

Brazoria National Wildlife Refuge

Master Naturalist Project Team

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Special Thanks to our Mentors – Dave Brandes and Becky McClendon

Project Overview -

Team selected one area of BNWR, Olney Pond, to observe over an 8 week timeframe from the same location.

Investigation Preconceptions -

Over time, by observing the same area of BNWR, the team would observe noticeable changes in bird life, vegetation, water levels, animal life, etc. due to changes in the recorded variables.

Olney Pond Observation Overview



25-Feb



28-Mar



31-Mar

Variables Observed and Recorded

- Date
- Time
- Observer(s)
- Weather Conditions
 - Temperature
 - Wind Speed
 - Wind Direction
- Bug Level
- Birds
- Water Conditions/Level (vs. weir)
- Vegetation
- Animals
- Insect/Butterfly
- Additional observations of note



SVOP Water Network Team - 2018

Date _____ Time _____

Observer's _____

Weather Conditions - (Sunny, Cloudy, Rain, Overcast) _____

Temperature _____ Wind Conditions (Direction/Speed) _____ Bug Level (none) H M L

Water Condition Observations _____

Vegetation Observations _____

Animals Observed (including species number) _____

Insects/Butterflies Observed (including species number) _____

Birds Observed (including species number and total)

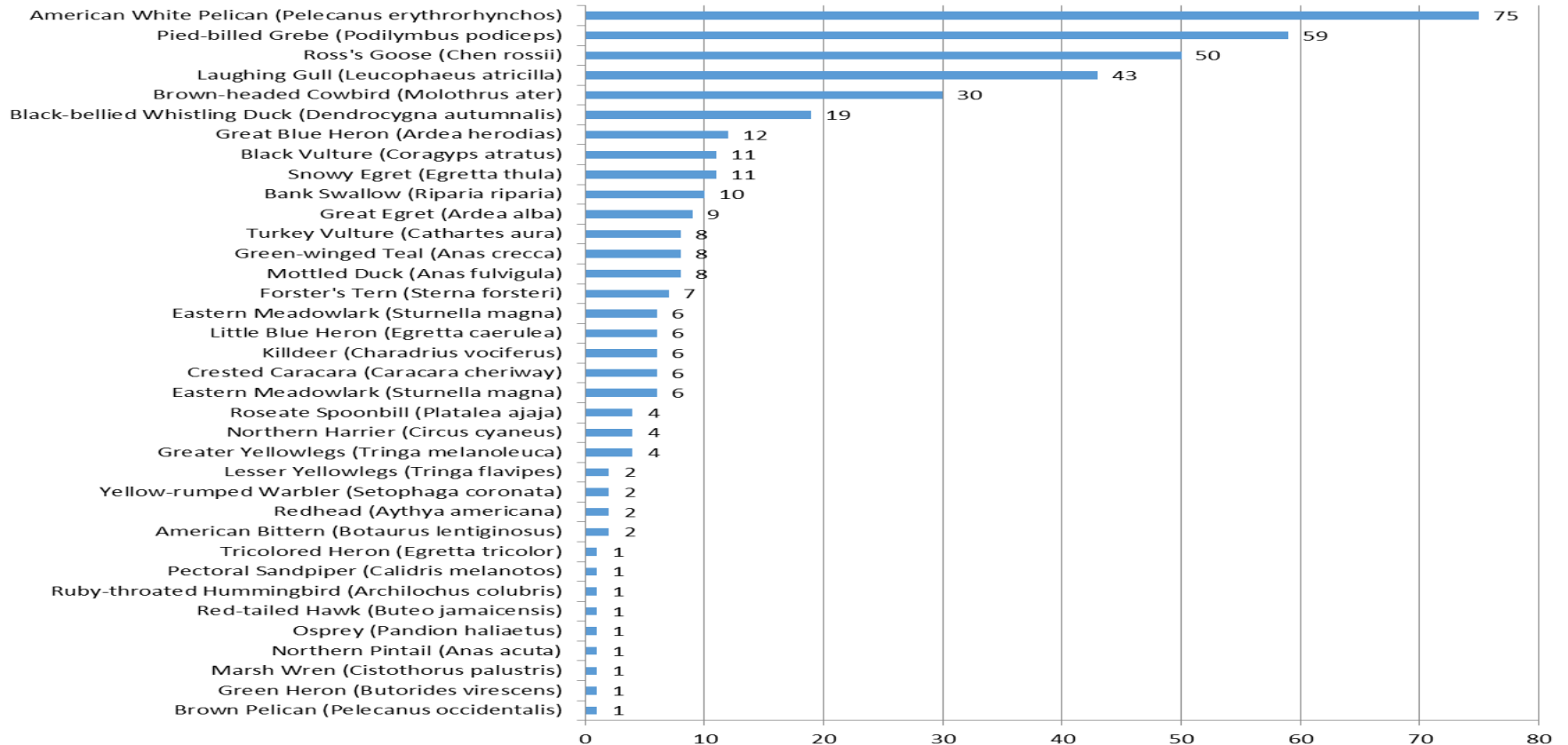
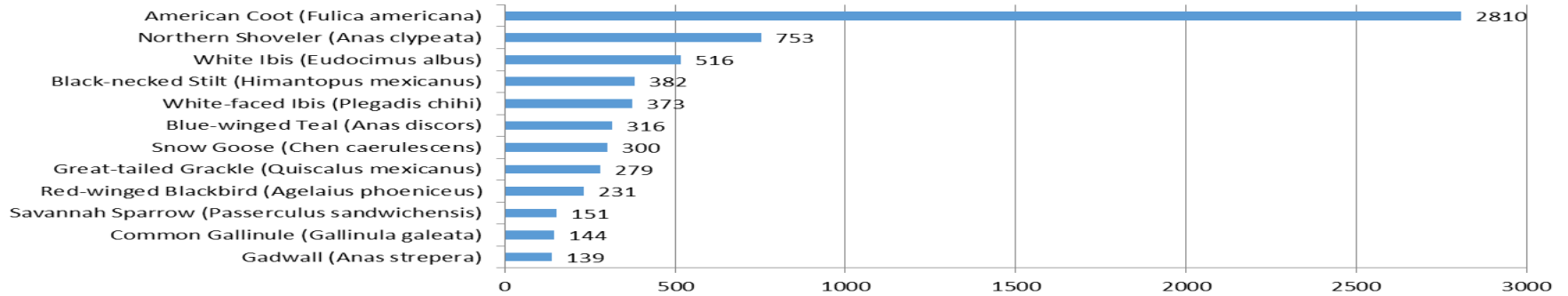
Species	Number	Species	Number
American Coot			
Black-necked Stilt			
Black-winged Stilt			
Belted Kingfisher			
Blue Jay			
Common Gallinule			
Cowbird			
Greater Scaup			
Green-winged Teal			
Laughing Gull			
Lesser Blue Heron			
Marsh Wren			
Pied-billed Grebe			
Ring-necked Pheasant			
White Ibis			
White-necked Stilt			

Additional Observations:

