



Blue-winged Teal, *Spatula discors*,  
On Cibolo Creek

# Cibolo Preserve Waterfowl Monitoring

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2019

This document summarizes data obtained during the seventh Waterfowl monitoring season on the Cibolo Preserve in Boerne, Texas from October 2018 to June 2019.

# CIBOLO PRESERVE WATERFOWL MONITORING 2019

## **Monitors:**

Team Leader – Tom Riordan  
Team member – Tara Randle  
Team member – Betty Dunn  
Team member – Dick Park  
Alternate team member – Kenneth Butler

**Cibolo Preserve / Cibolo Creek Monitored Bi-Weekly:** October 10, 2018 through June 26, 2019.

## Background

The seventh season of monitoring was completed on June 26, 2019 as a sustained effort in the identification and population count of waterfowl present at the Cibolo Preserve. The team remained the same as a very cohesive and complimentary unit of monitors. An alternate was added to the team to fill in on dates a primary team member is unavailable.

This survey is intended to determine actual waterfowl species present including species in the *Anatidae*, *Rallidae*, & *Podicipedidae* families. These families include species commonly referred to as ducks, geese, waterfowl, grebes, cormorants and coots. The survey is documenting species presence and the timing of presence at the Cibolo Preserve.

Waterfowl are generally present on the Cibolo Preserve from October through May, as an over-wintering site along the Central Flyway, a well-documented corridor for bird migration. With 1.5 continuous miles of Cibolo Creek providing plentiful forage, mild winter temperatures, and habitat protected from human interference, the Cibolo Preserve is an ideal location for waterfowl to congregate.

This seventh year of monitoring began on October 10, 2018 and continued through June 26, 2019 when one neo-tropic cormorant was sighted. No other identifiable waterfowl were observed at the June 26th monitoring; therefore, the season was considered ended at that survey. The project continues one day each month during the summer month in addition to the twice per month during the regular waterfowl monitoring season.

Four study areas along the creek continued to be utilized as waterfowl habitat. The same names that were used in the inaugural study continue to be used; Ronald's Reach, Bill's Reach, Rookery Bend and Fern Bank (Figure 5). Within each of these study areas the species present, population count and, if possible, gender identification were recorded.

Gadwall, *Anas strepera* continued to be the most prevalent waterfowl species on the Cibolo Preserve. However, it's abundance this year at 23.5%, continues to decrease compared to years past (41% in 2018, 62% in 2017). The next most prevalent **identified** species was the Blue-

winged Teal, *Spatula discors* accounting for 21.9% of species abundance and pictured on the cover. This is the first year Blue-winged Teal made the top three species. Wood duck, *Aix sponsa* at 16.7% rounded out the top three for the first time. Following in 4<sup>th</sup> and 5<sup>th</sup> were the Black-bellied whistling-duck, *Dendrocygna autumnalis* at 3.7% and the Mallard, *Anas platyrhynchos* at 3% (Table 2). There was another increase in **unidentified** species this year. Unidentified waterfowl accounted for 17.7% of the total number of waterfowl sighted, with the largest number of unidentified birds being in the Rookery Bend segment of Cibolo Creek. This trend follows unidentified species numbers from last year and appears to be related to the area surveyed and lack of visibility and not a reflection of the monitors skills in ID.

Notable observations this year include ten Neotropic Cormorant, *Phalacrocorax brasilianus* following last years first appearance of the species with a count of seven in 2018. Single observations of a Ring-necked Duck, *Aythya collaris* and an American Coot, *Fulica Americana* were atypical sightings. The Lesser Scaup count was the lowest for this species since the survey started with a count of only 8 individuals.

The 2018-2019 season total count was 558 or approximately 1/3 of last years count of 1576 (Figure 1). Continuance of this survey over the long term will help to determine if the Cibolo Preserve is an essential overwintering area for waterfowl, especially in times of water scarcity across the region. The years 2015, 2016 and 2018 had above average rainfall for the time period January – June. Complete results for this season are presented on the following pages as figures and tables.

