



COMMUNITY SCIENCE BIRD MONITORING AT UTAH LAKE NORTH SHORE

2021 Project Report

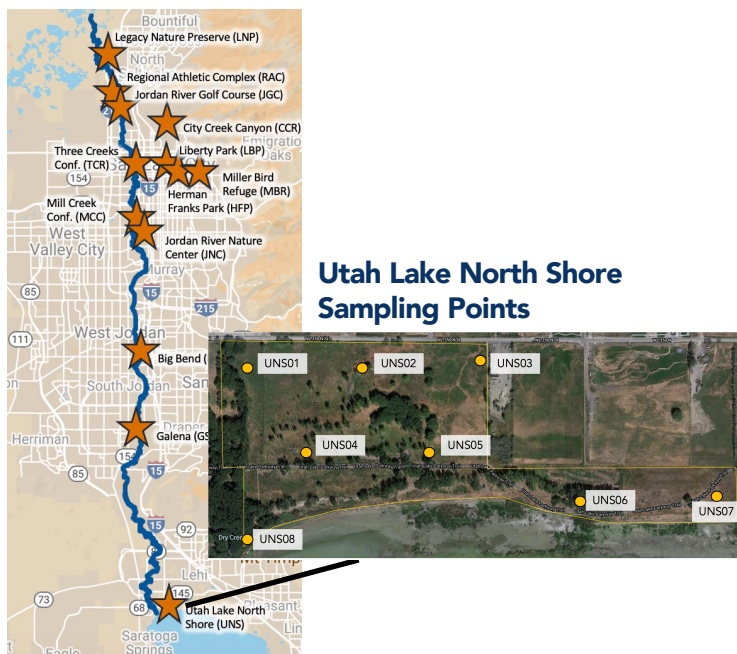
PROJECT OVERVIEW

Utah Lake North Shore is an 80 acre property located on the north shore of Utah Lake just east of the site where the Jordan River exits the lake. Utah Lake is Utah’s largest freshwater lake, and provides important breeding, stopover, and wintering habitat for many species of birds. The land surrounding the lake is rapidly being developed, making the remaining preserved habitat essential to support birds and other wildlife that rely on the area. In late 2020, Tracy Aviary began conducting a community science bird monitoring project at Utah Lake North Shore. Here, we summarize results from the 2021 survey season.

STUDY SITES

We generated eight sampling points across the Utah Lake North Shore site 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



BIRD SURVEY METHODS

Breeding season point count surveys



During May – July of 2021, 11 community scientists and Tracy Aviary staff conducted 6 breeding season point count surveys at Utah Lake North Shore. 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, March, August, 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 two owl surveys at Utah Lake North Shore during 2021. During March and April, when owls are most likely to be vocalizing, groups of volunteers led by a trained Tracy Aviary staff person walked the site in the evening listening for owls, stopping periodically to play owl calls and listen for responses.

UTAH LAKE NORTH SHORE - 2021 RESULTS

2021 SURVEY SUMMARY

During 6 breeding season surveys at Utah Lake North Shore in 2021, we had 936 bird observations and detected 78 species. During 7 non-breeding season surveys, we had 21,546 bird observations and detected 101 species. During 2 owl surveys, we had 3 detections of Great Horned Owls.

With our combined surveys, we had a total species list of 119 species at Utah Lake North Shore in 2021

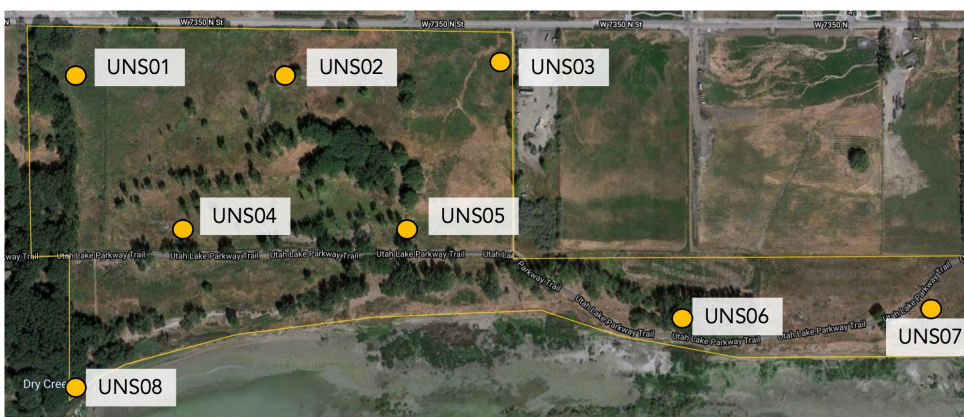


Julie Whittrock

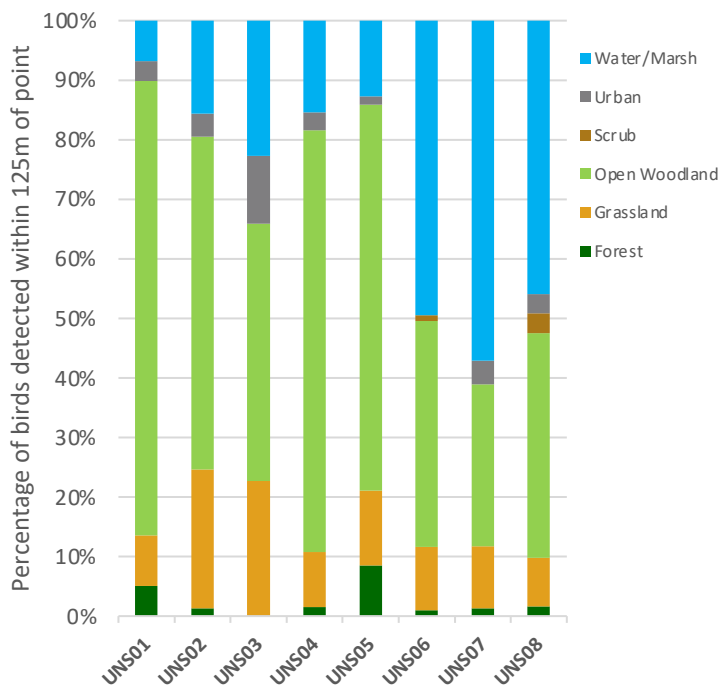
Song Sparrows are one of the bird species that use habitat at Utah Lake North Shore.

