



COMMUNITY SCIENCE BIRD MONITORING AT GALENA SOÓNKAHNI

2020 Project Report

PROJECT OVERVIEW

Since 2015, Tracy Aviary has been conducting a community science bird monitoring project at Galena/Soonkahni (henceforth: Galena), a 250 acre preserve adjacent to the Jordan River. Managed by a number of stakeholders, including Utah Division of Forestry, Fire and State Lands, Utah Open Lands, and Salt Lake County, Galena is one of the largest areas of protected open space along the Jordan River corridor. With this bird monitoring study, Tracy Aviary volunteers help to collect information about how birds use the habitats at Galena, and how community composition changes throughout the site and over time. This information can help guide bird-friendly restoration and management strategies. Here, we summarize results from our 2020 bird monitoring field season.

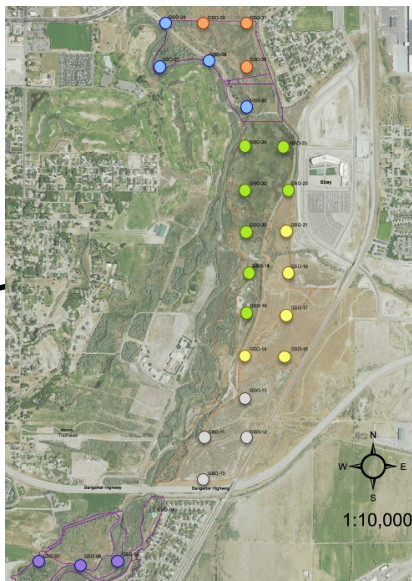
STUDY SITES

We generated 26 sampling points across Galena where we conducted bird and vegetation surveys. These surveys are part of a larger community science bird monitoring program that includes twelve other study sites in the Salt Lake region. Using information from other study sites, we can gain inference about larger scale patterns and trends in urban and riparian birds communities.

Bird Monitoring Sites



Galena Sampling Points



BIRD SURVEY METHODS

Breeding season point count surveys



During May – July of 2020, 10 community scientists conducted 4 breeding season point count surveys at Galena. Point count surveys 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, noted the minute during the survey (1-6) when the observation was made, and also noted weather and site variables, such as wind speed and cloud cover.

Non-breeding season group surveys

Information from point count surveys was supplemented by non-breeding group surveys conducted in January, February, March, August, September, October, November, and December 2020. 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.



BIRD MONITORING 2020 RESULTS

2020 SURVEY SUMMARY

During 4 breeding season surveys at Galena, we had 2,544 bird observations and detected 72 species. During 8 non-breeding season surveys, we had 11,285 bird observations and detected 97 species. We had a total species list of 117 species at Galena in 2020.

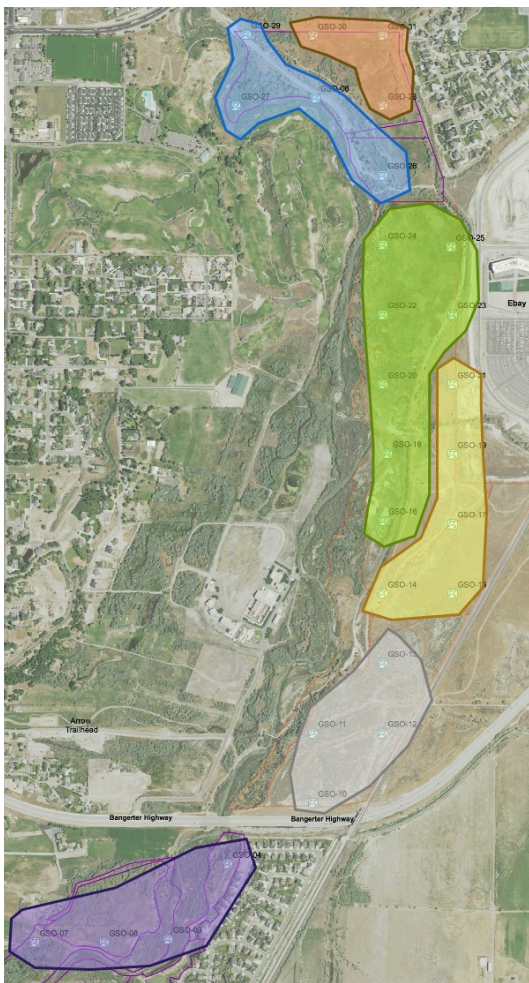


Song Sparrows are common at Galena and elsewhere along the Jordan River.