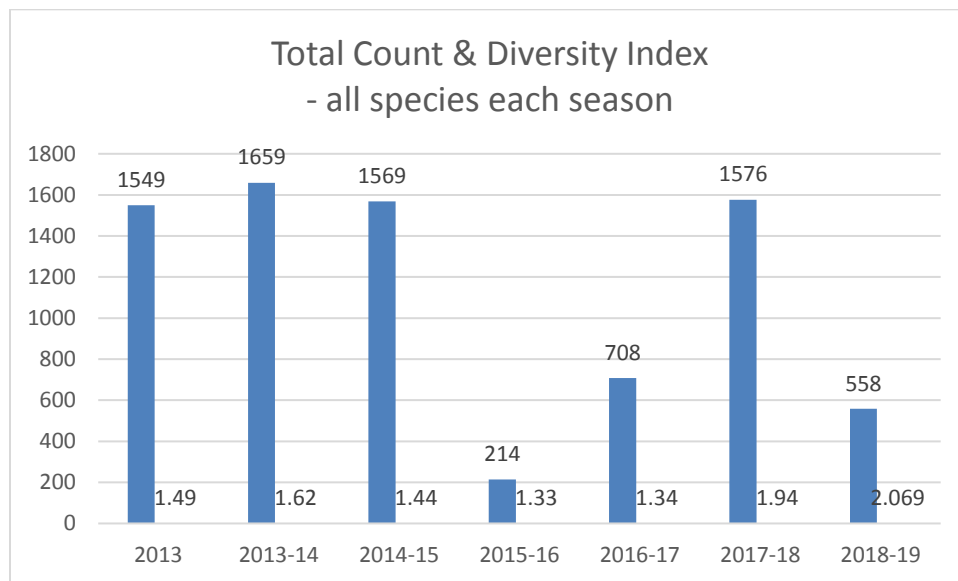


Figure 1. Total counts and diversity index of ALL species observed each season. 2013 was the inaugural year of the survey and only a partial study year from January – May. All other years were complete seasons.

Species	2014	2015	2016	2017	2018	2019
Black-bellied Whistling-Duck	354	54	0	3	39	21
Wood Duck	6	6	0	14	4	93
Gadwall	821	937	123	438	647	131
American Wigeon	18	5	0	1	37	3
Mallard	24	147	1	5	101	17
Blue-winged Teal	91	74	14	5	66	122
Northern Shoveler	72	11	0	16	39	12
Northern Pintail	0	0	0	0	0	0
Green-winged Teal	25	16	37	0	5	11
Redhead	1	2	0	0	0	0
Ring-necked Duck	0	1	0	0	7	1
Lesser Scaup	52	59	19	52	119	8
Bufflehead	153	216	16	121	205	14
Hooded Merganser	2	10	1	16	37	5
Red-breasted Merganser	2	14	0	0	0	0
Ruddy Duck	0	0	2	2	0	0
Pied-billed Grebe	9	7	1	0	0	3
American Coot	1	0	0	0	1	1
Double-crested Cormorant	18	6	0	16	17	7
Common Golden-eye	6	0	0	0	4	0
Unidentified	4	4	0	19	240	99
Neotropic Cormorant*	0	0	0	0	7	10
Cinnamon Teal *	0	0	0	0	1	0
Total	1659	1569	214	708	1576	558

Table 1. Total Count each species for each season 2014 through 2019.

<b>Species</b>	<b>Count</b>	<b>Species Abundance (P*100)</b>	<b>Species Diversity (D)</b>
Black-bellied Whistling-Duck	21	3.763	0.123434708
Wood Duck	93	16.667	0.298626578
Gadwall	131	23.477	0.340215367
American Wigeon	3	0.538	0.028095412
Mallard	17	3.047	0.106361067
Blue-winged Teal	122	21.864	0.332403631
Northern Shoveler	12	2.151	0.082568867
Northern Pintail	0	0.000	----
Green-winged Teal	11	1.971	0.077403406
Canvasback	0	0.000	----
Redhead	0	0.000	----
Ring-necked Duck	1	0.179	0.011333977
Lesser Scaup	8	1.434	0.060859031
Bufflehead	14	2.509	0.092462765
Hooded Merganser	5	0.896	0.042248397
Red-breasted Merganser	0	0.000	----
Ruddy Duck	0	0.000	----
Pied-billed Grebe	3	0.538	0.028095412
American Coot	1	0.179	0.011333977
Double-crested Cormorant	7	1.254	0.054926777
Sandpiper	0	0.000	----
Common Golden-eye	0	0.000	----
Grebe sp.	0	0.000	----
Unidentified	99	17.742	0.306800488
Neotropic Cormorant*	10	1.792	0.072074801
Cinnamon Teal *	0	0.000	----
<b>Total</b>	<b>558</b>	<b>100.000</b>	<b>2.06924466</b>

