



COMMUNITY SCIENCE BIRD MONITORING

AT THE REGIONAL ATHLETIC COMPLEX AND THE JORDAN RIVER GOLF COURSE

2021 Project Report

PROJECT OVERVIEW

In partnership with Salt Lake City, Tracy Aviary is conducting community science bird monitoring projects at two sites along the Jordan River: 1) the Nature Preserve Area of the Regional Athletic Complex (RAC), and 2) the Jordan River Golf Course (JGC). Beginning in 2015, our goal for this study was to collect data on the avian community of these sites to better understand the birds that occur at the RAC and JGC, determine how the bird community differs between sites and over time, and identify the presence of species of conservation concern. Here, we summarize results from our 2021 field season.

STUDY SITES

We generated six sampling points within the RAC and two sampling points in the JGC where we conducted bird and vegetation surveys. These surveys are part of a larger community science bird monitoring program that includes seven other study sites along the Jordan River. Using information from other study sites, we can gain inference about larger scale patterns and trends in birds communities along the river.

BIRD SURVEY METHODS

Breeding season point count surveys



During May – July of 2021, 10 community scientists and Tracy Aviary staff conducted 8 breeding season point count surveys at the RAC and JGC. Point counts were conducted by pairs of community scientists between dawn and 10am. The ‘observer’ identified all birds seen and heard during six minutes, and noted the number of individuals, distance, and direction. The ‘recorder’ wrote all of the observations on the datasheet, and also noted weather and site variables, such as wind speed.

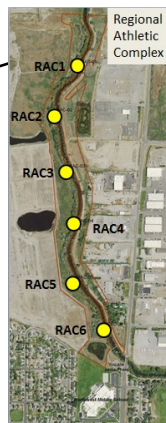
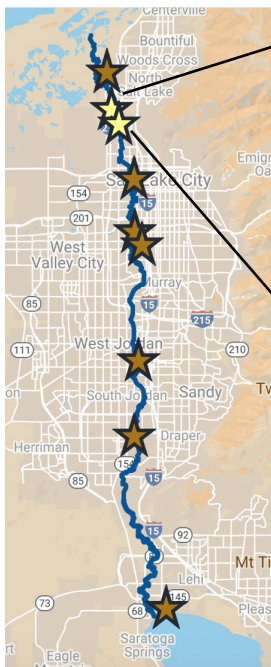
Non-breeding season group surveys

Information from point count surveys was supplemented by non-breeding group surveys conducted in January, February, August, September, October, November, and December 2021. During non-breeding surveys, groups of volunteers led by a trained Tracy Aviary staff person walked a transect through the site and noted all birds seen and heard in the area.

Owl survey

Because owls are less likely to be detected by traditional survey methods, we also conducted 2 owl surveys at the RAC and 3 owl surveys at the JGC during 2021. During February -May, when owls are most likely to be vocalizing, groups of volunteers led by a trained Tracy Aviary staff person walked the sites in the evening listening for owls, stopping periodically to play owl calls and listen for responses.

Bird Monitoring Sites



Regional Athletic Complex (RAC)



Jordan River Golf Course (JGC)

RAC & JGC - 2021 RESULTS

2021 SURVEY SUMMARY

During 8 breeding season surveys at the RAC in 2021, we had 882 bird observations and detected 63 species. During 5 non-breeding season surveys, we had 3,595 bird observations and detected 63 species. We detected one Barn Owl during our owl surveys. With our combined surveys, we had a total species list of 88 species at the RAC in 2021.

During 8 breeding season surveys at the JGC in 2021, we had 529 bird observations and detected 33 species. During 6 non-breeding season surveys, we had 1,275 bird observations and detected 41 species. We had two Great-horned Owl detections during our owl surveys. With our combined surveys, we had a total species list of 52 species at the JGC in 2021.



Song Sparrows are one of the bird species that use habitat at the RAC and JGC.

Since we began monitoring surveys in 2015, we've detected 154 species that use habitat at the RAC and 125 species that use habitat at the JGC

BREEDING SEASON COMMUNITY COMPOSITION

We examined the composition of bird communities across sampling points at the RAC and JGC by comparing relative proportions of bird families and habitat guilds for species detected within 125m of each point during the breeding season. We found relatively high proportions of swallows, sparrows, and icterids across points at the RAC, and high proportions of swallows, pigeons/doves, and old world sparrows/starlings at the JGC. We also found high proportions of birds that used water/wetland habitat and birds that used open woodland habitat across both sites, with higher proportions of urban birds at the JGC.