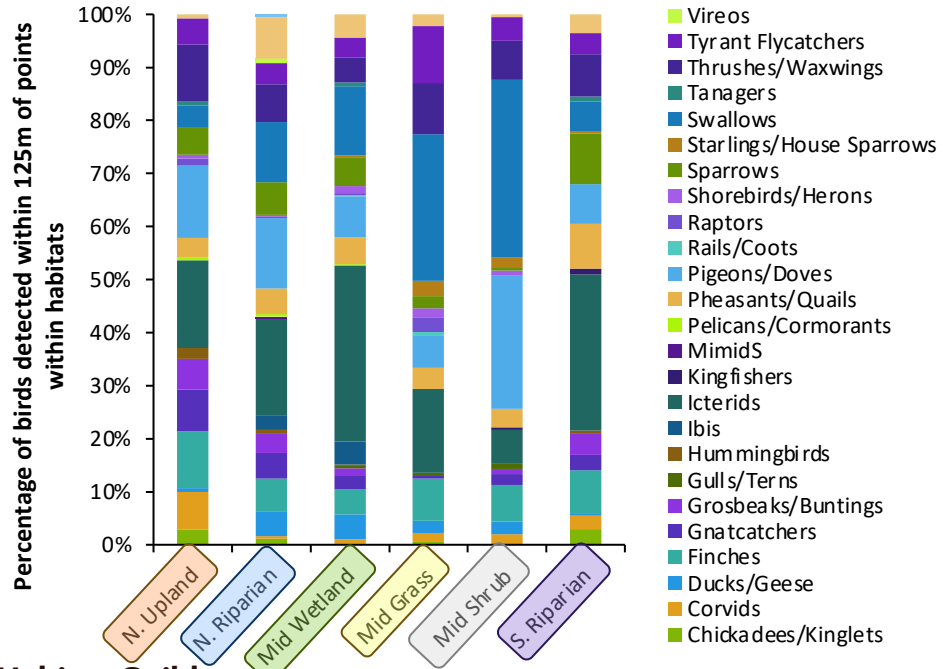
Since we began monitoring in 2015, we've detected 163 species that use habitat at Galena.

BREEDING SEASON COMMUNITY COMPOSITION ACROSS GALENA

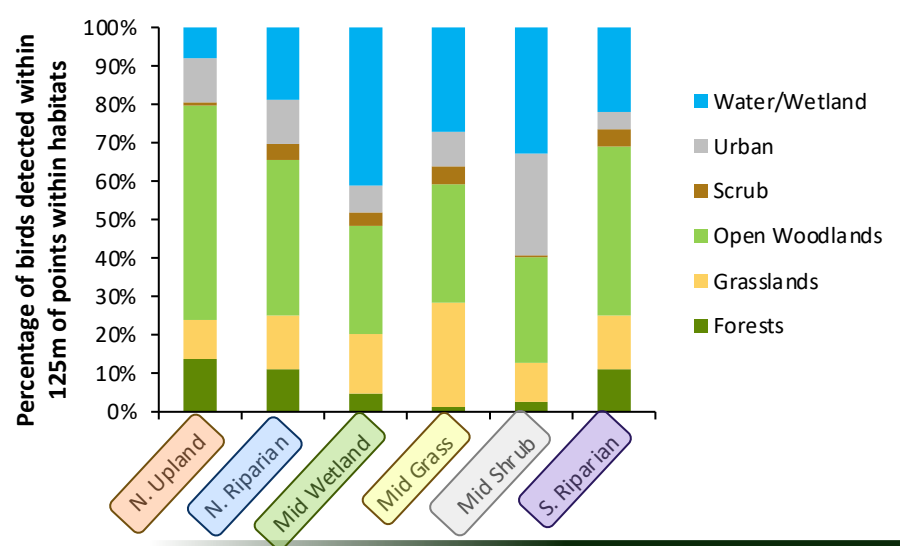
Galena encompasses several different habitat types in different areas of the site, and we analyzed patterns in how different bird species use these areas. Based on similarities in the dominant trees, shrubs, groundcover, and water features present at each points, we classified them into six sections: north upland, north riparian, mid wetland, mid shrubland, mid grassland, and south riparian. We used point count data to calculate the relative abundance, or total number of observations per survey, of each species detected within 125m of each point. To explore patterns of species occurrence across the landscape, we separated species into family groups and habitat guilds, and noted how many observations of each we had in each section.



Families



Habitat Guilds



BIRD MONITORING 2020 RESULTS

BIRD HABITAT USE PATTERNS THROUGHOUT THE JORDAN RIVER

We use breeding season data to help understand the how habitat features and landscape attributes impact where different bird species are found; information that could help with land management and restoration decisions that create, protect, or enhance healthy bird habitat for target species. A preliminary occupancy modeling analysis using bird survey data from 2020 identified the most important factors influencing habitat use by 12 species across the 12 bird monitoring sites. We selected 8 species that were considered target species (i.e., native, riparian-associated, and urban-sensitive), and 4 species that were considered non-target species (i.e., non-native and/or urban-associated). Our analysis examined which habitat or landscape attributes (Table 1) influenced the probability that these species would use an area within our sampling sites.

