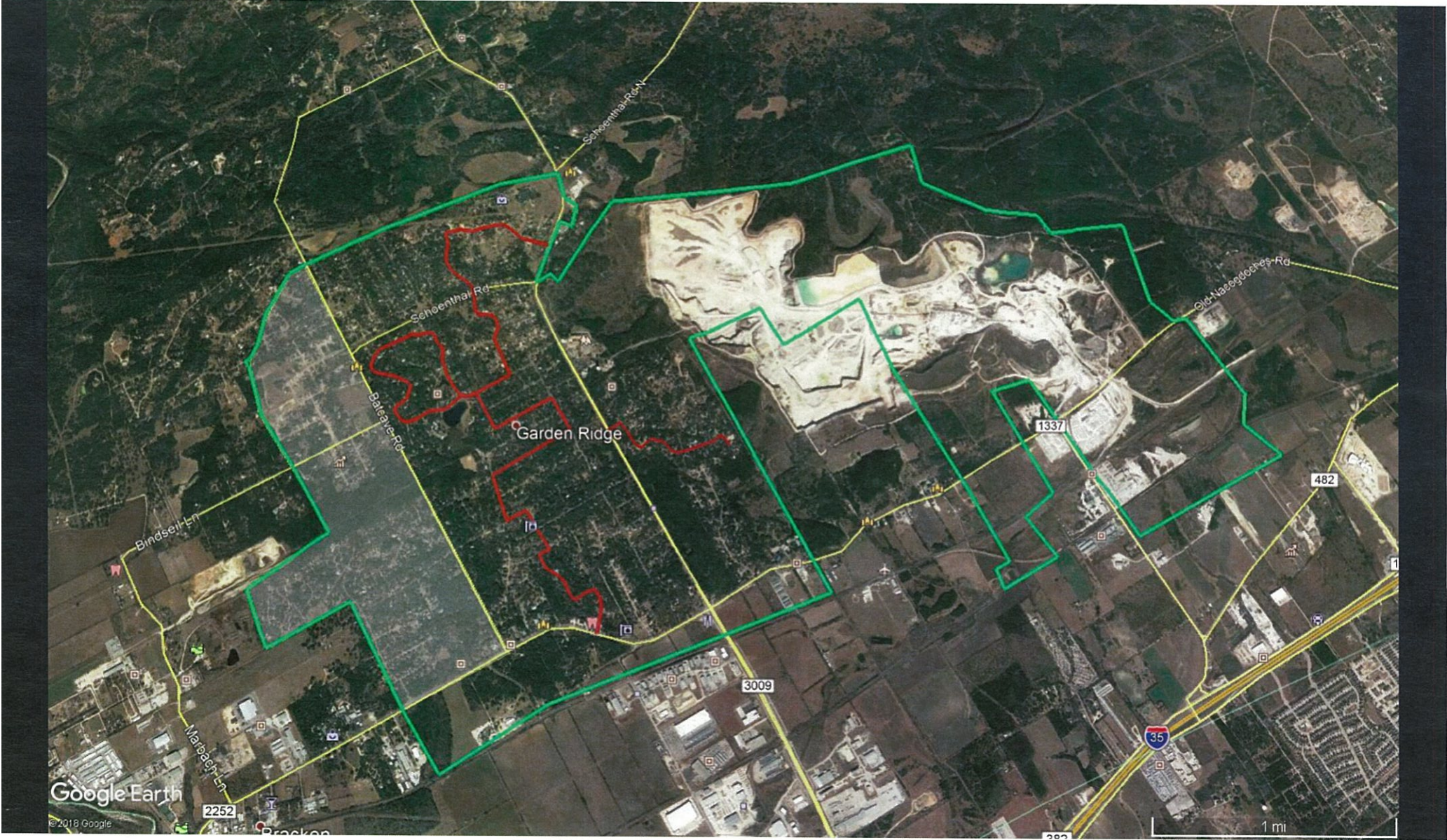
- ❖ Spotlight surveys conducted during August and September are less likely to be influenced by seasonal environmental factors, food distribution, acorn-drop, or other biological events affecting deer.
- ❖ Identification of deer by age (fawns vs. adults) and sex (bucks vs. does) is possible during this time frame

Where should spotlight surveys be conducted?

- ❖ A spotlight survey route should be established that covers as much of the area as is possible.
- ❖ That route, once established, should be used annually, beginning and ending at the same point each time.

What data are collected during each survey?

- ❖ Every effort should be made to count every deer seen within 250 of each spotter.
- ❖ Each deer should be identified as either a buck, doe or fawn.
- ❖ Deer that cannot be 100% identified to age or sex should be recorded as unknown.



Google Earth

© 2018 Google

2252

Bracken

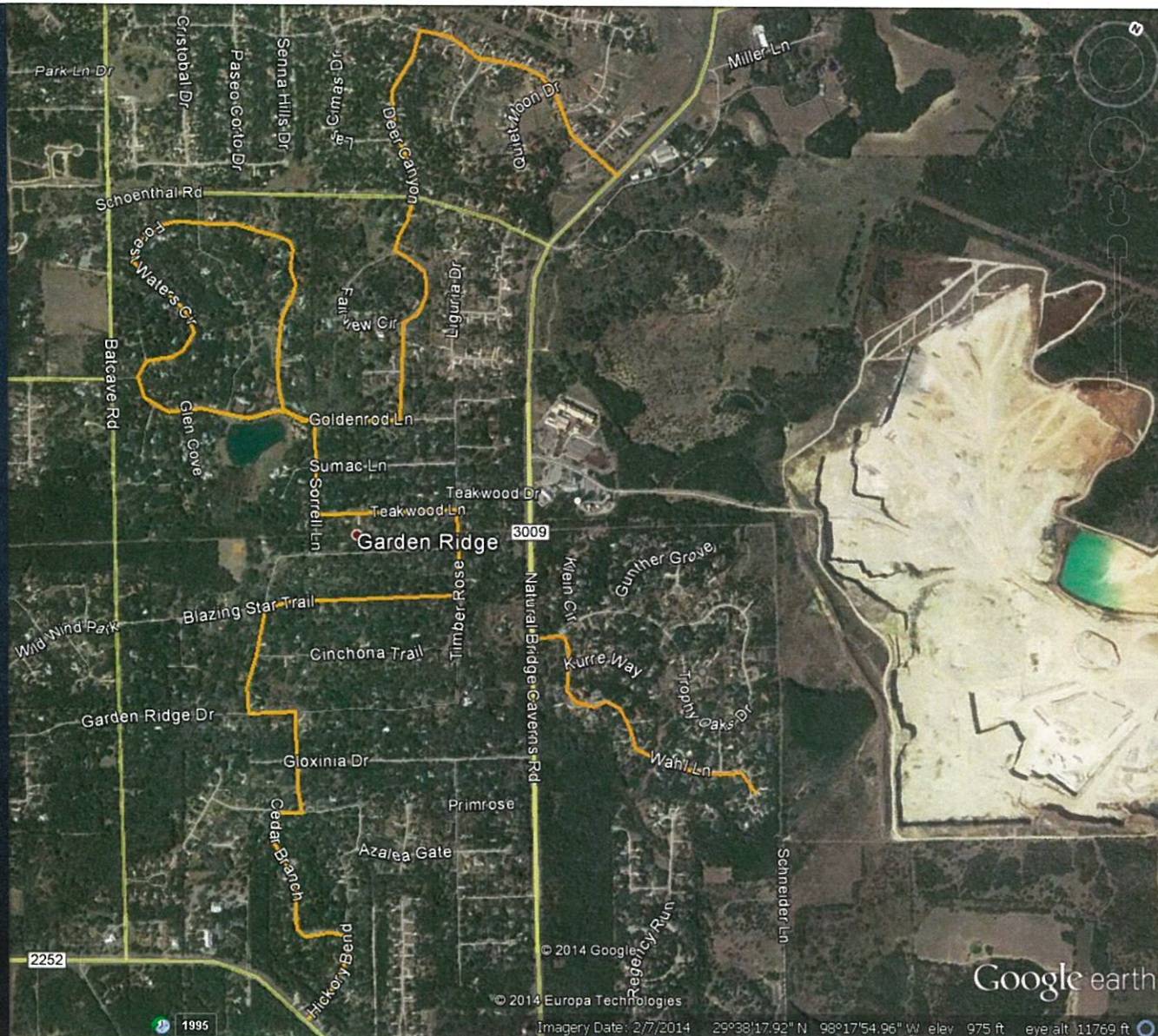
3009

1337

482

35

1 mi



**Texas Parks and Wildlife Department
Spotlight Deer Survey**

County & Ranch _____ Name of line _____

Date _____ Official Sunset _____ PM Time Began _____ PM Time Ended _____ PM

Start: Temp. _____ Cloud Cov. _____ Wind Speed _____ Wind Dir. _____ Odometer Reading _____

End: Temp. _____ Cloud Cov. _____ Wind Speed _____ Wind Dir. _____ Odometer Reading _____

Mile	Bucks	Does	Fawns	Unidentified	Total Observed	Acres of Visibility	Acres per Deer	Deer per 1,000 Acres
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
TOTAL								

Does Per Buck _____ Observers: _____

Fawns Per Doe _____

Comments _____

Will every deer be counted?

- ❖ Deer surveys, even under the best of circumstances, never account for every deer, even in high-fenced properties; deer survey data is an estimate of population.
- ❖ Another way to view census/survey information is that they are **trend** data; conducting annual surveys allows for the comparison of population trends over time, **not exact numbers**.
- ❖ **When population estimates are made carefully each year under similar conditions, trends become more important than actual numbers.**

How is the collected deer survey data used?

- ❖ The total number of deer counted can be divided into the total number of calculated visible acres to determine the number of deer per acre along the route.
- ❖ With this number, the estimated population for the community can then be determined by dividing the total acres of the community by the estimated acres per deer.
- ❖ The number of bucks, does and fawns in the population can also be determined – see the example on the next slide.
- ❖ In addition, because these are daylight counts, it is also possible to determine herd composition, i.e. the buck to doe ratio and the fawn to doe ratio.

Here is an example (from a paper by Texas A&M):

- ❖ 3 surveys conducted on a 5,000-acre ranch during August and September
- ❖ 420 visible acres multiplied by 3 surveys = 1,260 acres
- ❖ A total of 90 deer counted on all three surveys
- ❖ 1,260 visible acres divided by 90 deer = one deer per 14 acres
- ❖ To determine the estimated number of deer on the entire ranch, divide the total acreage by 14 and you arrive at 357 deer (remember, this is an estimate)
- ❖ To estimate the number of bucks, does and fawns, multiply the total number of deer by the percent of all deer positively identified as bucks, does and fawns:

357 Deer X 0.20 (% identified as bucks) = 71 bucks

357 Deer X 0.50 (% identified as does) = 179 does

357 Deer X 0.30 (% identified as fawns) = 107 fawns

TOTAL = 357 deer

2019 Proposed Protocols

- ❖ Three surveys to be conducted from mid-August to mid-September; specific dates tbd
- ❖ Each survey to begin one hour prior to sunset
- ❖ Each surveyor will have a pair of usable binoculars
- ❖ Each deer should be identified as either buck, doe or fawn; if a deer cannot be 100% identified by age/sex, it will be recorded as unknown
- ❖ All deer seen within 250 yards of the truck (either side) will be counted using criteria above
- ❖ Each surveyor will survey only his/her side of truck
- ❖ Truck will proceed at 5-8 mph stopping as needed to document each individual in groups
- ❖ Four participants:
 - ❖ Craig Hensley (driver)
 - ❖ One person in passenger seat recording observations on data sheet
 - ❖ Two people in back of truck – one member of wildlife commission or designated representative and one member of community opposed to deer management

Thank You

From: Martha Stipp
Sent: Saturday, July 6, 2019 9:46 PM
To: City Secretary
Subject: Citizen volunteer Observer

I would like to submit my name to be one of the citizen volunteers to ride along on the deer census to be done in August. My husband and I did counts in 2016. I rode along on one count in 2018. Please forward my application to the WMAC.

Thank you,
Martha Stipp

Sent from my iPhone



City of Garden Ridge

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

MINUTES WILDLIFE MANAGEMENT ADVISORY COMMISSION REGULAR MEETING MONDAY, JUNE 17, 2019, 6:00 P.M.

Commissioners Present:

Chair Cynthia Shanahan-Segovia
Commissioner Ken Kneupper
Commissioner Jeremiah McKinney
Commissioner Troy Bippert

Commissioners Absent:

Vice-Chair David Krawczynski (Voluntary Announced Absence)
Commissioner Paul Sullivan (Excused)
Councilmember Lisa Swint, Ex-officio
Vacant Position

City Staff Present:

Nancy Cain, City Administrator
Marisa Spencer, City Secretary

Other Appointed or Elected Officials in Attendance:

Councilmember Todd Arvidson

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 Segovia at 6:00 p.m. on Monday, June 17, 2019, 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 Segovia led the Pledge of Allegiance.

4. Wildlife Management Advisory Commission Chair Statement

Chair Segovia spoke regarding the work, actions, and pro-active approaches taken to support and enhance wildlife in the City of Garden Ridge. She stated the Commission has worked with professionals in order to make informed recommendations to City Council. She stated the City of Garden Ridge partnered with the National Wildlife Federation and became a Monarch City, accomplishing the leadership circle accreditation during the first year. Chair Segovia thanked the Comal Master Gardeners for their efforts in helping the City become a Monarch City.

5. Citizen Comment Period – limited to 30 minutes total

Tristan Arvidson, 20506 Bat Cave Road, spoke regarding his Eagle Scout project and welcomed the Commission to call or email him with questions or to receive more information.

6. Business Items

The following items are for discussion and/or possible action, including recommendations:

a) Approvals

i. Minutes for May 20, 2019, Wildlife Management Advisory Commission Regular Meeting.

Motion: A motion was made by Commissioner Kneupper, seconded by Commissioner Bippert, to approve the minutes for May 20, 2019, Wildlife Management Advisory Commission Regular Meeting. The Commission voted three (3) for and none (0) opposed. The motion carried unanimously.

b) Discussions/Reports

i. Wildlife and wildlife incidents within the City of Garden Ridge.

1. Police Department

The Commission reviewed the wildlife report from the Police Department.

2. Animal Services

The Commission reviewed the wildlife report from Animal Services.

c) Updates/Recommendations

i. Development of comprehensive Wildlife Management Plan for Garden Ridge.

1. Discuss and make possible recommendations regarding topics and/or items in the Wildlife Management Plan for Garden Ridge.

Commissioner McKinney reviewed the updated Wildlife Management Plan. He discussed the additional information as well as information still needed in the Wildlife Management Plan. Chair Segovia spoke regarding the iNaturalist application for mobile devices.

The Commission discussed working with the Parks Committee and Commissioner Bippert attending the monthly Parks Committee meetings when possible. The Commission requested Parks Committee meeting update be added to future agendas as a rolling item similar to the City Council update.

ii. Commissioner's Projects

1. Wildlife Mailer from New Braunfels (Sullivan).

Chair Segovia stated Commissioner Sullivan was not feeling well and was excused prior to the meeting.

2. September 28th, 2019, Ribbon Cutting Event and Celebration (Segovia).

Chair Segovia stated she invited Craig Hensley, Texas Parks and Wildlife Biologist, to attend the new Garden Ribbon Cutting Event and Celebration. The Commission discussed the event and putting together informational material to handout at the event.

3. Health of wildlife in Garden Ridge.

The Commission did not have anything to discuss at this time.

4. Future education/training sessions and Grapevine articles.

Chair Segovia stated Mr. Hensley and his supervisor will be at the Commission's July meeting to review procedures for conducting deer counts. The Commission discussed the schedule for future education/training sessions: August – Commissioner Bippert (TBD), September – Commissioner McKinney (bats/the language of bats), October – Commissioner Kneupper (bees).

iii. City Council Update/Report

1. June 5, 2019, City Council Regular Meeting.

Commissioner McKinney updated the Commission on the monthly activity report he provided at the June 5, 2019, City Council Regular Meeting. He stated the City Council received the Commission's budget request consideration and approved the Commission's recommendation to accept the resignation of Commissioner Hatch.

- iv. **Ordinance No. 210-022018 An Ordinance of the City Council of the City of Garden Ridge adopting board and commission policy and procedures; providing that this Ordinance shall be cumulative of all Ordinances; providing a severability clause; providing a savings clause; and providing an effective date.**

1. **Interview possible candidates for the Wildlife Management Advisory Commission vacancy created by the resignation of Hatch (term expiring September 30, 2020).**

The Commission reviewed Mark Ecton's resume and interviewed him for the Wildlife Management Advisory Commission vacancy with term expiring September 30, 2020.

2. **Make a recommendation to City Council for appointment of Commissioner.**

Motion: A motion was made by Commissioner Kneupper, seconded by Commissioner McKinney, to recommend to City Council the appointment of Mark Ecton to the Wildlife Management Advisory Commission Place 7 vacancy with term expiring September 30, 2020. The Commission voted three (3) for and none (0) opposed. The motion carried unanimously.

3. **Discuss and make recommendations related to application of ordinance provisions to commission members, if needed.**

Chair Segovia stated the Commission does not have anything else to discuss at this time.

d) Future Agenda Items.

i. Commissioner input.

None at this time.

- ii. Announcement of next Wildlife Management Advisory Commission Regular Meeting (Monday, July 15, 2019, at 6 p.m. at City Hall).**

Chair Segovia announced the next Wildlife Management Advisory Commission Regular Meeting will be held on Monday, July 15, 2019, at 6:00 p.m. at City Hall.

7. Citizen Comment Period - limited to 20 minutes total

Martha Stipp, 21007 Cedar Branch, spoke regarding communication efforts and Commissioners speaking into microphones in order to be clearly heard during meetings.

Mark Ecton, 9430 Gardenia Bend Drive, spoke regarding efforts to improve citizen attendance at meetings.

8. Adjournment

There being no further business, the Monday, June 17, 2019, Wildlife Management Advisory Commission Regular Meeting was adjourned at 7:08 p.m. by Chair Segovia.

Cynthia Shanahan-Segovia, Chair

ATTEST:

Marisa Spencer
City Secretary

SIGN IN TO SPEAK AT THE JUNE 17, 2019
WILDLIFE MANAGEMENT ADVISORY COMMISSION REGULAR MEETING
CITIZEN COMMENT PERIOD

Rules for Citizens' Participation:

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- 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*

#	NAME	ADDRESS	SUBJECT
1.	Tristan Arvidson boy scout	20506 Butcave Rd Garden Ridge TX	eagle scout project on fairview circle
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

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: 8 July 2019

Copies:

Reference: Monthly Wildlife Statistics

Members of the Commission,

Here is the data collected for the preceding weeks regarding the Police Departments involvement with animal related calls. These numbers do not include any cases related to domestic dogs or cats.

11 June 2019 through 8 July 2019

- 1- Report of rattlesnake in garden. Identified as Rat snake.
- 1- Turtle in roadway. Deceased prior to officers arrival.



MONTHLY ANIMAL SERVICES REPORT

July 2019

Year to Date Wildlife Report

	Jan	Feb.	Mar	Apr.	May	Jun	Jul	Aug.	Sep.	Oct	Nov	Dec.	Total
Deer	11	6	5	2	10	11							45
Raccoons	5	3	3	3	5	4							20
Possums	2	1	1	4	2	3							13
Skunks	5	0	0	0	0	0							5
Wild hogs	0	0	0	0	0	0							0
Turtles	0	0	0	0	1	2							3
Squirrels	0	2	0	0	2	0							4
Foxes	1	1	0	0	0	1							3
Armadillos	0	1	0	1	1	0							3
Hawks	1	0	0	0	0	0							1
Bats	0	0	1	0	0	0							1
Coyotes	0	0	1	0	0	0							1
Buzzards	0	0	0	0	0	0							0
Ringtails	0	0	0	0	0	0							0
Snakes	0	0	0	1	0	4							5
Other	0	1	0	0	1	0							2
YTD Total	25	15	11	11	22	25							109

Additional information

Information on the 11 deer:

- 1 - predator attack
- 5 - vehicle
- 4 - natural
- 1 - released

2017 Report

City of Garden Ridge

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

City of Garden Ridge Animal Control

2017 Wildlife Report

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug. 21- Sept. 14	Sep.15 Oct. 12	Oct. 13 Nov.15	Dec.	Total
Deer	9	11	9	14	18	14	14	4	13	36	20	162
Raccoons	2	3	6	4	4	14	10	8	9	18	4	82
Opossums	5	5	9	10	3	3	1	8	11	10	3	68
Skunks	12	2	0	0	3	7	12	17	7	8	2	70
Wild hogs	0	0	0	0	12	1	5	0	0	0		18
Turtles	0	0	3	0	0	0	0	0	0	0		3
Squirrels	0	0	0	0	0	0	1	7	0	0		8
Foxes	1	0	1	0	0	0	1	0	0	3		6
Armadillos	0	0	0	3	5	4	4	0	3	0		19
Hawks	0	0	0	0	0	0	0	0	0	0		0
Bats	0	0	0	0	0	0	0	0	0	0		0
Coyotes	1	0	0	0	0	0	0	0	0	0		1
Buzzards	2	0	0	0	0	0	1	0	0	1		4
Ringtails	0	0	0	0	3	0	1	0	0	0		4
Snakes	0	0	2	2	1	0	1	0	1	1	1	9
Other											1	1
Total	32	21	30	33	49	43	51	44	44	77	31	
											YTD Total	455



2018 Report

City of Garden Ridge

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

MONTHLY ANIMAL SERVICES REPORT

January 2019

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	6	12	152
Raccoons	5	3	3	4	2	4	1	6	3	2	5	7	45
Possums	1	3	4	6	3	5	2	1	3	7	1	3	39
Skunks	1	7	2	0	0	2	1	0	0	2	0	0	15
Wild hogs	0	0	0	1	0	0	2	0	0	0	0	0	3
Turtles	0	0	0	0	3	0	0	0	2	0	0	0	5
Squirrels	0	2	5	6	8	1	1	0	4	2	3	1	33
Foxes	0	0	0	0	0	1	0	0	0	2	0	2	5
Armadillos	0	0	0	2	3	6	4	4	0	2	0	0	21
Hawks	1	0	0	0	0	0	0	0	0	0	0	0	1
Bats	0	0	0	0	0	0	3	2	1	0	1	0	7
Coyotes	0	0	0	0	0	0	1	0	0	1	0	0	2
Buzzards	1	1	1	0	0	0	0	1	0	2	0	0	6
Ringtails	1	0	1	0	0	0	0	0	0	0	0	0	2
Snakes	0	0	0	0	0	1	2	0	1	1	0	2	7
Other	0	0	0	0	1	0	0	0	0	1	0	0	2
YTD Total	24	39	30	26	28	35	31	23	17	49	16	27	345

Additional information

Information on the 12 deer picked up:

- 1 - predator attack
- 7 - vehicle
- 1 - fence
- 3 - natural

DRAFT 07-15-19

City of Garden Ridge Wildlife Management Plan

Prepared by:
Garden Ridge Wildlife Commission

JUNE 2019

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1.0 INTRODUCTION

This wildlife management plan (plan) was prepared for the City of Garden Ridge, by the Garden Ridge Wildlife Management Advisory Commission (GRWMAC) and approved by City Council on **X**. The purpose of a wildlife management plan is to document the practices that may be taken to manage wildlife resources of a given area. In this case, the plan will serve to detail the proposed wildlife management practices of the City of Garden Ridge while providing recommendations for private residents and landowners. Wildlife management practices can provide direct and indirect benefit to wildlife and apply to both plant and animal species. This primary intent of this plan is to encourage the ongoing persistence and enhancement of local wildlife species with a focus on habitat management. This plan was developed in consultation with the Texas Parks and Wildlife Department (TPWD), to ensure feasible and sound management practices were considered. If at any time new information becomes available that would warrant a change or update to the plan, the GRWMAC will recommend the appropriate changes as needed.

1.1 Ecological History of Garden Ridge

The City of Garden Ridge occurs in Comal County, at the southeastern limits of the Edwards Plateau Ecoregion of Texas (see **Attachment A.**) (TPWD, 1960). “When the Edward Plateau region was settled by European man in the mid-1800s, it was maintained as a grassland savannah largely by grazing habits of bison and antelope as well as by frequent natural and man-made fires. The land supported a rich diversity of forbs and grasses. Cedar was restricted to overgrazed areas along rivers and streams, and in areas of shallow soils and steep canyons where fires did not occur frequently. White-tailed deer were rarely found in the grasslands. With European settlement came fences, cows, sheep, goats and the control of fire. Livestock were continuously grazed in fenced pastures which disrupted the natural movement patterns of grazing animals. Plants were not allowed to rest and recover from grazing. By 1900, continuous overgrazing and control of fire had taken its toll. The land began to change from a grassland to a brushland. Many of the woody brush species were readily grazed by sheep, goats, cattle, and an increasing deer herd. These animals have selective eating habits and eat the more desirable plants first and leave the less desirable plants for last. By the 1940's, many of the good quality plant species were highly depleted and not readily found on most ranges. The Edwards Plateau is now dominated by many poor-quality browse, forb, and grass plants. Ashe juniper and red berry juniper (commonly called cedar) are highly undesirable forage plants for domestic livestock and deer. In much of the Edwards Plateau, cedar has become the dominant plant species causing a once diverse and healthy landscape to become a "cedar break" in many areas with very little plant diversity on the landscape” (TPWD, 2019).

1.2 Vegetation Communities / Habitats of Garden Ridge

The city of Garden Ridge comprises 4,882.7 acres of mixed land uses including residential, commercial, undeveloped and industrial lands. As shown in **Attachment B**, **X** primary habitat types occur within the

city including oak/elm forest, cedar breaks, X. These include X. **Table 1.** Details the approximate aerial acreage of each primary habitat type within the City Limits of Garden Ridge.

Table 1. Approximate Acreage of Habitat Types of Garden Ridge

Residential	X
Oak/Cedar Forest	X
Oak/Cedar woodland	X
Improved Pasture	X
Fallow shrubland	X
Aquatic	X
Non-vegetated	X
Total:	4,885.7

The following provides a brief description of the current habitat types of Garden Ridge.

Residential

These areas exhibit the vegetative stand of a well-developed forest with a dense canopy of mixed hardwoods, and understory dominated by non-native sod-grasses. Live oak (*Quercus virginiana*), cedar elm (*Ulmus crassifolia*) and ashe juniper (*Juniperus ashei*) are the dominant trees with interspersed species planted by landowners. The mid-story consists of various shrubs, most of which have been planted for landscaping. The herbaceous stratum is sod-grasses including bermudagrass (*Cynodon dactylon*), St. Augustine (*Stenotaphrum secundatum*) and zoysia grass (*Zoysia* sp.). These areas typically provide suitable habitat for small wildlife species including birds, small mammals, reptiles and amphibians. This habitat type is less suitable for large mammals such as white-tailed deer due to the replacement of naturally occurring food sources with non-native plants.

Oak/Cedar Forest:

Oak/Cedar woodland:

Improved pasture:

Fallow shrubland:

Aquatic:

Non-vegetated:

2.0 WILDLIFE MANAGEMENT ADVISORY COMMISSION

By city ordinance 196-032018, the city of Garden Ridge established a wildlife management advisory commission (GRWMAC). This commission was first created to formulate recommendations on the

management of the white-tailed deer population. Since its establishment, the GRWMAC has expanded its assistance from white-tailed deer recommendations, to education trainings on native plants for landscaping, migratory birds and urban wildlife management. **Section 6** of this document provides more detail on wildlife trainings and outreach.

3.0 GOALS

3.1 Primary Goals

During the development of this plan, the following goals were considered of primary importance for the ongoing persistence and enhancement of local wildlife species.