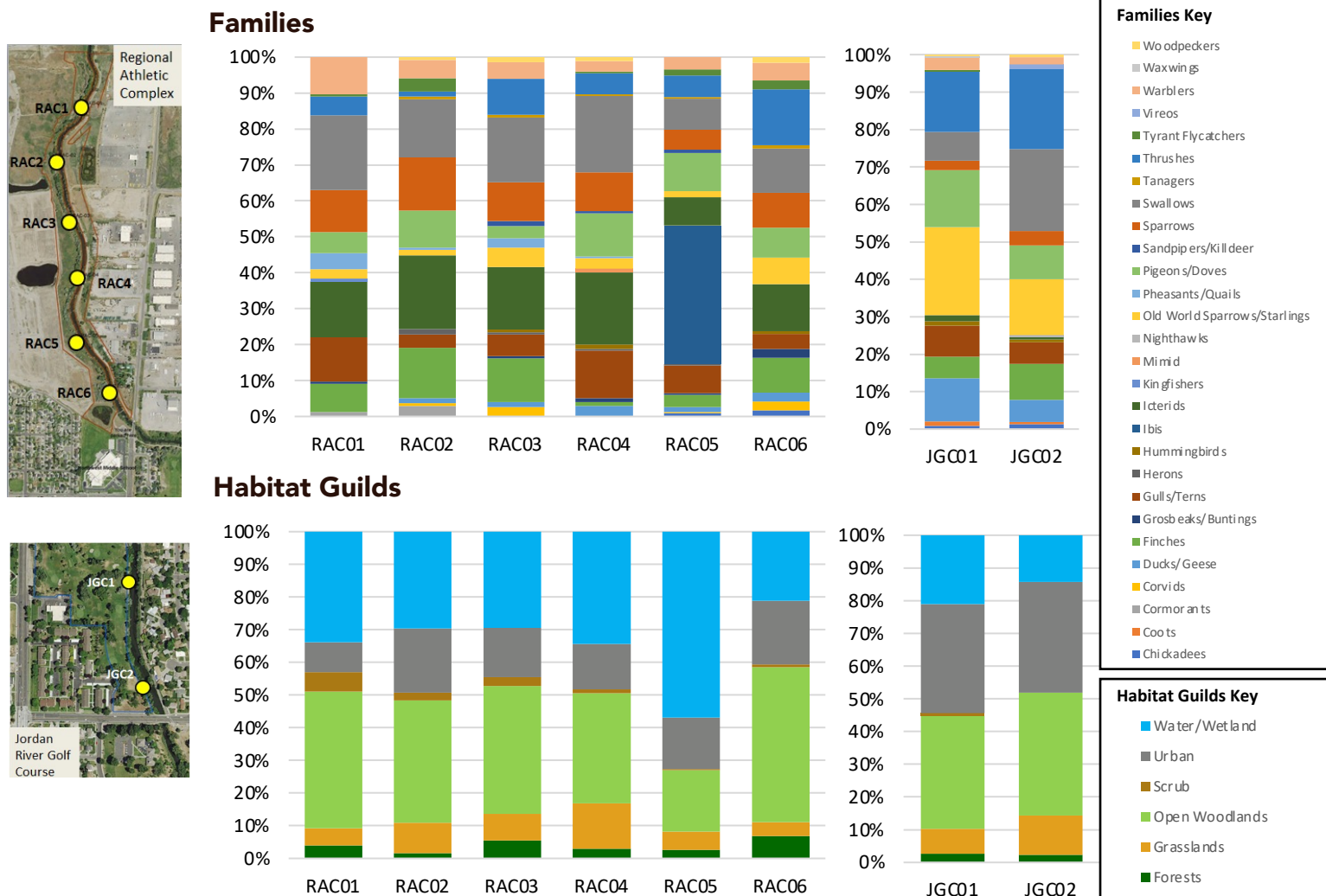


Figure 1. Graphs the community composition of birds within different family groups and habitat guilds at each of the sampling points within the RAC and JGC during 2021 breeding season surveys.

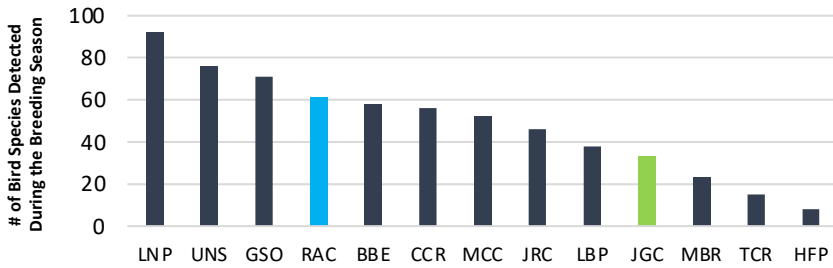
RAC & JGC - 2021 RESULTS

COMPARISON TO OTHER LOCAL BIRD MONITORING SITES

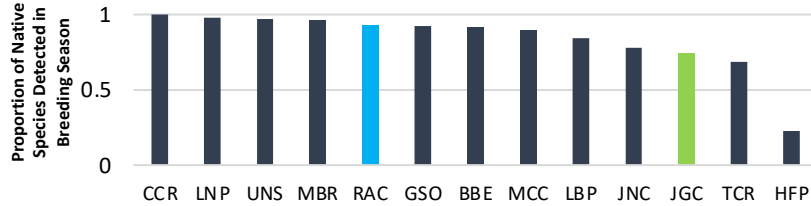
Species Richness, native, urban-sensitive, and riparian species

We can measure the health of an urban riparian site such as the RAC and JGC by looking at several metrics, including species richness (the number of species detected), and the proportion of native, urban-sensitive, and riparian-associated birds that use the site. When comparing the RAC (light blue) and JGC (light green) to other monitoring sites (dark blue), we found the RAC to have above average species richness, native bird species, riparian associated species, and urban sensitive species, while the JGC had below average levels for all of those metrics.

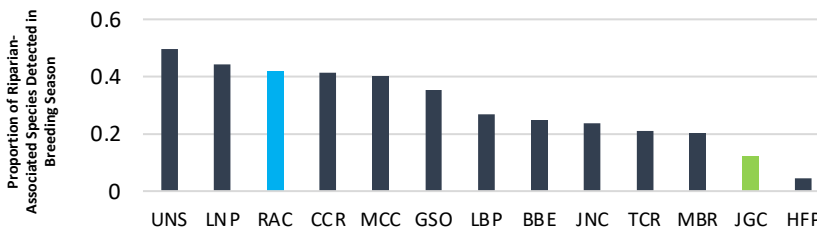
Species Richness



Native Bird Species



Riparian-Associated Bird Species



Urban-Sensitive Bird Species

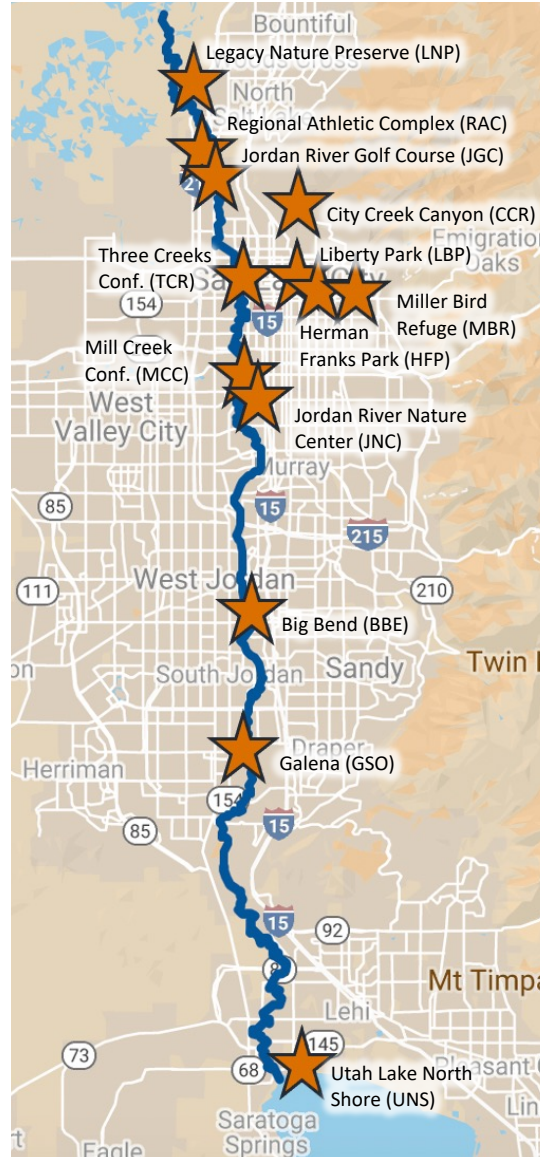
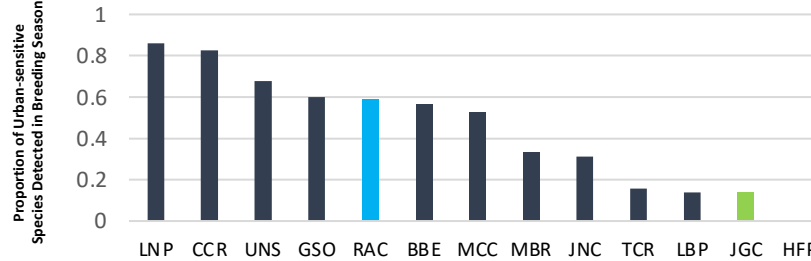