Occupancy Analysis: Overall Habitat Use Patterns

Canopy Cover was found to be an important factor for habitat use by **50%** of the target species examined. All but Western Kingbird positively associated with canopy cover.

Distance to River or Riparian/Wetland habitat within 125m was found to be an important factor for habitat use by **37.5%** of the target species examined. All species had decreased habitat use as distance from river increased and riparian/wetland habitat decreased.

Undeveloped Habitat was found to be an important factor for habitat use by **75%** of the non-target species examined, with decreasing habitat use in areas with more undeveloped habitat.

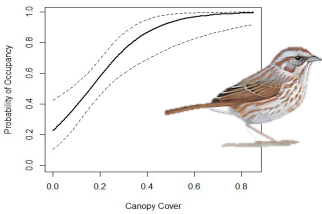
Table 1. Habitat and landscape attributes included in occupancy analysis.

Variable	Measurement (unit)
Canopy	Tree canopy cover within 50m (%)
Shrub	Shrub cover within 50m (%)
Herb	Herbaceous cover within 50m (%)
Water	Cover of water within 50m (%)
DistRiver	Distance to the river or stream (m)
Elevation	Elevation (m)
Riparian125	Riparian or wetland habitat within 125m (%)
Undeveloped125	Undeveloped habitat within 125m (%)
Undeveloped500	Undeveloped habitat within 500m (%)

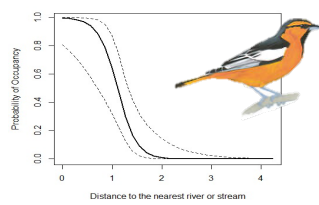
Occupancy Analysis: Species Results

Target Species

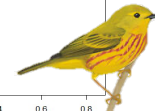
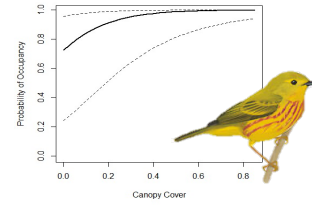
Song Sparrow habitat use increases with increasing **tree canopy cover**



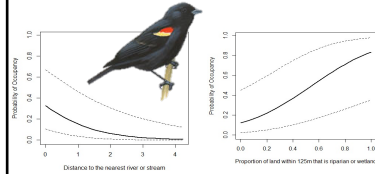
Bullock's Oriole habitat use decreases as you get further from a **river or stream**



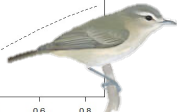
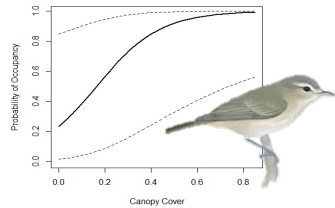
Yellow Warbler habitat use increases with increasing **tree canopy cover**



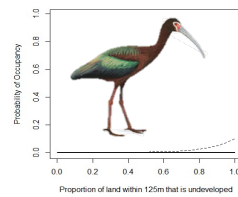
Red-winged Blackbird habitat use decreases with **distance from a river or stream**, and increases with the proportion of **riparian/wetland habitat** within 125m of the point



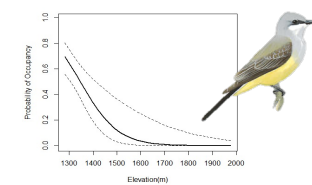
Warbling Vireo habitat use increases with increasing **tree canopy cover**



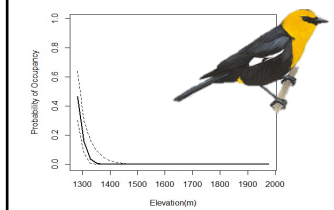
White-faced Ibis habitat use increases with the proportion of **undeveloped habitat** within 125m



Western Kingbird habitat use decreases with **distance from a river or stream**, and decreases with increasing **tree canopy cover**