3.1(a) Management of White-tailed deer

As with much of Comal County, the city of Garden Ridge is host to robust white-tailed deer (WTD) population. In 1998, the estimated 1,555,000 white-tailed deer population for the Hill Country constituted over 40 percent of the white-tailed deer found in Texas (Young and Traweek 1999). Census data from 2018 estimated a total of 1.9 acre per deer within the Garden Ridge. This differs greatly from the recommended stocking rate of 12-16 acre per deer (TPWD 2008). Accordingly, GR has committed to reducing the WTD herd to a target of 5 acres per deer.

3.1(b) Mayor's Monarch Pledge: Segovia

3.3(c) Dark Sky Community: Krawczynski

3.3(d) Management of brown-headed cowbird populations

Comal county is home to a wide variety of songbirds including the brown headed cowbird. This species is a brood parasite that lays its eggs in the nests of other songbirds. Studies have shown that the brown-headed cowbird to parasitize more than 225 species of American birds and that the removal of one cowbird female enhances the survival of 35 songbird per year (TPWD, 2019). To minimize impacts to local songbird populations, the city will participate in the TPWD cowbird trapping program.

3.3(e) Management and Enhancement of Wildlife Habitat on City Lands

4.0 COORDINATION & PERMITS

4.1 White-tailed deer Permits

In the event that population control is needed for white-tailed deer, the city will obtain the proper permits required by state law.

4.2 Additional Permits

Additional permits or training such as those for the control of brown-headed cowbirds will be obtained if needed.

5.0 HABITAT MANAGEMENT

5.1 White-tailed deer management

5.1(a) Annual Census:

An annual census will be performed to estimate the population of white-tailed deer in Garden Ridge. From those results, a determination will be made for the need, if any, of population control. Methodologies used for the census will be those recommended by TPWD. (see Attachment C for WTD census results)

5.1(b) Population Control:

Given that very few large land tracts exist within the city limits today, hunting is a not a feasible means to control the local WTD population. As such, the city has elected to utilize trapping methods approved through TPWD to assist in population control. These include trap, transport and process (TTP) and trap, transport and transplant (TTT). For detail on TTP and TTT please visit TPWD website:

https://tpwd.texas.gov/business/permits/land/wildlife_management/trap_transport/.

To reach the target goal of 5 acres per deer, annual trapping will persist at a rate recommended by TPWD. Annual recommendations, which may vary will be obtained by TPWD following census results. Trapping methods will also vary based on the availability of transport properties and TPWD approval. Processed WTD meat will be donated to approved charity organizations.

5.1(c) Herd Health Monitoring

Reduced WTD population numbers will decrease browse pressure and provide higher forage potential for WTD and other species. Higher forage potential increases animal health and vigor. To assess animal health and vigor, herd health monitoring will be conducted through an assessment of body weight and age (see Attachment C for WTD health monitoring data). This data will be obtained in years when trapping and processing occurs.

5.1(d) Conflict Management Practices

In Garden Ridge conflict between residents and wildlife may occur. It is always recommended to avoid physical contact with any wild animal including white-tailed deer fawns. Other common practices to avoid conflict with white-tailed deer include:

- Avoid feeding of deer as per Ordinance 186-092018.
- Obey posted speed limits.

- To help minimize landscape damage, plant varieties that are less favored by deer (see **Attachment I.**) and install fences when feasible.

Additional conflict management practices for white-tailed deer can be found at:

https://www.humanesociety.org/sites/default/files/docs/HSUS%20Deer%20Conflict%20Mgt%20Plan_FINAL.pdf

Texas is home to a variety of raptors and the Red-shouldered hawk is common to the Garden Ridge area. When nesting, these large birds can be territorial toward humans and other wildlife. If an active nest is found the city recommends establishing an avoidance buffer when feasible. This will help to ensure the nesting pair and young do not feel threatened. **Note:** Red-shouldered hawks and any other raptors and migratory birds are protected by federal law, and the removal of a nest without the proper permit is illegal.

5.2 Control & Management of Invasive & Noxious Species

5.2(a) Invasive & Toxic Plant Management

A variety of toxic and invasive plants occur in the central Texas area (see **Attachment D**). These include native and non-native species that typically grow aggressively, multiply quickly without natural controls, and display adverse effects through contact or ingestion. When feasible, the city will implement standard practices to remove these plants such as mechanical removal and herbicide treatments. Any herbicide treatment will follow label instructions in compliance with all state and federal regulations. The goal of this effort is to promote a diverse mix of native plants in the city for wildlife. The city recommends that citizens review **Attachment D** for species to control or avoid as landscape plants.

5.2(b) Invasive & Nuisance Wildlife Management

Invasive wildlife can have profound impacts on native species, habitats and humans alike. Feral pigs are an invasive species that has been documented within the city. Feral pigs cause millions of dollars damage annually to the agriculture lands and residential landscaping. To minimize impacts from feral pigs, the city will trap when sightings occur. Impacts to local songbirds from brown-headed cowbirds will be minimized through participation in the TPWD brown-headed cowbird trapping program. Trapping will be conducted as detailed in the TPWD protocol. **Attachment E** includes information on brown headed cowbirds and the TPWD trapping protocol.

5.3 Oak Wilt Management

Oak wilt is one of the most destructive tree diseases in the United States, and it is killing oak trees in Central Texas at epidemic proportions. Oak wilt is an infectious disease caused by the fungus *Ceratocystis fagacearum*, which invades and disables the water-conducting system in susceptible trees.

All species of oaks (*Quercus* spp.) in Central Texas can be infected with the oak wilt fungus. (Texas Forest Service, 2019). **Attachment F** includes information on oak wilt. On March 7, 2018, ordinance #71-032018 was passed to follow guidelines from the Texas Forest Service to combat the spread of oak wilt.

5.4 Native Plantings & Management

Where feasible, the city will plant native plant species in common areas such as parks, city building areas and right of ways. These species are adapted to the local climate requiring less water or fertilizer and provide food and cover for native wildlife. **Attachment G** includes a list of native species that may be planted which are recommended for the area. The city recommend that residents use these species when feasible. **Attachment G** also includes a list of native plant nurseries in the area.

5.5 Residential Wildlife Management Practices

With few lands under city control, the highest potential for wildlife enhancement and management resides with the residents of Garden Ridge. The following list of practices are recommended for Garden Ridge residents for wildlife enhancement. Singularly, these measures have a small impact, yet when implemented by multiple residents, the cumulative benefits can be profound for local wildlife.

5.5(a) Supplemental Water & Feeding of Migratory Birds

Texas is host to nearly 650 bird species and supplemental water and feed can benefit these species in migration or the extreme periods of winter and summer. Bird feeders and watering areas also bring people and birds together. These features can enhance the local awareness to the variety of bird species that frequent the area. When feasible, the city recommends the feeding of birds following recommendations from the U.S. fish and Wildlife Service available at <https://www.fws.gov/birds/bird-enthusiasts/backyard/bird-feeding.php>.

5.5(b) Supplemental Cover & Nest/Roost Boxes

Wildlife utilize cover to travel, rear young, evade predators and extreme climate conditions. This is similar with nest/roost boxes. When feasible, the city recommends adding supplemental cover for wildlife such as leaf piles beneath shrubs and small piles of brush/tree trimmings and rocks. Low growing plants and shrubs can also provide cover for wildlife. Nest/Roost boxes are also recommended for birds and bats. These features provide safe sites for the rearing of young. **Attachment H** includes a few basic nest and bat boxes designs for consideration by residents.

5.5(c) Landscaping Practices

With the proper design, residential landscaping can provide quality habitat for a variety of wildlife species. The following provides a few concepts to consider in landscape design for wildlife enhancement.

1. **Plant selection & Diversity:** Selecting the right plants can greatly enhance residential areas for wildlife. Native plants typically provide a natural food source and cover while requiring far less water or fertilization from homeowners. Additional benefit is gained by planting a variety of plants. This will result in flowering and fruiting at various times throughout the year.
2. **Structure & Edge:** Wildlife benefit greatly from habitats that possess a variety of physical structure. As such, when feasible, it is recommended to incorporate structural diversity to include an upper canopy (trees), mid-story (shrubs) and herbaceous stratum (low growing plants, such as annual or perennial flowers). Many wildlife species utilize edge habitats for nesting, feeding and travel. When feasible, it is recommended to create edge habitats within landscaped areas. For an example of structural diversity and edge habitats please see **Attachment J**.

6.0 PUBLIC OUTREACH & EDUCATION

6.1 Presentations, Field Days & Local Events

Educational presentations on wildlife are provided on monthly basis during the GRWMAC meetings. For information on upcoming meetings visit the city website at the link below.

<https://ci.garden-ridge.tx.us/>

6.3 GR Species List & Wildlife Sightings

The GRWMAC encourages the residents of Garden Ridge to report wildlife sightings within the city limits. This information can be used to educate our residents to the variety of species that inhabit the city as year-round and as migrants. Tap on the link below to report wildlife sightings.

<https://www.inaturalist.org/>

7.0 REFERENCES

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U.S. Fish and Wildlife Service (2019). Backyard Birding-Bird Feeding. <https://www.fws.gov/birds/bird-enthusiasts/backyard/bird-feeding.php> accessed 29 April 2019.

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ATTACHMENT A. City of Garden Ridge Location Map

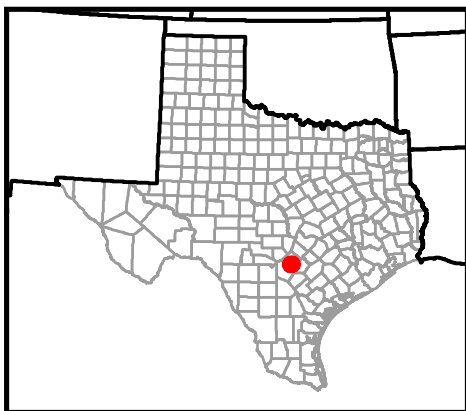
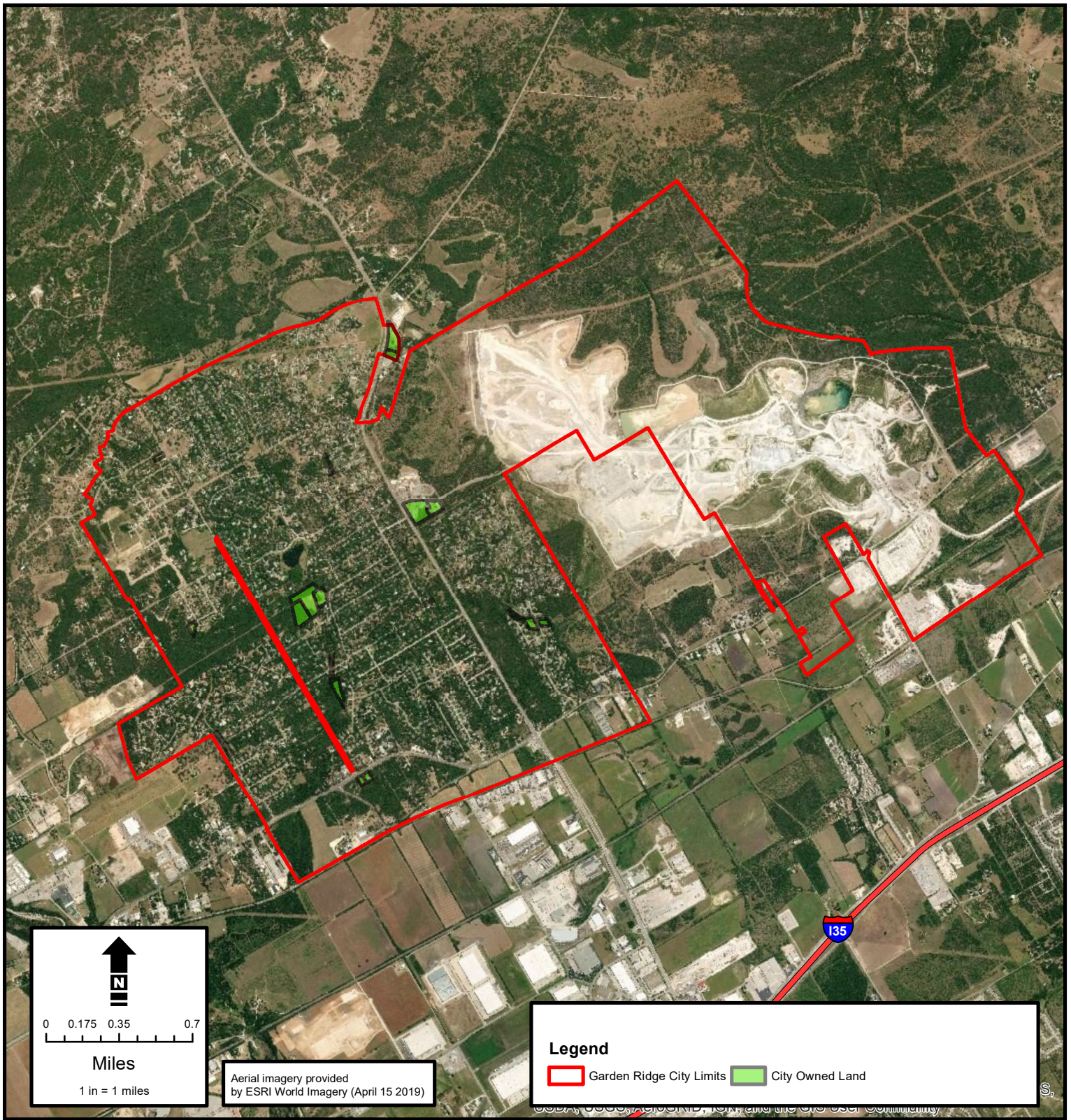


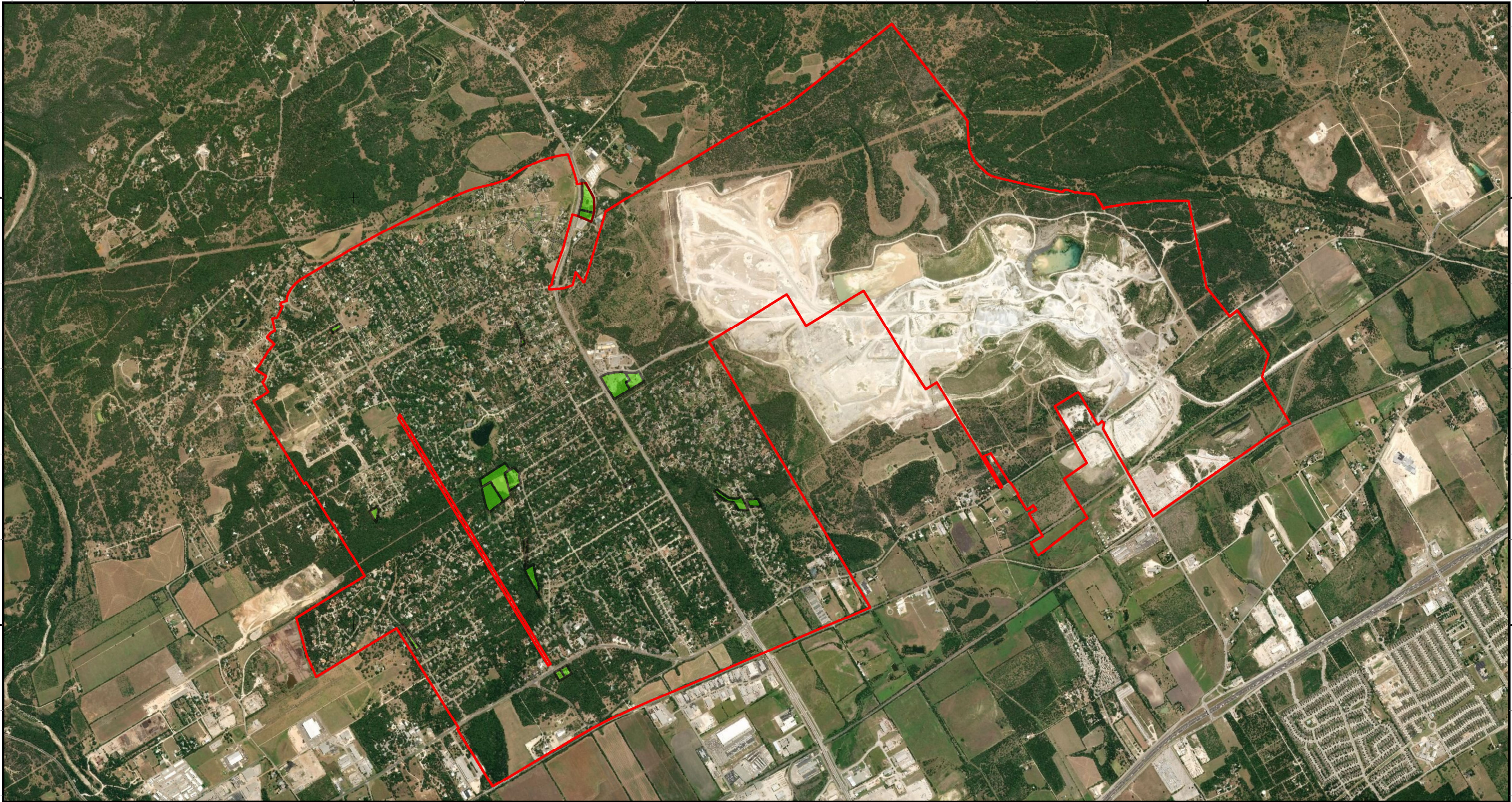
Exhibit 1

Location Map

City of Garden Rige Wildlife Management Plan Comal County, Texas



ATTACHMENT B. City of Garden Ridge Habitat Map



0 0.225 0.45 0.9
Miles
1 inch equals 0.41 miles



Legend

-  City Owned Land
-  Garden Ridge City Limits

Map Created April 2019
ESRI World Imagery

City of Garden Ridge Wildlife Management Plan Comal County, Texas Exhibit 2 Aerial Map

ATTACHMENT C. White-tailed deer Census & Herd Health Monitoring Data

ATTACHMENT D. Invasive & Noxious Plants List

Common Name	Botanical Name
Noxious plants¹	
alligatorweed	<i>Alternanthera philoxeroides</i>
balloonvine	<i>Cardiospermum halicacabum</i>
Brazilian peppertree	<i>Schinus terebinthifolius</i>
broomrape	<i>Orobanche ramosa</i>
camelthorn	<i>Alhagi camelorum</i>
Chinese tallow tree	<i>Triadica sebifera</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
giant duckweed	<i>Spirodela oligorrhiza</i>
giant reed	<i>Arundo donax</i>
hedge bindweed	<i>Calystegia sepium</i>
hydrilla	<i>Hydrilla verticillata</i>
itchgrass	<i>Rottboellia cochinchinensis</i>
Japanese dodder	<i>Cuscuta japonica</i>
kudzu	<i>Pueraria montana</i> var. <i>lobata</i>
lagarosiphon	<i>Lagarosiphon major</i>
paperbark	<i>Melaleuca quinquenervia</i>
purple loosestrife	<i>Lythrum salicaria</i>
rooted waterhyacinth	<i>Eichhornia azurea</i>
saltcedar	<i>Tamarix</i> spp.
salvinia	<i>Salvinia</i> spp.
serrated tussock	<i>Nassella trichotoma</i>
torpedograss	<i>Panicum repens</i>
tropical soda apple	<i>Solanum viarum</i>
water spinach	<i>Ipomoea aquatica</i>
waterhyacinth	<i>Eichhornia crassipes</i>
waterlettuce	<i>Pistia stratiotes</i>
Invasive plants¹	
Chinese tallow tree	<i>Triadica sebifera</i>
kudzu	<i>Pueraria montana</i> var. <i>lobata</i>
saltcedar	<i>Tamarix</i> spp.
tropical soda apple	<i>Solanum viarum</i>

Footnotes:

1. Designation from Texas Administrative Code. 2015.
Quarantines and noxious plants, Chapter 19. State of Texas.

ATTACHMENT E. Brown Headed Cowbird Information

Brown-headed Cowbirds

The Brown-headed Cowbird, *Molothrus ater*, is a member of the blackbird family. The adult male is easily identified by his brown head and metallic green-black body. Female cowbirds are a pale brown with a gray-brown head. Both males and females have a length of about 7½ inches. Cowbirds are called **brood parasites** because they lay their eggs in the nests of other birds and do not care for their own young. Their parasitic reproduction strategy is unique among the world's blackbird species. Today, brown-headed cowbirds occur throughout the United States.



Male Brown-headed Cowbird

Cowbirds evolved to follow herds of grazing animals, often covering many miles in a day. They can little afford the time to build their own nests, lay and incubate eggs, and care for the chicks. Instead, the female cowbird finds the nest of another bird, lays a single egg in it, and leaves. The female cowbird may do this an average of up to 40 times per breeding season. In fact, a female in a captive breeding study laid over 70 eggs in a single year. The female cowbird will remove or destroy some or all of the eggs and or nestlings of the host birds.

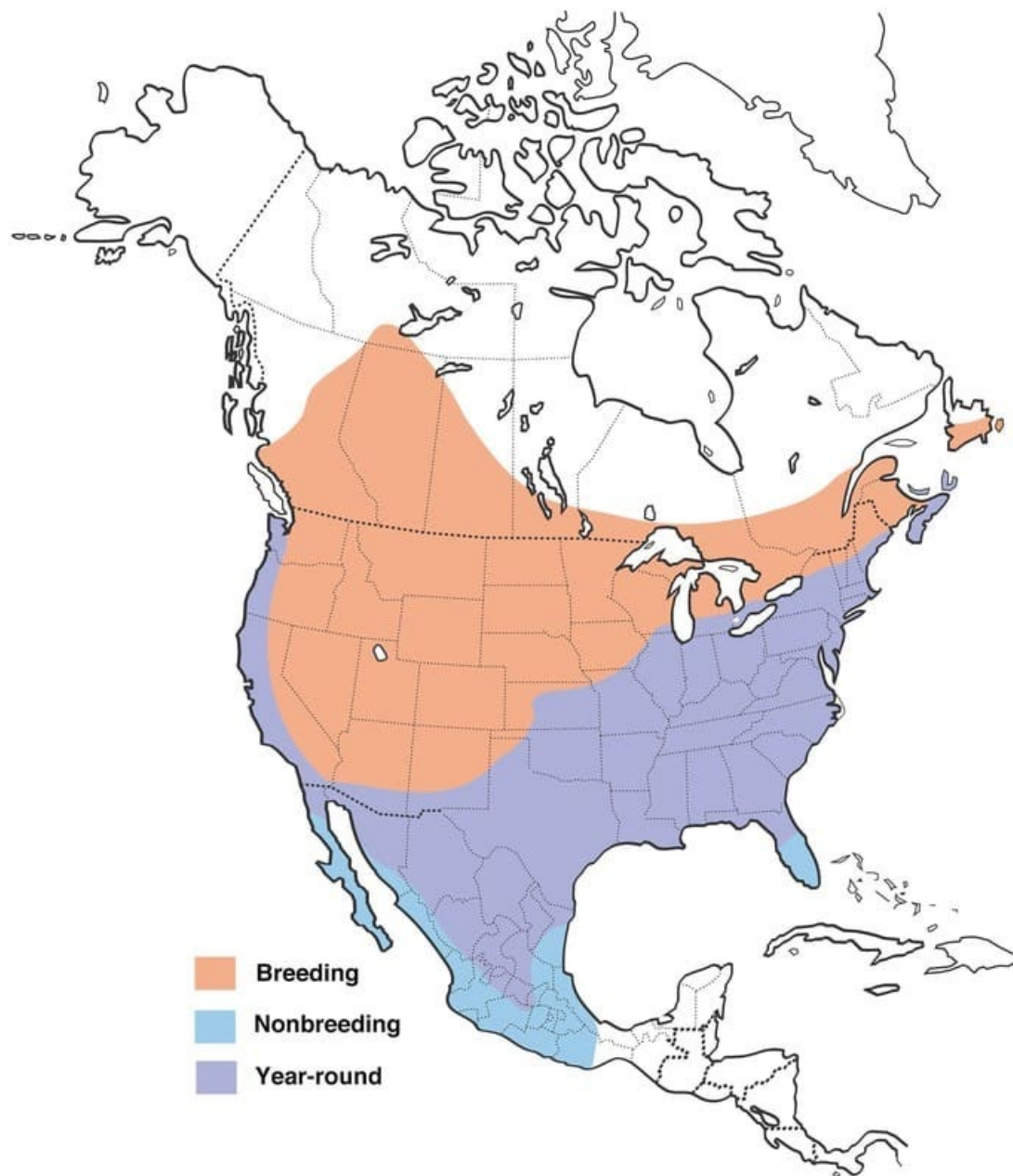
The host birds, usually songbirds, raise the cowbird chick as their own. Cowbird eggs hatch sooner and the young grow faster, so the cowbird chicks get most of the food and have been known to push the host's chicks completely out of the nest. The majority of the time the adult host birds end up feeding and caring for only the cowbird chick, rather than raising the next generation of their own kind.

Declining Songbird Populations

Throughout North America songbird numbers are declining. While there is no single reason for this decline, one major contributing factor is the spread of the cowbirds due to landscape changes throughout North America.

Cowbirds once occurred only in short-grass prairies, where they followed buffalo herds, feeding on insects stirred up by the grazing animals. Human-caused changes to the environment, including the introductions of domesticated grazing animals and cultivated fields and lawns, has greatly benefited the cowbird, helping it to spread to new territories and prey on more songbird species. Today the cowbird parasitizes more than 225 species of North American birds. The cowbird may pose a particular danger to already-threatened species like the Black-capped Vireo. Studies have shown that the removal of one female cowbird enhances the survival of 35 songbirds per year.

In an effort to manage the brown-headed cowbird populations, Texas Parks and Wildlife has implemented a [Cowbird Trapping Program](#). Anyone interested in participating is welcome to go through our training and certification process.



Online Cowbird Certification Training

All persons wishing to trap cowbirds must be certified through an approved training program before the trap is put into operation. This training is offered at **no cost** by Texas Parks and Wildlife Department (TPWD) and affords the landowner with permit coverage to handle and **release non-target birds** that may inadvertently enter the trap. All applicable state and federal laws must be observed during the duration of trapping. If questions arise, contact your closest TPWD office for assistance.

Because cowbirds are a native species in North America, they are protected under the Migratory Bird Treaty Act. However, there are exceptions to this law for acts of depredation by a few select species. Under the Texas Parks and Wildlife Code, Section 64.002(c) brown-headed cowbirds are included among this small group of eight non-protected bird species that may be killed when found committing or about to commit depredations on ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in numbers and in a manner that constitutes a health hazard or other nuisance. State regulations may not supersede federal regulations, so it is important that all participants in this project follow the protocols outlined here. No traps are to be in operation either before March 1, or after May 31.

Successful completion of this online training will certify you to trap cowbirds and release non-target birds. A score of 100% is required for passing. There is no limit to the number of times the test may be taken.

The goals of this test are:

- Enable more people to be conveniently certified to trap cowbirds.
- Educate landowners and other interested persons to the background and biological necessity for trapping cowbirds to reduce nest parasitism on songbird populations.
- Provide the information necessary for landowners and other interested persons to successfully, properly, and safely maintain a cowbird trap, identify cowbirds, and safely release non-target captures.

Upon completion of this test the learner will:

- Be able to correctly answer all quiz questions with an accuracy of 100%.
- Be able to distinguish cowbirds from other birds.
- Know why cowbird trapping is beneficial to songbird populations.
- Know how to properly set up and maintain a cowbird trap.
- Know the proper procedures for humanely dispatching cowbirds.

Take the Test

[Online Cowbird Certification Training](#) (Online registration is required)

Report

[Annual Report 50 CFR 21.43 Depredation Order for Blackbirds, Grackles, Cowbirds, Magpies and Crows Form](#)
(Word Doc)



Office Use Only

Date Completed Report received: ____/____/____

Initials: _____

**ANNUAL REPORT - 50 CFR 21.43
DEPREDATION ORDER FOR BLACKBIRDS,
GRACKLES, COWBIRDS, MAGPIES, AND CROWS**

INSTRUCTIONS. You must submit an annual report if you conducted any control activities under the provisions of 50 CFR 21.43. Complete this reporting form and return it to your Regional Migratory Bird Permit Office (see addresses below) by January 31, if you conducted depredation control under the depredation order in the previous calendar year. Use of this form is not mandatory, but you must submit the information requested. Please summarize by species and then by location.