Figure 2. Graphs showing a comparison of species richness and the proportion of native, riparian-associated, and urban-sensitive bird species at the RAC (light blue), the JGC (light green) and other bird monitoring sites (dark blue).

RAC & JGC - 2021 RESULTS

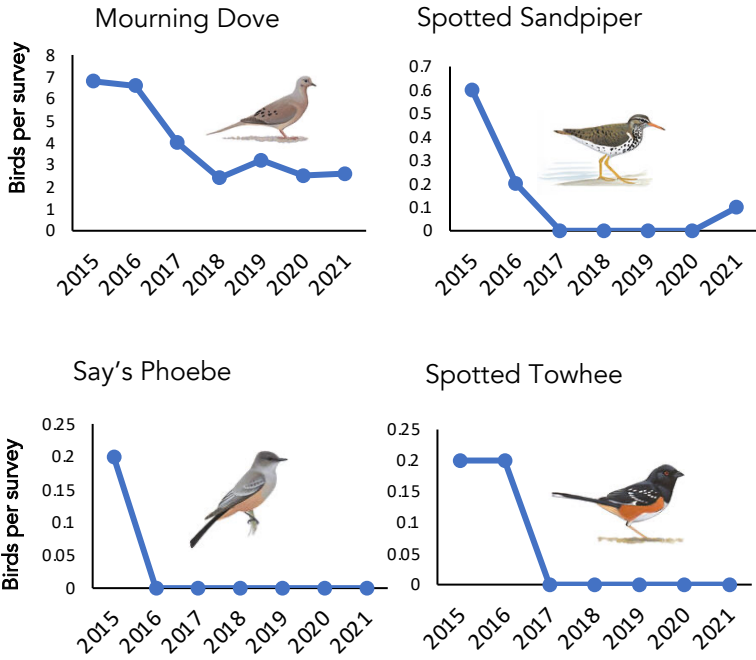
TRENDS OVER TIME

Over the past six years of monitoring, some bird species have declined and even gone locally extinct at the RAC and JGC, and some have increased in relative abundance. These trends are different in each site; the RAC has seen increasing trends for several riparian obligate species, while it is mostly urban-adapted species that are increasing at the JGC.

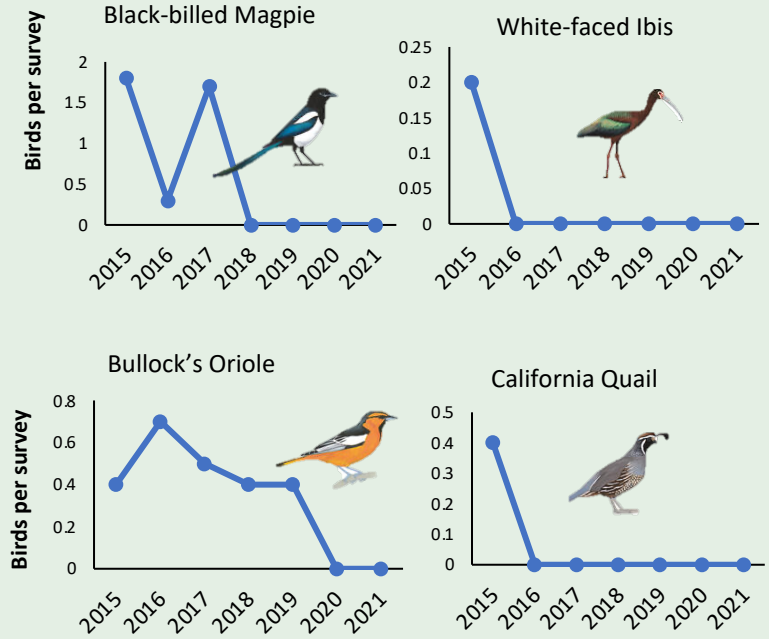
Regional Athletic Complex (RAC)

Jordan River Golf Course (JGC)