Table 2. 2019 Season specific totals for each species with calculated species abundance and diversity. Calculated using the Shannon-Wiener Index (H') a commonly used diversity index in ecological studies. Species diversity can range from 0-5; commonly it will fall within 1.5-3.5. Zero indicates very low species diversity and five indicates the most species diversity. \*not included in study area counts shown in Table 3 or figure 4 since are rare sightings.

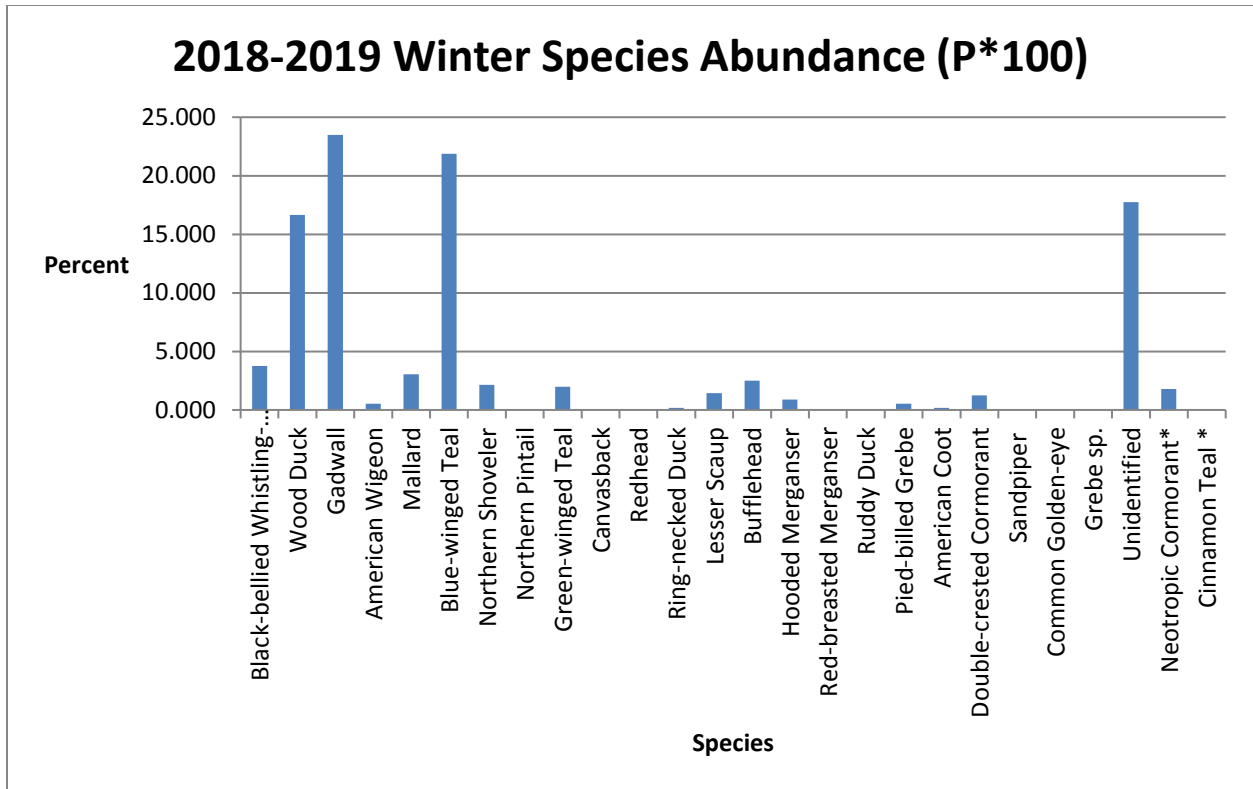


Figure 2. Total Species Abundance for 2018-19 Season.