SIGN AND DATE THE CERTIFICATION STATEMENT AT THE END OF THE SUMMARY

REPORTING PERSON OR ORGANIZATION: _____

ADDRESS: _____ **CITY** _____ **STATE** _____ **ZIP** _____

TELEPHONE NUMBER: _____ **EMAIL ADDRESS:** _____ **REPORT FOR CALENDAR YEAR** _____

Species Taken	Number Taken	Month Taken	County and State Where Birds were Taken	Purpose of the Take (Crop or Animal Species)
Total:				

I certify that the information in this report is true and correct to the best of my knowledge. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.

Signature: _____ **Date:** _____

ANNUAL REPORT - 50 CFR 21.43
SUPPLEMENTAL SHEET - DEPREDATION ORDER FOR BLACKBIRDS, GRACKLES, COWBIRDS, GRACKLES, MAGPIES, AND CROWS

NAME/ORGANIZATION: _____ **REPORT YEAR:** _____ **PAGE NO.** _____

Species Taken	Number Taken	Month Taken	County and State Where birds Were Taken	Purpose of the Take (Crop or Animal Species)
Total:				

FISH AND WILDLIFE SERVICE DEPREDAATION ORDER ANNUAL REPORT
Paperwork Reduction Act and Privacy Act – Notices

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, *et seq.*) and the Privacy Act of 1974 (5 U.S.C. 552a), please be advised of the following.

1. The gathering of information on fish and wildlife is authorized by the Bald and Golden Eagle Protection Act (16 U.S.C. 668); 50 CFR 22, the Migratory Bird Treaty Act (16 U.S.C. 703-712), 50 CFR 21; General Provisions of 50 CFR 10, and the Wildlife Provisions (Import/export/transport) of 50 CFR 14. You can find the authorizing statutes at: <http://www.gpoaccess.gov/cfr/index.html> and <http://www.fws.gov/permits/ltr/ltr.shtml>.
2. Information requested in this form is purely voluntary. However, submission of requested information is a condition of your operating under the depredation order and the above laws. Failure to provide the requested information may be sufficient cause to pursue legal action against you for take of migratory birds. However, your response is not required unless a currently valid Office of Management and Budget (OMB) control number is displayed on the form.
3. Disclosures outside the Department of the Interior may be made without the consent of an individual under the routine uses listed below, if the disclosure is compatible with the purposes for which the record was collected (Ref. 68 FR 52611, 4 September 2003). Among the purposes are the following, not all of which are applicable in every case.
 - a. Routine disclosure to subject matter experts, and Federal, tribal, State, local, and foreign agencies, for the purpose of obtaining advice relevant to making a decision on an application for a permit or when necessary to accomplish a FWS function related to this system of records.
 - b. Routine disclosure to Federal, tribal, State, local, or foreign wildlife and plant agencies for the exchange of information on permits granted or denied to assure compliance with all applicable permitting requirements.
 - c. Routine disclosure to Federal, tribal, State, and local authorities who need to know who is permitted to receive and rehabilitate sick, orphaned, and injured birds under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; federally permitted rehabilitators; individuals seeking a permitted rehabilitator with whom to place a bird in need of care; and licensed veterinarians who receive, treat, or diagnose sick, orphaned, and injured birds.
 - d. Routine disclosure to the Department of Justice, or a court, adjudicative, or other administrative body or to a party in litigation before a court or adjudicative or administrative body, under certain circumstances.
 - e. Routine disclosure to the appropriate Federal, tribal, State, local, or foreign governmental agency responsible for investigating, prosecuting, enforcing, or implementing statutes, rules, or licenses, when we become aware of a violation or potential violation of such statutes, rules, or licenses, or when we need to monitor activities associated with a permit or regulated use.
 - f. Routine disclosure to a congressional office in response to an inquiry to the office by the individual to whom the record pertains.
 - g. Routine disclosure to the Government Accountability Office or Congress when the information is required for the evaluation of the permit programs.
 - h. Routine disclosure to provide addresses obtained from the Internal Revenue Service to debt collection agencies for purposes of locating a debtor to collect or compromise a Federal claim against the debtor or to consumer reporting agencies to prepare a commercial credit report for use by the FWS.
4. For individuals, personal information such as home address and telephone number, and personal identifiers (if reported) will be removed prior to any release of the report.
5. The relevant burden for an annual report for activities under 50 CFR 21.43 is 2 hours. This burden estimate includes time for reviewing instructions, gathering and maintaining data and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of the form to the Service Information Clearance Officer, U.S. Fish and Wildlife Service, Mail Stop 2042-PDM, U.S. Department of the Interior, 1849 C Street, NW, Washington D.C. 20240.

U.S. Fish and Wildlife Service
Regional Migratory Bird Permit Offices

REGION	AREA OF RESPONSIBILITY	MAILING ADDRESS	CONTACT INFORMATION
1	Hawaii, Idaho, Oregon, and Washington	911 N.E. 11 th Avenue Portland, OR 97232-4181	Tel: (503) 872-2715 Fax: (503) 231-2019 Email: permitsR1MB@fws.gov
2	Arizona, New Mexico, Oklahoma, and Texas	P.O. Box 709 Albuquerque, NM 87103	Tel: (505) 248-7882 Fax: (505) 248-7885 Email: permitsR2MB@fws.gov
3	Iowa, Illinois, Indiana, Minnesota, Missouri, Michigan, Ohio, and Wisconsin	5600 America Boulevard West Suite 990 Bloomington, MN 55437-1458	Tel: (612) 713-5436 Fax: (612) 713-5393 Email: permitsR3MB@fws.gov
4	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virgin Islands, and Puerto Rico	P.O. Box 49208 Atlanta, GA 30359	Tel: (404) 679-7070 Fax: (404) 679-4180 Email: permitsR4MB@fws.gov
5	Connecticut, District of Columbia, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Virginia, Vermont, and West Virginia	P.O. Box 779 Hadley, MA 01035-0779	Tel: (413) 253-8643 Fax: (413) 253-8424 Email: permitsR5MB@fws.gov
6	Colorado, Kansas, Montana, North Dakota, Nebraska, South Dakota, Utah, and Wyoming	P.O. Box 25486 DFC (60154) Denver, CO 80225-0486	Tel: (303) 236-8171 Fax: (303) 236-8017 Email: permitsR6MB@fws.gov
7	Alaska	1011 East Tudor Road Mail Stop 201 Anchorage, AK 99503-6103	Tel: (907) 786-3693 Fax: (907) 786-3641 Email: permitsR7MB@fws.gov
8	California and Nevada	2800 Cottage Way Sacramento, CA 95825-1829	Tel: (916) 978-6183 Fax: (916) 414-6486 Email: permitsR8MB@fws.gov

Trapping Brown-headed Cowbirds to Control Songbird Nest Parasitism



Trapping Brown-headed Cowbirds

The purpose of this guide is to assist landowners that wish to help songbird reproduction by building and operating a cowbird trap. Please note that all persons wishing to trap cowbirds should participate in the online training program before the trap is put into operation. This training is offered at no cost by **Texas Parks and Wildlife (TPW)**. All applicable state and federal laws must be observed during the duration of trapping. If questions arise, contact your closest **TPW** office for assistance.

Why Trap Cowbirds?

Throughout North America songbird numbers are declining. While there is no one single reason for this decline, one major contributing factor is the spread of the brown-headed cowbird. These birds were once limited to the short-grass prairies, where they followed the herds of buffalo, feeding on the insects stirred up by the movement of herds as they moved from place to place. Today however, this highly adaptive bird is found throughout North America. This is a problem because of the reproductive strategies the species employs. The cowbird is what is referred to as a brood parasite. This means the female lays her eggs in the nests of other birds, abandoning them to the care of foster parents. The foster birds raise the cowbird chick to the detriment of their own young. Because the female cowbird can lay as many as 70 eggs per season, susceptible species of songbirds, such as the black-capped vireo and the golden-cheeked warbler, that are already endangered, are particularly at risk.

Collecting Data

As with any scientific endeavor, cowbird trapping requires that data be collected in order to determine how effective it is. Collecting data also allows scientists to track the movements of banded birds, and hopefully to find new ways to reduce the parasitism rate that has caused many songbird populations to decline. By participating in this project landowners have the opportunity to help songbirds, and make a genuine contribution to the threatened and endangered wildlife in Texas.

Once the data has been collected, landowners should keep a copy, and forward a completed annual report to **Regional Migratory Bird Permitting Office for the U.S. Fish and Wildlife Service (USFWS)** by January 31st each year. This allows **USFWS** to monitor the total numbers of birds being trapped and the locations of the traps. Data to be collected should include the date, the number and type of non-target species that might get into the trap, the number of males, the number of females, and the numbers of banded birds that might be caught. *Banded birds are to be released* after the data is collected.

Selecting a Trapping Location

The location of the trap is critical to maximize cowbird capture and to minimize non-target birds being caught. The idea is to put the trap in a place that is as attractive to cowbirds as possible, without being disruptive to other species. Ideally the trap should be located in areas that include the following:

- Close to where cattle or other livestock graze.

- In open pasture, away from any brush, and in low grass.
- The trap should be readily accessible to vehicles, even after heavy rain.
- Water and some perching snag (dead trees) nearby.

Site Precautions

Even on a perfect location site there are precautions that should be taken to insure the safety of landowners and others participating in cowbird trapping.

One of the hazards to be aware of is that of predators. Any mammal, bird, or reptile that eats birds will be attracted to the traps in search of an easy meal. Keep the grass around the trap short. This will not only make it easier to spot snakes, but it will also make it more attractive to cowbirds. Raccoons and skunks will dig under the traps if precautions are not taken to keep them out. Owls and hawks also try to swoop down on the birds inside the trap. Fire ants can pose an additional hazard. Before using fire ant bait, check with your local Extension Service office for application recommendations. Always be sure to read and follow pesticide label directions. Never use any insecticides in the trap itself.

TRAP OPERATION: It is suggested that traps be operated from March 1 to May 31 ONLY. This is to avoid incidental catch of non-target species. After May 31, fledglings of beneficial species such as cardinals, mockingbirds, buntings, and finches are most abundant and are more likely to be accidentally trapped.

Setting up the Trap

Erect the trap on a level site with no gaps between the frame and the ground. Use a shovel to fill in any gaps, if necessary.

Place a one gallon poultry waterer on level ground inside the trap. Scatter about a half a coffee can of cleaned milo (grain sorghum) on the ground, being careful to avoid getting it in the water. Do not feed milo during rainy weather because the birds do not like soggy grain. Wait until the ground has dried up before scattering it out again. Each trap must contain adequate food, water and shade and be checked daily.

Since cowbirds are gregarious birds, the traps work best if about 10-15 live cowbirds are present to act as decoys. When first starting a trap without decoys, be patient. If cowbirds are in the area, they'll find and enter the trap.

Use a large minnow dip or trout net to catch birds in the trap. You must **immediately release** any non-target bird species. Any bird not a cowbird is a non-target bird. Always remove and dispose of any dead or injured birds (usually a result of avian predator attack on the trap). The most common species of non-target birds that have been found in traps are mockingbirds, cardinals, various sparrows, grackles, blackbirds, and loggerhead shrikes. Consult a bird field guide to help you identify these species. Non-target birds will enter the traps for a variety of reasons. Some are attracted to the grain, some for company, and still others just out of curiosity. Putting a board across one side at the top to provide shade to trapped birds is recommended. Humanely treating birds while in the trap and humanely euthanizing birds is important.

If a federally permitted wildlife rehabilitator is within 1 hour or less of your capture efforts, you must send injured or debilitated non-target federally protected migratory

birds to the rehabilitator. If no rehabilitator is closer than 1 hour away, you may euthanize an injured or debilitated bird of a non-target species unless the species is federally listed as an endangered, threatened, or candidate species, in which case you must deliver it to a rehabilitator and report the take to the nearest U.S. Fish and Wildlife Service Field Office or Special Agent.

For a listing of endangered, threatened birds:

http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/nongame/listed-species/

For a listing of U.S. Fish and Wildlife Service Offices:

<http://www.fws.gov/southwest/es/FieldOffices.html>

For a listing of U.S. Fish and Wildlife Special Agents:

<http://www.fws.gov/southwest/lawenforcement/statecontacts.html>

Euthanizing Cowbirds

This is the real job of protecting songbirds from nest parasitism. Whichever method is used to kill cowbirds, it must be humane, fast, and certain. The recommended method is cervical dislocation, or separating the vertebra.

Cervical dislocation: Hold top of neck between thumb and forefinger, grab head with other hand, turn and lift until you feel the cervical vertebrae detach from the head – HINT: hold the bird away from you when you do this the first few times until you have the “touch”. A catch box, net, gloves, and a light for night time are useful items to have on hand.

Alternative Dispatch Methods: Carbon dioxide (CO₂) gas in a 5-gallon bucket may be used to euthanize brown-headed cowbirds. Use dry ice as the source of carbon dioxide. Cut a hole in the top of the bucket, cover opening with a piece of inner tube, or similar material, that has a slash in it to facilitate putting birds inside. Birds must not be touching the dry ice! Birds should be dead within 20 seconds.

Taking Traps out of Operation

Because cowbirds are a native species in North America, they are protected under the Migratory Bird Treaty Act. However, there are exceptions to this law for acts of depredation by a few select species. Under the **Texas Parks and Wildlife Code**, Section 64.002(c) brown-headed cowbirds are included among this small group of eight non-protected bird species that “may be killed at any time and their nests or eggs may be destroyed.” State regulations may not supersede federal regulations, so it is important that all participants in this project follow the protocols outlined here in this module. Again, it is recommended that no traps be in operation either before March 1, or after May 31.

If it is not possible to remove the trap to a location where it can be stored under cover, then certain precautions must be taken because birds, including non-target species, will tend to enter the trap. The traps may be taken out of operation by placing boards over the entry slots or by securing the door in an open position. Be sure to remove all cowbirds, and release any banded birds, disposing of any dead or injured birds.

Reporting the Data

Be sure to record all data on birds captured on an approved data form and forward copies to United States Fish and Wildlife Office in Albuquerque, New Mexico. Landowners who are actively participating in trapping brown-headed cowbirds must submit their data by January 31st each year. Submit data to:

U.S. Fish and Wildlife Service
Regional Migratory Bird Permit Offices
P.O. Box 709
Albuquerque, NM 87103

2 cuts 5" of 7/16" rod (door hinge part)
1 cut 7" of 1" x 1/4" strap (door latch)
1 cut 5" of 1" x 1/4" strap (on door)
1 cut 2" of 3/8" tubing (on door)
1 cut 3 1/4" 7/16" rod

Alternate Trap Entrance Plate:

2 pieces of plate 7" wide x 94 1/2" long, separated by 1 1/4" inches that will form the opening. *The exact 1 1/4" width of the opening is critical.*



Construction Tips

- Use treated lumber throughout. Added initial cost is compensated for by longer field life and reduced maintenance.
- Don't rip lumber until you are ready to start construction. Ripped lumber will bow and twist if allowed to sit for several days.
- Use a shelf bracket on diagonal corners to square each panel before attaching gussets. To cut gussets, lay out sheet of plywood in 12" squares, then draw diagonals across the square. A sheet of plywood will make 64 gussets.
- Gussets go on one side of panel, hailscreen attaches to the other side. For side and top panels, wire will end up being on the inside on the panel. This prevents birds from roosting on framework next to wire where they are prone to predation. **Exception:** End panels are constructed the same way, but during final trap assembly, the wire goes on the outside, because the drop entrance attaches to horizontal members for structural stability.
- This pattern is designed to use 48" wide hailscreen to maximize efficiency. Internal cross members are placed to allow for slight overlap. Wide hailscreen will probably not be readily available in stock, but any building supply can order it. Use of narrower hailscreen requires repositioning of tack strips, and results in higher lumber use.
- To maximize shop efficiency: cut gussets; rip lumber; pre-cut lengths; cut out slot assembly; assemble side, top, and end panels; attach hailscreen; final assembly. When building multiple units, performing similar actions for several traps at the same time will allow you to develop an assembly line process that cuts construction time per unit.
- ***Slot width of 1.25 inches in slot assembly is critical.*** Wider slots will increase non-target captures, including small raptors, which will feed on your decoy birds. Escapes by females may also increase with wider slots.
- Side panels attach to the outside of end panels. Nothing else will fit if you attach ends outside.
- During final assembly assemble in this order: end, side, side, top, top, dropping slot assembly (3 pieces), then finish with the other end.



Cowbird “pick-up” Trap Construction Instructions

This is the “Pick-Up” style trap and it will fit in the bed of a pick-up truck. It measures 6’L X 4’W X 4’H.



- Materials needed:**
- Approximately 40 feet of 1” X 1” inch mesh wire (4 ft. tall)
 - 1’ X 4’ piece of plywood
 - cage clips and pliers
 - screen door spring
 - 6-8’ of heavy duty string
 - tie wire

Procedure:

- 1 Roll out wire mesh.
- 2 Measure out and cut 20’ for sides of trap.
- 3 Carefully bend at 4’, 10’ and 14’ so that a square trap that is 4’ X 6’ is created. *This can be accomplished by lying the wire between two boards – be careful to bend between the two wires and not right up against one or the other wires.*
- 4 Cut a 6’ piece to be used for the floor of the trap.
- 5 Use cage clips about every 4-5 inches to attach the floor and secure the side pieces.
- 6 Cut a 4’ piece of mesh wire and bend 90° at 1 foot to form an “L” shaped piece.

ATTACHMENT F. Oak wilt Information



TEXAS A&M FOREST SERVICE

Forest Health: Identify and Manage Oak Wilt

Oak wilt is one of the most destructive tree diseases in the United States, and it is killing oak trees in Central Texas at epidemic proportions. Oak wilt is an infectious disease caused by the fungus *Ceratocystis fagacearum*, which invades and disables the water-conducting system in susceptible trees. All species of oaks (*Quercus* spp.) in Central Texas can be infected with the oak wilt fungus. Red oaks (Spanish oak, Shumard oak, blackjack oak) and live oaks are most commonly killed by oak wilt when compared with white oaks (post oak, bur oak, Mexican white oak) which are less commonly killed. However, those white oaks such as shin oak, chinkapin oak and Lacey oak that grow in stands with interconnected root systems also may die in large numbers from oak wilt.

The successful management of oak wilt depends on correct diagnosis and an understanding of how the pathogen spreads between different oak species. Red oaks play a critical role in the spread of oak wilt through the formation of fungal mats while live oaks are most commonly affected due to their tendency to grow from root sprouts and vast interconnected root systems that allow movement of the fungus between adjacent trees.

Identification of Oak Wilt:

Patterns of Tree Mortality: Most live oaks defoliate and die over a 1-6 month period following initial appearance of symptoms. Some live oaks take longer to die, and a few live oaks in oak wilt centers escape infection or may be resistant to the fungus.

Red oaks rarely survive oak wilt and often die within 3 to 4 weeks following the initial appearance of symptoms. During summer months, diseased red oaks often can be spotted from a distance because of their bright autumn-like coloration in contrast to the surrounding greenery.

Foliar Symptoms: Leaves on diseased live oaks often develop chlorotic (yellow) veins that eventually turn necrotic (brown), a symptom called veinal necrosis. Defoliation may be rapid, and dead leaves with brown veins often can be found under the tree for months after defoliation. Leaves may exhibit other patterns of chlorosis and necrosis, but these symptoms are less reliable than veinal necrosis for diagnosing oak wilt in live oaks.



Foliar symptoms of oak wilt on red oaks are less distinct. In early spring, young leaves simply wilt, turning pale green and brown. Mature leaves develop dark green water-soaking symptoms or turn pale green or bronze, starting at the leaf margins and progressing inward.

Fungal Mats: Fungal mats are reliable indicators for diagnosis of oak wilt. These specialized spore-producing structures most often form in spring on red oaks that develop advanced symptoms of oak wilt the previous late summer or fall. Red oak infections in late spring or summer usually do not give rise to fungal mats due to high temperatures and low soil moisture conditions. Fungal mats can be

Forest Health: Identify and Manage Oak Wilt

found by looking for inconspicuous narrow cracks in the bark of dying red oaks leading to hollow areas between the bark and wood. They often have a distinctive odor similar to fermenting fruit. Fungal mats can be exposed for inspection by chopping away the loose bark. Fungal mats do not form on infected live oaks or white oaks.



Laboratory Diagnosis: Oak wilt diagnosis may be confirmed by isolating the fungus from diseased tissues in the laboratory. Samples can be submitted to: Texas Plant Disease Diagnostic Laboratory, 1500 Research Parkway, Suite A130, Texas A&M University Research Park, College Station, TX 77845. A Texas A&M Forest Service forester, a county extension agent or trained arborist should be consulted for proper collection and submission of samples.

Integrated Oak Wilt Management:

Early detection and prompt action are essential for successful management of oak wilt. The specific measures taken depend on several circumstances outlined in this fact sheet, but should include appropriate combinations of the following:

Prevent New Infections

- Cut and dispose of diseased red oaks immediately.
- Avoid wounding oak trees, including pruning, from February through June, and paint all wounds and fresh stumps regardless of season.
- Handle oak firewood cautiously, burn all firewood before spring, and never store unseasoned oak wood from infected trees near healthy oaks.
- Cover unseasoned firewood (from infection centers and unknown origins) with clear plastic, and bury the edges of the plastic.

Stop Spread through Roots

- Install a trench at least 4 ft deep and 100 ft beyond the perimeter of infection centers to break up root connections.
- Cut or uproot all trees within the 100-ft barrier (except those injected with fungicide).

Inject High-Value Oaks with Fungicide

- Identify high-value oak trees in close proximity to expanding oak wilt infection centers.
- Consult a trained and licensed arborist (with certified applicator's license) for treatment of high-value oak trees with injections of the fungicide *propiconazole*.

Plant New Trees

- Promote biological diversity in the landscape by planting less-common native trees.
- Avoid wounding oaks during planting.

For more information on oak wilt in Texas, visit the internet website www.texasoakwilt.org.

ATTACHMENT G. Native Plant List



Native and Adapted *Landscape Plants*



an earthwise guide for Central Texas

Find your perfect
plant with our
online search tool!



Native and Adapted
Landscape Plants
an earthwise guide for Central Texas

This guide was developed to help you in your efforts to protect and preserve our water resources.



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For more information on deer-resistant, fire-resistant, rain garden and poisonous plants, see page 52

To help you create your own landscape design, resources are available to Austin citizens at www.austintexas.gov/department/landscape-design

Cover Photo: Crossvine

Key

Native to:

- E** - Edwards Plateau, Rocky, Western Zone: shallow, limestone or caliche soil (generally on the west side of Austin)
- B** - Blackland Prairie, Eastern Zone: Deeper, dark, clay soils (generally on the east side of Austin)
- B/E** - Native to both Edwards Plateau and Blackland Prairie
- T** - Native to Texas (not a part of Edwards Plateau or Blackland Prairie)
- X** - Hybrid plant with native Texas parentage

For additional native plant information, visit the plant section of the Lady Bird Johnson Wildflower Center website at www.wildflower.org

Height and Spread:

Height and spread are provided in ranges. The maximum heights reflect ideal conditions.

Utility Approved Trees:

-  Plants appropriate for use near overhead and underground utilities should not exceed 20' (call 811 at least 3 business days before you plan to dig).

Light:

- Sun** – needs at least 6-8 hours of full, direct sun
- Sun/Part Shade** – can take anywhere from 4-8 hours of sun. Typically these plants bloom more in sun but require less water in part shade
- Shade** – less than 4 hours of direct sun; or dappled light for 6-8 hours

Evergreen or Deciduous:

- E** – Evergreen
- SE** – Semi-evergreen
- D** – Deciduous

Water:

Refers to the plant's water needs during the growing season **after they are established**. The majority of plants require more frequent watering while becoming established. For Austin's current water restrictions, variances and other irrigation information visit: www.WaterWiseAustin.org

- VL** – Very Low (Water occasionally, if no significant rainfall for 30 days)
- L** – Low (Water thoroughly every 3-4 weeks if no significant rainfall)
- M** – Medium (Water thoroughly every 2-3 weeks if no significant rainfall. Most plants in the guide with this designation prefer shade so the soil does not dry out as quickly)
- H** – High (Water thoroughly every 5-7 days if no rainfall) Due to the City's efforts to conserve water, there are only a few plants with this designation and they should be placed in areas that are naturally moist and/or receive stormwater runoff

Wildlife:

- X** – Most Texas native plants provide greater wildlife value than hybrid, non-native and/or exotic plants. Flowers, nectar, leaves, fruits and nuts provide food for wildlife; these plants also provide essential cover for nesting and raising young. To learn more visit: www.KeepAustinWild.com



Gardening, “Austin-style...”

This Grow Green guide was created to help you select plants that are native to and adapted for the Austin area. These plants tend to be drought tolerant, most need little, if any supplemental fertilizer, are resistant to most diseases and pests, and many provide habitat and food sources for local wildlife. The less watering, fertilizing and chemical usage required in your yard, the more you contribute to the conservation and protection of our precious water resources - our streams, lakes and aquifers

To achieve a successful earth-wise landscape, plant the right plant in the right place. Plants from other parts of the country are often poorly suited to our conditions. It is important to understand the regional climate as well as site specific conditions. Our climate can vary from baking hot heat and drought one year, to frequent rain and flooding in the next. Some years we may get a hard freeze and some not.

The environmental conditions across Austin vary quite a bit so it is critical to evaluate your specific site conditions. Consider the soil type and depth, sun and shade patterns, as well as any microclimate factors.

We hope you enjoy using this guide to bring a touch of Austin's natural beauty to your own landscape. Visit **www.GrowGreen.org** for more earth-wise gardening information.



Texas Ash



Eastern Red Cedar



Black Cherry



Arizona Cypress



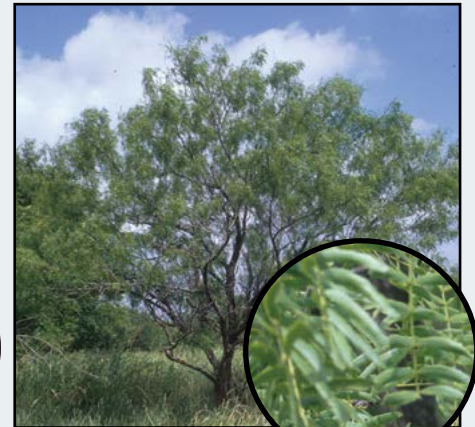
Bald Cypress



Montezuma Cypress



Cedar Elm



Honey Mesquite



Bigtooth Maple



Bur Oak



Chinquapin Oak

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
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Trees

General Maintenance: Eliminate crossing branches; shape a young tree in the first three years after planting to produce an attractive mature specimen. Avoid planting trees with fruit near sidewalks, pools and porches because they can be messy. For more tree care tips see the Grow Green Tree Care and Installation and Maintenance fact sheets. Did you know? Trees receive protection within the city limits of Austin once they reach 19" in diameter on single-family lots, and 8" in diameter on multi-family and commercial properties. For more information visit www.austintexas.gov/treeportal or call (512) 974-1876.