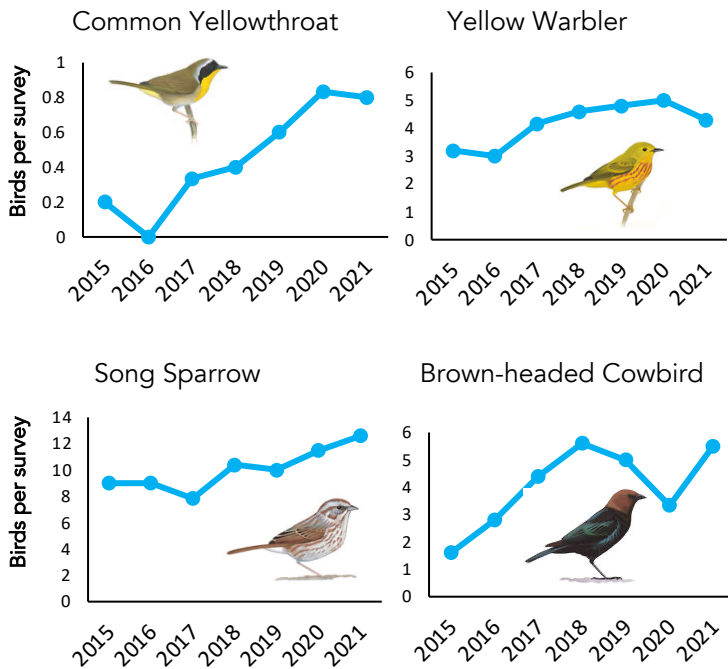
Declining trends and local extinctions



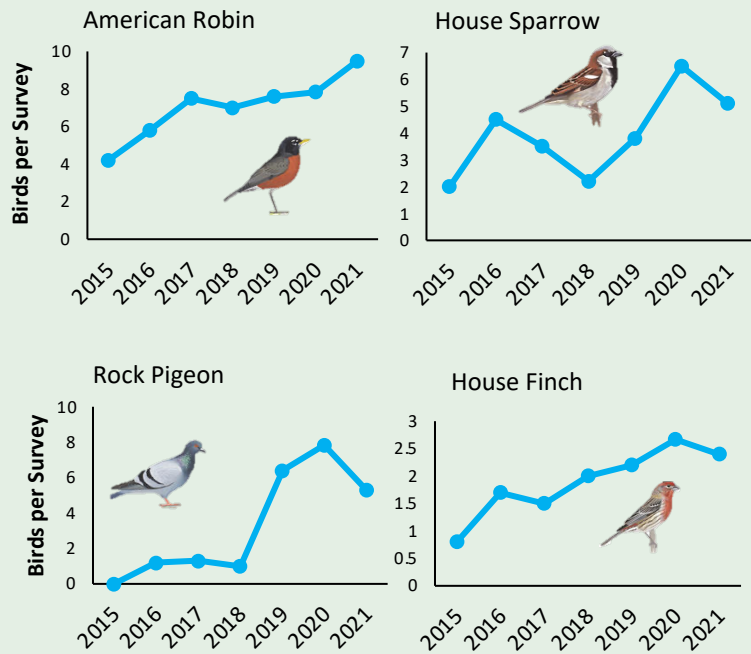
Declining trends and local extinctions



Increasing trends and local colonization



Increasing trends and local colonization

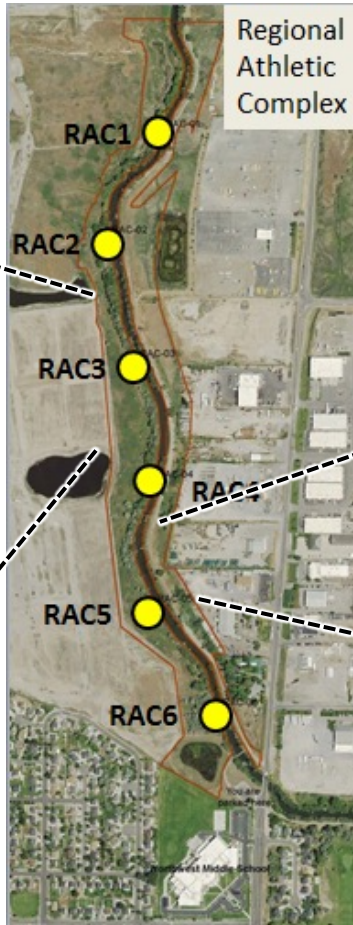


RAC & JGC - 2021 RESULTS

Management actions that could improve habitat for target bird species, and actions or activities that could potentially degrade bird habitat and should be avoided

Promote vertical structure and canopy cover throughout the site by protecting existing trees and/or replacing trees that are removed. This will enhance habitat for riparian-associated birds such as warblers, flycatchers, and orioles.

Add wetland elements. Several areas near the RAC have ephemeral water and wetland vegetation, and enhancing these wetland components and adding wetland vegetation could enhance habitat for species such as Red-winged and Yellow-headed Blackbirds, Virginia rails and Sora, Marsh Wrens, and Common Yellowthroats.



Plant and maintain trees, shrubs, and other native vegetation over a large footprint of the site. This vegetation will enhance the contiguous habitat along the Jordan River corridor and provide a buffer from the surrounding roads and development.

No tree removal or thinning activities should take place during the breeding and nesting season (April – July).

Maintain standing dead trees to provide habitat for cavity-nesting species, such as chickadees, nuthatches, screech-owls, and woodpeckers. Avoid complete removal if possible; cutting them to a height of 10ft can mitigate safety concerns while still providing cavity habitat.



If trees are to be removed, mature trees should be thinned out slowly while they are replaced so vertical structure and fruiting resources are maintained throughout the restoration process.

REGIONAL ATHLETIC COMPLEX (RAC)

COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
American Avocet	1	1.3	0.2	1.3	0	0	0	0.8	0	0	0.3	1.5	0.1	0
American Coot	0.8	8.5	0.3	15.1	0	9.1	0.2	7.4	0.4	13	0.2	3.5	0	2.8
American Crow	0	1.2	0.2	1.6	0	1.8	0	8.4	0	4.6	0.2	3.3	0.1	2
American Goldfinch	1	8.3	1.5	5.6	0.7	3.5	1.2	1.5	1.2	3	1.3	2.8	1.3	1.8
American Kestrel	0	0.5	0	1.1	0	0.6	0	0.5	0	0.6	0	0.4	0.1	0.2
American Pipit	0	1	0	0.4	0	0.1	0	1	0	0.2	0	0.3	0	0.4
American Robin	9.8	15.8	12.3	32.8	10.3	10.6	13.4	7.9	10.8	16.4	13.8	12.1	9.4	25.4
American Tree Sparrow	0	0.2	0	0	0	0	0	0	0	0.2	0	0	0	0
American White Pelican	1.8	0	0.3	0	0	0	0	9.1	0	0	1.7	0	0	0
American Wigeon	0	0.5	0	0	0	0.1	0	0	0	0	0	0	0	0
Bald Eagle	0	0	0	0.1	0	0	0	0.1	0	0.2	0	0.1	0	0
Bank Swallow	0	0	0.3	0.4	0	3.6	0.2	0.3	0	0	0.3	0	0.9	0
Barn Owl	0	0	0.7	0	0	0	0	0	0	0	0.3	0.1	0	0
Barn Swallow	1.4	1.7	1.2	4.4	1.2	0	0.6	2.1	2.6	5.2	1.3	1.9	0.4	0.8
Belted Kingfisher	0.2	0.7	0	0.4	0	0.3	0	1.1	0	0.4	0.2	0.6	0.3	0.6
Black Phoebe	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0
Black-billed Magpie	3	8.2	3.2	11.1	3.3	9.5	1.8	6.3	1.2	8.6	1	7.9	1	2.4
Black-capped Chickadee	1	8.5	2.8	8.9	0	4.4	1.6	3.5	1.4	9.2	1.5	3	0.6	2.8
Black-chinned Hummingbird	0	0.5	0.7	1.4	1.8	0.3	0.6	0.1	0	0.4	0.7	0.8	0.5	0
Black-crowned Night-Heron	0.2	0.2	0.3	0.5	0.3	0.1	0.2	0.8	0.2	0.4	0.3	0	0.6	0.2
Black-headed Grosbeak	0	0	0.2	0.1	0.2	0.1	0	0	0.2	0.2	0	0.3	1	0
Black-necked Stilt	0.4	0	0.3	0	0	0	0	0.6	0	0	0	0	0	0
Blue-gray Gnatcatcher	0.6	0.3	0	0.6	0.3	0.5	0.2	0.1	0	1.2	0.3	0.4	0	0.2
Blue-winged Teal	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0
Brewer's Blackbird	0	0.3	0.5	1	0	0	0	0.4	0	0.4	0	0	0	0
Brewer's Sparrow	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0
Broad-tailed Hummingbird	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0
Brown Creeper	0	0.8	0	0.9	0	0	0	0.3	0	0	0	0	0	0
Brown-headed Cowbird	2	0	2.7	0.1	3.8	0	5.4	0	5	0	3.5	0	5.5	0
Bullock's Oriole	5.4	0.2	8.8	0.1	8.3	0	12.6	0	9.8	0	10.8	0	8.8	0
Cackling Goose	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
California Gull	0.8	29	2.3	1.8	0.5	2.6	0.8	9.4	0.8	16.8	1.3	2.6	3.8	4
California Quail	0.4	1.5	0	4.4	0.2	4	0.8	0.9	0.2	12.4	0.8	8.3	1	3
Canada Goose	4.8	86	2.2	78.8	0	28.5	0.2	29.8	2	23	3.5	19.6	0.1	8.4
Canvasback	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0
Caspian Tern	0	0.3	0.2	0	0	0	0	0	0	0	0.5	0	0.3	0
Cattle Egret	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0
Cassin's Finch	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0
Cedar Waxwing	3	12.8	0.7	6.1	0.8	0.8	0.6	1.6	2.2	5.6	3.3	2.8	0.1	5.4
Chipping Sparrow	0	0.8	0.8	0.5	0	0	0	0.1	0.2	0.2	0	0	0.1	0.2
Cinnamon Teal	0.2	0	0	0	0	0	0	0	0	1.2	0	0	0	0
Cliff Swallow	2	0	8	0	3	0.3	10.4	0	6.6	0.8	40.2	0	8.1	0
Common Goldeneye	0	0	0	0.1	0	0.3	0	0.5	0	1	0	0	0	0
American Avocet	1	1.3	0.2	1.3	0	0	0	0.8	0	0	0.3	1.5	0.1	0

REGIONAL ATHLETIC COMPLEX (RAC)

COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Common Merganser	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Common Nighthawk	0	0	0	0.1	0	0	0	0.1	0	0.2	0	0	0	0
Common Raven	0	0.2	0.2	0	0.8	0.4	0	0	0	0.8	0	1.1	1.8	0.6
Common Yellowthroat	0.2	0	0	0.1	0.3	0	0.6	0.1	0.8	0.6	1.2	0.3	0.8	0
Cooper's Hawk	0	0.5	0	0.6	0.2	0.1	0	0.4	0.2	0.4	0.2	0.1	0.1	0.6
Cordilleran Flycatcher	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Dark-eyed Junco	0	32.2	0	14.4	0	6.3	0	4.9	0	10.2	0	8.1	0	5
Double-crested Cormorant	0.2	0.3	0.5	0	0	0	0.2	0.1	0.6	0.4	1.2	0.1	0.8	0.2
Downy Woodpecker	1.8	2.7	0.7	2.8	0.5	1.3	1	1.4	1.4	1.4	1.5	1.9	1.4	2
Dusky Flycatcher	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
Eurasian Collared-Dove	1.6	22.2	1.8	38.4	0.7	13.8	0.4	6	1	13	1.2	17.8	1.9	12.4
European Starling	7.6	596.7	4.8	602.4	4.2	107.8	3.8	500.1	4.8	198	17.2	157.6	2.3	500
Evening Grosbeak	0.2	0.2	0	0	0	0.1	0	0	0	0	2	0.1	0	0
Ferruginous Hawk	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
Forster's Tern	1	0.2	1	0	0.3	0.1	0.6	0.6	0.6	0	3.3	0	2	0
Franklin's Gull	3.2	21.3	21.5	3.6	1	3.5	0.6	5.8	1.8	8.8	5.2	1.9	2.4	2.4
Gadwall	0.2	0.7	0.8	1.4	0	0.9	0	0.4	0	1.8	0.5	0.1	0.1	0
Golden Eagle	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
Gray Catbird	0.4	0.2	0.3	0	0.5	0.3	0.2	0.1	0.2	0.8	1.2	0.4	0.4	0
Great Blue Heron	0	0.2	0	0.1	0.2	0.5	0.4	0.3	0.2	0.4	0.8	0.1	0.3	0.6
Great-horned Owl	0	0	0	0.3	0	0	0	0.3	0	0	0	0	0	0
Great-tailed Grackle	0.8	0.2	2	0	1.7	0.3	0.8	0.6	0.4	0	0.5	0	0	0
Greater Yellowlegs	0	1.2	0	0.6	0	0.3	0	0.1	0	1.8	0	0	0	1.2
Green-winged Teal	0	0.2	0	0	0	0.3	0	0.5	0	2	0	0.1	0	0
Hammond's Flycatcher	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0
Harris's Sparrow	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0
Hermit Thrush	0	0	0	0.6	0	0.1	0	0.8	0	1.6	0.2	0.1	0	0.2
Herring Gull	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Hooded Merganser	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0
House Finch	4.4	25	4.2	24.9	2.2	12.5	2.2	11.8	5.8	25.2	7.5	9.8	5	14.2
House Sparrow	0.4	21.3	0.5	25.1	0.3	5	0.8	3.5	0.8	6.8	0.3	3.3	0.8	3.2
House Wren	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Killdeer	3.6	2.2	2.2	1.3	1.5	0.4	0.6	0.8	0.4	1.6	2.2	1.6	1.1	1.8
Lazuli Bunting	0.4	0.5	0	0.4	0	0.8	0	0.3	0.4	0.4	0	0.3	0	0.6
Least Flycatcher	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Lesser Goldfinch	2.4	3.2	0.5	5.9	0.7	3	1.8	1.8	1.2	19.6	1.2	1.5	0.6	5.6
Lesser Scaup	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Lesser Yellowlegs	0	0	0	0	0	0	0	0	0	0.2	0	0.1	0	0
Lincoln's Sparrow	0.2	0.3	0	0.1	0	0	0	0	0	0.8	0	0.1	0	0.4
Loggerhead Shrike	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
MacGillivray's Warbler	0.2	0.2	0.2	0.3	0	0.1	0	0.1	0	0.6	0	0.3	0	0.6
Mallard	4.4	30.2	5	77.5	3.8	42	1.8	30.5	5	66.4	3.3	28.4	1.8	22.6
Marsh Wren	0	0.2	0	0	0	0	0	0.1	0	0.2	0	0.1	0	0
Merlin	0	0.3	0	0.3	0	0	0	0.1	0	0.2	0	0.1	0	0.2