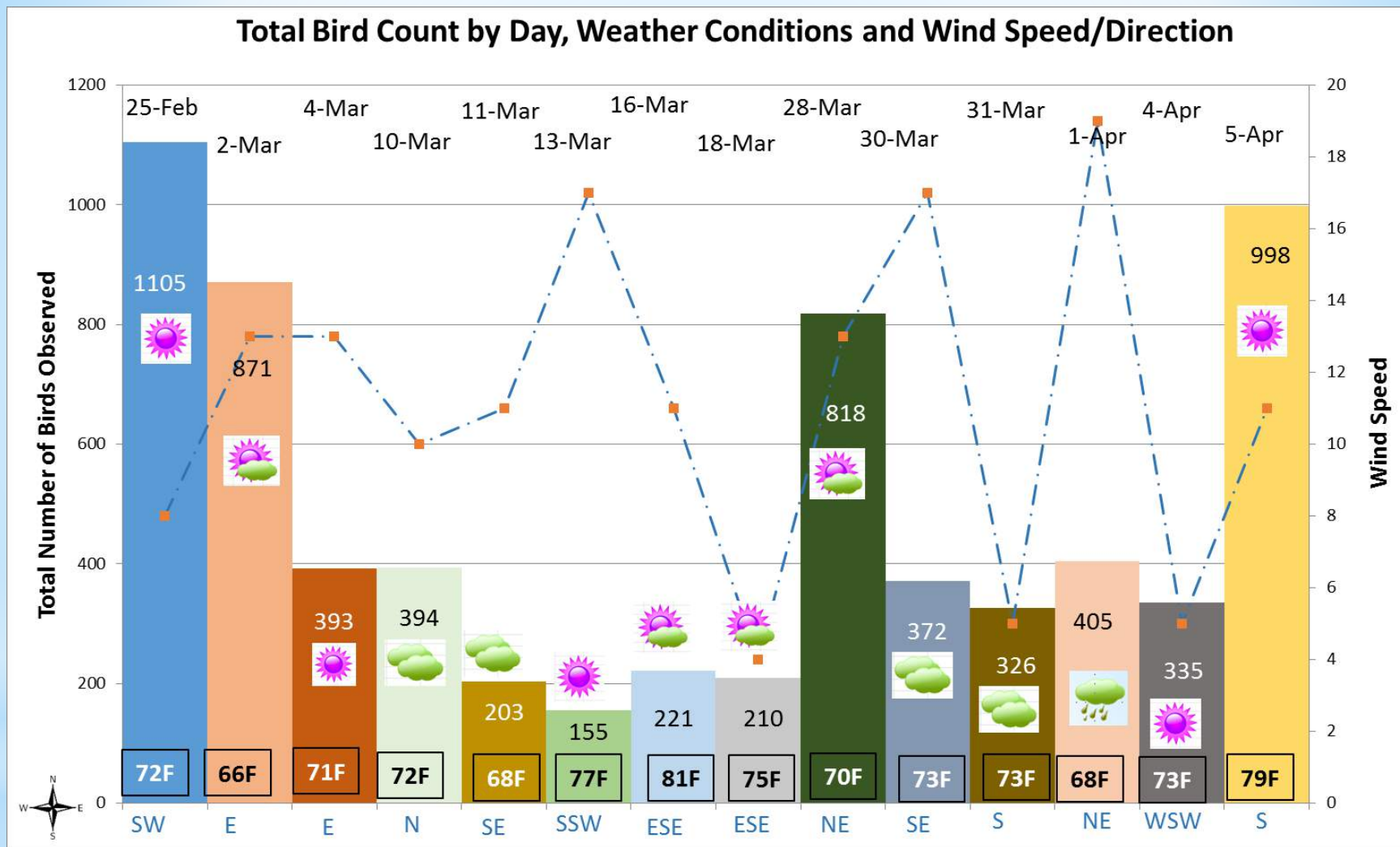


48 Species of Birds Noted

Birds Observed



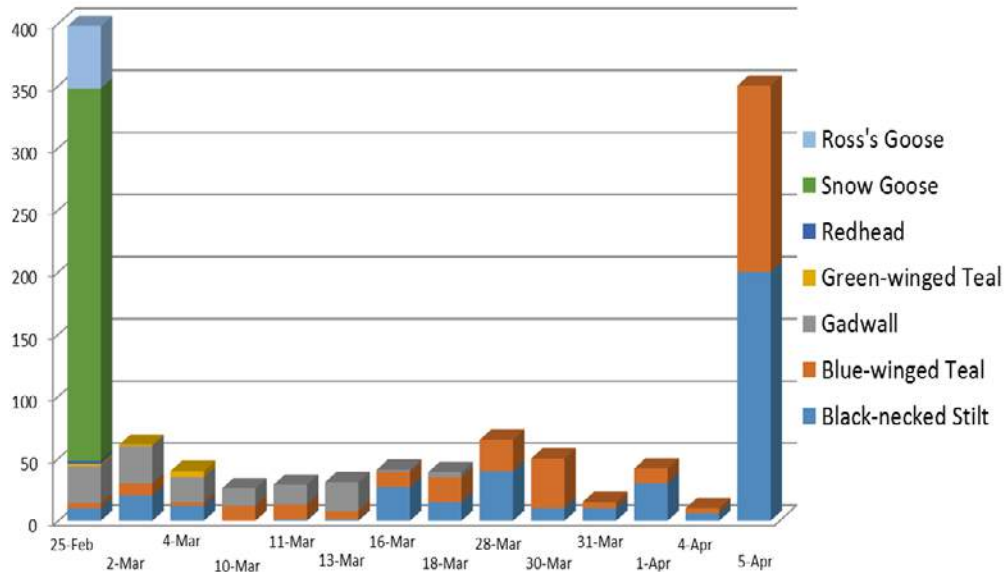
Can we associate bird numbers with other recorded variables?



