



*Spatula cyanoptera* – Cinnamon Teal  
On Cibolo Creek

# Cibolo Preserve Waterfowl Monitoring

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2018

This document summarizes data obtained during the sixth Waterfowl monitoring season on the Cibolo Preserve in Boerne, Texas from October 2017 to June 2018.

# CIBOLO PRESERVE WATERFOWL MONITORING 2018

## **Monitors:**

Team Leader – Tom Riordan  
Team member – Tara Randle  
Team member – Betty Dunn  
Team member – Dick Park

**Cibolo Preserve / Cibolo Creek Monitored Bi-Weekly:** October 11, 2017 through May 23, 2018.

## Background

The sixth season of monitoring was completed on May 23, 2018 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. The Cibolo Preserve funded the purchase of a waterfowl ID course from the Cornell Lab of Ornithology Bird Academy for each of the monitors to refine their waterfowl identification skills in February 2018.

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 sixth year of monitoring began on October 11, 2017 and continued through May 23, 2018 when four black-bellied whistling duck were sighted. No identifiable waterfowl were observed at the June 27th monitoring; therefore, the season was considered ended in May. The team, being the dedicated birders they are, continue through the summer months on the fourth Wednesday of each month from May – September, to see what waterfowl may be utilizing the Cibolo Creek and to also document other bird species. The project continues one day each month during the summer months as well as 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 accounting for nearly 41% of waterfowl observations this season. (in the prior season the Gadwall were 62%). The next most prevalent **identified** species was the *Bucephala albeola* or Bufflehead at 13%. The Lesser Scaup, *Aythya affinis* at only 7.5% of the 17-18 season observations, was the third most observed species and is nearly identical to the prior season at 7.3% (Table 2). There was a significant increase in **unidentified** species this year. Unidentified waterfowl accounted for 15.22% of the total number of waterfowl sighted, with the largest number of unidentified birds being in the Rookery Bend segment of Cibolo Creek. It is uncertain if the higher percentage of unidentified waterfowl is due to reduced visibility in the area or if additional training is needed.

Notable observations this year include seven Ring-necked Ducks, *Aythya collaris* and a single Cinnamon Teal, *Spatula cyanoptera*. The former last observed in 2015 and the latter a first for this survey. It was our highest count ever of the Hooded Merganser at 37 individuals counted or 2.35% of all waterfowl observed (Table 1). Additionally notable was the observation of the Neotropic Cormorant, *Phalacrocorax brasilianus*, this species reaches the upper limits of its range in east and far south Texas so is considered only a rare sighting. It will be interesting to see if we continue to observe it in the future, indicating a shift of range. Lacking entirely from this year’s survey was the Ruddy Duck and Pied-billed Grebe.

The 2017-2018 season count at 1576 is more than double the 708 individuals observed during the 2016-17 season and more in line with the counts obtained in the inaugural years of this survey (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 and 2016 had above average rainfall. Complete results for this season are presented on the following pages as figures and tables.

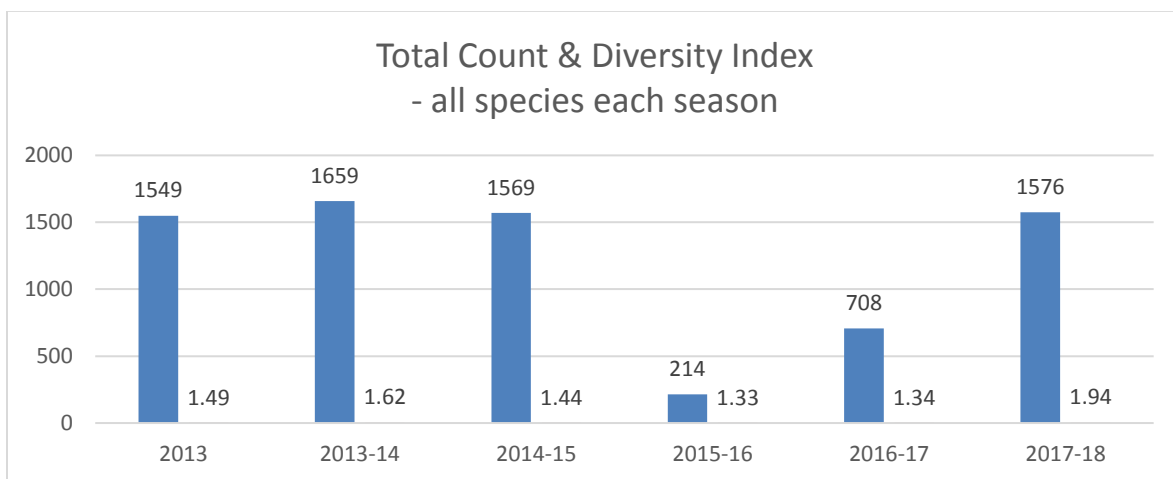


Figure 1. Total counts and diversity index of ALL species observed each season. 2013 was the inaugural year of the survey and only a partial study year from January – May.