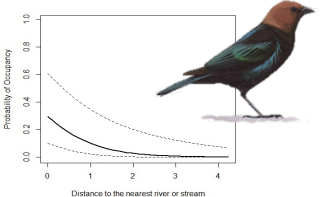


Yellow-headed Blackbird habitat use decreases with increasing **elevation**

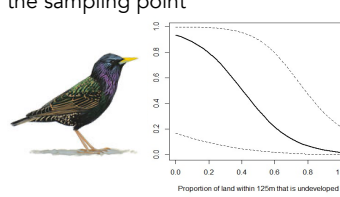


Non-target Species

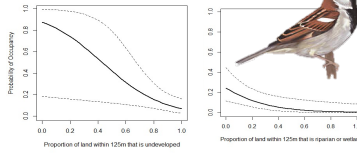
Brown-headed Cowbird habitat use decreases as you get further from a **river or stream**



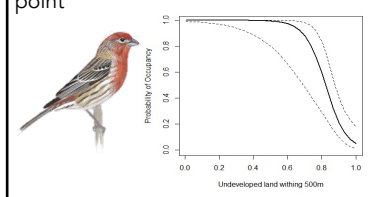
European Starling habitat use decreases with the proportion of **undeveloped habitat** within 125m of the sampling point



House Sparrow habitat use decreases with the proportion of **undeveloped habitat** within 500m and **riparian/wetland habitat** within 125m of the sampling point



House Finch habitat use decreases with the proportion of **undeveloped habitat** within 500m of the sampling point



BIRD MONITORING 2020 RESULTS

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

Promote vertical structure and canopy cover throughout the riparian zones within 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.

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

Add and enhance wetland and ephemeral water elements. Especially in the “mid-wetland” area of the site, enhancing ephemeral water 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. In these areas, maintain native forb and sedge species.

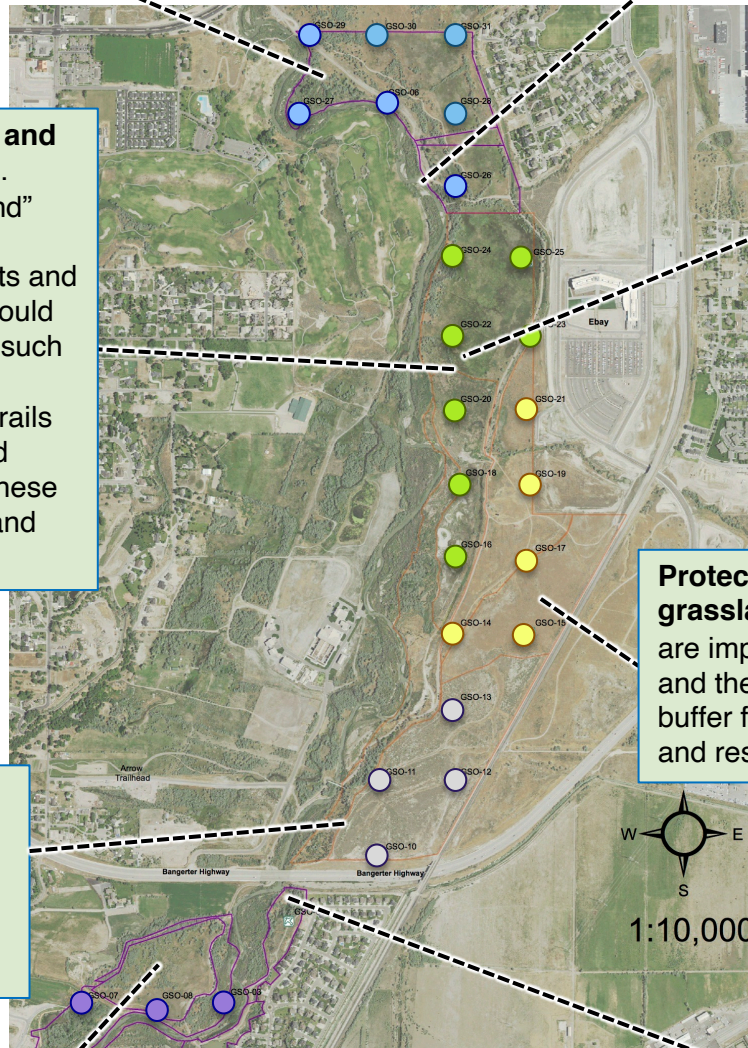
If trees are to be removed, mature trees should be thinned out slowly while they are replaced so vertical structure and fruiting resources are maintained throughout the restoration process.

In addition to canopy trees, include shrubs and other understory species when re-vegetating an area, especially those that produce fruits.

Protect upland shrub and grassland habitat: These habitats are important for many bird species, and they provide the riparian area a buffer from the surrounding roads and residential development.

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.

Plant in “clumps” and “strips”: concentrate plantings in clumps that mimic natural establishment of vegetation, and connect patches of existing habitat with strips of continuous vegetation that are at least 3-10m wide. This helps birds disperse through the site to unoccupied but suitable habitat patches.