Ash, Texas <i>Fraxinus texensis</i>	E	40-50'	40-50'	Sun	D	Fall	Yellow-bronze foliage	VL	x	Fast-growing; native; only Ash appropriate for Austin area; provide good drainage; relatively long life; provides nesting and cover; birds eat flowers and fruit; susceptible to emerald ash borer; prune to shape or raise canopy if needed
Cedar, Eastern Red <i>Juniperus virginiana</i> var. <i>virginiana</i>	B	30-50'	15-25'	Sun	E	Year round	Evergreen leaves	L	x	Columnar, spreading shape; needs deep soil; good screen plant; native; provides cover and food for wildlife; Ashe Juniper, <i>J. ashei</i> , (mistakenly called Cedar) is a native alternative for shallow soils; does not need pruning
Cherry, Black <i>Prunus serotina</i> var. <i>exima</i>	B	25-50'+	35'	Sun	D	Spring	White flower; yellow fall foliage	L-M	x	Attractive shape; fall color; fragrant flowers; glossy leaves; fruit bearing; not for heavy clay soils; foliage can be fatal if consumed; provide moist location; attracts birds, butterflies and pollinators; prune for shape or to raise canopy
Cypress, Arizona <i>Cupressus arizonica</i>	T	25-50'	15-25'	Sun	E	Year round	Blue-silver foliage	VL	x	Suited to well-drained, limestone soils; attractive, peeling red bark; some disease problems; native to Chisos Mountains; prune to shape, if needed
Cypress, Bald <i>Taxodium distichum</i>	B/E	60-100'	35-50'+	Sun/Part Shade	D	Fall	Copper foliage	H	x	For riparian/moist, deep soil or poor drainage conditions only; foliage dries up in dry, hot location; obtain plants of western seed source; does not need pruning
Cypress, Montezuma <i>Taxodium mucronatum</i>	T	60-100'	25-50'+	Sun/Part Shade	D	Fall	Bronze foliage	M	x	Similar to Bald Cypress but faster growth and more adapted to dry conditions; may freeze in severe winters; native to south Texas; does not need pruning
Elm, Cedar <i>Ulmus crassifolia</i>	B/E	50-75'	25-35'	Sun/Part Shade	D	Fall	Gold foliage	VL	x	Upright form, native; adapted to rocky soils; can withstand poor soils; provides seeds and nesting for wildlife; prune to shape or raise canopy if needed
Honey Mesquite <i>Prosopis glandulosa</i> var. <i>glandulosa</i>	B/E	25'-40'	25-30'	Sun	D	Spring - Fall	Creamy white flowers	VL	x	2-3" long blooms; bright green foliage and weeping shape; very slow growing; thorns; excellent nectar source; Thornless Mesquite is <i>Prosopis chilensis</i> ; prune to shape or raise canopy if needed
Maple, Bigtooth <i>Acer grandidentatum</i>	E	20-50'	20-30'	Sun/Part Shade	D	Fall	Red, gold foliage	M	x	Best maple for alkaline soils; outstanding fall color; prune to shape or raise canopy if needed
Oak, Bur <i>Quercus macrocarpa</i>	B/E	50-70'+	30-50'+	Sun	D	Spring	Large acorns	M	x	Large, majestic tree, very adaptable; provide plenty of space and deep soil; moderate growth rate; important source of food for wildlife; prune to shape or raise canopy if needed
Oak, Chinquapin <i>Quercus muhlenbergii</i>	B/E	50-70'+	30-40'	Sun	D	Fall	Yellow and rust foliage	L	x	Stately form; provide deep soil; moderate growth rate; provides food for many birds and mammals; prune to shape or raise canopy if needed



Lacey Oak



Mexican White Oak



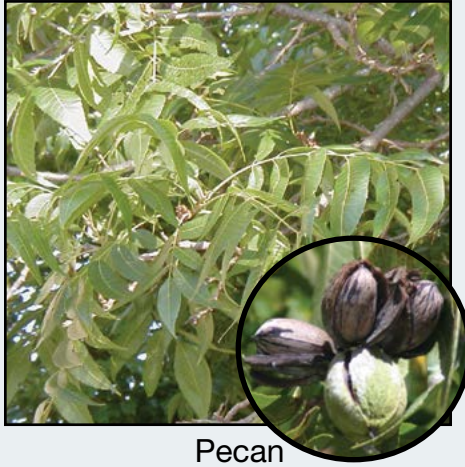
Southern Live Oak*



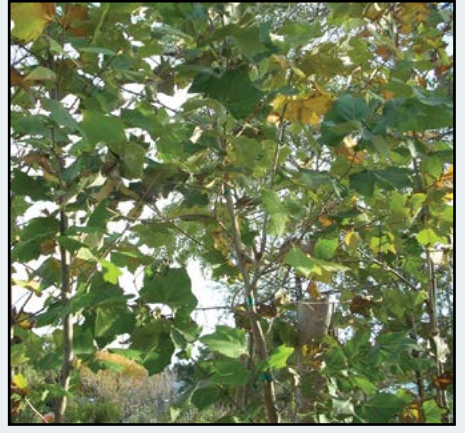
Texas Red Oak



Texas Palmetto



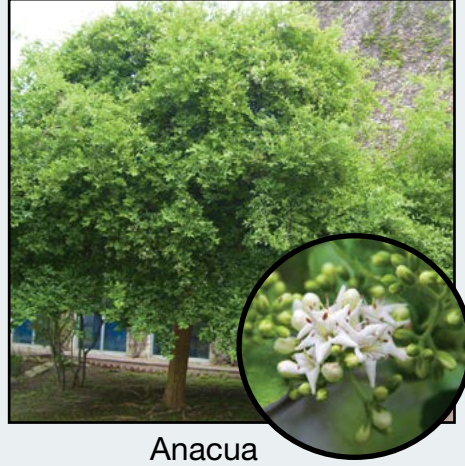
Pecan



Mexican Sycamore



Anacacho Orchid



Anacua



Arroyo Sweetwood



Mexican Buckeye

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Oak, Lacey <i>Quercus laceyi</i>	E	30-50'+	25'	Sun/Part Shade	D	Spring - fall	Blue-green foliage	VL	x	Ideal for small urban yards; slow growth rate; will grow on shallow, limestone soils; resistant to oak wilt; susceptible to oak phylloxera insects; prune to shape or raise canopy if needed
Oak, Mexican White <i>Quercus polymorpha</i>	T	45-60'+	30-40'	Sun	SE	Spring	New foliage peach	VL	x	Handsome tree; provide deep soil; sheds leaves in spring when new leaves emerge; small population native to West Texas; resistant to oak wilt; susceptible to oak phylloxera insects; prune to shape or raise canopy if needed
Oak, Southern Live <i>Quercus virginiana</i>	B/E	40-60'+	50'+	Sun/Part Shade	E	Year round	Evergreen leaves	L-VL	x	Oak wilt susceptible; provide large open space; evergreen but sheds leaves in spring as new leaves emerge; if planting in shallow soil, use Escarpment Live Oak, <i>Q. fusiformis</i> , which is more drought tolerant; prune only during hottest and coldest months; paint all wounds immediately to help prevent spread of oak wilt
Oak, Texas Red <i>Quercus texana</i>	E	60-75'+	15-30'	Sun	D	Fall	Red foliage in fall	L	x	Well adapted to rocky soils; susceptible to oak wilt; provides food and cover for wildlife; Shumard Oak, <i>Q. shumardii</i> is a taller alternative, but only for deep, well-drained soil; prune to shape or raise canopy
Palmetto, Texas Palm, Texas Sabal <i>Sabal texana</i> or <i>S. mexicana</i>	T	45'	15'	Sun/Part Shade	E	Spring	Small white flowers	L	x	Not a true tree; found in moist, wet locations and/or those areas with occasional flooding; provides food for birds and other wildlife; prune only to remove dead fronds
Pecan <i>Carya illinoensis</i>	B	60-75'+	60-75'	Sun	D	Fall	Nut	H	x	For riparian/moist, deep soil conditions only; tall impressive tree; nut-producing; susceptible to disease and insects; many cultivars available
Sycamore, Mexican <i>Platanus mexicana</i>		60'	40'	Sun/Part Shade	D	Fall	Yellow/orange	H	x	For riparian/moist, deep soil conditions only; fast-growing; resistant to bacterial leaf scorch; may not be cold tolerant; prune to shape or raise canopy if needed

Small Trees/Large Shrubs

Ⓐ For small trees see the TREE section General Maintenance Comments; for large shrubs, if a plant is multi-stemmed leave lower foliage to create creening or to "limb up" remove lower branches as needed; see individual species notes. Plants that prefer Low (L) and Very Low (VL) water can be used in a rain garden if the soil is fast draining and they don't sit in water for an extended period. Rain garden plant success depends on the soil, how fast it drains and if the plants are in their preferred growing conditions.

Anacacho Orchid Tree <i>Bauhinia lunarioides</i>	T	6-12' Ⓐ	6-12'	Sun/Part Shade	D	Spring	White or pink flowers	L	x	Excellent understory tree; protect from winter winds; prefers well-drained soil; fragrant flowers attract butterflies and bees; prune to shape or raise canopy if needed
Anacua (Sandpaper Tree) <i>Ehretia anacua</i>	T	20-25'+	15-30'	Sun/Part Shade	SE	Spring - summer	White flowers	L	x	Fast-growing; often suckers or is multi-trunked; provide well-drained, alkaline soil; may die back in severe winters; edible fruit; attracts birds; bee nectar source; prune to shape or raise canopy if needed
Arroyo Sweetwood <i>Myrsopernum sousanum</i>		up to 20'+ Ⓐ	15'	Sun/Part Shade	D	Spring	White flowers; gold fall foliage	VL	N	Fast-growing shrub, often multi-trunked; nice foliage; prefers alkaline soil; fragrant, showy flowers; attracts butterflies, birds and bees; prune to shape or raise canopy if needed
Buckeye, Mexican <i>Ungnadia speciosa</i>	E	12-20' Ⓐ	12-20'	Sun/Part Shade	D	Early spring	Pink flowers	L	x	Multi-trunked; use as understory shrub; needs 1/2 day of sun; 1" fragrant blooms; good nectar source; seeds eaten by wildlife but poisonous to humans; does not need pruning



Red Buckeye



Carolina Buckthorn



Cherry Laurel



Crape Myrtle



Dessert Willow



Eve's Necklace



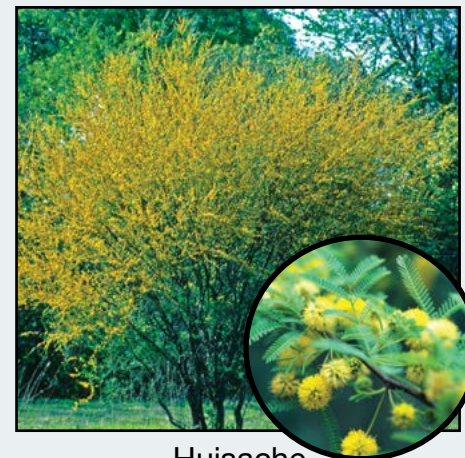
Goldenball Leadtree



Possumhaw Holly



Yaupon Holly



Huisache



Kidneywood

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Buckeye, Red <i>Aesculus</i> var. <i>pavia</i>	B/E	10-20' ⓤ	10-15'	Part Shade	D	Spring	Red flowers	L-M	x		Red, funnel-shaped flowers; attracts hummingbirds; nectar source; seeds poisonous to wildlife; prune for shape only
Carolina Buckthorn <i>Frangula caroliniana</i>	B/E	12-20' ⓤ	10-15'	Sun/Part Shade	D	Fall - winter	Yellow foliage	L	x		Understory tree with glossy leaves; can withstand periodic flooding; red berries attract wildlife; flowers are good nectar source; prune to shape or raise canopy if needed
Cherry Laurel <i>Prunus caroliniana</i>	T	15-20'+	15'	Sun/Part Shade	E	Spring	White flowers	M	x		Screening plant; avoid using in hot dry locations; requires deep soil and even soil moisture so is not suited for rain gardens; is susceptible to iron chlorosis; wildlife food; 'Bright and Tight' can be used as a large hedge
Crape Myrtle <i>Lagerstroemia indica</i>		varies if under 20' ⓤ	varies	Sun	D	Summer	Varies	L-M	x		Often too big for selected space, so note mature size of cultivar (dwarf cultivars available); large types not suited to rain gardens; needs good air circulation; choose powdery mildew resistant cultivars; aphids and a new scale insect can be a problem; occasionally reseeds; remove suckers but do not chop tops
Desert Willow <i>Chilopsis linearis</i>	E	varies if under 20' ⓤ	15-20'	Sun/Part Shade	D	Spring - fall	White, pink or burgundy	VL	x		Open, airy structure creates light shade for underplantings; native; trumpet-shaped, 3" long flower; provide well-drained soil; flowers and seeds provide food for wildlife; prune for shape or to raise canopy; remove suckers if needed
Eve's Necklace <i>Styphnolobium affine</i>	E	15-20'+ ⓤ	10-20'+	Sun/Part Shade	D	Spring - fall	Light pink flowers	VL	x		Small, understory tree; native; 4-6" drooping flower clusters; provides nectar; seeds are poisonous; prune to shape or raise canopy, if needed
Goldenball Leadtree <i>Leucaena retusa</i>	E	12-20'+ ⓤ	12-15'	Sun/Part Shade	D	Spring - Fall	Gold flowers	VL	x		Small, understory tree with 1" round globe-like fragrant blooms; native; airy foliage casts light shade for underplantings; provides cover, nesting and nectar; prune for shape or to raise canopy if needed
Holly, Possumhaw <i>Ilex decidua</i>	B/E	12-20' ⓤ	12'	Sun/Part Shade	D	Fall - winter	Red berries	M	x		Large multi-stemmed, shade-tolerant shrub; red berries on female plants attract birds in winter; tolerates poor drainage; similar to Yaupon Holly but loses its leaves in winter; prune for shape if needed
Holly, Yaupon <i>Ilex vomitoria</i>	B	12-20' ⓤ	10-15'	Sun/Part Shade	E	Winter	Red berries	L-M	x		Large, evergreen, multi-stemmed, shade-tolerant shrub; red berries on female plants attract birds in winter; tolerates poor drainage; fruits best in full sun; poisonous berries; prune for shape if needed
Huisache <i>Acacia farnesiana</i>	T	15-20'+	20'	Sun	SE	Spring	Yellow flowers	VL	x		Excellent native tree for waterwise gardens; fragrant blooms; forage for birds and other small creatures; prune for shape or to raise canopy if needed
Kidneywood <i>Eysenhardtia texana</i>	E	8-15' ⓤ	6-8'	Sun/Part Shade	D	Spring - fall	White flowers	VL	x		Fast-growing, native shrub with open, airy foliage; fragrant flowers; blooms off and on through growing season; foliage smells citrusy when crushed; attracts butterflies and bees, prune for shape if needed



Mountain Laurel



Mexican Olive



Windmill Palm



Texas Persimmon



Mexican Plum



Pomegranate



Mexican Redbud



Retama



Roughleaf Dogwood

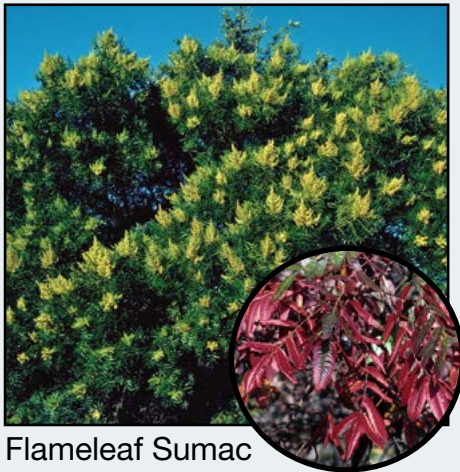


Mexican Silktassel



Evergreen Sumac

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Mountain Laurel, Texas <i>Sophora secundiflora</i>	E	12-20' ⓤ	8-12'	Sun/Part Shade	E	Spring	Purple flowers	VL	x		Slow-growing evergreen native; showy purple flowers with grape bubble gum fragrance; poisonous seeds; native to rocky, limestone cliffs; provide good drainage; prune to shape or raise canopy if desired
Olive, Mexican <i>Cordia boissieri</i>	T	15' ⓤ	15'	Sun/Part Shade	D	Spring and Summer	Gray green foliage	VL	x		Furry-textured foliage; top may die in hard freeze; some reports fruit edible but not palatable; fruit can be messy so don't plant near paved surfaces or rain gardens; prune to shape or raise canopy if needed
Palm, Windmill <i>Trachycarpus fortunei</i>		25'	7-10'	Sun/Part Shade	E	Year round	Dark green foliage	L-VL	x		Palms are not true trees; tropical-looking, fan-shaped fronds; furry-looking trunks; painful spines; avoid west sun; hardy to 5° F; remove dead fronds as needed; can be heavy-feeders
Persimmon, Texas <i>Diospyros texana</i>	E	12-20'+ ⓤ	8-12'	Sun/Part Shade	D	Spring	White flowers	VL	x		Multi-trunked, slow-growing native shrub; smooth, gray bark; native to shallow, rocky limestone soils; female trees bear fruit which attract wildlife but can be messy so don't plant near paved surfaces or in rain gardens; prune to shape or raise canopy if needed
Plum, Mexican <i>Prunus mexicana</i>	B/E	15-20'+ ⓤ	15-20'	Sun/Part Shade	D	Spring	White flowers	L	x		Great understory tree; earliest spring bloomer; provide good drainage and fair amount of soil; fragrant flowers are nectar source; larval host; edible fruit in July-Sept; but can be messy so don't plant near paved surfaces or in rain gardens; prune to shape or raise canopy if needed
Pomegranate <i>Punica granatum</i>		varies if under 20' ⓤ	varies	Sun	SE	Summer - fall	Orange flowers	L	x		Will grow on shallow, rocky, limestone soil; thorny stems; dwarf fruiting and non-fruiting cultivars are available; some have edible fruit, don't plant fruiting cultivars near paved surfaces or rain gardens
Redbud, Mexican <i>Cercis canadensis</i> var. 'mexicana' Redbud, Texas <i>Cercis canadensis</i> var. 'texensis'	E	10-15' 15-20'	10-15'	Sun/Part Shade	D	Early spring	Pinkish purple	L-VL	x		Mexican variety has small wavy leaves; Texas variety has leaves that are larger and less wavy; provide well-drained site; Eastern Redbud not recommended; prune to shape, raise canopy or remove suckers
Retama <i>Parkinsonia aculeata</i>	T	12-20' ⓤ	12-20'	Sun/Part Shade	D	Spring - fall	Yellow flowers	VL	x		Green trunk and branches; seeds out; root suckers; thorns; fast-growing; short-lived; provides nectar, seeds and nesting; prune to shape or raise canopy if needed
Roughleaf Dogwood <i>Cornus drummondii</i>	B/E	12'-20' ⓤ	15-20'	Sun/Part Shade	D	Spring	White berries	L	x		Give lots of space; thicket-forming; suckers extensively; use for natural areas and habitat gardens; tolerates alkaline soil; good nectar and fruit source
Silktassel, Mexican <i>Garrya ovata</i> spp. <i>lindheimeri</i>	E	5-11' ⓤ	5-11'	Sun/Part Shade	E	Spring	Green flowers	L	x		Extremely drought and disease tolerant; must have well-drained soil to do well; fast-growing; good substitute for Ligustrum
Sumac, Evergreen <i>Rhus virens</i>	E	8-10' ⓤ	6-8'	Sun/Part Shade	E	Late summer to winter	White blooms	L	x		Glossy leaves turn burgundy in cool season; fuzzy, orange/red berries provide food for birds and other wildlife; needs good drainage; prune as needed to maintain natural form



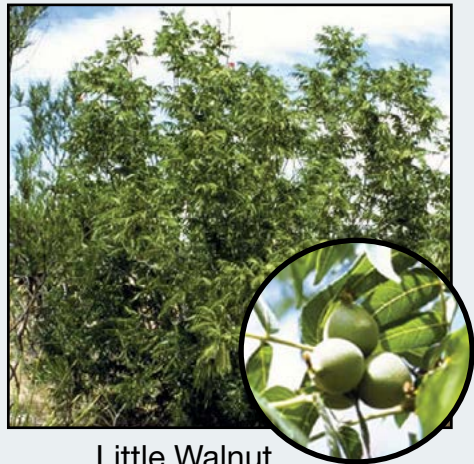
Flameleaf Sumac



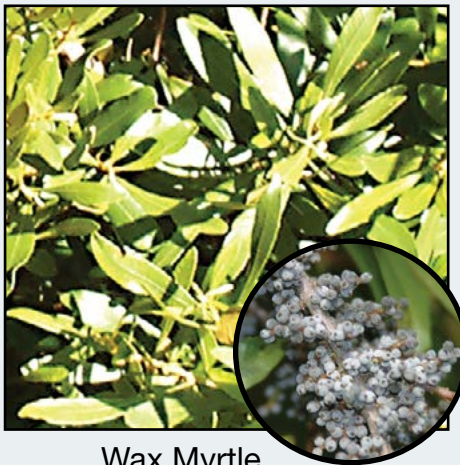
Rusty Blackhaw Viburnum



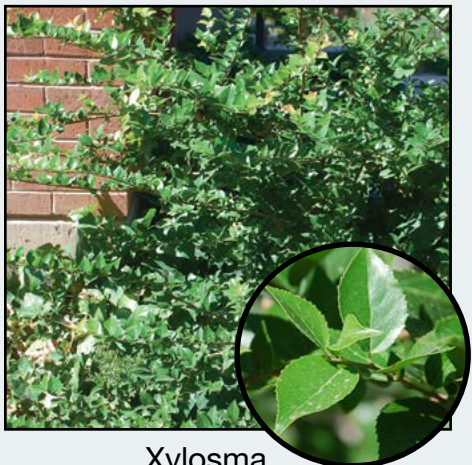
Sandankwa Viburnum



Little Walnut



Wax Myrtle



Xylosma



Abelia



Agarita



American Beautyberry



Apache Plum



Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Sumac, Flameleaf <i>Rhus lanceolata</i>	B/E	12 - 15'+ ⓤ	10 - 20'+	Sun/Part Shade	D	Fall	Orange/red fall foliage	VL	x		Give lots of space; thicket-forming suckers can go out 20'; native to limestone soils; provides food for bees, mammals, and birds; no pruning necessary
Viburnum, Rusty Blackhaw <i>Viburnum rufidulum</i>	B/E	15-20' ⓤ	10-15'	Sun/Part Shade	D	Late spring and fall	White flowers; fall foliage	L	x		Good understory tree; provide deep, well-drained soils; slow-growing; yellow, orange, and red fall color; fall fruit favored by birds; prefers deep soil so not suited to rain gardens; prune to shape or raise canopy as needed after blooming
Viburnum, Sandankwa <i>Viburnum suspensum</i>		6-8' ⓤ	6-8'	Sun/Part Shade	E	Spring	White flower	M			Fairly fast-growing; needs good drainage; prefers deep soil so not suited to rain gardens; prune to shape as needed after blooming
Walnut, Little <i>Juglans microcarpa</i>	T	18-20'	20'	Sun/Part Shade	D	Spring and fall	White flowers; nuts	M	x		Grows in limestone soil; provides good cover, nesting; nuts provide food for wildlife; poisonous flowers; prune for shape or to raise canopy as needed
Wax Myrtle <i>Morella cerifera</i>	B	12 - 15'+ ⓤ	15'	Sun/Part Shade	E	Winter	Blue berries	M	x		Fast-growing evergreen screen; foliage aromatic when crushed; dwarf cultivars available at 8-10' height; provides food and cover for wildlife; prefers deep soil so not suited for rain gardens; prune for shape or to raise canopy if needed
Xylosma <i>Xylosma congestum</i>		12-20' ⓤ	8-15'	Sun/Part Shade	SE	Spring	White flowers	M	x		Large, loose, airy shrub or small tree; glossy foliage; inconspicuous flowers; adaptable to most soils, but prefers consistent soil moisture so not suited to rain gardens; heat tolerant; occasional scale or spider mites; hardy to 10° F; can be pruned as tree or hedge

Shrubs

To maintain a natural look, selectively prune to shape if needed but do not shear. Plants that prefer Low (L) and Very Low (VL) water can be used in a rain garden if the soil is fast draining and they don't sit in water for an extended period. Rain garden plant success depends on the soil, how fast it drains and if the plants are in their preferred growing conditions.