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

Table 1. Total Count each species for each season 2014 through 2018.

<b>Species</b>	<b>Count</b>	<b>Species Abundance (P*100)</b>	<b>Species Diversity (D)</b>
Black-bellied Whistling-Duck	39	2.475	0.091538237
Wood Duck	4	0.254	0.015168403
Gadwall	647	41.053	0.365497105
American Wigeon	37	2.348	0.088079894
Mallard	101	6.409	0.17607868
Blue-winged Teal	66	4.188	0.132879045
Northern Shoveler	39	2.475	0.091538237
Northern Pintail	0	0.000	----
Green-winged Teal	5	0.317	0.018252561
Canvasback	0	0.000	----
Redhead	0	0.000	----
Ring-necked Duck	7	0.444	0.024059103
Lesser Scaup	119	7.551	0.195075566
Bufflehead	205	13.008	0.26530789
Hooded Merganser	37	2.348	0.088079894
Red-breasted Merganser	0	0.000	----
Ruddy Duck	0	0.000	----
Pied-billed Grebe	0	0.000	----
American Coot	1	0.063	0.004671729
Double-crested Cormorant	17	1.079	0.048858086
Sandpiper	0	0.000	----
Common Golden-eye	4	0.254	0.015168403
Grebe sp.	0	0.000	----
Unidentified	240	15.228	0.286599951
Neotropic Cormorant*	7	0.444	0.024059103
Cinnamon Teal *	1	0.063	0.004671729
<b>Total</b>	<b>1576</b>	<b>100.000</b>	<b>1.935583616</b>

Table 2. 2018 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.