GALENA SOÓNKAHNI

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

Species	Number of Observations (detections/survey)											
	2015		2016		2017		2018		2019		2020	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
American Avocet	1.4	0	0.2	0	0	0	0.2	0.125	2.5	0.125	0.5	0
American Coot	0.4	7.75	0	5	0.2	6	0.2	4	0.5	1.875	0	2.25
American Crow	0	15.375	0	0.75	0	0	0.4	2	0	0	0	0
American Goldfinch	10.8	8.125	8.2	6.625	6.2	9.375	5	9.375	4.75	9.75	6.5	5
American Kestrel	3	1.75	6.2	1.375	6.8	2	4.6	2.75	3.25	3.375	4.25	2.375
American Pipit	0.2	4.125	0	0.5	0	3.625	0.2	3.125	0	1.125	0	1.625
American Robin	24	92.75	28.2	98.25	12.2	68.375	25.2	82	22.5	167.88	35.5	53
American Tree Sparrow	0	0.625	0	1	0	0.5	0	0.25	0	0.125	0	0.875
American White Pelican	2.2	1.875	4	0.375	1.4	0	3.2	0	3	2.5	3.25	0
American Wigeon	0	1	0.2	0	0	16.125	0	0.375	0	0.5	0	2.625
Bald Eagle	0	0	0	0	0	0	0	0	0	0.25	0	0.25
Bank Swallow	3.6	2.875	5	0.75	1.6	0.875	3.4	3.75	5	12	3	0.625
Barn Owl	0	0	0	0.125	0	0.125	0.2	0	0	0.25	0	0
Barn Swallow	7.8	7.75	11	10.5	9.4	22	16	13.375	17	15.875	13	10.875
Barrow's Goldeneye	0	0	0	0.125	0	0	0	0	0	0	0	0.125
Belted Kingfisher	1.6	0.625	2.2	0.25	1.2	1.5	3.4	0.375	0.75	1.125	1.5	0.375
Bewick's Wren	0	0	0	0	0	0	0	0	0	0	0	0.125
Black-billed Magpie	22.4	14	23.6	14.75	20.8	12.875	19.2	12.5	22.25	12.875	13.5	16.125
Black-capped Chickadee	4.2	5.75	8.8	5	4.4	4.125	3.4	4.875	6.5	8	6	4
Black-chinned Hummingbird	2.6	0.75	2	3	1.4	1.25	2	1.75	1.75	2	2	2.375
Black-crowned Night Heron	0	0	0.4	0	0.4	0	0	0	0	0	0.25	0.125
Black-headed Grosbeak	7	0.125	10	0.375	6.6	0.375	7.2	0.125	3.5	0.125	11.25	0
Black-necked Stilt	0.2	0	0	0	0	0	0	0	0	0	0	0
Blue Grosbeak	1	0.25	3.8	0	0.8	0	0.6	0	0	0	0	0
Blue-gray Gnatcatcher	9	1	11.8	1.25	9	1.375	9.8	1.75	9.75	2.375	14.25	1.375
Blue-winged Teal	0	0	0	0	0	0	0	0	0.25	0	0	0
Brewer's Blackbird	0.2	0	1.6	0	0	0	2.4	0	0.5	0	0.25	0
Brewer's Sparrow	0	0	0.6	1	0	0.375	0.2	2.375	0	0.375	1.5	0.375
Broad-tailed Hummingbird	0	0.125	0.2	0	0	0	0.2	0.125	0.75	0	0.25	0
Brown Creeper	0	0	0	0	0	0	0	0	0	0	0	0.125
Brown-headed Cowbird	10.6	0	18.6	0.25	9.8	0	10.4	0	15.5	0	17.75	0
Bufflehead	0	0	0	0.5	0	0.25	0	0	0	0	0	0
Bullock's Oriole	26.4	0.5	38.4	0.5	26.8	0.375	34.2	0	33.5	0.125	39	0.125
Cackling Goose	0	0.125	0	0	0	0	0	0.5	0	0.125	0	0.625
California Gull	1.2	0.625	3.2	3.75	2.4	1.5	1.4	0.375	5.5	0.625	1	3.25
California Quail	9.6	9.625	18.2	11.125	5.4	3	10.4	2.375	10.75	6.625	12	6.75
Calliope Hummingbird	0	0	0	0.125	0	0	0	0	0	0	0	0
Canada Goose	9.2	169.38	5.2	110.38	4.2	128.13	8	148.38	35.5	196.88	17.75	92.375
Caspian Tern	0.6	0.25	0.4	0.75	1	0.125	1.2	0.5	1	0	0	0
Cassin's Vireo	0	0	0	0.125	0	0	0	0	0	0	0	0
Cedar Waxwing	3.4	25.875	0	8.75	0	1.375	0.6	8.375	3.75	9.625	1.25	2.25
Chipping Sparrow	0.4	0	0	0.75	0	0.125	0	0.75	0	0.125	0.5	0.125
Cinnamon Teal	0.6	0	1.6	0.875	0.2	0	1.4	0	0.75	0	0	0
Cliff Swallow	9.2	0.25	9.8	1.25	15.6	0	8.2	0	85.25	0	36.5	2.875