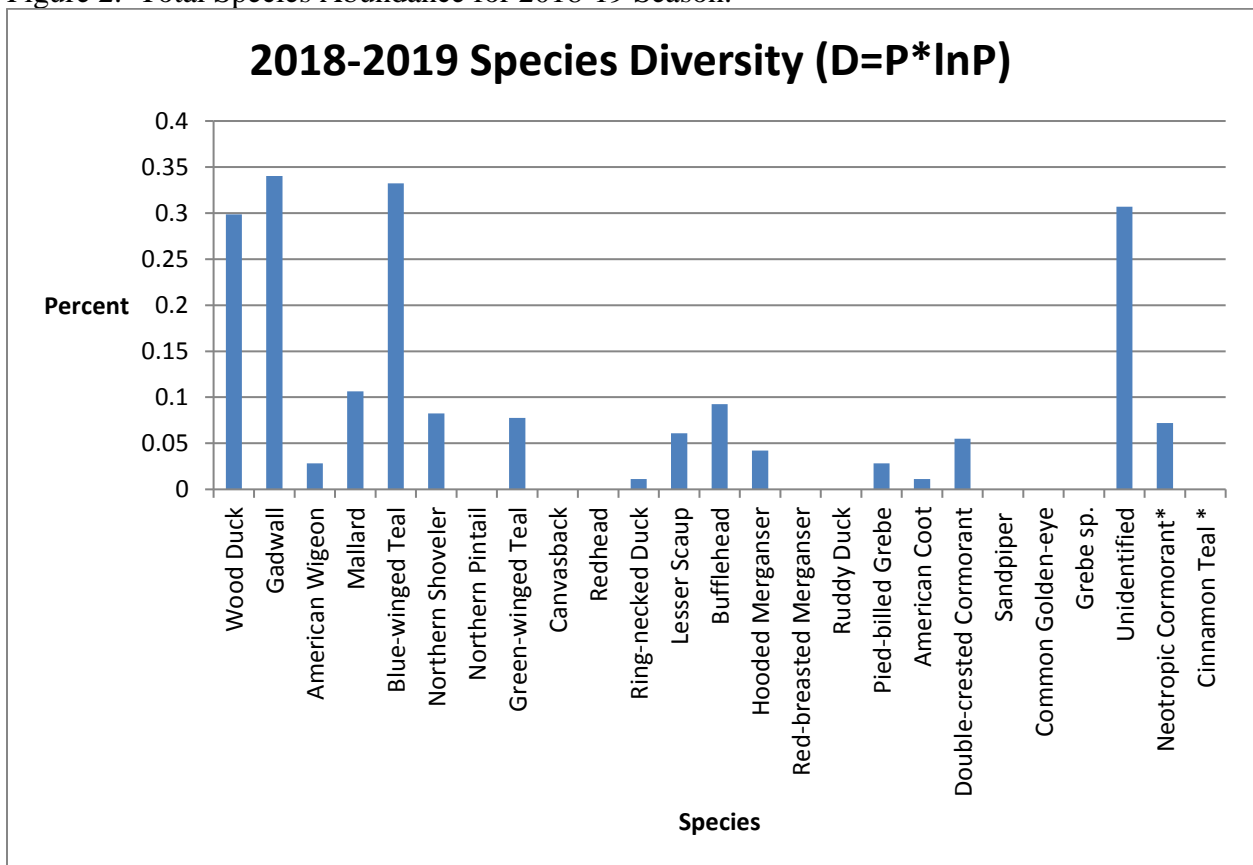


Figure 3. Total Species Diversity for 2018-19 Season. \*not included in area counts shown below.