Abelia, Glossy <i>Abelia x grandiflora</i>		6'	6'	Sun/Part Shade	E	Summer - fall	Pink/white flowers	L-M	x		Fast-growing, very adaptable, dense, evergreen hedge; fragrant flowers; 3-4' dwarf cultivars available; check label for specifics; attracts bees; selectively prune errant stems if too wild-looking
Agarita <i>Berberis trifoliata</i> (<i>Mahonia trifoliata</i>)	E	3-7'	3-6'	Sun/Part Shade	E	Early spring	Yellow flowers; red berries	VL	x		Native, evergreen shrub; bluish-green, holly-like foliage; fragrant early spring flowers; prickly leaves not pedestrian friendly but provides excellent nesting for birds; red edible berries; pruning not necessary
American Beautyberry <i>Callicarpa americana</i>	B	4-6'	6'	Shade	D	Fall - winter	Purple fruit	L-M	x		Great native understory shrub; prefers dependable moisture and deep soil, so not suited to rain gardens; attractive berries in fall and winter; wildlife food; graceful structure does not need pruning
Apache Plume <i>Fallogia paradoxa</i>	E	4-6'+	4-6'	Sun/Part Shade	SE	Spring	White flowers; pink fruit	L	x		Multi-stemmed; 2" showy blooms; good for erosion control; adaptable to dry, well-drained, limestone, sandy and clay soils; provides nectar, cover; attracts bees, butterflies, birds; evergreen to 20° F



Japanese Aralia



Barbados Cherry



Purple Baptisia



Bottlebrush



Wooly Butterfly Bush



Coralberry



Cotoneaster



Desert Broom



Elbow Bush



Flame Acanthus



Black Dalea

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Aralia, Japanese <i>Fatsia japonica</i>		10'	10-12'	Shade	E	Late summer - early fall	Cream flowers	M	x	Large, tropical-looking foliage; inconspicuous blooms; water from below to reduce foliage disease; may die back in harsh winter; prefers consistent soil moisture so not suited to rain gardens; remove yellow foliage as needed
Baptisia, Purple (Wild Indigo) <i>Baptisia australis</i>	T	up to 5'	3'	Sun	D	Spring - early summer	Blue/purple	L-M	x	Tap-rooted plant; prefers well-drained soil; tolerates limestone, most parts of plants poisonous; attracts butterflies and bees
Barbados Cherry <i>Malpighia glabra</i>	T	4-6'+	2-3'	Sun/Part Shade	SE	Spring - Fall	White to pale pink flowers	L-M	x	1/2" delicate, crepe-paper flowers; red berries that are prized by birds and small mammals; evergreen above 25° F
Bottlebrush <i>Callistemon citrinus</i>		8'	6'	Sun	E	Spring - Summer	Red flowers	L	x	Unusual, tropical-looking flowers; provide well-drained soil; drought tolerant; pest and disease resistant; many cultivars available; attracts bees; prune for natural look if needed
Butterfly Bush, Woolly <i>Buddleja marrubifolia</i>	T	4-6'	4-6'	Sun/Part Shade	D	Late spring - fall	Orange flowers	L	x	South Texas native shrub with fuzzy, silvery blue-green leaves; interesting 1/2" flower; provide good drainage; winter hardy, attracts butterflies; prune for natural look if needed
Coralberry <i>Symphoricarpos orbiculatus</i>	B	2-3'	3'	Sun/Part Shade	D	Fall - winter	Magenta berries	M	x	Good native for erosion control; stems root to form colony; prefers consistent soil moisture so not suited to rain gardens; needs rich soil and good air circulation; provides cover and berries for wildlife; cut back in winter if gets leggy; control runners as required
Cotoneaster <i>Cotoneaster</i> spp.		3-5'	4-7'	Sun/Part Shade	E	Fall	Red berries	M	x	Adaptable evergreen shrubs; many species and cultivars available; foliage varies from silver-gray to dark green; check label for specifics; attractive fleshy berries; attracts bees; prune for natural look if needed
Dalea, Black <i>Dalea frutescens</i>	E	1-3'	3'	Sun	D	Summer	Purple flowers	VL	x	Native to dry, limestone soils; requires little water; long roots will find water some distance away; excellent nectar source; may shear back after first frost browns leaves
Desert Broom <i>Baccharis sarothroides</i>		3-6'+	3-4'	Sun	SE	Fall	White flowers	L	x	Multi-stemmed shrub; very adaptable; readily colonizes disturbed areas; use in wildscapes; may shed leaves during drought
Elbow Bush <i>Forestiera pubescens</i>	E	4-6'	4-5'	Sun/Part Shade	D	Spring	White	VL	x	Thicket-forming, irregular-shaped shrub; use in natural areas or wildlife habitats; non-showy flowers provide spring nectar for many insects; berries eaten by birds and small mammals; prune to shape if needed
Flame Acanthus <i>Anisacanthus quadrifidus</i> var. <i>wrightii</i>	E	3-5'	3-4'	Sun/Part Shade	D	Summer - fall	Orange-red flowers	VL	x	Medium-sized native shrub can be used as low hedge; orange, tubular flowers attract hummingbirds and butterflies; reseeds aggressively; if frost browns leaves, cut back by 1/3 to 1/2 before spring growth begins



Fragrant Mimosa



Bush Germander



Greek Myrtle



Indian Hawthorne



Dwarf Burford Holly



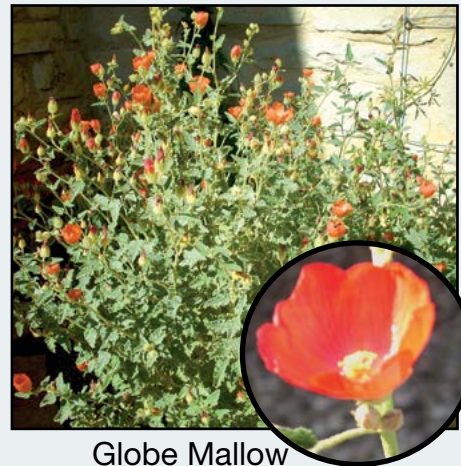
Dwarf Yaupon Holly



Nellie R. Stevens Holly



Japanese Yew



Globe Mallow



White Mistflower



Mock Orange

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Fragrant Mimosa <i>Mimosa borealis</i>	E	6-8'	6-8'	Sun	D	Spring - summer	Pink flowers	VL	x		Needs good drainage; prickly stems; tolerates poor caliche soil; little maintenance necessary
Germander, Bush <i>Teucrium fruticans</i>		4-6'	4-6'	Sun/Part Shade	E	Summer	Lavender/blue flowers	L	x		Don't over water; attractive silvery-gray green foliage; attracts bees and butterflies; prune errant stems for a natural look, shaping not necessary
Greek Myrtle <i>Myrtus communis</i>		10-12'+	5-8'	Sun/Part Shade	E	Spring - summer	White flowers	L-M			Fine-textured evergreen shrub or small tree; fragrant flowers; heat and drought tolerant; good substitution for Boxwood; prune only to shape as needed
Hawthorn, Indian <i>Raphiolepis indica</i>		4-6'	4-6'	Sun/Part Shade	E	Spring	White or pink flowers	L-M	x		Adaptable evergreen shrubs; many cultivars available; susceptible to leaf spot problems in wet weather; look for disease resistant and cold hardy cultivars; check label for specifics; attractive fleshy berries; pruning usually not necessary
Holly, Dwarf Burford <i>Ilex cornuta</i> 'Burfordii'		4-6'	3-4'	Sun/Part Shade	E	Spring - winter	White blooms; red berries	L	x		Use as evergreen hedge or screen; adapts to many soil types; attracts bees; susceptible to scale insects; non-dwarf cultivars available; prune for natural look
Holly, Dwarf Yaupon <i>Ilex vomitoria</i> 'Nana'	X	2-4'	2-4'	Sun/Part Shade	E	Year Round	Evergreen foliage	L			Low, mounding, evergreen shrub; maintains a formal shape; good substitute for Boxwood; hybrid with native Texas parentage; pruning not usually necessary
Holly, Nellie R. Stevens <i>Ilex cornuta</i> 'Nellie R. Stevens'		8-10'	5-6'	Sun	E	Fall - winter	Red berries	L-M			Inconspicuous blooms in spring; female plants produce red berries if not sheared; susceptible to iron chlorosis and scale insects; berries attract wildlife; prune to shape
Japanese Yew <i>Podocarpus macrophyllus</i>		10-20'	5-10'	Sun/Part Shade	E	Year round	Dark green foliage	L-M	x		Narrow, upright evergreen shrub; provide well-drained soil; slow-growing; poisonous fruit, prefers even soil moisture, so not suited for rain gardens; prune to shape if needed
Mallow, Globe <i>Sphaeralcea ambigua</i>	T	2-5'	2-5'	Sun	D	Summer - fall	Orange, pink or purple flowers	L	x		Provide good drainage and fertile soil; flowers attract bees and butterflies; seeds eaten by seed-eating birds and small mammals; lightly prune for shape
Mistflower, White <i>Ageratina havanensis</i>	E	3-5'	2-3'	Sun/Part Shade	D	Fall	White flowers	L	x		Rounded shape; grows in most soils; fragrant blooms in fall; attracts butterflies, moths and hummingbirds; cut back by 1/2 in winter before new growth begins, if needed to maintain compactness
Mock Orange <i>Philadelphus coronarius</i>		8-12'	6-8'	Sun/Part Shade	D	Spring	White/yellow flowers	L-M			Fragrant flowers; avoid use in poorly drained soil; medium fast growth; fruit has no major landscape interest; disease and pest free; prune non-flowering woody stems immediately after flowering



Texas Dwarf Palmetto



Pineapple Guava



Pittosporum



'Belinda's Dream' Rose



'Cecile Brunner' Rose



'Grandma's Yellow' Rose



'Knockout' Rose



'Livin' Easy' Rose



'Marie Daly' Rose*



'Martha Gonzales' Rose



'Mutabulis' Rose

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Palmetto, Texas Dwarf <i>Sabal minor</i>	B/E	3-5'	4-6'	Sun/Part Shade	E	Spring	White flowers	L-M	x	Not a true shrub; trunkless native palm; tropical-looking but tough; tolerates poor drainage; 1-6' flower clusters; provides cover and food; prune only to remove damaged fronds
Pineapple Guava <i>Feijoa sellowiana</i>		6-10'	6-8'	Sun	E	Spring - early summer	Pink and red blooms	L-M	x	Likes well-drained soil; a little cold tender; fruit can be messy so don't plant near paved surfaces or in rain gardens; prune for desired shape
Pittosporum <i>Pittosporum tobira</i>		8-10'	7-9'	Sun/Part Shade	E	Spring	Creamy-white flowers	M	x	Broad-leaved evergreen makes a good screen; glossy leaves; fragrant flowers; provide well-drained soil; 'Variegata' has leaves with white edges; dwarf cultivars available; susceptible to scale insects; may be damaged in severe winter; pruning not necessary

Roses

Prune back by 1/3 in late winter; remove spent blooms to encourage more blooms; Use drip irrigation to reduce wet foliage and and prevent fungal diseases. Roses are not recommended for rain gardens due to thorns, maintenance and variable water needs.

Rose, Belinda's Dream <i>Rosa</i> 'Belinda's Dream'		4'	4'	Sun	SE	Spring - fall	Pink flowers	M		Repeat bloomer; fragrant; disease resistant; good shrub form with large blooms
Rose, Cecile Brunner <i>Rosa</i> 'Cecile Brunner'		3-4'	3-4'	Sun	SE	Spring - fall	Pink flowers	M		Repeat bloomer; disease resistant; easy to grow and care for
Rose, Grandma's Yellow <i>Rosa</i> 'Grandma's Yellow'		4-5'	3'	Sun	SE	Spring - fall	Yellow flowers	M		Formerly 'Nacogdoches'; repeat bloomer; purest and most disease-resistant yellow rose; fragrant flowers; very thorny
Rose, Knock Out <i>Rosa</i> 'Knock Out'		3'	3'	Sun	SE	Spring - fall	Red flowers	M		Purple new growth; repeat bloomer; cultivar showing disease resistance
Rose, Livin' Easy <i>Rosa</i> 'Livin' Easy'		4'	3'	Sun	SE	Spring - fall	Coral to orange	M		Repeat bloomer; showing good disease resistance; upright growth habit
Rose, Marie Daly <i>Rosa</i> 'Marie Daly', Rose, Marie Pavie <i>Rosa</i> 'Marie Pavie'		3'	3'	Sun/ Part Shade	SE	Spring - fall	White to pale pink	M		Antique rose; repeat bloomer; fragrant, very few thorns; disease tolerant; 'Marie Pavie' is white version (see insert)
Rose, Martha Gonzales <i>Rosa</i> 'Martha Gonzales'		3'	3'	Sun/ Part Shade	SE	Spring - fall	Red flowers	M		Antique rose; repeat bloomer; few thorns; disease tolerant
Rose, Mutabilis <i>Rosa</i> 'Mutabilis'		6'	8'	Sun	SE	Spring - fall	Copper yellow to pink	M		Antique rose; very drought tolerant; copper yellow flowers turn to a pretty pink, repeat bloomer; disease resistant



'Nearly Wild' Rose



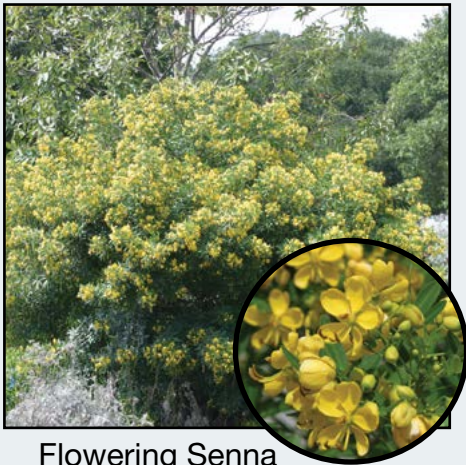
'Old Blush' Rose



Upright Rosemary



Texas Sage



Flowering Senna



Skyflower



Fragrant (Aromatic) Sumac



Turk's Cap



Sweet Almond Verbena



Thryallis (Golden Showers)

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Rose, Nearly Wild <i>Rosa</i> 'Nearly Wild'		3'	4'	Sun	SE	Spring - fall	Deep pink	M			Single pink bloom; repeat bloomer; disease resistant; needs soil with compost added
Rose, Old Blush <i>Rosa</i> 'Old Blush'		5'	5'	Sun	SE	Spring - fall	Deep pink	M			Antique rose; repeat bloomer; disease resistant
Shrubs continued											
Rosemary, Upright <i>Rosmarinus officinalis</i>		4'	4-6'	Sun	E	On and off all year	Pale blue	L-M	x		Culinary herb; upright shrub; good drainage required; attracts bees; Trailing Rosemary, <i>R. officinalis</i> var. <i>prostratus</i> makes good groundcover
Sage, Texas <i>Leucophyllum frutescens</i>	T	5-8'	4-5'	Sun	E	Spring - summer	Purple, pink or white flowers	L-VL	x		Gray leaves but green-leaved and compact cultivars also available; blooms off and on after rain events; provide well-drained soil; prune for natural look; do not shear or hedge
Senna, Flowering <i>Senna corymbosa</i>		6-8'	4-6'	Sun/Part Shade	SE	Summer - fall	Yellow flowers	L-M	x		Dark green leaves, showy bloomer, adapted to caliche soils; attracts hummingbirds and butterflies; susceptible to extremely cold weather; prune for shape or to raise canopy; cut back 1/2 in late winter if damaged by freeze
Skyflower, <i>Duranta</i> <i>Duranta erecta</i>		5-10'	4-10'	Sun/Part Shade	SE	Summer - fall	Purple or white flowers	L-M			Fine texture; yellow fruit, cold tender; provide fertile, well-drained soil; more flowers in full sun; many cultivars available; cut back after freeze but before new spring growth
Sumac, Fragrant (Aromatic) <i>Rhus aromatica</i>	B/E	6-9'	4-6'	Sun/Part Shade	D	Fall	Vibrant fall leaves	L	x		Leaves have spicy fragrance when crushed; flowers provide early nectar; smaller varieties available; fruits ripen early, attract wildlife; prune errant stems for natural look; shaping not necessary
Sweet Almond Verbena <i>Aloysia virgata</i>		4-8'+	8'	Sun/Part Shade	SE	Spring - summer	White flowers	M-L	x		Multi-branched, upright habit, adaptable; fragrant flowers; blooms on and off all summer; attracts butterflies, bees and hummingbirds; dies back in severe winter; prune to shape
Thyrallis, (Golden Showers) <i>Galphimia glauca</i>		4-6'	4'	Sun	E	Spring - fall	Yellow	L			Easy to grow; needs room to spread; tolerates most soils; prefers well-drained soils; hardy to 25° F; lightly prune if needed, to reduce legginess
Turk's Cap <i>Malvaviscus arboreus</i> var. 'Drummondii'	E	2-6'	3-5'	Sun/Part Shade	D	Late spring - fall	Red flowers; red fruit	L	x		Forms expanding colonies, but easy to contain; attracts hummingbirds and butterflies; top of plant may freeze; cut back to keep confined, when leggy, or if needed after freeze



Artemisia



Beebalm



Yellow Bird of Paradise



Black-eyed Susan



Bulbine



Red Bird of Paradise



Mexican Butterfly Weed



Calylophus



Cast Iron Plant



Catmint

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
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Perennials

Mild winters and/or protecting plants may eliminate the need to cut them back; if the plant looks good, leave it alone. If it needs rejuvenating or you want to encourage compactness, most perennials will respond positively if cut back 1/3 to 1/2. In general it is best to cut back perennials in winter before new spring growth occurs. Plants that prefer Low (L) and Very Low (VL) water can be used in a rain garden if the soil is fast draining and they don't sit in water for an extended period. Rain garden plant success depends on the soil, how fast it drains and if the plants are in their preferred growing conditions.

Artemisia <i>Artemisia 'Powis Castle'</i>		1-2'	3-6'	Sun	E	Year round	Blue-gray foliage	VL		Aromatic, lace-like; low water use and low maintenance; cut back to 4" in late winter before new spring growth
Beebalm <i>Monarda fistulosa</i>	B	2-5'	2-3'	Sun/Part Shade	D	Summer	Lavender, pink or white flowers	L-M	x	Showy native perennial with many cultivars; grows on a variety of soils; nectar source; attracts butterflies, birds and hummingbirds; fragrant foliage; cut back to 4" in late winter before new spring growth
Bird of Paradise, Red <i>Caesalpinia pulcherrima</i>		5-6'+	3-6'	Sun	D	Summer - fall	Red/orange flowers	L	x	Dependable summer bloomer with very showy, tropical-looking flowers; heat tolerant; attracts hummingbirds; top will be damaged by freeze but roots are hardy to 15° F; prune for shape only; mulch to prevent winter kill of roots
Bird of Paradise, Yellow <i>Caesalpinia gilliesii</i>		6-8'	6-12'	Sun	D	Spring - fall	Yellow with orange	L		Light airy foliage; tropical look; dependably hardy; disease and pest resistant; seeds are toxic; prune for shape only; mulch to prevent winter kill of roots
Black-eyed Susan <i>Rudbeckia hirta</i> var. <i>pulcherrima</i>	B/E	1-2'	1-2'	Sun/Part Shade	D	Summer	Yellow with dark centers	L-M	x	Daisy-like blooms in summer; butterfly nectar; can grow native from seed; <i>Rudbeckia fulgida</i> var. <i>sullivantii</i> 'Goldsturm' is a cultivar with larger blooms; prune back in late winter
Bulbine <i>Bulbine frutescens</i>		2'	2.5'	Sun	SE	Spring - fall	Orange or yellow	VL		Aloe-like leaves; cold tender; may not survive harsh winter unless protected, so not recommended for rain gardens; trim off bloom stalks as they decline
Butterfly Weed, Mexican (Tropical Milkweed) <i>Asclepias currasavica</i>		3-4'	1-2'	Sun/Part Shade	D	Summer - fall	Yellow and/or orange flowers	L	x	Leaves of milkweeds are eaten by monarch caterpillars; non-native Mexican is common in nurseries, to encourage migration and reduce local overwintering, which may increase disease; cut back to 6" Nov-Feb. Plant natives when possible. Native <i>A. tuberosa</i> needs good drainage; do not disturb its taproot when transplanting; or try it, <i>A. asperula</i> and <i>A. viridis</i> from seed
Calylophus (Square Bud Primrose) <i>Calylophous berlandieri</i>	E	1-2'	1-2'	Sun/Part Shade	E	Spring - summer	Yellow flowers	VL	x	Good rock garden plant; needs good drainage; 'Compact Gold' is a low-growing variety; good for use as groundcover; no maintenance needed
Cast Iron Plant <i>Aspidistra elatior</i>		3'	2-3'	Shade	E	Spring - fall	Large green leaves	L		Good understory plant for dry shade; large, long green leaves; leaf edges will scorch if too much sun; remove damaged foliage to 3" height as needed
Catmint <i>Nepeta X faassenii</i>		1-2'	1.5 - 3'	Sun/Part Shade	D	Summer - fall	Lavender blue flowers	L-M	x	Silvery green foliage; provide well-drained soil and afternoon shade; seeds are sterile so it will not spread; attracts bees and butterflies; cut back to 3-6" after freeze damage but before spring growth



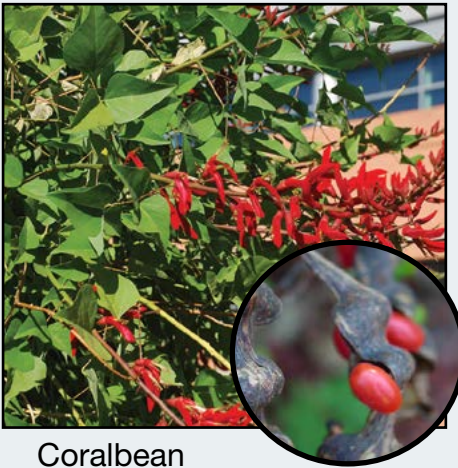
Chile Pequin (Petin)



Red Columbine



Columbine



Coralbean



Coreopsis



Batface Cuphea



Cuphea 'David Verity'



Blackfoot Daisy



Chocolate Daisy



Copper Canyon Daisy



Englemann Daisy

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Chile Pequin <i>Capsicum annuum</i>	E	2-4'	2-4'	Sun/Part Shade	D	Summer - fall	White flowers	L	x	Red peppers are edible and very hot!; perennial only in mild winter; reseeds easily; birds love the fruit; cut back to 3-6" after freeze damage but before new spring growth
Columbine, Red <i>Aquilegia canadensis</i>	E	1-2'	1-2'	Sun/Part Shade	SE	Spring	Red flowers	M	x	Prefers moist, yet well-drained soils; reseeds; dormant in summer without water; susceptible to leaf miners; attracts some hummingbirds; prune off spent foliage and seedheads in late May
Columbine <i>Aquilegia chrysantha</i> var. 'Hinkleyana'	T	1-2'	1-2'	Sun/Part Shade	SE	Spring	Yellow flowers	L-M	x	Prefers moist, yet well-drained soils; reseeds; dormant in summer without water; susceptible to leaf miners; attracts some hummingbirds; prune off spent foliage and seedheads in late May
Coralbean <i>Erythrina herbacea</i>	T	5'	4'	Sun/Part Shade	D	Spring	Red flowers	L	x	Good understory plant; blooms on long stalks; sharp spines; attracts hummingbirds; seeds are poisonous and not eaten by wildlife; will freeze back so not suited for rain gardens; remove tall bloom shoots after flowering; cut back after freeze and before spring growth
Coreopsis, Lance-leaf <i>Coreopsis lanceolata</i>	T	1-1.5'	1.5-2'	Sun/ Part Shade	D	Spring - summer	Yellow flowers	L-M	x	Butterfly plant; covered with yellow daisy-like flowers; native to east and southeast Texas; 'Sunray' and 'Baby Sun' are tighter, more compact; prune or shear off spent blooms to encourage more flowers
Cuphea, Batface <i>Cuphea ilavea</i>		1'	1'	Sun/Part Shade	D	Late spring - fall	Red and purple flowers	L-M	x	Appropriately named; very heat tolerant; cold tender so not suited for rain gardens; cut back to 6" after cold damage occurs but before spring growth
Cuphea, 'David Verity' <i>Cuphea 'David Verity'</i>		2-3'	2-3'	Sun	D	Summer - fall	Orange and yellow	L	x	Appropriately named; very heat tolerant; cold tender so not suited for rain gardens; cut back to 6" after cold damage occurs but before spring growth
Daisy, Blackfoot <i>Melampodium leucanthum</i>	E	6-12"	1-1.5'	Sun	E	Spring and summer	White with yellow centers	VL	x	Short daisy-like blooms all spring and summer; occasionally reseeds; requires dry conditions; excellent rock garden plant; can be temperamental when transplanting; prune back if leggy
Daisy, Chocolate <i>Berlandiera lyrata</i>	T	1-2'	2'	Sun/Part Shade	D	Late summer	Yellow flowers	L-M	x	Likes dry, rocky limestone, plant has chocolate scent; nectar source for bees and other insects; use in natural area or habitat garden; can be grown from seed; no maintenance
Daisy, Copper Canyon <i>Tagetes lemmonii</i>		3'	4'	Sun	D	Fall	Yellow flowers	L	x	Daisy-like flowers; strongly-scented leaves; native to Mexico; attracts beneficial insects; can prune plants to size mound you want; stop shearing by mid-summer to allow fall flowers
Daisy, Engelmann <i>Engelmannia peristenia</i>	B/E	1.5-2'	2'	Sun/Part Shade	E	Spring to mid-summer	Yellow flowers	M	x	Easy to grow native perennial; good for natural areas, meadows and habitat gardens; reseeds easily moving around the garden; flowers open in late afternoon; attracts birds; seeds commercially available; remove spent bloom stalks



Damianita



Datura



Esperanza



Fall Aster



Firecracker Fern



River Fern



Firebush



Frostweed



Gaura



Gayfeather

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Damianita <i>Chrysactina mexicana</i>	E	1	1.5 - 2'	Sun	E	Spring and some summer	Golden yellow flowers	VL	x	Low-growing; mounding; use in rock garden; mainly blooms in spring and then on and off through growing season; drought hardy; aromatic foliage; provide well-drained soil; attracts bees; prune in early spring to shape
Datura (Jimson Weed) <i>Datura wrightii</i>	E	4-5'	4-5'	Sun/Part Shade	D	Spring - fall	Large white flowers	L	x	Large, night-blooming, white, trumpet-shaped flowers; native; all parts are poisonous, attracts bees, butterflies, and moths; may reseed; cut back to 6-8" after cold damage and before new spring growth
Esperanza (Yellow Bells) <i>Tecoma stans</i>	T	4-8'	4-6'	Sun	D	Summer - fall	Yellow or orange	L-M	x	Showy blooms; native species has narrow leaves; new cultivars provide color options; top attracts bees and humminbirds; remove spent blooms as needed; cut back to 6-8" after cold damage but before new spring growth
Fall Aster <i>Aster oblongifolium</i>	E	2-3'	2.5-3'	Sun/Part Shade	D	Fall	Purple/ lavender flowers	L	x	Native perennial with fine-textured flowers; profuse fall bloomer; nectar source; colonizes but easy to control; lightly prune if needed through spring and summer to keep compact
Fern, Firecracker <i>Russelia equisetiformis</i>		3'	3'	Sun/Part Shade	E	Spring - winter	Red or white flowers	L	x	Needs moderately rich, well-drained soils; not a true fern; attracts hummingbirds; prune spent flower stalks
Fern, River <i>Thelypteris kunthii</i>	B/E	2-3'	3'	Shade	D			M-H	x	Likes shady, moist areas, so not suited for rain gardens; prune dead fronds before spring time growth; mulch well
Firebush <i>Hamelia patens</i>		3-4.5'	4-5'	Sun	D	Summer - fall	Orange-red flowers	M	x	Tubular flowers attract hummingbirds; turns burgandy in fall; needs protection in severe winters; prune to 6" above ground after first hard freeze and before new spring growth
Frostweed <i>Verbesina virginica</i>	E	3-6'	colonizes	Shade	D	Fall	White flowers	L-M	x	Forms colonies; nectar source; attracts bees and butterflies; stem ruptures with freeze creating ice crystal formations (inset photo); commercial availability limited; cut back to 6" after cold damage occurs and before new spring growth
Gaura <i>Gaura lindheimeri</i>	B	2-3'	3'	Sun/Part Shade	D	Spring - summer	Pink or white/pink	L	x	Tall flower spikes with 1" flowers that that resemble fluttering butterflies; attracts butterflies; cut back to 3" after first hard freeze
Gayfeather <i>Liatris mucronata</i>	E	1-3'	1-1.5'	Sun	D	Fall	Purple to rose pink	VL	x	Likes well-drained limestone soil; best if kept dry; great nectar source for butterflies and other insects; cut back to 3" after first hard freeze



Green Germander



Ghost Plant



Gregg Mistflower



Perennial Hibiscus



Mexican Honeysuckle



Hymenoxys



'Indigo Spires' Salvia



Bicolor or Butterfly Iris



Lamb's Ear



Lantana (hybrid)



Texas Lantana

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Germander, Green <i>Teucrium chamaedrys</i>		up to 1'	1-2'	Sun	D	Spring	Pink, purple, lavender	L-M	x	Shrubby; clump-forming; dark evergreen, aromatic foliage; needs well-drained soil; attracts bees and butterflies; no pruning necessary
Ghost Plant <i>Graptopetalum paraguayense</i>		7-12"	6-12"	Sun/Part Shade	E	Spring	Grayish pink leaves	VL	x	Easy to grow with good drainage, light blue to gray, pink foliage; succulent leaves break off easily (and readily re-root); attracts bees; no maintenance necessary
Gregg Mistflower <i>Conoclinium greggii</i>	T	1-2'	2-4'+	Sun/Part Shade	D	Summer - fall	Blue flowers	L-M	x	Forms colonies, but easy to contain; tolerates poor soil; can take full sun but does best in morning sun or part shade; attracts butterflies; native to West Texas; cut back to 3" if needed after hard freeze
Hibiscus, Perennial <i>Hibiscus</i> spp.	X	3-5'	4'	Sun	D	Summer - fall	Bright red blooms	M	x	Showy blooms can reach 8-10" across; many cultivars available are hybrids; provides nectar for hummingbirds; <i>H. moscheutos</i> <i>H. coccineus</i> ; cut back to 6" after hard freeze
Honeysuckle, Mexican <i>Justicia spicigera</i>		3'	4'	Sun/Part Shade	SE	Spring - fall	Orange flowers	L	x	Hummingbird plant; grayish foliage; long bloom period; prune back as needed to encourage fullness
Hymenoxys (Four Nerve Daisy) <i>Tetaneuris scaposa</i>	E	1'	1'	Sun/Part Shade	E	Spring - fall	Yellow flowers	VL	x	Daisy-like blooms grow from small tuft; prefers dry, well-drained soils; good in rock garden; prune off spent bloom stalks
Indigo Spires <i>Salvia</i> 'Indigo Spires'	x	3-4'	5-7'	Sun/Part Shade	D	Summer	Blue/purple	L-M	x	Allow room to mound and spread; shear back by 1/3 in summer
Iris, Bicolor <i>Dietes bicolor</i>		4'	2-3'	Sun/ Part Shade	E	Spring - early summer	Creamy yellow w/ markings	L		Forms clumps of long, narrow, iris-like foliage; Butterfly Iris, <i>D. iriodoides</i> , has wider leaves and white flower with blue and yellow markings; remove unsightly foliage as needed
Lamb's Ear <i>Stachys byzantina</i>		1'	1.5'	Sun	D	Year round	Gray fuzzy leaves	L	x	Tolerates dry soil; used for foliage not flowers; attracts bees; remove unsightly foliage as needed; avoid overhead watering
Lantana (hybrid) <i>Lantana x hybrida</i>	X	2-4'	4'	Sun	D	Spring - fall	Varies	L	x	Many varieties; butterfly delight; prolific blooming (photo: 'New Gold'); can be cold tender; all parts are poisonous; cut back to 6" after freeze and before new spring growth
Lantana, Texas <i>Lantana urticoides</i>	B/E	3-5'	4-5'	Sun	D	Summer - fall	Orange and yellow flowers	L	x	Flowers begin yellow and turn orange; give lots of room; attracts butterflies; stems become thorny with age; all parts are poisonous, cut back in winter as desired to keep in bounds