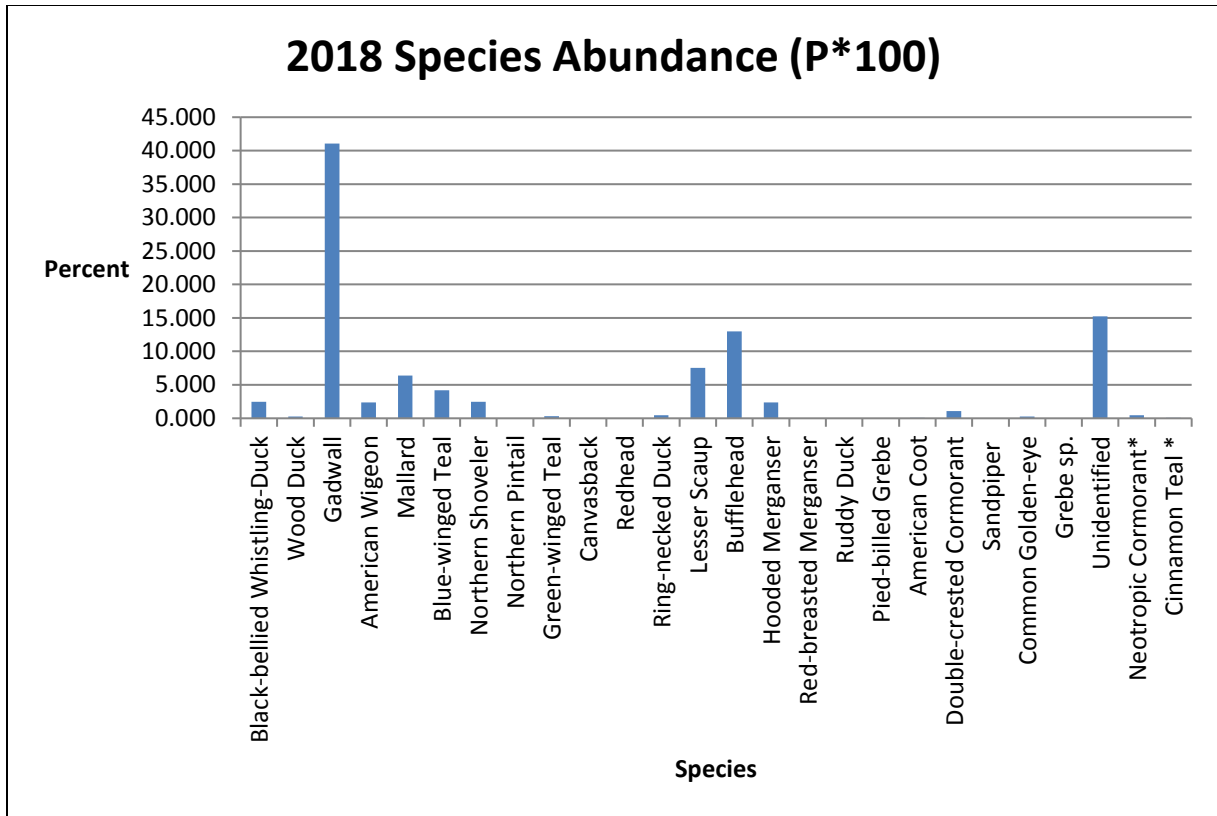


Figure 2. Total Species Abundance for 2017-18 Season.

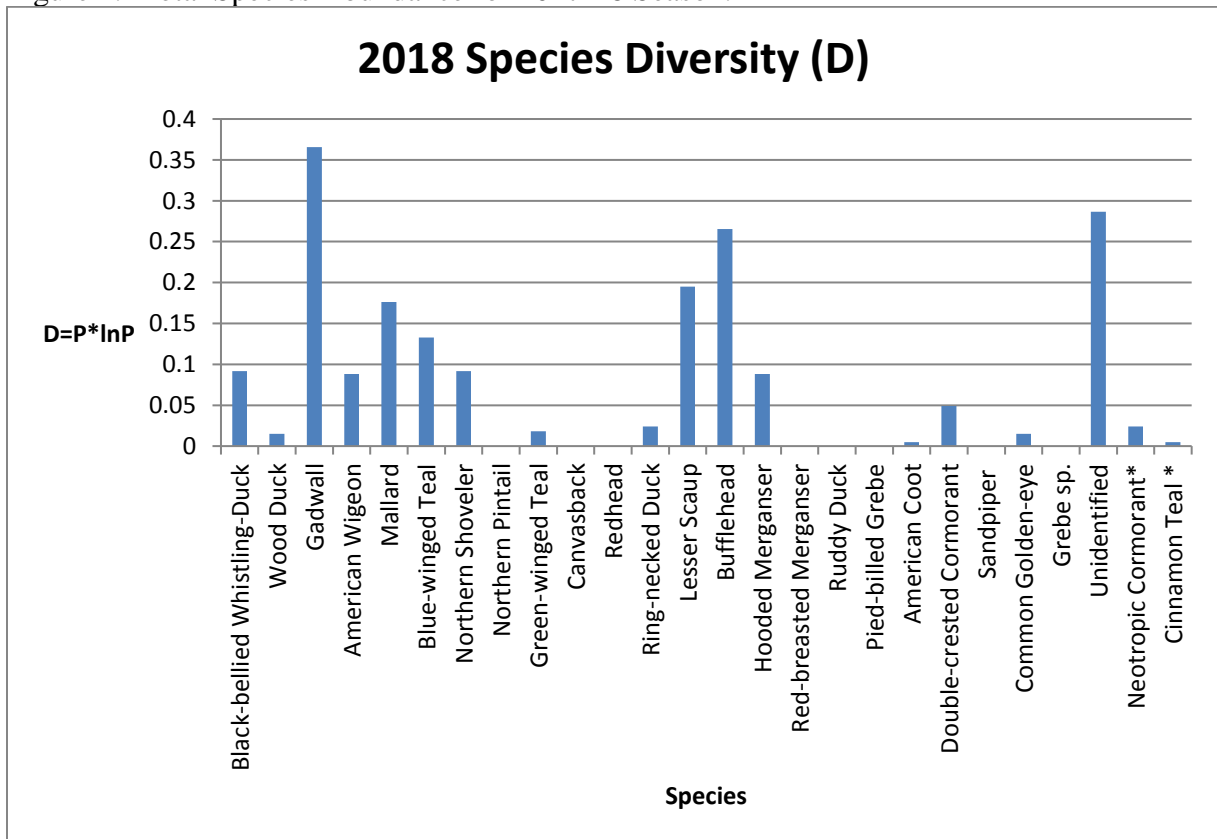


Figure 3. Total Species Diversity for 2017-18 Season.