GALENA SOÓNKAHNI

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Species	Number of Observations (detections/survey)											
	2015		2016		2017		2018		2019		2020	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Common Goldeneye	0	0.25	0	1.25	0	1.625	0	0.75	0	0.625	0	0.75
Common Grackle	0	0	0	0	0	0	0.2	0	0	0	0	0
Common Merganser	0.2	0	0	2.25	0	0.375	0	0.125	0	0.125	0	8.125
Common Raven	0.8	0.375	0.4	1.125	0.4	0.75	1	2	0.75	1.25	0.5	0.625
Common Yellowthroat	1.2	0.125	1.4	0.125	0.4	0.125	0.4	0.25	0.25	0.5	3.5	0.125
Cooper's Hawk	0.2	1.375	0.2	0.5	0	0.75	0	0.75	0	0.625	0.25	0.875
Dark-eyed Junco	0	4.5	0.2	4.75	0	4	0.2	5.375	0	10.75	0	3.75
Double-crested Cormorant	2	0.125	4	0.125	0.6	0	0.2	0.125	2.5	3.375	1	1
Downy Woodpecker	0	0.625	0.4	0.5	0.2	0.5	0	0.625	0.25	0.875	0.5	0.5
Dusky Flycatcher	0.2	0	0	0	0	0	0	0.125	0.5	0	0.25	0
Eared Grebe	0	0	0	0	0	0	0	0	0.25	0	0	0
Eastern Bluebird	0	0	0	0	0	0.25	0	0	0	0	0	0
Eastern Kingbird	0.6	0	1.4	0	0	0.125	0	0.875	0	0	0	0
Eurasian Collared-Dove	0.6	2.125	3.6	2.75	1.6	9.75	3.4	6.5	3.5	6.875	3	7.5
European Starling	7.2	1050.8	8	220.75	6.2	133.25	10.4	568.63	16	1205	4.25	790.88
Evening Grosbeak	0.2	4.875	0.2	0	0	4.25	0.2	1.25	0	1.125	0	1.75
Ferruginous Hawk	0	0	0	0	0	0	0	0.125	0	0	0	0
Forster's Tern	0.4	0	0	0	0.2	0	0	0	0	0	0.25	0
Fox Sparrow	0.4	0	0	0	0	0	0	0	0	0	0	0.125
Franklin's Gull	0.6	0.875	3.6	1.5	1.6	0.125	0.4	0	1.75	7.875	0.75	0
Gadwall	0	5	0	1.625	0	2.75	0.2	1.25	0	0.125	0	2.5
Golden Eagle	0	0	0	0	0	0	0.2	0	0.5	0	0.25	0.125
Grasshopper Sparrow	0	0	0.2	0	0	0	0	0.125	0	0	0	0
Gray Catbird	0.4	0	0	0	0	0	0.2	0.125	0	0	0.25	0
Great Blue Heron	0.4	0.75	0.2	0.375	0	1.625	0.2	1.25	0.5	0.375	1	0.625
Great Egret	0	0	0.4	0	0	0	0	0	0	0	0	0
Great Horned Owl	0	0	0.2	0.125	0.2	0.125	0	0	0	0	0	0
Great-tailed Grackle	0	0	0	0.125	0.2	0	0	0.875	0.75	0	0.25	0
Green-tailed Towhee	0	0	0.2	0.125	0	0	0	0	0	0	0	0
Green-winged Teal	0.2	1.5	0.4	5.125	0	0.25	0	0.875	1	0.5	0	1
Hammond's Flycatcher	0	0	0	0.125	0	0	0	0.125	0	0	0	0.25
Hermit Thrush	0	0	0	0.25	0	0.125	0	0.125	0	0.25	0	0
Herring Gull	0	0	0	0.25	0	0	0	0	0	0	0	0.125
Hooded Merganser	0	0.625	0	0.25	0	0	0	0	0	0	0	0
Horned Lark	0	0.5	0	0	0	0	0	0.25	0.25	0.25	0	1.25
House Finch	9.8	30.5	5.8	12.125	5.2	11.875	7.2	21	12.75	15.5	18	22.25
House Sparrow	0.6	12	1.4	10	0.6	9	1.6	8.875	2	7.625	2.5	6
House Wren	0	0	0	0.125	0	0	0	0	0	0	0	0
Killdeer	4	0.5	7.4	0.75	1.8	0.875	5	0.625	6.75	0.625	2.5	0.375
Lark Sparrow	0.2	0	0	0.125	0	0	0.2	0.375	0	0.625	0.25	0
Lazuli Bunting	4	0.5	3.6	0.75	0	0.75	0.2	1.25	0.75	1.5	2.5	0.75
Lesser Goldfinch	4.4	3.875	4.6	5.125	4	1.75	6.8	2	14	7.375	6.25	14.875
Lesser Scaup	0	0.125	0	0	0	0	0	0	0	0	0	2.25
Lincoln's Sparrow	0.2	0.25	0	0.25	0	0	0	0.375	0	0.5	0	0