Trailing Lantana



Lion's Tail



Maximillian Sunflower



Mexican Mint Marigold



Fall Obedient Plant



Mexican Oregano



Gulf Coast Penstemon



Hill Country Penstemon



Rock Penstemon



Garden Phlox



Plumbago

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Lantana, Trailing <i>Lantana montevidensis</i>		1-1.5'	4'+	Sun/Part Shade	SE	Spring - fall	Lavender or white flowers	L	x		May be used as a groundcover; very tolerant of poor soils; resistant to lantana lacebugs; attracts butterflies; all parts are poisonous; do not plant near preserves
Lion's Tail <i>Leonotis leonurus</i>		4-6'	4-6'	Sun	E	Late spring - fall	Orange flowers	L			Unusual, multi-tiered bloom; provide well-drained soil; seeds out readily; do not plant near preserves; prune after flowering to maintain compact form
Maximilian Sunflower <i>Helianthus maximiliani</i>	B/E	up to 10'	Forms colony	Sun/Part Shade	D	Fall	Yellow flowers	L-M	x		Forms colony so plant with plenty of space toward back of garden; easy to grow; seed is commercially available; cut back stalks after freeze and birds have harvested seeds
Mexican Mint Marigold <i>Tagetes lucida</i>		2-3'	2-3'	Sun/Part Shade	D	Fall	Yellow/orange flowers	L	x		Tarragon-flavored culinary herb; spreads over time; nectar source for butterflies; shear in early summer to encourage compactness
Obedient Plant, Fall <i>Physostegia virginiana</i>	B	2-4'	4'+	Sun/Part Shade	D	Fall	Lavender	M	x		Tolerates poor drainage; spreads aggressively by underground rhizomes, but easy to contain; <i>P. angustifolia</i> is spring-blooming relative; cut back to 6" after fall bloom
Oregano, Mexican <i>Poliomintha longiflora</i>		3'	4'	Sun/Part Shade	E	Summer	Lavender/pink	L	x		Aromatic foliage; edible leaves; attracts hummingbirds and butterflies; will sprawl if not pruned; cut back top 1/2 after bloom and to 3-4" after cold damage and before spring growth
Penstemon, Gulf Coast <i>Penstemon tenuis</i>	T	1.5-2.5'	1-1.5'	Sun/Part Shade	SE	Spring	Lavender	L	x		Attracts hummingbirds; seeds out readily; remove flower stalks before they set seed to avoid spread
Penstemon, Hill Country <i>Penstemon triflorus</i>	E	1.5-2.5'	1.5'	Sun/Part Shade	D	Spring	Hot pink to red	L	x		Good hummingbird plant; needs well-drained soil; cut back flowers after blooming
Penstemon, Rock <i>Penstemon baccharifolius</i>	E	1-1.5'	2'	Sun	E	Spring - summer	Cherry red	L	x		Needs well-drained soil; attracts hummingbirds; trim if leggy
Phlox, Garden <i>Phlox paniculata</i>		3'	2'	Sun/Part Shade	D	Summer	Purple flowers	M	x		Tall bloom spikes all summer; susceptible to powdery mildew; attracts butterflies; cut back to 3" after hard freeze and before spring growth
Plumbago <i>Plumbago auriculata</i>		3-4'	4-6'	Sun/Part Shade	D	Summer	Sky blue or white	L-M	x		Light green foliage; does best with morning sun and afternoon shade; attracts hummingbirds; cut back to 6" if hard freeze damage occurs



Missouri Primrose



Purple Coneflower



Rock Rose



Dwarf Ruellia



Cedar Sage



Cherry Sage



Jerusalem Sage



Majestic Sage



Mealy Blue Sage



Mexican Bush Sage



Penstemon Sage

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Primrose, Missouri <i>Oenothera macrocarpa</i>	B/E	1-1.5'	3'	Sun/Part Shade	D	Spring	Yellow flowers	L	x	Silver foliage; large, yellow, buttercup-like flowers that open in the evening; may go dormant in summer; interesting seed pods; cut back to 3" after freeze damages leaves
Purple Coneflower <i>Echinacea purpurea</i>	T	1-3'	3'+	Sun/Part Shade	D	Spring - summer	Violet or white flowers	L	x	Daisy-like flowers; native; good butterfly plant; seed available for native species; hybrid selections also available; remove flower stalks after birds have harvested seeds
Rock Rose <i>Pavonia lasiopetala</i>	E	3'	3'	Sun/Part Shade	D	Summer	Pink	L	x	Small native shrub with 1.5" hibiscus-like blooms; more prone to powdery mildew in shade; very few blooms after spring; reseeds freely; attracts butterflies; cut back by 1/3 in late winter
Ruellia, Dwarf <i>Ruellia brittoniana</i>		8"-1'	1'	Sun/Part Shade	D	Spring - summer	Blue/ purple to pink	L	x	Petunia-like flower; dwarf varieties include 'Katie' or 'Bonita'; reseeds profusely; taller types are invasive; do not plant near preserves; attracts butterflies; cut back to 3" after first frost browns leaves
Sage, Cedar <i>Salvia roemeriana</i>	E	1-2'	1-2'	Shade/Part Shade	D	Spring - summer	Red	VL	x	Reseeds freely; red bloom spikes bring color to shady spots; great for hummingbirds; remove seed heads after flowering, then scatter in new areas to expand population
Sage, Cherry (Autumn Sage) <i>Salvia greggii</i>	E	2-3'	2-3'	Sun/Part Shade	E	Spring - fall	Red, many other colors	M	x	1" long blooms; comes in a variety of colors; hummingbirds love the red ones; tough, may bloom less after 4-5 years; cut back mature plants by 1/3 to 1/2 after spring or fall bloom if needed to rejuvenate
Sage, Jerusalem <i>Phlomis fruticosa</i>		2-3'	3-4'	Sun	E	Spring - summer	Yellow flowers	L	x	Unusual flowers; multi-tiered; attractive gray green foliage; attracts bees and hummingbirds; remove spent bloom stalks and ratty foliage as needed
Sage, Majestic <i>Salvia guaranitica</i>		3-5'	4-5'	Sun/Part Shade	D	Spring - summer	Blue or purple flowers	L	x	Attractive green foliage and large florets on spikes; attracts hummingbirds; cut back to 6" after cold weather browns leaves and before new spring growth begins
Sage, Mealy Blue <i>Salvia farinacea</i>	B/E	2-3'	2-3'	Sun	D	Spring - summer	Blue flowers	L	x	Will grow in most soils; attracts hummingbirds and bees; easy to grow from seed; the cultivar <i>S. farinacea</i> 'Henry Duelberg' has dark blue flowers; remove spent bloom stalks to encourage flowering; cut back mature plants to 6" in late winter before new spring growth begins
Sage, Mexican Bush <i>Salvia leucantha</i>		4-5'	4-5'	Sun	D	Late summer - fall	Purple and white	L	x	Silver-green, lance-like foliage; new growth white and fuzzy; an all purple flowering type is available; cut back after frost browns leaves and before new spring growth
Sage, Penstemon/ Big Red Sage <i>Salvia penstemonoides</i>	E	3-4'	1-2'	Sun/Part Shade	E	Summer - fall	Magenta flowers	L	x	Tall, spiked blooms provide vertical accent and nectar for hummingbirds in summer; attractive glossy leaves form evergreen rosette (basal leaves) in winter; remove spent bloom stalks at base



Russian Sage



San Luis Sage



Tropical Sage



Lindheimer Senna



Shrimp Plant



Skeletonleaf Goldeneye



Heartleaf Skullcap



Pink Skullcap



Wright's Purple Skullcap



Society Garlic



Spider Lily

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Sage, Russian <i>Perovskia atricpilifolia</i>		3'	3'	Sun	D	Late summer - fall	Blue flowers	L	x		Fine-textured, silvery green lacey leaves; spiky flower stalks; needs good drainage; cut back to 3" after first freeze browns leaves and before new spring growth
Sage, San Luis <i>Salvia microphylla</i>		3-4'	3-4'	Sun/Part Shade	E	Summer - fall	Red, many other colors	L	x		Prefers well-drained soil; has scented foliage; attracts butterflies and hummingbirds; many cultivars available; from Mexico
Sage, Tropical <i>Salvia coccinea</i>	B	2-3'	1-1.5'	Sun/Part Shade	D	Late spring - fall	Red	L-M	x		Short-lived perennial; reseeds profusely; dwarf varieties available; outstanding hummingbird plant; attracts butterflies; cut back in early summer to 3" and after first frost browns leaves
Senna, Lindheimer <i>Cassia lindheimeriana</i>	E	3-4'	3-4'	Sun/Part Shade	D	Late Summer - fall	Yellow flowers	L	x		Gray foliage; provide well-drained soil; very tolerant of poor, rocky soils; prune back after frost browns leaves
Shrimp Plant <i>Justicia brandegeana</i>		3-4'	3-4'	Sun/Part Shade	D	Spring - fall	Copper, red or yellow	L	x		Does best in morning sun, afternoon shade; great hummingbird plant; best when massed; flowers resemble shrimp; do not plant near preserves; cut back to 6" in winter to encourage bushiness
Skeletonleaf Goldeneye <i>Viguiera stenoloba</i>	E	3-4'	4-6'	Sun/Part Shade	SE	Summer - fall	Yellow flowers	VL	x		Mound of daisy-like flowers; attractive fine-textured foliage; provide well-drained soil; cut back to 6" in winter to encourage bushiness
Skullcap, Heartleaf <i>Scutellaria ovata</i> subsp. <i>bracteata</i>	E	2'	2'	Shade	E	Spring	Blue flowers	L	x		Colonizes and spreads easily; flowers attract butterflies; may be dormant in summer; little maintenance required
Skullcap, Pink <i>Scutellaria suffrutescens</i>		1'	3'	Sun/Part Shade	E	Summer	Pink flowers	L	x		Low-growing; very tidy; mounding plant; attracts bees; cut back by 1/3 after bloom if needed to keep compact
Skullcap, Wright's Purple <i>Scutellaria wrightii</i>	B/E	6-10"	1'	Sun/Part Shade	E	Spring - summer	Purple flowers	L	x		Native, low water use; drought and heat tolerant; showy blooms; attracts bees; cut back by 1/2 after bloom if needed to keep compact
Society Garlic <i>Tulbaghia violacea</i>		1.5-2.5'	1.5'	Sun/Part Shade	E	Spring - summer	Pink flowers	L-M			Provide well-drained soil; solid or variegated leaf forms available; bruised foliage has onion aroma; remove spent bloom stalks
Spider Lily <i>Hymenocallis liriosme</i>	T	1-2'	1-2'	Sun/Part Shade	D	Spring	White flowers	L-M	x		Large 7" fragrant, white flowers; glossy strap-like leaves grow in clumps; attracts insects; will die back after freeze and stay dormant until spring



Spiderwort



Texas Betony



Winecup



Yarrow



Zexmenia



Agave



Basket Grass



Prickly Pear Cactus



Nolina



Texas Sotol

Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Spiderwort <i>Tradescantia</i> spp.	T	1-3'	2'	Shade	D	Spring - fall	Purple or pink flowers	L	x		Fast spreading; dormant in summer, woody; edible; nectar source for insects; cut back to 6" in winter or to increase blooms
Texas Betony <i>Stachys coccinea</i>	T	1-1.5'	2-3'	Sun/Part Shade	D	Summer - fall	Coral/red flowers	L	x		Constantly blooming; can be used as a groundcover; nice gray green foliage; attracts hummingbirds; stems can be brittle; shear regularly to encourage fullness and bloom
Winecup, Perennial <i>Callirohoe involucrata</i>	B/E	6" - 1'	4-5'	Sun/Part Shade	D	Spring - early summer	Magenta flowers	L	x		Sprawling habit great for filling in between plants; will go dormant in summer without supplemental water; larval host plant; cut back to rosette in winter
Yarrow <i>Achillea</i> spp.		1-1.5'	3'	Sun/Part Shade	E	Late spring and summer	varies	L-M	x		Forms groundcover; fern-like leaves; butterflies enjoy nectar; larval host plant for Painted Lady butterfly; remove spent blooms; cut back to basal foliage after frost browns leaves
Zexmenia <i>Wedelia texana</i>	E	1.5-2.5'	2-3'	Sun/Part Shade	SE	Spring - fall	Golden flowers	L	x		Blooms continuously though not profusely; use in combination with other blooming plants; reseeds; periodic shearing will encourage repeat blooming and fullness

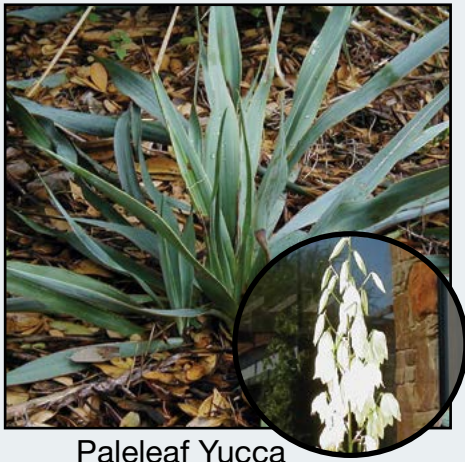
Yuccas/Agaves/Succulents/Cacti/Sotols

These plants require very little, if any maintenance but they all must have well-drained soil. Old bloom stalks should be removed at the base; old leaves can be removed for a neater appearance; wear heavy-duty gloves and eye protection

Agave spp. <i>Agave</i> spp.		varies	varies	Sun/Part Shade	E	Spring - summer	White to creamy white and yellow	VL	x		Agave spp. are available in many sizes, leaf types, and varying degrees of hardiness; after blooming rosette dies but it leaves "pups"; provides nectar, pollen and seeds; agave weevil is new pest to watch for; Century Plant (<i>A. americana</i>); Parry's Agave (<i>A. parryi</i> var. <i>truncata</i>); Queen Victoria Agave (<i>A. victoriae-reginae</i>); Squid (<i>A. bractosa</i>); no maintenance required
Basket Grass (Sacahuista) <i>Nolina texana</i>	E	2'	3'	Sun/Part Shade	E	Fall	Cream-colored plume	VL	x		Not a true grass; grass-like mounding form effective on slopes; keep away from walkways as leaves have sharp edges; remove old bloom stalks at base
Cactus, Prickly Pear <i>Opuntia</i> spp.	B/E	varies	varies	Sun	E	varies	varies	L	x		Likes well-drained, alkaline soil; may become shrub-like; parts are edible; purple fruit; provides pollen, nectar and fruit for wildlife; many types available including spineless; check label for size, flower color, hardiness and distinguishing attributes
Nolina <i>Nolina lindheimeriana</i>	E	10-12'	4-5'	Sun/Part Shade	E	Summer	Tan flowers	L	x		10' tall spike of small, tan flowers; remove old leaves from trunk for neater appearance
Sotol, Texas <i>Dasylirion texanum</i>	E	3-4'	3-4'	Sun/Part Shade	E	Early summer		L	x		Long blade-like leaves with sharp edges (not pedestrian-friendly); needs space; good barrier plant; requires good drainage; remove old bloom stalks at the base



Yucca



Paleleaf Yucca



Red Yucca



Twistleaf Yucca



Little Bluestem



Indian Grass



Inland Sea Oats



Meadow Sedge



Bamboo Muhly



Big Muhly

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Yucca spp.		varies	varies	Sun/Part Shade	E	Spring - summer	Mostly white	VL	x	Fragrant flowers; deer typically eat blooms but not foliage; Yucca spp. are available in many sizes, leaf types and hardiness; seeds eaten by small mammals; Paleleaf (<i>Y. pallida</i>); Twistleaf (<i>Y. rupicola</i>); Softleaf (<i>Y. recurvifolia</i>); Big Bend (<i>Y. rostrata</i>); remove old bloom stalks at the base
Yucca, Paleleaf <i>Yucca pallida</i>	B	1'	2'	Sun/Part Shade	E	Summer	White flowers	VL	x	Fragrant flowers; leaves pale blue-green; deer will eat bloom but not foliage; remove old bloom stalks at the base; (<i>H.funifera</i>) is Giant Yucca
Yucca, Red <i>Hesperaloe parviflora</i>	E	2-4'	4'	Sun	E	Spring - summer	Coral spike	VL	x	May colonize; deer will eat blooms but not foliage; attracts hummingbirds; remove old bloom stalks at the base
Yucca, Twistleaf <i>Yucca rupicola</i>	E	1-2'	2'	Sun/Part Shade	E	Summer	White	L	x	Older leaves are twisted; deer eat blooms but not foliage; nectar attracts nocturnal moths; larval host plant for the Yucca Giant Skipper; remove old bloom stalks at the base

Ornamental Grasses

The Muhlys are all good options as accents, in groups or in rain gardens. They stay in mounding forms and can be cut back once a year if needed. The prairie grasses are best used in restoration, prairie, habitat gardens or natural plantings.

Bluestem, Little <i>Schizachyrium scoparium</i>	B/E	3-4'	1.5'	Sun	D	Fall	Copper foliage	L	x	Prairie plant appropriate in mass plantings in meadow, natural areas or restoration project; larval host plant for several Skipper butterflies; provides cover for wildlife; cut back to 6" in winter before new spring growth
Indiangrass <i>Sorghastrum nutans</i>		3-5'	5'	Sun	D	Fall	Bright gold	M-H	x	Prairie plant appropriate in mass plantings in meadow, natural areas or wetlands; tall seed heads in fall; provides food and cover for wildlife; reseeds; cut back to 8" height in winter prior to new spring growth
Inland Seaoats <i>Chasmanthium latifolium</i>	B/E	2-4'	3-6'+	Shade	D	Summer - fall	Ivory seeds	L-M	x	Good understory plant; graceful, drooping wheat-like seed heads, reseeds easily; appropriate for woodlands; prefers moist areas; cut back to 4" in winter
Sedge, Meadow <i>Carex perdentata</i>	B/E	1-1.5'	1.5'	Sun/Part Shade	E	Spring	Green foliage	M	x	Clumping sedge; coarser texture than most sedges and is one of the tallest; trim to contain; seeds provide food for wildlife
Muhly, Bamboo <i>Muhlenbergia dumosa</i>		4-5'	3-4'	Sun/Part Shade	D	Late summer to winter	Fine-textured seed stalks	L	x	Silver-green, fine-textured foliage; hardy but stems brittle; bloom stalks turn attractive straw color in winter; selectively prune stalks to maintain elegant shape; cut back in winter if needed
Muhly, Big <i>Muhlenbergia lindheimeri</i>	E	3-4'	3-4'	Sun/Part Shade	D	Fall	White flowers on 6' stalk	L-M	x	Clumping, blue-green grass; smaller native alternative to Pampasgrass; featherlike blooms in fall; provides seeds, denning and nesting material; rake or cut back in winter



Deer Muhly



Gulf Muhly



Pine Muhly



Sideoats Grama



Switchgrass



Alamo Vine



Carolina Jessamine



Crossvine



Fig Vine



Coral Honeysuckle



Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Muhly, Deer <i>Muhlenbergia rigens</i>	T	1-1.5'	1-1.5'	Sun/Part Shade	D	Fall	Feathery seed heads	L	x	Tidy clump grass that maintains a round shape; commercial availability may be limited; cut back in winter
Muhly, Gulf <i>Muhlenbergia capillaris</i>	T	2-1/2'	2'	Sun/Part Shade	D	Fall	Pink seed heads	L-M	x	Wispy seed heads provide great fall color, especially when backlit; cut back in winter
Muhly, Pine <i>Muhlenbergia dubia</i>	T	1-3'	1-3'	Sun	D	Fall	Feathery seed heads	VL	x	Nicely shaped bunchgrass; stiff needles; no maintenance required
Sideoats Grama <i>Bouteloua curtipendula</i>	T	2-3'	1'	Sun/Part Shade	D	Fall	One-sided seed head	L	x	State grass of Texas; side hanging seed pods; easy to grow from seed; drought tolerant; cut back to 6" height in winter prior to new spring growth
Switchgrass <i>Panicum virgatum</i>	B/E	6'	4'	Sun/Part Shade	D	Fall	Reddish tint	L-H	x	Upright, habit; tall seed heads in fall; usually has a reddish tint; prefers moist areas; prairie plant appropriate in mass plantings in meadow, natural areas or wetlands; reseeds; cut back to 8" height in winter prior to new spring growth; numerous cultivars available

Vines

Most vines prefer their roots to be shaded while the vegetation grows in dappled light to full sun.

Alamo Vine <i>Merremia dissecta</i>	E	12'	10-12'	Sun/Part Shade	D	Spring - fall	White flowers w/ red throat	L-M		Fast-growing, twining vine; easy to grow from seed; tolerates poor soil and alkaline soil but needs good drainage; spreads by rhizomes; poisonous seed; blooms in afternoon; nectar for butterflies; prune to direct and control growth
Carolina Jessamine <i>Gelsemium sempervirens</i>	T		6-20'	Sun/Part Shade	E	Early spring	Yellow flowers	M	x	Twining vine; fragrant; attracts hummingbirds; prefers even soil moisture so is not suited for rain gardens; poisonous if ingested
Crossvine <i>Bignonia capreolata</i>	T		6-30'+	Sun/Part Shade	SE	Spring - summer	Orange flowers	L	x	Tendrill vine attaches to wall; very aggressive climber; 'Tangerine Beauty' variety has bright coral blooms; attracts hummingbirds and bees; prune to direct and control growth
Fig Vine <i>Ficus pumila</i>			6-30'+	Sun/Part Shade	SE	Spring - fall	Green leaves	M		Vine attaches to wall; very aggressive; not recommended for wood structures; do not plant near preserves; free of insects and diseases; susceptible to hard freezes; prune to direct and control growth
Honeysuckle, Coral <i>Lonicera sempervirens</i>	T		6-12'	Sun/Part Shade	SE	Late winter to early spring	Coral flowers	L-M	x	Twining vine for smaller structures; nectar attracts hummingbirds and butterflies; fruit attracts birds; prefers fertile, moist soil; prune to direct and control growth



Star Jasmine



Mexican Flame Vine



Passion Vine



Lady Banksia Rose



Trumpet Vine



Virginia Creeper



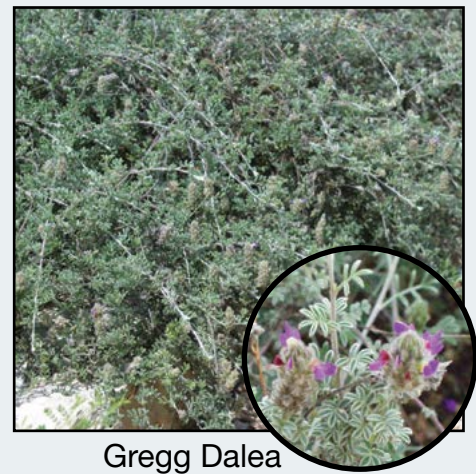
Texas Wisteria



Aztec Grass



Clover Fern



Gregg Dalea

Common Name	Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Jasmine, Star <i>Trachelospermum jasminoides</i>		20'	12-16'	Sun/Part Shade	E	Spring - summer	White flowers	L		Fragrant blooms; glossy leaves; poisonous if ingested; aggressive in shady areas; do not plant near preserves; prune to direct and control growth
Mexican Flame Vine <i>Pseudogynoxys chenopodioides</i>		10'+		Sun/Part Shade	D	Spring - fall	Orange flowers	L	x	Non-aggressive twining vine with thick glossy leaves; provides quick cover for chainlink fence; dies back in severe winter; attracts bees, butterflies, and birds; prune to direct and control growth
Passion Vine <i>Passiflora incarnata</i>	T		6-15'	Sun/Part Shade	D	Early spring - summer	Lavender flowers	L-M	x	Tendrill vine; perennial; food for several species of butterfly larva; exotic-looking flower; aggressive growth; spreading; prune to direct and control growth
Rose, 'Lady Banksia' <i>Rosa banksiae</i>			20+'	Sun	E	Spring	White to yellow	M		Fast-growing, climbing rose; needs sturdy support and lots of space so not suited for rain gardens; thornless, disease free; white flowers are fragrant; prune after spring bloom to control and direct growth
Trumpet Vine <i>Campsis radicans</i>	B/E		6-40'+	Sun/Part Shade	D	Summer	Reddish-orange flowers	L	x	Not recommended for wood structures; attracts hummingbirds; aggressive spreader; plant where roots can be confined; 'Madame Galen' and 'Georgia' have larger blooms; prune to direct and control growth
Virginia Creeper <i>Parthenocissus quinquefolia</i>	B/E		to 40'+	Sun/Part Shade	D	Fall	Scarlet fall foliage	L	x	Vigorous vine or groundcover; not recommended for wood structures; pest free; many birds eat fruit; fruit is poisonous
Wisteria, Texas <i>Wisteria frutescens</i>	T	25-30'	3-6'	Sun/Part Shade	D	Spring	Bluish-lilac flowers	M	x	High heat tolerance; fragrant; plants can become chlorotic on alkaline soils; flowers attract several insect species; prune to direct and control growth

Groundcovers

Some groundcovers are great turf alternatives. They are most effective in large masses to form a solid cover on the ground. Most are very low maintenance. Plants that prefer Low (L) and Very Low (VL) water can be used in a rain garden if the soil is fast draining and they don't sit in water for an extended period. Rain garden plant success depends on the soil, how fast it drains and if the plants are in their preferred growing conditions

Aztec Grass <i>Ophiopogon intermedius</i>		1'	1-1.5'	Shade	E	Year round	Variegated foliage	M		Clumping grass-like groundcover; similar to Liriope with white variegated leaves; no pests or diseases; variety of cultivars available - check label for specifics; no pruning necessary
Clover Fern <i>Marsilea macropoda</i>	T	6"-1'	2'	Sun/Part Shade	D	Spring - fall	Grayish leaves	L		Tough groundcover with clover-like leaves; does not require much water but likes it; spreads by runners; dies back during severe winters; no pruning necessary
Dalea, Gregg <i>Dalea greggii</i>	T	6"-1'	2-4"	Sun	SE	Summer - fall	Purple flowers	L	x	Good for slopes; silvery blue-green leaves; dry soil; winter-hardy; mostly fall flowers attract bees and butterflies; seeds eaten by birds and small mammals; pruning not necessary