<b>Species</b>	<b>Ron's Reach</b>	<b>Bill's Reach</b>	<b>Rookery Bend</b>	<b>Fern Bank</b>	<b>Total</b>
Black-bellied Whistling-Duck	6	0	25	8	39
Wood Duck	0	0	1	3	4
Gadwall	217	141	139	150	647
American Wigeon	0	15	0	22	37
Mallard	9	2	59	31	101
Blue-winged Teal	13	0	34	19	66
Northern Shoveler	6	10	23	0	39
Northern Pintail	0	0	0	0	0
Green-winged Teal	0	0	5	0	5
Canvasback	0	0	0	0	0
Redhead	0	0	0	0	0
Ring-necked Duck	0	6	1	0	7
Lesser Scaup	41	39	21	18	119
Bufflehead	61	38	41	65	205
Hooded Merganser	19	6	12	0	37
Red-breasted Merganser	0	0	0	0	0
Ruddy Duck	0	0	0	0	0
Pied-bill Grebe	0	0	0	0	0
American Coot	0	0	0	1	1
Double-crested Cormorant	0	0	5	12	17
Sandpiper	0	0	0	0	0
Common Goldeneye	0	0	0	4	4
Grebe sp.	0	0	0	0	0
Unidentified	53	27	107	53	240
Neotropic Comorant					7
Cinnamon Teal					1
					1576
Totals per area	425	284	473	386	