REGIONAL ATHLETIC COMPLEX (RAC)

COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Mountain Chickadee	0	0.3	0	0	0	0	0	0	0	0	0	0.3	0	0
Mourning Dove	7	7.5	7	5.8	3.5	3.4	2.4	1.8	3.2	2.2	3.2	2.1	2.6	0.8
Nashville Warbler	0	0	0	0.1	0	0	0	0	0	0.2	0	0.1	0	0
Northern Flicker	0	6.7	0	8.1	0	2.9	0	2.4	0	4.2	0.2	1.6	0	7.2
Northern Parula	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0
Northern Harrier	0	0	0	0.3	0	0.4	0	0	0	0.6	0	0	0	0
Northern Mockingbird	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0
Northern Rough-winged Swallow	12.2	0	3.3	0.8	0.8	0.3	2.2	0.5	4.8	0.6	1.8	0	1.6	0
Northern Shoveler	0	1.2	0	0.1	0	0.3	0	0	0	2.4	0	1.9	0	0.6
Northern Shrike	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
Northern Waterthrush	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0
Olive-sided Flycatcher	0	0.3	0	0	0	0.1	0	0	0	0	0	0	0	0
Orange-crowned Warbler	0	0.5	0	0.5	0	0	0	1.4	0	1.2	0	0.3	0	2.4
Osprey	0	0	0	0	0	0	0	0	0	0	0.2	0.1	0	0
Peregrine Falcon	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Pied-billed Grebe	0.2	1.5	0.3	1.3	0	1.4	0	1.4	0	0.8	0.2	0.5	0	0.6
Pine Siskin	0.2	0.3	0	0	0	0	0	0	0	0.6	0	0.1	0.3	0
Prairie Falcon	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
Red Crossbill	0	0	0	0	0	0	0	0	0	0	2.2	0	0	0
Red-breasted Nuthatch	0	0	0	0	0	0.1	0	0	0	0.2	0	0	0	0
Red-naped Sapsucker	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Red-tailed Hawk	0	1.2	0	1.5	0	1.4	0	1.9	0.2	0.8	0	0.9	0	1
Red-winged Blackbird	2.4	3.7	1.8	10.9	2.5	13.8	0.6	14.1	5.2	12.2	2	2.5	3.3	4.4
Ring-billed Gull	0	8.8	0	13.3	0	1.9	0	6	0	8	0	1.5	0.8	7.4
Ring-necked Duck	0	0	0	0	0	2.6	0	4.3	0	3.4	0	0.1	0.1	0.4
Ring-necked Pheasant	1	0.3	0.2	0.3	0.8	1	0.6	0.1	0	0.2	0.5	0	0.3	0
Rock Pigeon	0	16.8	0.3	19	0.3	4.5	0.2	2.5	1.2	9.8	0.3	5.4	1.1	8.6
Rough-legged Hawk	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0
Ruby-crowned Kinglet	0	4.2	0	2.6	0	0.5	0	1.4	0.2	2.2	0.2	0.9	0	2
Rufous Hummingbird	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
Sandhill Crane	0	0	0.2	0	0	0	0	0	0	0	0.2	0	0	0
Savannah Sparrow	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0
Say's Phoebe	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0
Sharp-shinned Hawk	0	0.3	0.2	0.5	0	0.4	0	0	0	0	0	0.1	0	0.2
Snow Goose	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Snowy Egret	0	0.2	0.2	0	0	0.1	0	0.8	0	0	0	0.3	0	0.6
Solitary Sandpiper	0	0	0	0.4	0	0.3	0	0.1	0	0	0	0	0	0.4
Song Sparrow	9.4	6.5	8.8	8.1	8.3	8.4	10.4	8.4	10	16	13	9.1	12.6	4
Sora	0	0	0	0.1	0	0	0	0	0	0.2	0	0	0	0
Spotted Sandpiper	0.6	0	0.2	0.1	0	0	0	0.3	0	0	0	0.1	0.1	0
Spotted Towhee	0.4	1.3	0.2	0.9	0	0.1	0	1.4	0	1.6	0	2	0	3
Swainson's Hawk	0	0.2	0.2	0	0	0	0	0	0	0	0.2	0.1	0	0
Townsend's Solitaire	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0.2
Tree Swallow	0	0	2.5	0.3	0	0	0	0.8	0	0	0.3	0	0	0

REGIONAL ATHLETIC COMPLEX (RAC)

COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Tundra Swan	0	0	0	0	0	0	0	0	0	0	0	3.8	0	0
Turkey Vulture	0	0	0.2	0	0	0.1	0	0.1	0.4	0	0	0	0	0
Vesper Sparrow	0	0.2	0.3	0	0	0	0	0	0	0	0	0	0	0
Violet-green Swallow	0	0	0	0	0	0	0.2	0	0.4	0	0	0	0	0
Virginia's Warbler	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0
Warbling Vireo	0.2	0.2	0	0.1	0.2	0	0.2	0.1	0.2	0	0	0.3	0	0
Western Kingbird	2.4	0.3	4.7	0.1	2.3	0.8	3	1	2.8	1.2	2.8	0.9	1.8	0
Western Meadowlark	0.2	0	0.3	0	0.2	0.1	1.6	0	1	2.6	0.5	0	0.5	1.4
Western Tanager	1	0.5	1.5	2.1	1.2	0.4	0.8	0.3	1.6	1.2	0.3	0.6	0.8	0.6
White-breasted Nuthatch	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0
Western Wood-pewee	0	0	0.3	0.4	0	0	0.6	0.1	0	0	0.5	0	0	0
White-crowned Sparrow	1.4	7.7	0	5.6	0.5	5.1	0	8.4	0	11.6	0.2	14.1	0.1	19.8
White-throated Sparrow	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4
White-faced Ibis	4	0	1.3	1.8	0.2	9	0.2	6.5	2.6	27.8	5	0.8	0.8	0
Willow Flycatcher	0	0	0	0.3	0	0	0	0	0.4	0	0	0	0.3	0
Wilson's Snipe	0	3.7	0	1.5	0	0.6	0	1.1	0	0.2	0	0	0	0.2
Wilson's Warbler	0	0.5	0	0.6	0.8	0	0	0.1	0.4	0	0.2	0.5	0.3	0.4
Wood Duck	0	0.3	0	0.1	0	0	0	0	0	0.4	0	0	0	0
Woodhouse's Scrub-Jay	0	0.7	0	1	0	0	0	0	0	0	0	0	0	0
Yellow Warbler	3.4	0.5	3.5	1.9	4.3	1.9	5	2.5	4.8	2	5.2	1	4.3	0.4
Yellow-breasted Chat	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0
Yellow-headed Blackbird	1.6	0	3.2	0	4.8	0.1	4.6	0.8	4.4	0.2	1.7	0.4	2	0
Yellow-rumped Warbler	0.2	6.5	2.8	5.4	1.2	1.5	0.4	2.5	1	15.4	0.5	5	1	10.2