Species	Ron's Reach	Bill's Reach	Rookery Bend	Fern Bank	Total
Black-bellied Whistling-Duck	0	8	11	2	21
Wood Duck	28	0	49	16	93
Gadwall	20	19	83	9	131
American Wigeon	2	1	0	0	3
Mallard	0	0	8	9	17
Blue-winged Teal	3	67	44	8	122
Northern Shoveler	0	10	2	0	12
Northern Pintail	0	0	0	0	0
Green-winged Teal	0	0	8	3	11
Canvasback	0	0	0	0	0
Redhead	0	0	0	0	0
Ring-necked Duck	0	1	0	0	1
Lesser Scaup	1	2	5	0	8
Bufflehead	0	4	0	10	14
Hooded Merganser	0	0	3	2	5
Red-breasted Merganser	0	0	0	0	0
Ruddy Duck	0	0	0	0	0
Pied-bill Grebe	2	1	0	0	3
American Coot	0	0	1	0	1
Double-crested Cormorant	0	0	7	0	7
Sandpiper	0	0	0	0	0
Common Goldeneye	0	0	0	0	0
Grebe sp.	0	0	0	0	0
Unidentified	14	14	50	21	99
					548
Totals per area	70	127	271	80	

Table 3. 2018-19 Season specific count of each species observed in each study area.