Frogfruit



Creeping Germander



Golden Groundsel



Horseherb



Iceplant



Leadwort Plumbago



Liriope



Monkey Grass



Mountain Pea



Oregano



Pigeonberry

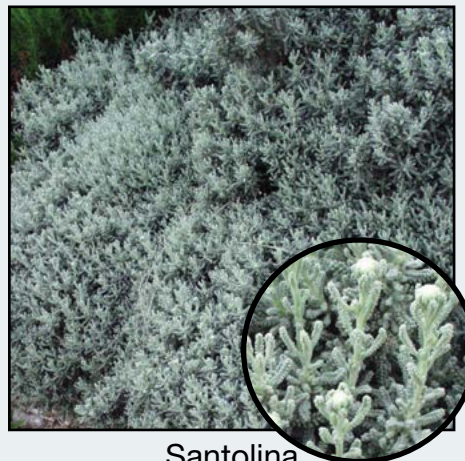
Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Frogfruit <i>Phyla nodiflora</i>	B/E	6-8"	1.5-2'	Sun/Part Shade	D	Spring - fall	White	L-M	x		Native groundcover; spreads rapidly; small flower; larval host plant to butterflies; can tolerate poor drainage; commercial availability may be limited; cut back to 3" in winter
Germader, Creeping <i>Teucrium cossonii</i>		4-6"	1.5-2'	Sun	E	Summer	Pink and purple flowers	L	x		Low mounding form; silver foliage; attracts bees; dark green cultivar available; requires well-drained soil; pruning not necessary
Golden Groundsel (Round-leaf ragwort) <i>Packera obovata</i>	E	1.5'	1-2'	Shade	E	Spring	Yellow flowers	L-M	x		Colonizes and spreads by runners but is easy to control; blooms in spring; is an evergreen rosette most of the year; attracts butterflies; pruning not necessary
Horseherb <i>Calyptocarpus vialis</i>	B/E	8-10"	1'	Sun/Part Shade	SE	Spring - fall	Yellow flowers	VL	x		Recommended for revegetation; tolerates some foot traffic; great for dry shade; naturally abundant in shady areas and lawns - but limited commercial availability; can mow as needed to maintain preferred height
Iceplant <i>Aptenia</i> spp. <i>Delosperma</i> spp. <i>Malephora</i> spp.		6"	12"	Sun	SE	Spring-fall	purple to yellow flowers	VL			Iceplant is the common name for 3 generas; fast-growing, groundcover for hot, dry sites; great for hanging baskets; has thick green succulent leaves; attracts bees and butterflies; no pruning necessary
Leadwort Plumbago <i>Ceratostigma plumbaginoides</i>		6-12"	3-5'	Sun/Part Shade	D	Summer	Blue flowers	L	x		Deep blue flowers and green foliage with burgundy tinge in cool weather; attracts butterflies; cut back if needed in winter
Liriope <i>Liriope muscari</i>		12-18"	12"	Sun/Part Shade	E	Summer	Purple spikes	M			Grass-like clumps of evergreen foliage; requires more water in sun; cultivars of varying height available; check plant label for details; cut back in winter if needed
Monkey Grass (Mondo Grass) <i>Ophiopogon japonicus</i>		4-8"	12+"	Shade	E	Year round	Green foliage	M			Great lawn alternative in shade; provide fertile, well-drained soil; clusters of flowers close to the leaves; dwarf form also available; do not plant near preserves; needs even moisture so not suited for rain gardens; cut back in winter if needed
Mountain Pea <i>Orbexilum pedunculatum</i>	T	8-12"	2-3'	Sun/Part Shade	SE	Spring	Purple flowers	L	x		Loose-textured, fast-growing, spreading groundcover; attracts bees; good substitute for Asian Jasmine; limited commercial availability; native to east and southeast Texas; shear occasionally to promote compact growth
Oregano <i>Origanum vulgare</i>		10"-2'	2'	Sun	E	Summer	White to rosy pink	L-M	x		Sprawling plant; pungently aromatic; attracts bees; flavorful leaves used in cooking; cut back to 3" in winter if needed
Pigeonberry <i>Rivina humilis</i>	B/E	1-1.5'	2'	Shade	D	Spring - fall	White/pink flowers	M	x		Spreads rapidly; tolerates moist or dry soil; tiny attractive red berries are prized by birds; may go dormant in summer; limited commercial availability; prune for natural look



Purple Heart



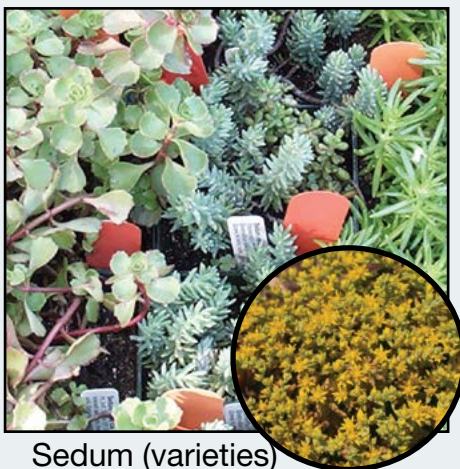
Lyre Leaf Sage



Santolina



Sedges



Sedum (varieties)



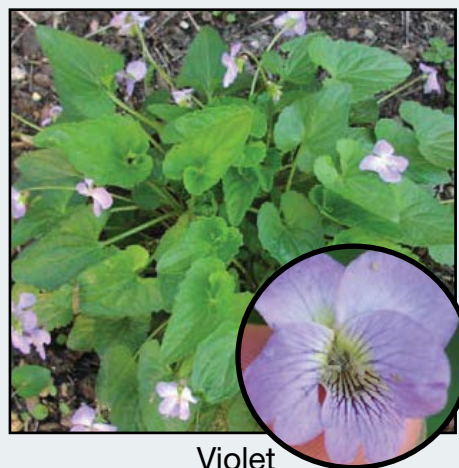
Silver Ponyfoot



Snakeherb



Verbena



Violet



Wavy Scaly Cloak Fern



Wooly Stemodia

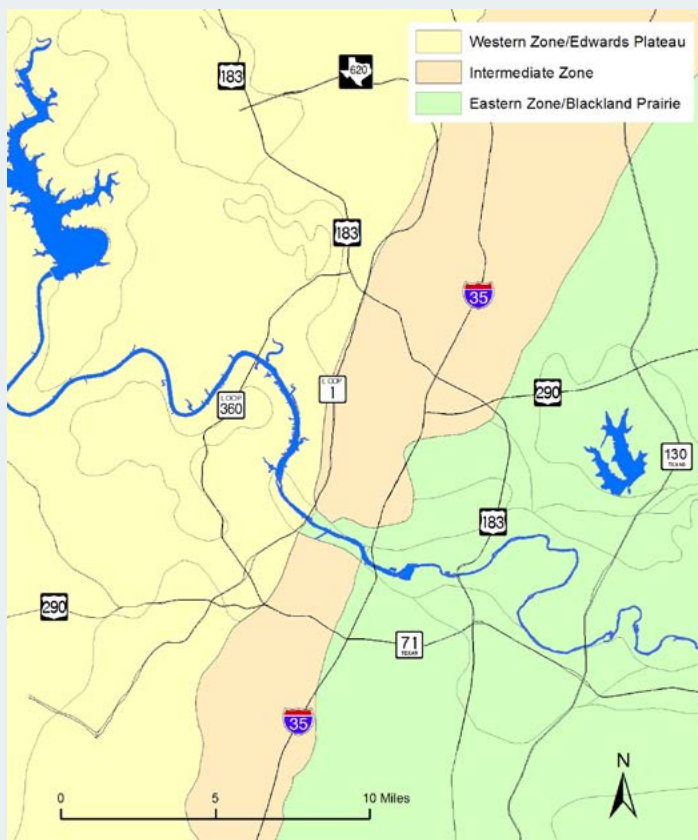
Common Name		Texas Native	Height	Spread	Light	Evergreen/Deciduous	Seasonal Interest	Color/Feature	Water	Wildlife	Comments and Maintenance
Purple Heart <i>Setcreasea pallida</i>			1'	3'	Sun/Part Shade	D	Spring - fall	Purple leaves w/pink flowers	L		Requires more water in sun but very drought tolerant once established; roots may rot in poorly drained soil, so not suited to rain gardens; not fully cold hardy in severe winter unless in protected location; prune to direct and control growth
Sage, Lyre Leaf <i>Salvia lyrata</i>	T		1-2'	1'	Sun/Part Shade	E	Spring	White to purplish blue flowers	L-M	x	Great for dry shade but can grow in full sun; reseeds easily so may move in garden; attracts hummingbirds, bees, and butterflies
Santolina (Lavender Cotton) <i>Santolina chamaecyparissus</i>			1-2'	1-2'	Sun	E	Spring	Yellow flowers	VL	x	Shrubby groundcover; fine-textured, aromatic evergreen foliage; attracts bees; requires excellent drainage; not long-lived; green leaf species also available
Sedges <i>Carex</i> spp.			varies	varies	Sun/Part Shade	E	Year round	Evergreen leaves	most are L		Grassy, clumplike foliage; plant in masses for groundcover; Berkeley (<i>C. tumicola</i>); Meadow (<i>C. perdentata</i>); Texas, (<i>C. texensis</i>); check label for specifics on height, hardiness and water needs; no pruning necessary
Sedum (Stonecrop) <i>Sedum</i> spp.			6"	1'	Sun/Part Shade	E	Summer	White	L		Succulent plants with many species, leaf types, flower colors; check label for specifics; good drainage required; withstands shallow, poor soil; no pruning necessary
Silver Ponyfoot <i>Dichondra argentea</i>	T		2-4"	2.5'	Sun/Part Shade	SE	Year round	Silver-gray leaves	L	x	Attractive silver gray foliage on low-growing runners; good drainage is critical; do not over water; native to west Texas; no pruning required
Snakeherb <i>Dyschoriste linearis</i>	T		6-12"	1.5'	Sun/Part Shade	E	Late spring - summer	Lavender flowers	L	x	Prefers dry caliche soils; upright stems, blooms mainly in spring but on/off through fall after rain; attracts butterflies; no pruning required
Verbena spp.			varies up to 18"	varies	Sun	SE	Spring - fall	varies	L	x	Spreading habit; fine-textured leaves; needs good drainage; attracts butterflies; there are many types of verbenas available commercially so check labels for details; native Prairie Verbena is <i>V. bipinnatifida</i> ; cut back to 3" if needed in winter
Violets <i>Viola missouriensis</i>	T		4-6"	8-10"	Shade	D	Spring	Violet flowers	L-M	x	Reseeds easily; will move around in garden; lighter purple bloom than houseplant
Wavy Scaly Cloak Fern <i>Astrolepis sinuata</i>	T		1'	3'	Sun/Part Shade	SE	Spring - fall	Feathery fronds	L		Xeric fern; drought tolerant; low water use; heat and cold tolerant; may go partially dormant with less water; no pruning needed
Wooly Stemodia <i>Stemodia lanata</i>	T		4-10"	3'+	Sun/Part Shade	D	Summer	Purple blooms	L	x	Delicate purple blooms contrast with gray foliage; good cascading plant for pots; needs good drainage; prune unattractive foliage

Sustainable landscape practices promote reducing turfgrass use because of its potential high water use and higher maintenance from mowing and nutritional needs. If you decide to use turf then choose it wisely and keep the area small. If you decide not to use turf consider using one of the groundcovers listed in this guide as a lawn alternative. If you already have a lawn, check out the Grow Green Lawn Care and Lawn Problems fact sheets.

No turfgrass is perfect for all sites in Central Texas. Austin Water restrictions may be more limiting during times of drought so it is best to select one of the warm-season grasses listed below. During extended periods of drought these grasses will turn brown and go dormant but will green up after enough rain.

Turfgrass species and variety selection depends largely on the following considerations:

- Water use
- Amount of sun or shade
- Use and how much foot traffic it will receive
- Maintenance requirements
- Soil depth and quality: Regardless of the species, **to use the least amount of water you must provide at least 4-6" of tilled, or otherwise un-compacted soil**, which will encourage turfgrasses to develop deep, extensive root systems that allow them to persist. If you have a site with limited or compacted soil, suitable turfgrass quality may be difficult to maintain during periods of drought.



What are the most common types of soil in the Austin area?

There are three main types:

- 1. Western Zone, Edwards Plateau:** On the rocky hills west of MOPAC/Loop One on the west side of town are highly alkaline limestone and caliche soils that are shallow and often with exposed rock. In those areas the soil depth can be a matter of inches.
- 2. Intermediate Zone, Combination and Disturbed Soils:** In the central parts of Austin (running north and south) where the Eastern and Western Zones intersect and overlap there are intermediate areas that are a mix of shallow to moderately deep soils intermingled in areas with soil brought in during construction. Due to the potential variability, identify specific soil types on your site to determine your best approach.
- 3. Eastern Zone, Blackland Prairie:** Generally east of IH 35 is the beginning of the deep, dark, clay prairie soils. Due to their tiny particle sizes, heavy clay soils do not have a lot of air spaces and typically do not drain very quickly. Adding compost or expanded shale improves aeration and drainage.

Warm-season Turfgrasses from Low to Medium water use:



Buffalograss

Buchloe dactyloides

Very low water use / Full sun / Tolerates light foot traffic

It does not have a dense canopy so it is more susceptible to weed invasions than other turfgrasses. Fewer weeds will invade with a more natural look by mowing 2 to 4 times per year on the highest mowing height adjustment. It does best in areas with 25 inches or less of annual rainfall. Overseeding turf or mixing the seed with other shortgrass species is one way to produce a denser turf.

See Shortgrass Prairie Seed Mixes

Sod: '609', 'Density', 'Prairie', 'Prestige'

Seeds: Common, 'Texoka', 'Bison', 'Bowie', 'Comanche', 'Topgun'



Shortgrass Prairie Seed Mixes

Low water use / Full sun / Tolerates light foot traffic

Several commercial native seed mixes are available that combine Buffalograss, *Buchloe dactyloides*, Curly Mesquite, *Hilaria belangeri* and Blue Grama Grass, *Bouteloua gracilis*; short wildflowers can also be added to create a short-grass meadow.

Seeds: Native grasses (wildflowers) mix



Bermudagrass hybrids that do not produce viable seed

Low-medium water use / Full sun / Tolerates high foot traffic.

Bermudagrass produces a dense canopy and is the most widely used turfgrass species for golf course and athletic turf in the southern United States. It is also popular for home lawns. The hybrids have a finer leaf texture than common types and create a denser turf that performs better under more frequent use, mowing, watering and fertilization. Hybrid varieties of Bermudagrass (interspecific crosses of *C. dactylon* and *C. transvaalensis*) are most often planted as sod and produce seedheads that are sterile. As a result, most hybrids do not pose the same invasive threat as Common Bermuda types and are preferred for use in the landscape. All Bermudagrass varieties have the potential to be invasive to neighboring plant beds and gardens due to their aggressive growth from rhizomes and stolons.

Sod, plugs or sprigs: 'Celebration', 'GN1', 'Grimes EXP', 'Tex Turf', 'TifSport', 'Tifway 419'

Special Note: Common Bermuda, *Cynodon dactylon*, is listed as one of Austin's Top 24 Invasive Plants in the City's Invasive Species Management Plan and is not accepted for Austin Water landscape rebates. It is not recommended for use in home lawns. Common Bermudagrass, as well as improved varieties of Common, that are left unmowed produce viable seeds that can escape the garden and invade natural areas. Bermudagrass seed and sod are listed in the City of Austin Environmental Criteria Manual, (used for commercial development only), to stabilize the soil and to reduce damages from sediment and runoff to downstream areas.



Zoysiagrass

(*Zoysia japonica*):

Low - medium water use / Full sun or partial shade / Tolerates some foot traffic.

Zoysiagrass spreads by rhizomes and stolons producing a dense turf. Within the zoysiagrass genus, *japonica* species are typically coarse-textured while *matrella* species are typically finer textured. However, much like Bermudagrass there are also interspecific crosses of each. Zoysiagrasses require less mowing and fertilization than Bermudagrass and are often considered lower maintenance for those reasons. It is best established from sod due to slow germination and growth that make it difficult to establish from seed. Like Bermudagrass, be sure to stay ahead of the rhizome and stolon growth into planting beds as it is wicked to try and eradicate if it is left to invade. It is slower than Bermudagrass in invading but will do so... and even in shaded beds!

Sod: 'Palisades', 'Jamur', 'El Toro', or 'Crowne'

Seed: 'Zenith' and 'Compadre'

Where can I get information about rain gardens and rain garden plants?

A rain garden is a low vegetated area that adsorbs and filters rainwater runoff from, roofs, sidewalks and driveways. Many of the plants featured in this guide can be expected to grow successfully in a residential rain garden. Plants that are not recommended are those that typically grow in the shade and need consistent soil moisture, require deep soil or have some undesirable plant characteristic (short-lived, weak wood, plants that have spines or fruit that falls on pavement and any that are considered invasive).

How much rainfall does Austin receive per year?

On average 32 inches of rain per year with very little in summer.

How hot and cold does it get?

Heat: The average temperature highs in the summer months are above 90° F, so plants that need cool summer temperatures, like peonies, lilacs or fuchsias, will not do well here. Summer heat is the biggest stress when planting, so the best time to plant is the fall; worst time to plant late spring – summer.

Cold: Austin is in Zone 8b where the average extreme minimum is 15 – 20° F. Our temperatures don't usually go below 20° F – but in severe winters they can. Plants that are susceptible to damage in severe winters should be planted in protected areas, such as on the south or west side of your house, and well-mulched before cold weather arrives.

Why was the Deer Resistance rating removed from this version of the guide?

This rating was removed from this version because after consulting numerous information sources it is clear that there is very little consensus on which plants specifically are “deer resistant.” To be safe, all woody plants in areas with deer need to be protected when the plants are young and until they can grow above the browse line.

Plant characteristics that may deter deer:

- Aromatic plants like rosemary, most of the salvias and lantanas
- Prickly, spiny or thorny foliage or stems like agarita, cactus, sotols (deer often eat the flowers)
- Bad-tasting sap like star jasmine
- Fuzzy leaves like Texas sage and lamb's ear
- Other approaches to deter deer include fencing, repellents and scare devices.

Where can I find out more information about which plants to choose when designing a fire-resistant landscape?

Building a fire-resistant landscape isn't as simple as only looking at plant selection. It includes a variety of factors from the slope of the landscape, building materials in and around the home to choosing the right plant for the right location. For more details on determining the right plant for the right place and how you can help build defensible space around your home

visit: www.austintexas.gov/WildfireEnviroBMPs

Where can I find more information about plants that are poisonous to humans and pets?

This guide includes some comments on plants' toxicity but it should not be considered exhaustive resource on the topic.

For poisoning emergencies call the **American Association of Poison Control Centers at (800) 222-1222**

For more information on common plants that are poisonous to animals visit www.asPCA.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants

You may also call **ASPCA Poison Control Center at (888) 426-4435** (there may be a consulting fee).

AUSTIN'S TOP INVASIVE PLANTS TO AVOID

Invasive plants spread into areas where they are not native. Their introduction causes or is likely to cause economic or environmental harm or harm to human health.

The following plants have already invaded preserves and greenbelts in Austin. They spread by seeds, berries and spores that can be easily transported long distances. For more information about Austin's invasive species, visit www.austintexas.gov/invasive

Common Name	Botanical Name	Non-Invasive Alternatives
Bermudagrass, Common	<i>Cynodon dactylon</i>	Hybrid Bermudagrasses (with sterile seeds)
Catclaw Vine	<i>Macfadyena unguis-cati</i>	Carolina Jessamine, Crossvine
Chinaberry	<i>Melia azedarach</i>	Chinquapin Oak, Texas Red Oak
Chinese Parasol Tree	<i>Firmiana simplex</i>	Arizona Cypress
Chinese Pistache	<i>Pistacia chinensis</i>	Chinquapin Oak, Texas Red Oak
Chinese Tallow	<i>Triadica sebifera</i>	Bigtooth Maple, Texas Redbud, Red Oak
Chinese Wisteria	<i>Wisteria sinensis</i>	Passion Vine
Elephant Ear	<i>Colocasis esculenta</i>	Arrowhead, Crinum Lily, Tuckahoe
Golden Bamboo	<i>Phyllostachys aurea</i>	Evergreen Yaupon, Bamboo Muhly
Japanese Hollyfern	<i>Cyrtomium falcatum</i>	River Fern
Japanese Honeysuckle	<i>Lonicera japonica</i>	Coral Honeysuckle
Johnsongrass	<i>Sorghum halepense</i>	Little Bluestem, Bushy Bluestem
Kudzu	<i>Pueraria montana var. lobata</i>	Virginia Creeper
Lilac Chaste Tree	<i>Vitex agnus-castus</i>	Mexican Buckeye
Paper Mulberry	<i>Broussonetia papyrifera</i>	Cherry Laurel, Texas Persimmon
Phontina, Red Tip	<i>Photinia x fraseri</i>	Cherry Laurel, Possumhaw, Silktassel
Photina, Tawainese	<i>Photinia serratifolia</i>	Cherry Laurel, Possumhaw, Silktassel
Privets, Large Leaf	<i>Ligustrum japonicum</i> , <i>L. lucidum</i> , <i>L. vulgare</i>	Cherry Laurel, Yaupon
Privets, Small Leaf	<i>Ligustrum quhoui</i> , <i>L. sinense</i>	Possumhaw, Wax Myrtle, Yaupon
Sacred Bamboo	<i>Nandina domestica</i>	Bush Germander, Texas Sage
Scarlet Firethorn	<i>Pyracantha coccinea</i>	Evergreen Sumac, Yaupon
Tree of Heaven	<i>Ailanthus altissima</i>	Chinquapin Oak, Lacey Oak

These plants travel by runners and rhizomes. While they are not generally transported long distances, they can invade nearby or "downstream" areas. Avoid planting near parks and preserves.

Common Name	Botanical Name	Non-Invasive Alternatives
English Ivy	<i>Hedera helix</i>	Leadwort Plumbago, Mountain Pea
Vinca	<i>Vinca major</i> & <i>V. minor</i>	Leadwort Plumbago, Mountain Pea
Wisteria (non-native species)	<i>Wisteria sinensis</i> , <i>W. floribunda</i>	Passion Vine



Already have these plants?
Most plants can be controlled by trimming
back berries, seedheads or runners.

THIS PLANT LIST IS ONLY A RECOMMENDATION AND HAS NO LEGAL EFFECT IN THE STATE OF TEXAS. IT IS LAWFUL TO SELL, DISTRIBUTE, IMPORT OR POSSESS A PLANT ON THIS LIST UNLESS THE TEXAS DEPARTMENT OF AGRICULTURE LABELS THE PLANT AS NOXIOUS OR INVASIVE ON THE DEPARTMENT'S PLANT LIST.

Common Name	Page #										
Abelia, Glossy	15	Cuphea, 'David Verity'	27	Horseherb	47	Passion Vine	45	Santolina (Lavender Cotton)	49		
Agarita	15	Cypress, Arizona	7	Huisache	11	Pecan	9	Sedge, Meadow	41		
Agave spp.	39	Cypress, Bald	7	Hymenoxys (Four Nerve Daisy)	31	Penstemon, Gulf Coast	33	Sedges	49		
Alamo Vine	43	Cypress, Montezuma	7	Iceplant	47	Penstemon, Hill Country	33	Sedum (Stonecrop)	49		
American Beautyberry	15	Daisy, Blackfoot	27	Indiangrass	41	Penstemon, Rock	33	Senna, Flowering	23		
Anacacho Orchid Tree	9	Daisy, Chocolate	27	Indigo Spires	31	Persimmon, Texas	13	Senna, Lindheimer	37		
Anacua (Sandpaper Tree)	9	Daisy, Copper Canyon	27	Inland Seaoats	41	Phlox, Garden	33	Shrimp Plant	37		
Apache Plume	15	Daisy, Engelmann	27	Iris, Bicolor	31	Pigeonberry	47	Sideoats Grama	43		
Aralia, Japanese	17	Dalea, Black	17	Japanese Yew	19	Pineapple Guava	21	Silktassel, Mexican	13		
Arroyo Sweetwood	9	Dalea, Gregg	45	Jasmine, Star	45	Pittosporum	21	Silver Ponyfoot	49		
Artemisia	25	Damianita	29	Kidneywood	11	Plumbago	33	Skeletonleaf Goldeneye	37		
Ash, Texas	7	Datura (Jimson Weed)	29	Lamb's Ear	31	Plum, Mexican	13	Skullcap, Heartleaf	37		
Aztec Grass	45	Desert Broom	17	Lantana (hybrid)	31	Pomegranate	13	Skullcap, Pink	37		
Baptisia, Purple (Wild Indigo)	17	Desert Willow	11	Lantana, Texas	31	Primrose, Missouri	35	Skullcap, Wright's Purple	37		
Barbados Cherry	17	Elbow Bush	17	Lantana, Trailing	33	Purple Coneflower	35	Skyflower, Duranta	23		
Basket Grass (Sacahuista)	39	Elm, Cedar	7	Leadwort Plumbago	47	Purple Heart	49	Snakeherb	49		
Beebalm	25	Esperanza (Yellow Bells)	29	Lion's Tail	33	Redbud, Mexican	13	Society Garlic	37		
Bird of Paradise, Red	25	Eve's Necklace	11	Liriope	47	Redbud, Texas	13	Sotol, Texas	39		
Bird of Paradise, Yellow	25	Fall Aster	29	Mallow, Globe	19	Retama	13	Spider Lily	37		
Black-eyed Susan	25	Fern, Firecracker	29	Maple, Bigtooth	7	Rock Rose	35	Spiderwort	39		
Bluestem, Little	41	Fern, River	29	Maximilian Sunflower	33	Rose, 'Belinda's Dream'	21	Sumac, Evergreen	13		
Bottlebrush	17	Fig Vine	43	Mexican Flame Vine	45	Rose, 'Cecile Brunner'	21	Sumac, Flameleaf	15		
Buckeye, Mexican	9	Firebush	29	Mexican Mint Marigold	33	Rose, 'Grandma's Yellow'	21	Sumac, Fragrant (Aromatic)	23		
Buckeye, Red	11	Flame Acanthus	17	Mistflower, White	19	Rose, 'Knock Out'	21	Sweet Almond Verbena	23		
Bulbine	25	Fragrant Mimosa	19	Mock Orange	19	Rose, 'Lady Banksia'	45	Switchgrass	43		
Butterfly Bush, Wooly	17	Frogfruit	47	Monkey Grass	47	Rose, 'Livin' Easy'	21	Sycamore, Mexican	9		
Butterfly Weed, Mexican	25	Frostweed	29	Mountain Laurel	13	Rose, 'Marie Daly'	21	Texas Betony	39		
Cactus, Prickly Pear	39	Gaura	29	Mountain Pea	47	Rose, 'Marie Pavie'	21	Thyrallis, (Golden Showers)	23		
Calylophus	25	Gayfeather	29	Muhly, Bamboo	41	Rose, 'Martha Gonzales'	21	Trumpet Vine	45		
Carolina Buckthorn	11	Germander, Bush	19	Muhly, Big	41	Rose, 'Mutabilis'	21	Turk's Cap	23		
Carolina Jessamine	43	Germander, Creeping	47	Muhly, Deer	43	Rose, 'Nearly Wild '	23	Verbena spp.	49		
Cast Iron Plant	25	Germander, Green	31	Muhly, Gulf	43	Rose, 'Old Blush'	23	Viburnum, Rusty Blackhaw	15		
Catmint	25	Ghost Plant	31	Muhly, Pine	43	Rosemary, Upright	23	Viburnum, Sandankwa	15		
Cedar, Eastern Red	7	Goldenball Leadtree	11	Nolina	39	Roughleaf Dogwood	13	Violets	49		
Cherry, Black	7	Golden Groundsel	47	Oak, Bur	7	Ruellia, Dwarf	35	Virginia Creeper	45		
Cherry Laurel	11	Greek Myrtle	19	Oak, Chinquapin	7	Sage, Cedar	35	Walnut, Little	15		
Chile Pequin	27	Gregg Mistflower	31	Oak, Lacey	9	Sage, Cherry (Autumn Sage)	35	Wavy Scaly Cloak Fern	49		
Clover Fern	45	Hawthorn, Indian	19	Oak, Mexican White	9	Sage, Jerusalem	35	Wax Myrtle	15		
Columbine	27	Hibiscus, Perennial	31	Oak, Southern Live	9	Sage, Lyre Leaf	49	Winecup, Perennial	39		
Columbine, Red	27	Holly, Dwarf Burford	19	Oak, Texas Red	9	Sage, Majestic	35	Wisteria, Texas	45		
Coralbean	27	Holly, Dwarf Yaupon	19	Obedient Plant, Fall	33	Sage, Mealy Blue	35	Wooly Stemodia	49		
Coralberry	17	Holly, Nellie R. Stevens	19	Olive, Mexican	13	Sage, Mexican Bush	35	Xylosma	15		
Coreopsis, Lance-leaf	27	Holly, Possumhaw	11	Oregano	47	Sage, Penstemon/Big Red Sage	35	Yarrow	39		
Cotoneaster	17	Holly, Yaupon	11	Oregano, Mexican	33	Sage, Russian	37	Yucca, Paleleaf	41		
Crape Myrtle	11	Honey Mesquite	7	Palmetto, Texas Dwarf	21	Sage, San Luis	37	Yucca, Red	41		
Crossvine	43	Honeysuckle, Coral	43	Palmetto, Texas /Palm Texas	9	Sage, Texas	23	Yucca spp.	41		
Cuphea, Batface	27	Honeysuckle, Mexican	31	Palm, Windmill	13	Sage, Tropical	37	Yucca, Twistleaf	41	Zexmenia	39