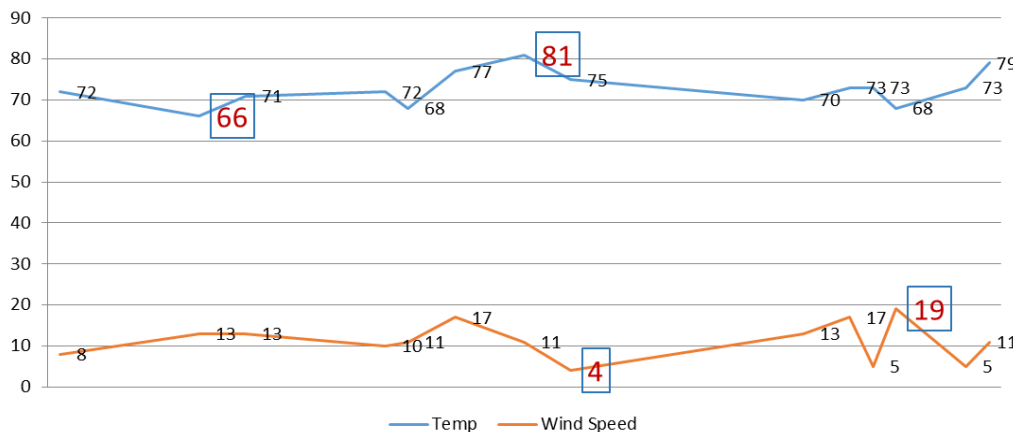
- 14 observations over 41 days.
- Wide array of weather, wind and temperature conditions noted.
- Minimal trends in bird type/number were associated with seasonal changes vs. weather/wind speed/direction observations

Possible reasons for minimal variable correlation

A Sampling of Bird Population Transition vs. Time



Range of Variability of Temp and Wind Speed



- Calendar span of observations were not long enough to determine if there are differences on a wide number of species
 - Winter visitors leaving as we started
 - Summer visitors arriving as we finished
- While we observed over an 8 week period, the weather variability was relatively low
 - 15°F temp difference
 - 15 MPH wind speed difference
- Observing for a longer period of time or over a different seasonal transition might yield different results