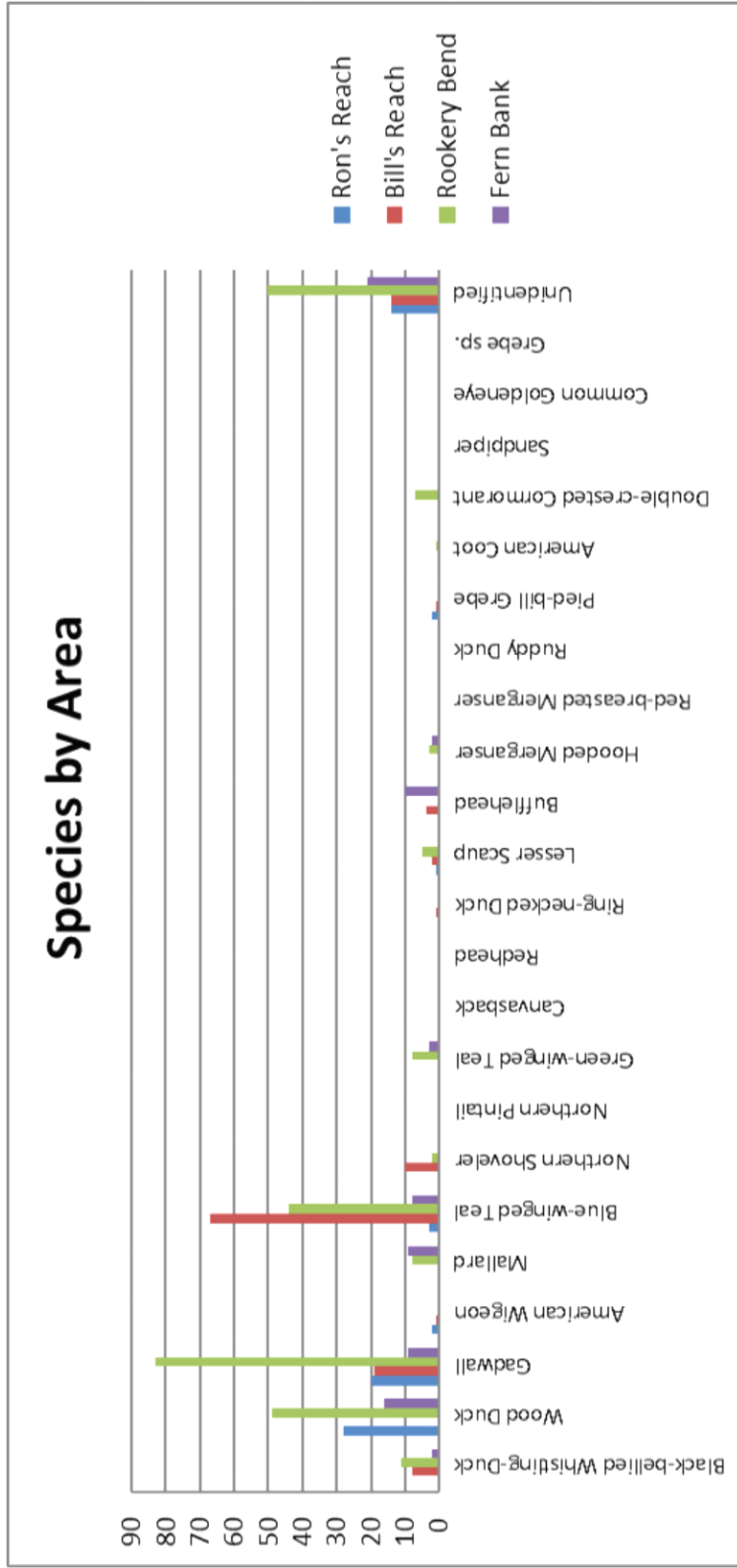


Figure 4. 2019 Survey - Species by study area.



# Waterfowl Study Areas at Cibolo Preserve

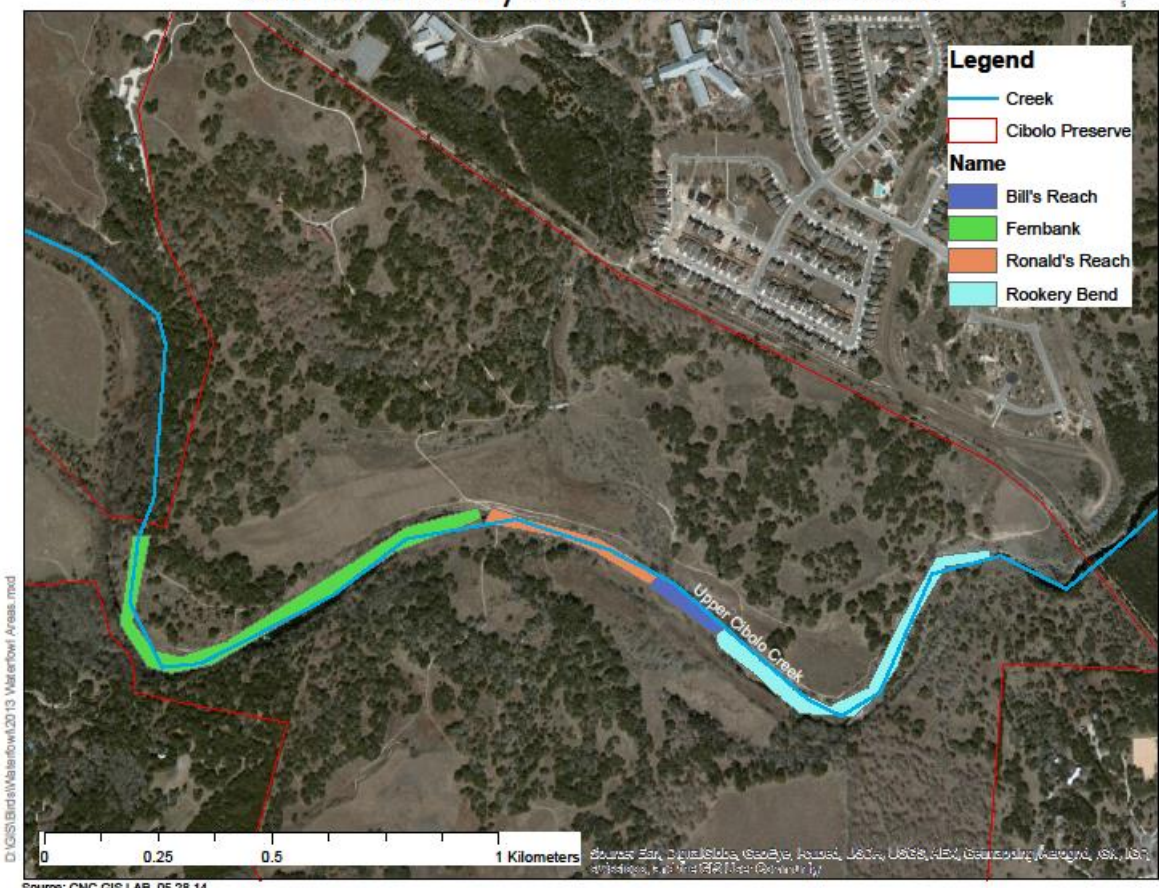


Figure 5. Study reaches on the Cibolo Creek at Cibolo Preserve