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

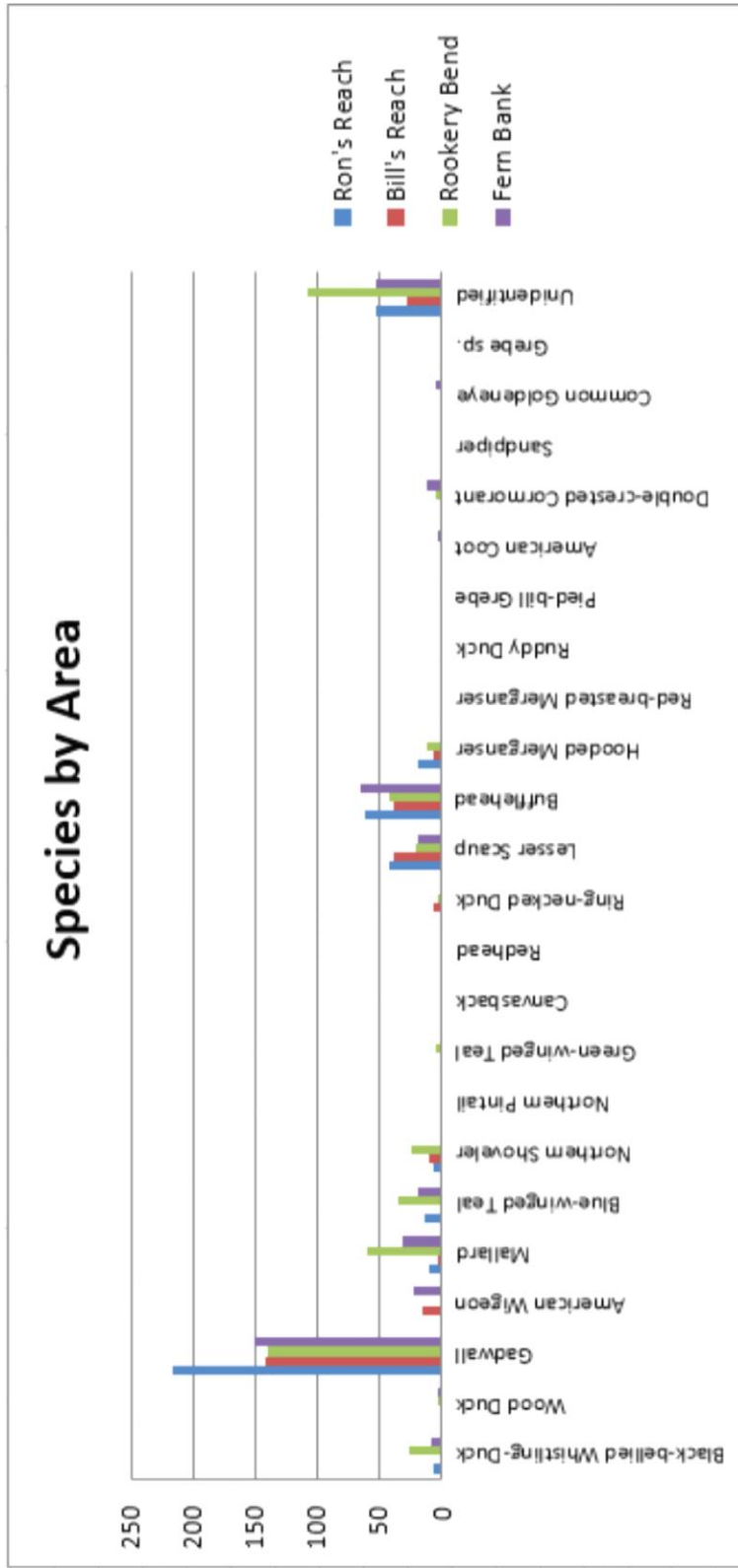


Figure 4. 2018 Survey - Species by study area.



# Waterfowl Study Areas at Cibolo Preserve

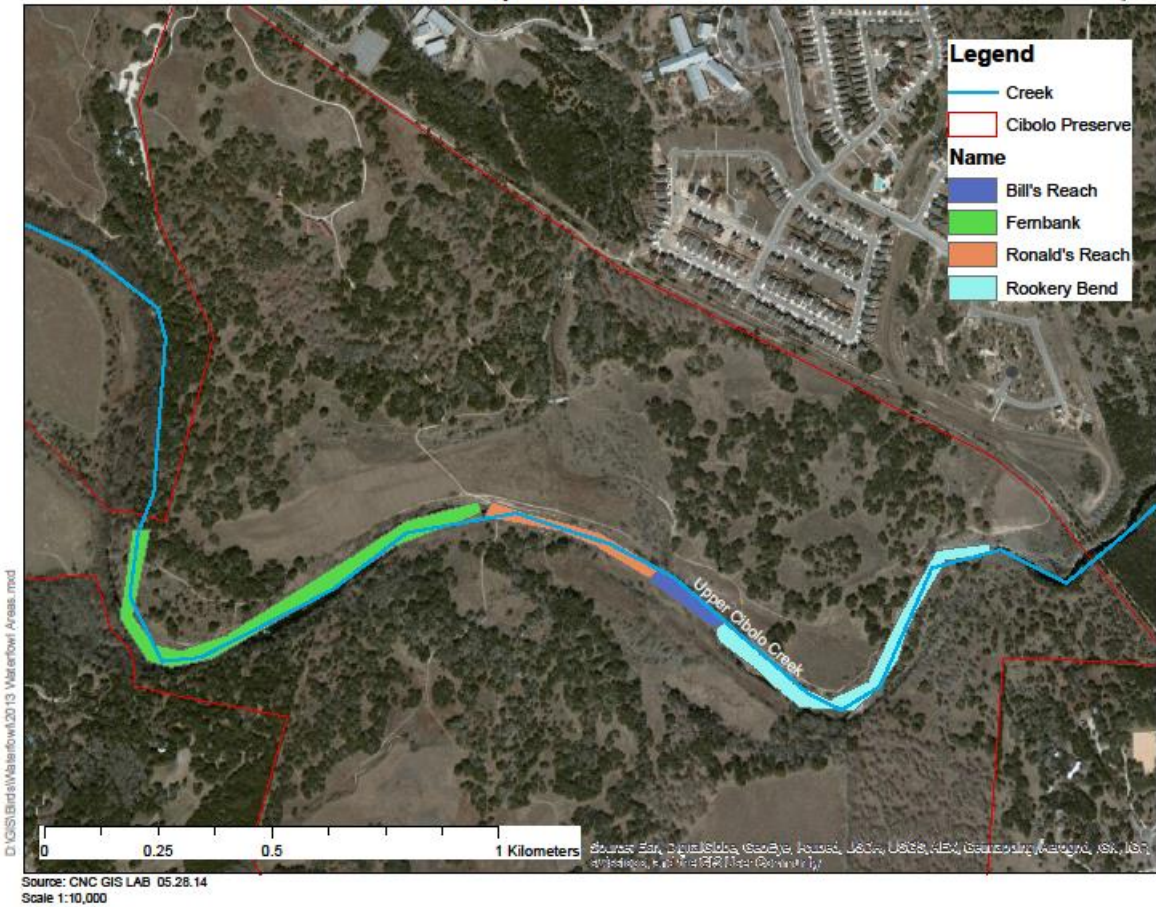


Figure 5. Study reaches on the Cibolo Creek at Cibolo Preserve