An Abundance of Bird Life



Great Blue Heron
Ardea herodias



Greater Yellowlegs
Tringa melanoleuca



Blue-winged Teal
Anas discors



Northern Shoveler
Anas clypeata

Winter Visitors



Laughing Gull
Leucophaeus atricilla



Pied-billed Grebe
Podilymbus podiceps



American Bittern
Botaurus lentiginosus



Gadwall
Anas strepera



American White Pelican
Pelecanus erythrorhynchos

Year-Round Residents



Osprey
Pandion haliaetus



Roseate Spoonbill
Platalea ajaja



White-faced Ibis
Plegadis chihi



Snow Goose
Chen caerulescens



Black-bellied Whistling Duck
Dendrocygna autumnalis



White Ibis
Eudocimus albus



Black-necked Stilt
Himantopus mexicanus

Recent Arrivals



Crested Caracara
Caracara cheriway



Common Gallinule
Gallinula galeata



Pectoral Sandpiper
Callidris melanotos



Ruby-throated Hummingbird
Archilochus colubris



Mottled Duck
Anas fulvigula

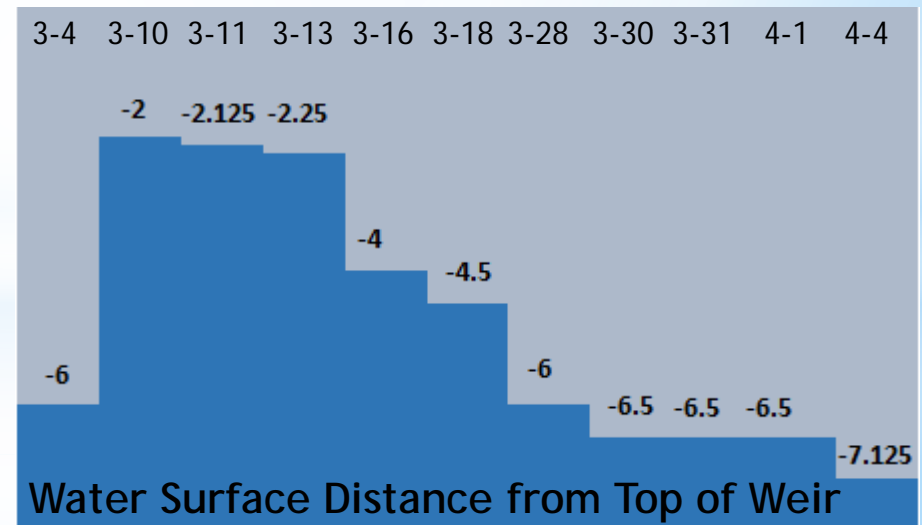


American Coot
Fulica americana

Some examples - not all inclusive

Artificial Ecosystem

- BNWR designed to provide habitat for migratory and over-wintering waterfowl
- Coastal prairie habitat maintained (vs. woodland) using controlled burns
- Fresh water level maintained using weirs
- Man-made road creates clean division between fresh water and brackish/salt water habitats



Flora in bloom

Flowering Plants Observed and Identified

- Tuberos Vervain *Verbena rigida* - N, E, M, I
- Evening Primrose *Oenothera speciosa* - T, E, M
- Sow Thistle or Lion's Paw *Sonchus arvensis* - N, E, M, I
- Southern Dewberry *Rubus trivialis* - T, E, M
- Yellow Sweet Clover *Melilotus officinalis* - N, I
- Small Coastal Germander *Teucrium cubense* - T
- Scarlet Pimpernel *Anagallis arvensis* - N, E, M, I
- Common Yellow Wood Sorrel *Oxalis stricta* - T, E
- Blue Eyed Grass *Sisyrinchium angustifolium* - T
- Cattails *Typha latifolia* - T, E, M, I
- Texas Indian Paintbrush *Castilleja indivisa* - T, E, M
- Texas Vervain *Verbena halei* small - T, M
- Dandelions *Taraxacum officinale* - N, E, M, I



T - Texas Native
N - Naturalized
E - Edible
M - Medicinal
I - Invasive

Other pond visitors



Green, black and blue damselfly
Ischnura ramburii



Little yellow
Pyrisitia lisa



Blue Crab
Callinectes sapidus



Red swamp crawfish
Procambarus clarkii



American Alligator
Alligator mississippiensis



Pearly Crescentspot
Phyciodes tharos



Gulf Coast Ribbon Snake *Thamnophis proximus*
Broad-banded Water Snake *Nerodia fasciata confluens*

Preconception Conclusions

Over time, by observing the same area of BNWR, the team would observe noticeable changes in bird life, vegetation, water levels, animal life, etc. due to changes in the recorded variables.

- Over time, changes were observed but could not be associated with the recorded variables
- Saw evidence of changes in bird species but primarily due to normal migratory habits
- Changes in plant presentation was due to normal seasonal progression
- Team concluded that to potentially link variables with observations more time duration and/or different seasons would be required
- We had fun and learned something about this ecosystem!