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	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Loggerhead Shrike	0.2	0	0	0	0	0	0	0.375	0	0	0	0
Long-billed Curlew	0.2	0	0	0	0	0	0	0	0.25	0	0	0
Long-eared Owl	0	0	0	0	0	0	0	0.125	0	0	0	0.875
MacGillivray's Warbler	0	0	0	0.375	0	0	0.4	0.125	0.5	0	0	0
Mallard	14	99.5	13.8	66.125	9	75.125	11.6	51.125	22	60.375	12	93
Marsh Wren	0.8	1.625	0.2	1.25	0	0.5	0	1.5	0	1.875	0	0.875
Merlin	0	0.125	0	0.125	0.2	0	0	0.125	0	0	0	0.375
Mexican Duck	0	0	0	0	0	0.125	0	0	0	0	0	0
Mountain Bluebird	0	0	0	0	0	0	0	0.125	0	0	0	0
Mourning Dove	25	9.5	28.6	5.25	20.4	7.75	27.4	10.625	31.75	10.125	29.5	5
Nashville Warbler	0	0	0	0.375	0	0	0	0.375	0	0.125	0	0.125
Northern Flicker	0.6	12.5	0	9.125	0	8.125	0.2	7.375	0	6.875	0.25	7
Northern Goshawk	0	0	0	0	0	0.125	0	0	0	0	0	0
Northern Harrier	0	0.5	0	0.75	0	0.875	0	0.125	0	1.75	0.25	1
Northern Mockingbird												0.125
Northern Pintail	0	0.375	0	1.375	0	0	0	0	0	0.125	0	0.125
Northern Rough-winged Swallow	7.6	5.5	12.4	4.25	11.8	1.5	11.4	1.25	17.25	5.75	12.25	0
Northern Shoveler	0	1.375	0	0.25	0	0	0	0	0	0	0	0.5
Northern Shrike	0	0	0	0.125	0	0	0	0	0	0	0	0
Olive-sided Flycatcher	0	0	0	0.125	0	0	0	0	0	0	0	0
Orange-crowned Warbler	0	0.25	0	0.625	0	0.125	0	0.75	0	1.25	0	1
Osprey	0	0.125	0	0	0	0	0	0	0.75	0.125	0	0
Peregrine Falcon	0	0	0	0	0	0	0.2	0	0.25	0	0	0
Pied-billed Grebe	0	1.25	0	0.625	0	0.25	0	0.375	0	0.25	0	0.25
Pine Siskin	0.2	0.125	0.6	0	0	0	0	0	0	0.375	0	0.25
Prairie Falcon	0	0	0	0	0	0	0	0.125	0	0.375	0	0
Red-tailed Hawk	1.8	2.75	3.6	4.125	2.6	5.5	3.8	3.875	3.5	4.875	2.75	4.625
Red-winged Blackbird	50	25.875	66.2	20.5	52	47.75	58.6	34.25	86.25	17.25	60.75	84
Ring-billed Gull	0	4	0	12	0.2	3	0	0.875	0.25	2.375	0	3.875
Ring-necked Duck	0	0	0	0	0	0.125	0	0	0	0.25	0	0
Ring-necked Pheasant	6.6	0.75	19.8	0.75	10.6	1.75	27	1.5	23.75	1.75	28	2.375
Rock Pigeon	3.8	19.625	9	34.75	8	126	9.6	60.25	29.75	62.25	35.25	26.75
Ross's Goose	0	0	0	0.125	0	0	0	0.125	0	0	0	0
Ruby-crowned Kinglet	0.8	0.375	0.2	0.125	0	0.125	0.2	0.5	0	0.5	0	0.25
Ruddy Duck	0	0	0	0	0	0	0.2	0	0	0	0	0
Rufous Hummingbird	0	0	0	0	0	0	0	0.25	0	0	0	0.125
Sandhill Crane	0	0	0	0.125	0.2	0	0	0.375	0	0	0	0.875
Savannah Sparrow	0.2	0	0.2	0	0	0	0	0.125	0	0	0	0.375
Say's Phoebe	0.2	0	0.6	0	0.2	0.25	0.4	0.375	0.75	0.125	0.5	0.5
Sharp-shinned Hawk	0.2	0.5	0	0.5	0.2	0.75	0.8	0.875	0	0.875	0	0.25
Snow Goose	0	0	0	0	0	0	0	0	0	0	0	1
Snowy Egret	0	0.125	0	0	0	0	0.2	0	0	0	0	0
Song Sparrow	28	10.375	29.4	10.125	23.4	8.75	26	7.875	21	10.125	26.25	7.875