Photos from the field:



JORDAN RIVER GOLF COURSE (JGC)
COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON
SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
American Avocet	0	1.3	0	1.3	0	0	0	0	0	0	0	0	0	0
American Coot	0.2	8.5	0	15.1	0	0	0	2.4	0	2.2	0.2	4.8	0.6	5.2
American Crow	0	1.2	0.2	1.6	0	0	0.2	9	0	3.8	1	4.6	0.3	6
American Goldfinch	0.6	8.3	1	5.6	0.3	0.3	0.8	6.7	0	1.6	0	2.4	0.1	2.5
American Kestrel	0	0.5	0	1.1	0	0	0	0.3	0	0.2	0.2	0	0	0.3
American Pipit	0	1	0	0.4	0	0	0	0.1	0	0	8.3	0.2	0	0
American Robin	4.2	15.8	5.8	32.8	7.5	7.5	7	15.6	7.6	9	0.2	23.8	9.5	5.7
American Tree Sparrow	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
American Wigeon	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0
Bald Eagle	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Bank Swallow	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0
Barn Owl	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0
Barn Swallow	2.4	1.7	3.8	4.4	3	3	3.2	6.6	5.4	0	5.7	2.8	3.5	0.3
Belted Kingfisher	0	0.7	0	0.4	0.3	0.3	0	0.4	0	0.6	0	0.4	0.1	0.2
Black-billed Magpie	1.8	8.2	0.3	11.1	1.7	1.7	0	6.9	0	2	0	3.8	0	1.3
Black-capped Chickadee	0.8	8.5	1	8.9	0.3	0.3	1	3.7	1.8	2	1	2.8	0.5	1.8
Black-chinned Hummingbird	0.2	0.5	0.2	1.4	0	0	0	0.6	0.4	0	0.8	0.8	0.3	0
Black-crowned Night-Heron	0	0.2	0	0.5	0	0	0	0	0	0	0	0	0	0
Black-headed Grosbeak	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0
Blue-gray Gnatcatcher	0	0.3	0	0.6	0	0	0	0	0	0	0	0	0	0
Blue-winged Teal	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0	0
Brewer's Blackbird	0	0.3	0	1	0	0	0.2	0	0	0	0	0	0	0
Brewer's Sparrow	0	0	0	0	0	0	0	0	0	0	0.3	0	0.1	0
Brown Creeper	0	0.8	0	0.9	0	0	0	0.1	0	0.2	0	0.6	0	0.5
Brown-headed Cowbird	0	0	0.2	0.1	1.3	1.3	0.6	0	1.4	0	0.2	0	1.1	0
Bullock's Oriole	0.4	0.2	0.7	0.1	0.5	0.5	0.4	0	0.4	0	0	0	0	0
Cackling Goose	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.5
California Gull	0.4	29	0.7	1.8	1.8	1.8	0.2	1.4	0	3.2	0	1.2	2	0.3
California Quail	0.4	1.5	0	4.4	0	0	0	0	0	0	0	1	0	1
Canada Goose	0	86	0	78.8	0	0	0	23.4	0	59	0.2	49.6	5.6	37.3
Caspian Tern	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0
Cassin's Finch	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0
Cedar Waxwing	0	12.8	0.8	6.1	0.2	0.2	0.6	2.3	0.6	1	0	2	0.1	4.3
Chipping Sparrow	0	0.8	0	0.5	0	0	0	0	0	0.6	0	0	0	0
Cinnamon Teal	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cliff Swallow	0.4	0	0.3	0	1.3	1.3	1.2	0	0.6	0	3	0	1.1	0
Common Goldeneye	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.5
Common Merganser	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Common Nighthawk	0	0	0	0.1	0	0	0.2	0.1	0	0	0	0	0.1	0
Common Raven	0	0.2	0	0	0	0	0	0.3	0	0	0	0	0	0.3
Common Yellowthroat	0	0	0	0.1	0	0	0	0	0.2	0	0	0.2	0	0
Cooper's Hawk	0	0.5	0	0.6	0	0	0.2	0	0	0.6	0	0.8	0	0.2
Cordilleran Flycatcher	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
American Avocet	0	1.3	0	1.3	0	0	0	0	0	0	0	0	0	0