Botanical Name		Page #	
<i>Abelia x grandiflora</i>	15	<i>Coreopsis lanceolata</i>	27
<i>Acacia farnesiana</i>	11	<i>Cornus drummondii</i>	13
<i>Acer grandidentatum</i>	7	<i>Cotoneaster</i> spp.	17
<i>Achillea</i> spp.	39	<i>Cuphea</i> , 'David Verity'	27
<i>Aesculus pavia</i> var. <i>pavia</i>	11	<i>Cuphea llavea</i>	27
<i>Agave</i> spp.	39	<i>Cupressus arizonica</i>	7
<i>Ageratina havanensis</i>	19	<i>Dalea frutescens</i>	17
<i>Aloysia virgata</i>	23	<i>Dalea greggii</i>	47
<i>Anisacanthus quadrifidus</i> var. <i>wrightii</i>	17	<i>Dasyllirion texanum</i>	39
<i>Aptenia</i> spp.	47	<i>Datura wrightii</i>	29
<i>Aquilegia canadensis</i>	27	<i>Delosperma</i> spp.	47
<i>Aquilegia chrysantha</i> var. 'Hinkleyana'	27	<i>Dichondra argentea</i>	49
<i>Artemisia</i> 'Powis Castle'	25	<i>Dietes bicolor</i>	31
<i>Asclepias currasavica</i>	25	<i>Diospyros texana</i>	13
<i>Aspidistra elatior</i>	25	<i>Duranta erecta</i>	23
<i>Aster oblongifolium</i>	29	<i>Dyschoriste linearis</i>	49
<i>Astrolepis sinuata</i>	49	<i>Echinacea purpurea</i>	35
<i>Baccharis sarothroides</i>	17	<i>Ehretia anacua</i>	9
<i>Baptisa australis</i>	17	<i>Engelmannia peristenia</i>	27
<i>Bauhinia lunarioides</i>	9	<i>Erythrina herbacea</i>	27
<i>Berberis trifoliata</i>	15	<i>Eysenhardtia texana</i>	11
<i>Berlandiera lyrata</i>	27	<i>Fallogia paradoxa</i>	15
<i>Bignonia capreolata</i>	43	<i>Fatsia japonica</i>	17
<i>Bouteloua curtipendula</i>	43	<i>Feijoa sellowiana</i>	21
<i>Buddleja marrubifolia</i>	17	<i>Ficus pumila</i>	43
<i>Bulbine frutescens</i>	25	<i>Forestiera pubescens</i>	17
<i>Caesalpinia gilliesii</i>	25	<i>Frangula caroliniana</i>	11
<i>Caesalpinia pulcherrima</i>	25	<i>Fraxinus texensis</i>	7
<i>Callicarpa americana</i>	15	<i>Galphimia glauca</i>	23
<i>Callirohoe involucrata</i>	39	<i>Garrya ovata</i> spp. <i>lindheimeri</i>	13
<i>Callistemon citrinus</i>	17	<i>Gaura lindheimeri</i>	29
<i>Calyphous berlandieri</i>	25	<i>Gelsemium sempervirens</i>	43
<i>Calyptocarpus vialis</i>	47	<i>Graptopetalum paraguayense</i>	31
<i>Capsicum annuum</i>	27	<i>Hamelia patens</i>	29
<i>Carex perdentata</i>	41	<i>Helianthus maximiliani</i>	33
<i>Carex</i> spp.	49	<i>Hesperaloe parviflora</i>	41
<i>Carya illinoensis</i>	9	<i>Hibiscus</i> spp.	31
<i>Cassia corymbosa</i>	23	<i>Hymenocallis lirisome</i>	37
<i>Cassia lindheimeriana</i>	37	<i>Ilex cornuta</i> 'Burfordii'	19
<i>Ceratostigma plumbaginoides</i>	47	<i>Ilex cornuta</i> 'Nellie R. Stevens'	19
<i>Cercis canadensis</i> var. 'mexicana'	13	<i>Ilex decidua</i>	11
<i>Cercis canadensis</i> var. 'texensis'	13	<i>Ilex vomitoria</i> 'Nana'	19
<i>Chasmanthium latifolium</i>	41	<i>Juglans microcarpa</i>	15
<i>Chilopsis linearis</i>	11	<i>Juniperus virginiana</i> var. 'virginiana'	7
<i>Chrysactina mexicana</i>	29	<i>Justicia brandegeana</i>	37
<i>Conoclinium greggi</i>	31	<i>Justicia spicigera</i>	31
<i>Cordia boissieri</i>	13	<i>Lagerstroemia indica</i>	11
		<i>Lantana montevidensis</i>	33
		<i>Lantana urticoides</i>	31
		<i>Lantana x hybrida</i>	31
		<i>Leonotis leonurus</i>	33
		<i>Leucaena retusa</i>	11
		<i>Leucophyllum frutescens</i>	23
		<i>Liatris mucronata</i>	29
		<i>Liriope muscari</i>	47
		<i>Ilex vomitoria</i>	11
		<i>Lonicera sempervirens</i>	43
		<i>Mahonia trifoliata</i>	15
		<i>Malephora</i> spp.	47
		<i>Malpighia glabra</i>	17
		<i>Malvaviscus arboreus</i> var. 'Drummondii'	23
		<i>Marsilea macropoda</i>	45
		<i>Melampodium leucanthum</i>	27
		<i>Merremia dissecta</i>	43
		<i>Mimosa borealis</i>	19
		<i>Monarda fistulosa</i>	25
		<i>Morella cerifera</i>	15
		<i>Muhlenbergia capillaris</i>	43
		<i>Muhlenbergia dubia</i>	43
		<i>Muhlenbergia dumosa</i>	41
		<i>Muhlenbergia lindheimeri</i>	41
		<i>Muhlenbergia rigens</i>	43
		<i>Myrospermum sousanum</i>	9
		<i>Myrtus communis</i>	19
		<i>Nepeta x faassenii</i>	26
		<i>Nolina lindheimeriana</i>	39
		<i>Nolina texana</i>	39
		<i>Oenothera macrocarpa</i>	35
		<i>Ophiopogon intermedius</i>	47
		<i>Ophiopogon japonicus</i>	47
		<i>Opuntia</i> spp.	39
		<i>Orbexilum pedunculatum</i>	47
		<i>Origanum vulgare</i>	47
		<i>Packera obovata</i>	47
		<i>Panicum virgatum</i>	43
		<i>Parkinsonia aculeata</i>	13
		<i>Parthenocissus quinquefolia</i>	46
		<i>Passiflora incarnata</i>	45
		<i>Pavonia lasiopetala</i>	35
		<i>Penstemon baccharifolius</i>	33
		<i>Penstemon tenuis</i>	33
		<i>Penstemon triflorus</i>	33
		<i>Perovaskia atriclipifolia</i>	37
		<i>Phaeralcea ambigua</i>	19
		<i>Philadelphus coronarius</i>	19
		<i>Phlomis fruticosa</i>	35
		<i>Phlox paniculata</i>	33
		<i>Phyla nodiflora</i>	47
		<i>Phystostegia virginiana</i>	33
		<i>Pittosporum tobira</i>	21
		<i>Platanus mexicana</i>	9
		<i>Plumbago auriculata</i>	33
		<i>Podocarpus macrophyllus</i>	19
		<i>Poliomnitha longiflora</i>	33
		<i>Prosopis glandulosa</i> var. <i>glandulosa</i>	7
		<i>Prunus caroliniana</i>	11
		<i>Prunus mexicana</i>	13
		<i>Prunus serotina</i> var. <i>exima</i>	7
		<i>Pseudogynoxys chenopodioides</i>	47
		<i>Punica granatum</i>	13
		<i>Quercus laceyi</i>	9
		<i>Quercus macrocarpa</i>	7
		<i>Quercus muhlenbergii</i>	7
		<i>Quercus polymorpha</i>	9
		<i>Quercus texana</i>	9
		<i>Quercus virginiana</i>	9
		<i>Raphiolepis indica</i>	19
		<i>Rhus aromatica</i>	23
		<i>Rhus lanceolata</i>	15
		<i>Rhus virens</i>	13
		<i>Rivina humilis</i>	49
		<i>Rosa banksiae</i>	47
		<i>Rosa</i> 'Belinda's Dream'	21
		<i>Rosa</i> 'Cecile Brunner'	21
		<i>Rosa</i> 'Grandma's Yellow'	21
		<i>Rosa</i> 'Knock Out'	21
		<i>Rosa</i> 'Livin' Easy'	21
		<i>Rosa</i> 'Marie Daly'	21
		<i>Rosa</i> 'Marie Pavie'	21
		<i>Rosa</i> 'Martha Gonzales'	21
		<i>'Rosa</i> 'Mutabilis'	21
		<i>Rosa</i> 'Nearly Wild'	23
		<i>'Rosa</i> 'Old Blush'	23
		<i>Rosmarinus officinalis</i>	23
		<i>Rudbeckia hirta</i> var. <i>pulcherrima</i>	25
		<i>Ruellia brittoniana</i>	35
		<i>Russelia equisetiformis</i>	29
		<i>Sabal minor</i>	21
		<i>Sabal Sabal texana</i> or <i>S. mexicana</i>	9
		<i>Salvia coccinea</i>	37
		<i>Salvia farinacea</i>	35
		<i>Salvia greggii</i>	35
		<i>Salvia guaranitica</i>	35
		<i>Salvia</i> 'Indigo Spires'	31
		<i>Salvia leucantha</i>	35
		<i>Salvia lyrata</i>	49
		<i>Salvia microphylla</i>	37
		<i>Salvia penstemonoides</i>	35
		<i>Salvia roemeriana</i>	35
		<i>Santolina chamaecyparissus</i>	49
		<i>Schizachyrium scoparium</i>	41
		<i>Scutellaria suffrutescens</i>	37
		<i>Scutellaria wrightii</i>	37
		<i>Scutellaria ovata</i> subsp. <i>bracteata</i>	37
		<i>Sedum</i> spp.	49
		<i>Setcreasea pallida</i>	49
		<i>Sophora secundiflora</i>	13
		<i>Sorghastrum nutans</i>	41
		<i>Stachys byzantina</i>	31
		<i>Stachys coccinea</i>	39
		<i>Styphnolobium affine</i>	11
		<i>Symphoricarpos orbiculatus</i>	17
		<i>Tagetes lemmonii</i>	27
		<i>Tagetes lucida</i>	33
		<i>Taxodium distichum</i>	7
		<i>Taxodium mucronatum</i>	7
		<i>Tecoma stans</i>	29
		<i>Tetaneuris scaposa</i>	31
		<i>Teucrium chamaedrys</i>	31
		<i>Teucrium cossonii</i>	47
		<i>Teucrium fruticans</i>	19
		<i>Thelypteris kunthii</i>	29
		<i>Trachelospermum jasminoides</i>	45
		<i>Trachycarpus fortunei</i>	13
		<i>Tradescantia</i> spp.	39
		<i>Tulbaghia violacea</i>	37
		<i>Ulmus crassifolia</i>	7
		<i>Ungnadia speciosa</i>	9
		<i>Verbesina virginica</i>	29
		<i>Viburnum rufidulum</i>	15
		<i>Viburnum suspensum</i>	15
		<i>Viguiera stenoloba</i>	37
		<i>Viola missourensis</i>	49
		<i>Wedelia texana</i>	39
		<i>Wisteria frutescens</i>	45
		<i>Xylosma congestum</i>	15
		<i>Yucca pallida</i>	41
		<i>Yucca rupicola</i>	41
		<i>Yucca</i> spp.	41

For additional earthwise landscaping information
and an online plant database, visit

www.growgreen.org



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Photo Credits: (L) = large image (S) = small inset image (C) = cover

Ray Matthews: Cover **Far South Nursery:** Arroyo Sweetwood (L, S), Catmint (L), Desert Broom (L), Greek Myrtle (L), Mexican Flame Vine (L), Mountain Pea (L, S), Texas Dwarf Palmetto (L), Roughleaf Dogwood (L), San Luis Sage (L), Sweet Almond Verbena (L), White Mistflower (L) **Lady Bird Johnson Wildflower Center:** **Andy and Sally Wasowski:** Alamo Vine (L), Apache Plume (L), Beebalm (L), Flameleaf Sumac (S), Golden Groundsel (L), Huisache (L,S), Lyre Leaf Sage (S), Maximilian Sunflower (L), Purple Baptisia (L), Snakeherb (L), Switchgrass (L); **Joseph A. Marcus:** Carolina Buckthorn (L), Datura (L), Lyre Leaf Sage (L), Pine Muhly, Roughleaf Dogwood (L), Purple Wright's Skullcap (L), Wavy Scaly Cloak Fern (L); **Lee Page:** Mealy Blue Sage (L); **Melody Lytle:** Frostweed (S); **Michael Dana:** Spiderwort (L); **Myra B. Allison:** Frostweed (L); **Norman G. Flaigg:** Little Walnut (L, S); **Paul Cox:** Clover Fern (L); **Ray Matthews:** Crossvine (C); **R.W. Smith:** Purple Baptisia (S); **Rachel Cywinski:** Anacua (L); **W.D. and Dolphia Bransford:** Flameleaf Sumac (L), Spider Lily (L), **Meredith O'Reilly:** Anacua (S), Chocolate Daisy (L), Fragrant Sumac (S), Gregg Mistflower (S), Mexican Buckeye (S), Mexican Olive (L,S), Tropical Milkweed (S) **Native Texas Nursery:** Eve's Necklace (L, S), Texas Redbud (L, S) **Plant Resources Center and Bio406d at the University of Texas at Austin:** Coralbean (S), Elbowbush (L), Evergreen Sumac (L,S), Gayfeather (S), Indiangrass (S), Maximilian Sunflower (S), Texas Persimmon (S), Violets (L, S)

Contributing Organizations:

American Society of Landscape Architects, Austin Parks Foundation, Capital Area Master Naturalists, Countryside Nursery, Far South Growers, Keep Austin Beautiful, Lady Bird Johnson Wildflower Center, McNeal Growers, National Wildlife Federation, Native Texas Nursery, Texas A&M, The Great Outdoors, The Natural Gardener, Texas A&M Extension Service/Travis County, TreeFolks, Turfgrass Producers of Texas

City Departments:

Austin Energy, Austin Resource Recovery, Austin Water, Development Services Department, Office of Sustainability, Parks and Recreation Department, Public Works, Watershed Protection Department

With special thanks to all the City of Austin staff past and present, who have contributed to the guide

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outside Austin: \$2.00
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5th Edition, 2014
Revised 2016**

References:

Bender, K. and Damude, N., *Texas Wildscapes: Gardening for Wildlife*, TWPd, 2007

Correll and Johnston, *Manual of the Vascular Plants of Texas*, The University of Texas at Dallas, 1996

Simpson, Benny, *A Field Guide to Texas Trees*, Texas Monthly Press Texas Monthly Press, 1988

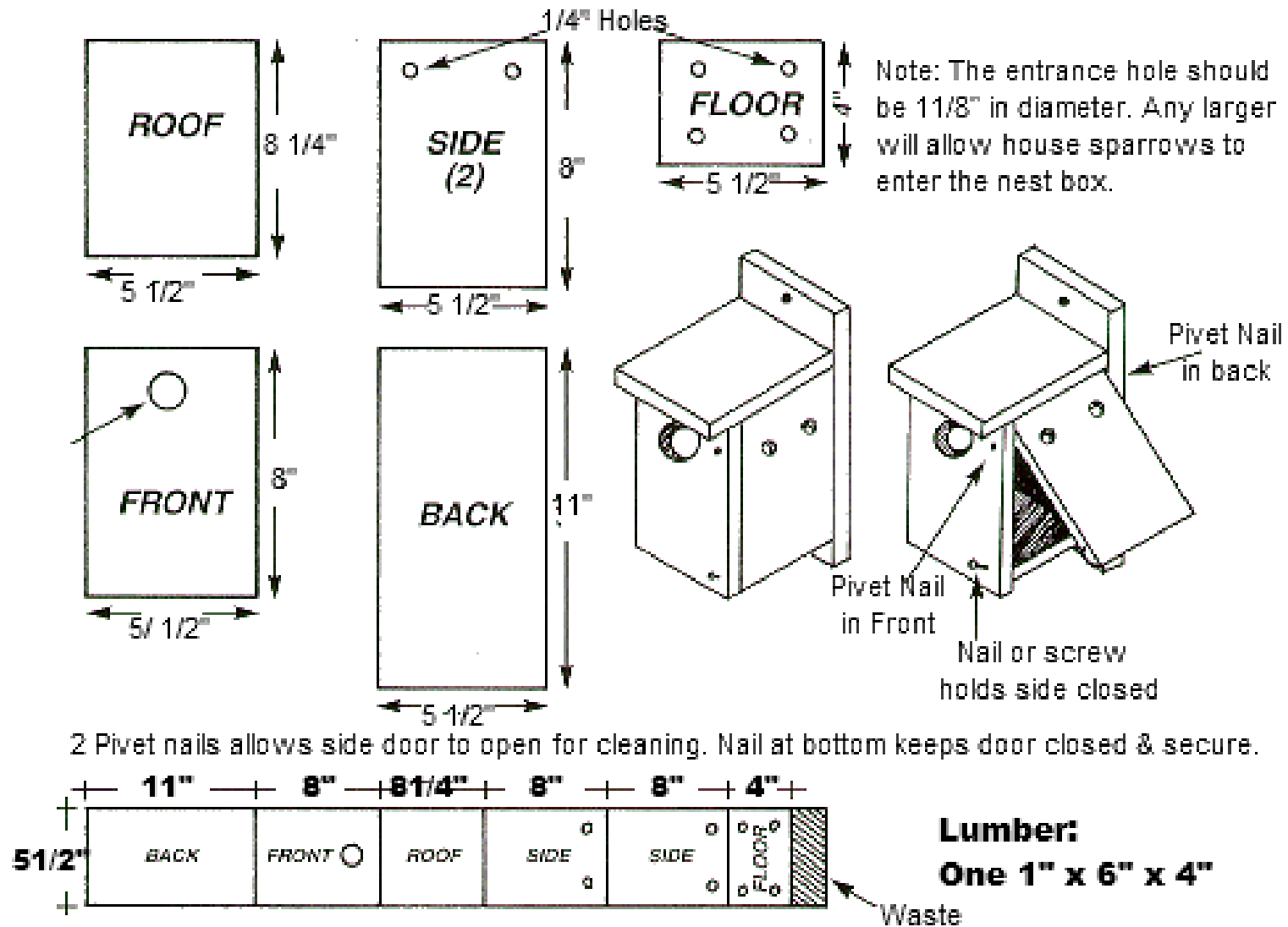
Wasowski A. and Wasowski, S., *Native Texas Plants Second Edition; Landscaping Region by Region*, Texas Monthly Press, 1997

Comments:

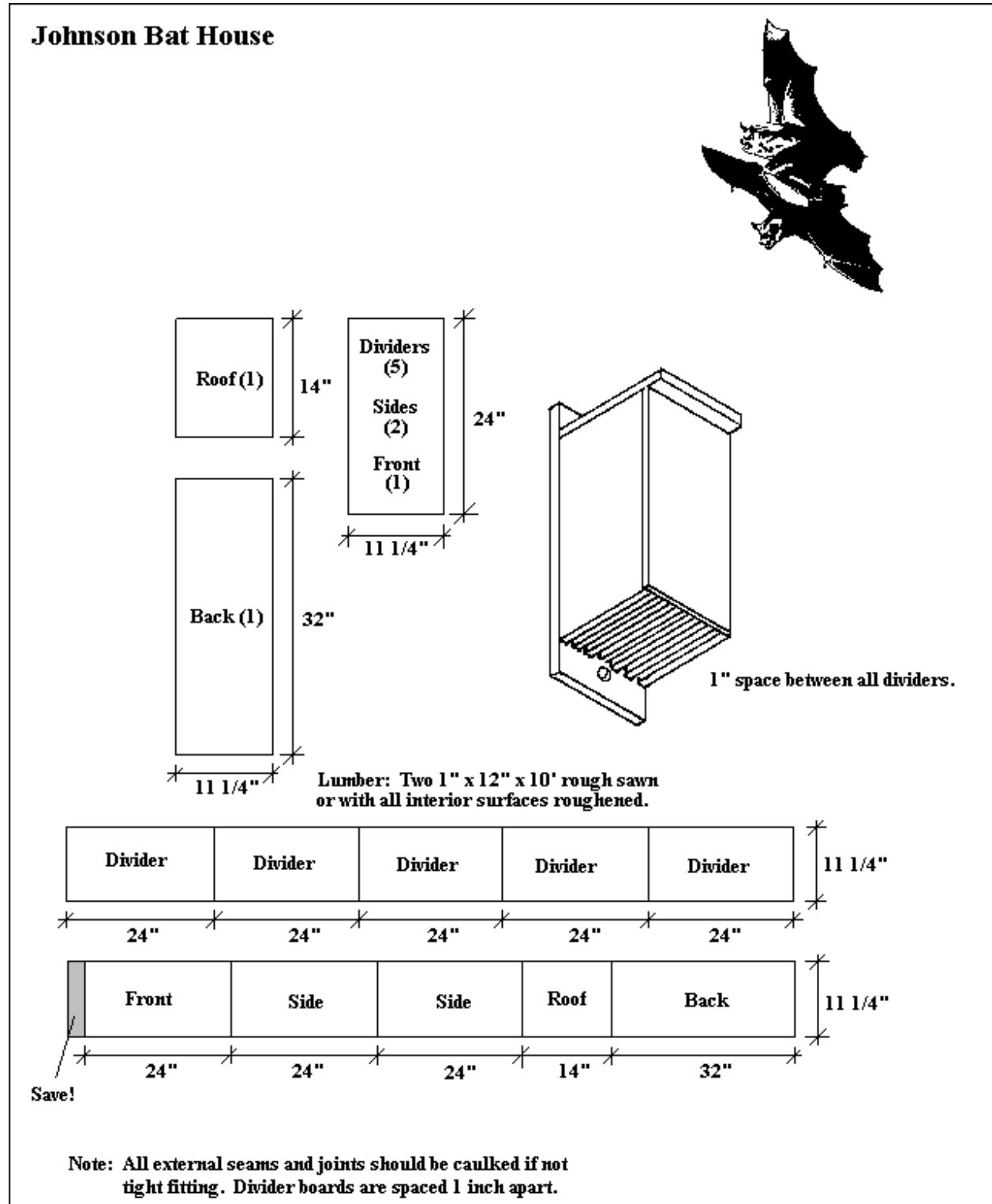
We recognize that there are many other plants well deserving of selection and we welcome your comments and suggestions regarding any new additions and changes you think would be useful. Please call 512-974-2550 or email us through www.growgreen.org.

ATTACHMENT H. Nest/Bat box design

Wren House Design



Source: <http://www.birdwatching-bliss.com/wren-house-plans.html>. (accessed May 2019)



Source:

<https://web.archive.org/web/20140803181652/http://www.npwrc.usgs.gov/resource/wildlife/ndblinds/johnbat.htm> (accessed May 2019)

ATTACHMENT I. Landscape design

Wildlife Management Advisory Commission Rolling Attendance

	2/19/18 Reg. Mtg.	2/27/18 Spec. Mtg.	3/19/18 Reg. Mtg.	4/16/18 Reg. Mtg.	5/14/18 Reg. Mtg.	6/18/18 Reg. Mtg.	7/16/18 Reg. Mtg.	8/20/18 Reg. Mtg.	9/17/18 Reg. Mtg.	10/15/18 Reg. Mtg.	11/19/18 Reg. Mtg.	12/17/18 Reg. Mtg.	01/28/19 Reg. Mtg.	02/25/19 Reg. Mtg.	03/18/19 Reg. Mtg.
Krawczynski	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Segovia	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
McKinney								P	P	P	P	A	P	P	P
Kneupper	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Hatch			P	P	P	P	P	P	P	P	P	P	P	P	P
Bippert	A	P	P	P	A	P	P	P	P	P	P	P	P	P	P
Sullivan	P	E	P	A	P	P	P	P	P	A	P	P	U	P	P

	4/15/19 Reg. Mtg.	5/20/19 Reg. Mtg.	6/17/19 Reg. Mtg.	7/15/19 Reg. Mtg.											
Krawczynski	P	P	A												
Segovia	P	P	P												
McKinney	A	P	P												
Kneupper	P	P	P												
Vacant															
Bippert	P	P	P												
Sullivan	P	P	P (E)												

P	Present
P-QNM	Present but quorum not meet
E	Excused (Ord. 210 reasons)
A	Voluntary Announced Absense
U	Unannounced Absence
	Not member yet

**2019 Wildlife Management Advisory Commission's Attendance at
City Council Regular Meetings**

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total for year
Krawczynski			P										1
Segovia	P	P		P	P		P						5
McKinney						P							1
Kneupper	P	P	P	P	P	P	P						7
Vacant													0
Bippert	P			P									2
Sullivan							P						1

	Met requirements
	Not met the requirements

Future Agenda Items

Wildlife Management Advisory Commission

August 19, 2019 Regular Meeting

14 days before Meeting	(08/05/19)	Commission and Staff items are due
10 days before Meeting	(08/09/19)	City Administrator and Chair review agenda. City Attorney is sent the agenda for approval.
6 days before Meeting	(08/13/19)	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	(08/15/19)	Post Agenda Packet to City Website
3 days before Meeting	(08/16/19)	(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

Municipal Court = Gray

Oak Wilt Public Education Session = Orange

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 07-15-19

Discussion/Reports

1. Wildlife Management Plan and Health of the wildlife in Garden Ridge
2. Police/Animal Services Wildlife Report
3. City Council Update
4. Ordinance 210
5. Future Agenda Items (Commissioners' input / Announce next meeting: September 16, 2019, at 6pm)

Training Session

- Commissioner Bippert – TBD

September 16, 2019

Regular Meeting

- | | | |
|-------------------------------|------------|---|
| 14 days before Meeting | (09/02/19) | Commission and Staff items are due |
| 10 days before Meeting | (09/06/19) | City Administrator and Chair review agenda. City Attorney is sent the agenda for approval. |
| 6 days before Meeting | (09/10/19) | 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 | (09/12/19) | Post Agenda Packet to City Website |
| 3 days before Meeting | (09/13/19) | (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
 City Holiday = Orange
 Municipal Court = Gray

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					

Approval

1. Minutes 08-15-19

Discussion/Reports

1. Wildlife Management Plan and Health of the wildlife in Garden Ridge
2. Police/Animal Services Wildlife Report
3. City Council Update
4. Ordinance 210
5. Future Agenda Items (Commissioners' input / Announce next meeting: October 21, 2019 at 6pm)

Training Session

- Commissioner McKinney – Bats/The Language of Bats

PENDING FUTURE AGENDA ITEMS

- Education/training session regarding social media from City Attorney (Kneupper)
- Update on research performed on non-drug birth control studies (Segovia).
- Hunting on Hanson Quarry
- Identify signs of wildlife
- Discussion on future surveys, including adult children (age 18 or older) living at home (Kneupper)
- Cost and provider for autopsies of a deer showing signs of Bottleneck (Krawczynski)

UPCOMING EDUCATION/TRAINING SESSIONS

- October – Commissioner Kneupper (bees)