GALENA SOÓNKAHNI

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

Species	Number of Observations (detections/survey)											
	2015		2016		2017		2018		2019		2020	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Sora	0.2	0	0	0.125	0	0	0.4	0.125	0	0.125	1	0.125
Spotted Sandpiper	2.2	3.375	3.8	0	0.2	0.25	1.6	0	4	0.125	3	0
Spotted Towhee	0.4	0	1.4	1.125	0	1.625	0.4	1.75	0.5	2.75	0	2.375
Swainson's Hawk	0.6	0.5	0	0.625	3.4	0.75	2	0.25	2	0.5	1	0
Swamp Sparrow	0	0	0	0	0	0	0	0	0	0.125	0	0
Tennessee Warbler	0	0	0	0	0	0	0	0.125	0	0	0	0
Townsend's Solitaire	0	0	0	0	0	0	0	0	0.25	0.375	0	0.125
Tree Swallow	1.4	0.125	0	0	0	0	1	0.25	4	0.375	0	0.5
Tundra Swan	0	0	0	2.625	0	0	0	0	0	0	0	0
Turkey Vulture	0.2	0.125	0.8	1	0	0	0.6	0.375	2	0.125	0.25	0
Vesper Sparrow	0	0.5	0.2	0	0	0.25	0	0.375	0.25	0	0	0
Violet-green Swallow	0.6	0	0	0	0	0	0	0.125	0.25	0.25	0	0
Virginia Rail	0	2.25	1	2.125	0.2	2.5	0.4	1.75	0.75	0.75	0	0.875
Warbling Vireo	0	0.125	0.2	0.125	0	0	0.4	0	0.25	0.125	1	0
Western Kingbird	14.6	2.125	17.8	2.125	20	0.625	14.8	0.875	21.5	1.125	20.75	0.5
Western Meadowlark	15.6	0.25	15	0.25	3.8	0.375	5.8	1.25	8.5	1	0.75	1
Western Screech-owl	0	0.25	0	0	0	0.25	0	0	0	0	0	0
Western Tanager	0.4	0.25	0.6	1	0.8	0.125	0.4	1	1.25	0.25	2.75	0.5
Western Wood-pewee	0	0	1.4	0.125	0	0	0.2	0.125	0	0	0.75	0.125
White-crowned Sparrow	3.8	40.5	1.8	19.125	1	12.5	0.8	24.375	0.75	35.25	0.25	29
White-faced Ibis	1.6	10.75	2	5.5	6.2	3.875	3.2	41.75	10.25	9.375	38.5	16.125
White-throated Sparrow	0	0	0	0	0	0	0	0.125	0	0	0	0
Willow Flycatcher	0	0	0.4	0.125	0	0.125	0.2	0	1	0	1.25	0
Wilson's Phalarope	0	0	0	0	0	0	0	0	0	0.25	0	0
Wilson's Snipe	0.2	0.125	0.8	0	0.4	0.25	0.6	0.125	1.5	0.25	0	0.125
Wilson's Warbler	0.2	0	0.6	0.125	0	0	0	0.875	0.5	0	0	0.25
Wood Duck	0	1.125	0	0.125	0	0.5	0	0	0	0.25	0	0.75
Woodhouse's Scrub-Jay	0	0	0	0	0	0.125	0	0.125	0	0.125	0	0
Yellow Warbler	7.8	0	10.2	2.25	7	1.25	10.2	1.625	8.75	1.75	14.75	0.125
Yellow-breasted Chat	0.2	0	5.6	0	0.2	0	0.8	0	1	0	3.5	0
Yellow-headed Blackbird	5	0.25	5.6	2.5	2.4	11.375	0.8	0.125	3	0.5	1.5	0.125
Yellow-rumped Warbler	0.6	14.375	2	15.625	0.2	7.125	0.2	7.75	2.25	11.375	1.5	9.375

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