JORDAN RIVER GOLF COURSE (JGC)
COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON
SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Dark-eyed Junco	0	32.2	0	14.4	0	0	0	18.3	0	16.6	0	12.4	0	6.7
Double-crested Cormorant	0	0.3	0.7	0	0	0	0.2	0.3	0.2	0	0.2	0	0.1	0
Downy Woodpecker	0	2.7	0.8	2.8	0	0	0.4	1.4	0.6	0.4	0.3	1.2	0.8	0.7
Eurasian Collared-Dove	0.8	22.2	2.3	38.4	1.5	1.5	0.8	14.6	1.8	3.6	1.3	6.6	1.6	5.8
European Starling	2	597	5.8	602	4.8	4.8	4	403	2.8	154	5.5	432	5.9	36.2
Evening Grosbeak	0	0.2	0.3	0	0	0	0	0.4	0	0.6	0	2	0	0
Forster's Tern	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Franklin's Gull	0.4	21.3	5.2	3.6	0	0	0.2	0.4	0	0	0	0	0	0
Gadwall	0	0.7	0	1.4	0	0	0	0	0	0	0.2	0	0	0
Gray Catbird	0	0.2	0	0	0	0	0	0	0	0	0	0.2	0	0
Great Blue Heron	0	0.2	0	0.1	0.2	0.2	0	0.3	0	0.2	0	0	0	0.2
Great Horned Owl	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0
Great-tailed Grackle	0	0.2	0	0	0	0	0	0	0	0	0	0.2	0	0
Greater Yellowlegs	0	1.2	0	0.6	0	0	0	0	0	0	0	0	0	0
Green-winged Teal	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Hammond's Flycatcher	0	0	0	0.1	0	0	0	0.4	0	0	0	0.2	0	0
Hermit Thrush	0	0	0	0.6	0	0	0	0.4	0	0.2	0	0.4	0	0.3
Herring Gull	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0
House Finch	0.8	25	1.7	24.9	1.5	1.5	2	14.9	2.2	4.2	6.5	7	2.4	5.7
House Sparrow	2	21.3	4.5	25.1	3.5	3.5	2.2	13.7	3.8	10.2	3.2	12.2	5.1	14.7
Killdeer	0	2.2	0.2	1.3	0	0	0.2	0.1	0	0	0	0	0	0
Lark Sparrow	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0
Lazuli Bunting	0	0.5	0	0.4	0	0	0	0	0	0	0	0	0	0
Lesser Goldfinch	1.4	3.2	1.8	5.9	0.8	0.8	1.2	3.9	2.6	1	3.2	1.6	1.4	2.3
Lincoln's Sparrow	0	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0
MacGillivray's Warbler	0	0.2	0	0.3	0	0	0	0.1	0	0	0	0.4	0	0
Mallard	1.6	30.2	4.2	77.5	3.8	3.8	2.2	30.9	2.8	24.2	3.3	41.4	4.9	19.8
Marsh Wren	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Merlin	0	0.3	0	0.3	0	0	0	0	0	0.2	0	0	0	0
Mountain Chickadee	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0
Mourning Dove	2.4	7.5	1.2	5.8	1.7	1.7	1.4	0.9	0.8	0.4	0.2	1	3.4	0.2
Nashville Warbler	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Northern Flicker	0	6.7	0	8.1	0	0	0	6	0	6.6	0	8	0	5.5
Northern Harrier	0	0	0	0.3	0	0	0	0	0	0	0	0.2	0	0
Northern Mockingbird	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0
Northern Pintail	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Northern Rough-winged Swallow	0	0	0.5	0.8	0	0	0.4	0	0	0	0.2	0	0.4	0
Northern Shoveler	0	1.2	0	0.1	0	0	0	0	0	0	0	0	0	0
Olive-sided Flycatcher	0	0.3	0	0	0	0	0	0.1	0	0	0	0	0	0
Orange-crowned Warbler	0	0.5	0	0.5	0	0	0	0.3	0	0	0	1.2	0	0.8
Pacific Wren	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0
Pied-billed Grebe	0	1.5	0	1.3	0	0	0	1.1	0	0.4	0	0.4	0	0.8
Pine Siskin	0	0.3	0.5	0	0	0	0	0	0	0	0	0.6	0.1	0
Pinyon Jay	0	0	0	0	0	0	0	0	0	0	0	2.2	0	0

JORDAN RIVER GOLF COURSE (JGC)
COMPLETE LIST OF BIRDS DETECTED DURING BREEDING SEASON
SURVEYS (BSS) AND NON-BREEDING SEASON SURVEYS (NBS)

Species	Year													
	2015		2016		2017		2018		2019		2020		2021	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Red-breasted Nuthatch	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0
Red-naped Sapsucker	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Red-tailed Hawk	0	1.2	0	1.5	0	0	0	0.7	0	1.6	0	0.8	0	0.5
Red-winged Blackbird	0	3.7	0	10.9	0	0	0.2	0.7	0.2	12	0	38	0	0
Redhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ring-billed Gull	0	8.8	0	13.3	0	0	0	1.6	0	2	0	3.8	0	5.3
Ring-necked Pheasant	0	0.3	0	0.3	0	0	0	0	0	0	0	0	0	0
Rock Pigeon	0	16.8	1.2	19	1.3	1.3	1	35.7	6.4	8.8	9.5	16	5.3	27.7
Ruby-crowned Kinglet	0	4.2	0	2.6	0	0	0	4.7	0.2	0.4	1.3	3	0	1.7
Sandhill Crane	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Say's Phoebe	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0
Sharp-shinned Hawk	0	0.3	0	0.5	0	0	0	0.3	0	0.4	0	0.2	0	0
Snow Goose	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Snowy Egret	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Solitary Sandpiper	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0
Song Sparrow	0.2	6.5	0.8	8.1	0.3	0.3	1.2	1.6	1.4	0	0.2	4.2	1	1.2
Sora	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Spotted Sandpiper	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Spotted Towhee	0	1.3	0	0.9	0	0	0	2.7	0	2	0	1.6	0	1
Swainson's Hawk	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Townsend's Solitaire	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0
Tree Swallow	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0
Vesper Sparrow	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Warbling Vireo	0.2	0.2	0.3	0.1	0.3	0.3	1.2	0.1	0.4	0	0.5	0	0.3	0
Western Kingbird	0	0.3	0	0.1	0	0	0.2	0	0	0	0	0.4	0	0
Western Meadowlark	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0
Western Tanager	0	0.5	0.2	2.1	0.2	0.2	0.4	0.9	0.4	0	0.2	0.8	0	0
Western Wood-pewee	0.2	0	0	0.4	0	0	0.4	0	0.4	0	0	0	0.1	0
White-crowned Sparrow	0	7.7	0.2	5.6	0	0	0	0	0	0	0	4.8	0.1	0.8
White-faced Ibis	0.2	0	0	1.8	0	0	0	0	0	0	0.2	30	0	0
Willow Flycatcher	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0
Wilson's Snipe	0	3.7	0	1.5	0	0	0	0	0	0	0	0	0	0
Wilson's Warbler	0	0.5	0	0.6	0	0	0	0.4	0	0	0	0.2	0	0.2
Wood Duck	0	0.3	0	0.1	0	0	0	0	0	0	0	0.8	0	0
Woodhouse's Scrub-jay	0	0.7	0	1	0	0	0	0.7	0	0.2	0	0	0	0
Yellow Warbler	0.8	0.5	1.2	1.9	1	1	2	0.7	0.8	0	1.5	4	1.1	0
Yellow-headed Blackbird	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0
Yellow-rumped Warbler	0	6.5	0.8	5.4	0.2	0.2	0	5.9	0.4	2.6	1.3	7	0.4	0.8

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