BREEDING SEASON COMMUNITY COMPOSITION

We examined the composition of bird communities across sampling points at Utah Lake North Shore by comparing relative proportions of bird families and habitat guilds for species detected within 125m of each point during the breeding season.



Habitat Guilds



Families

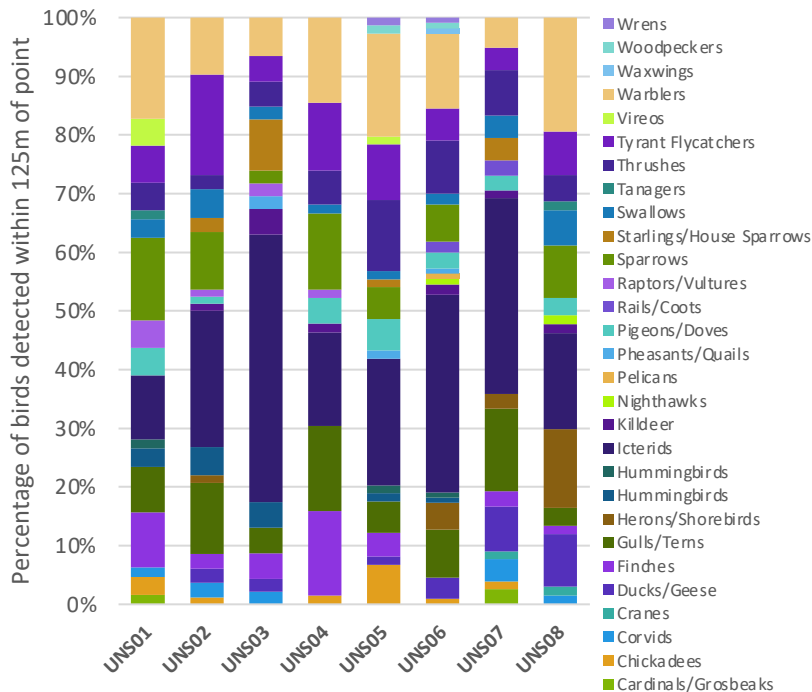


Figure 1. Graphs the community composition of birds within different family groups and habitat guilds at each of three sampling points within Utah Lake North Shore during 2021 breeding season surveys.

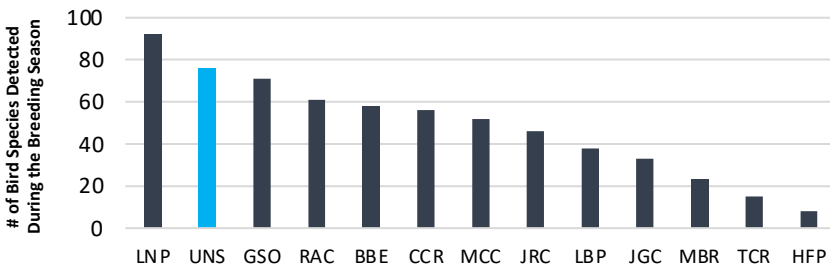
UTAH LAKE NORTH SHORE - 2021 RESULTS

COMPARISON TO OTHER LOCAL BIRD MONITORING SITES

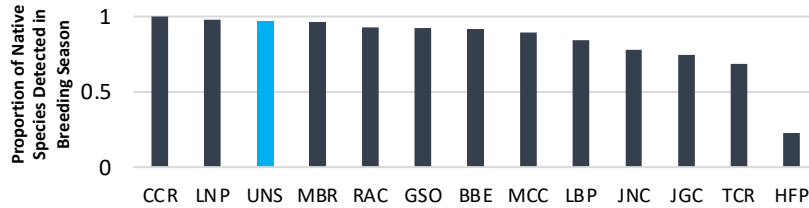
Species Richness, native, urban-sensitive, and riparian species

We can measure the health of an urban riparian site such as Utah Lake North Shore 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 Utah Lake North Shore (light blue) to other monitoring sites (dark blue), we found high breeding season species richness, above-average native and urban bird species, and high riparian-associated birds.

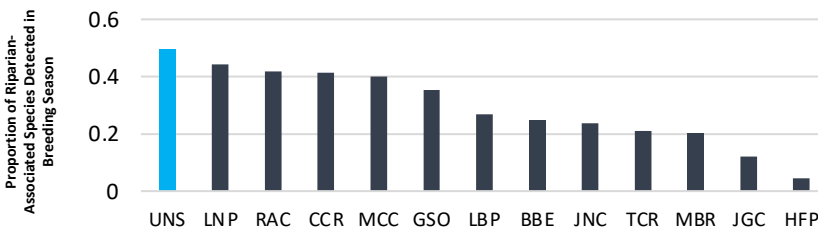
Species Richness



Native Bird Species



Riparian-Associated Bird Species



Urban-Sensitive Bird Species

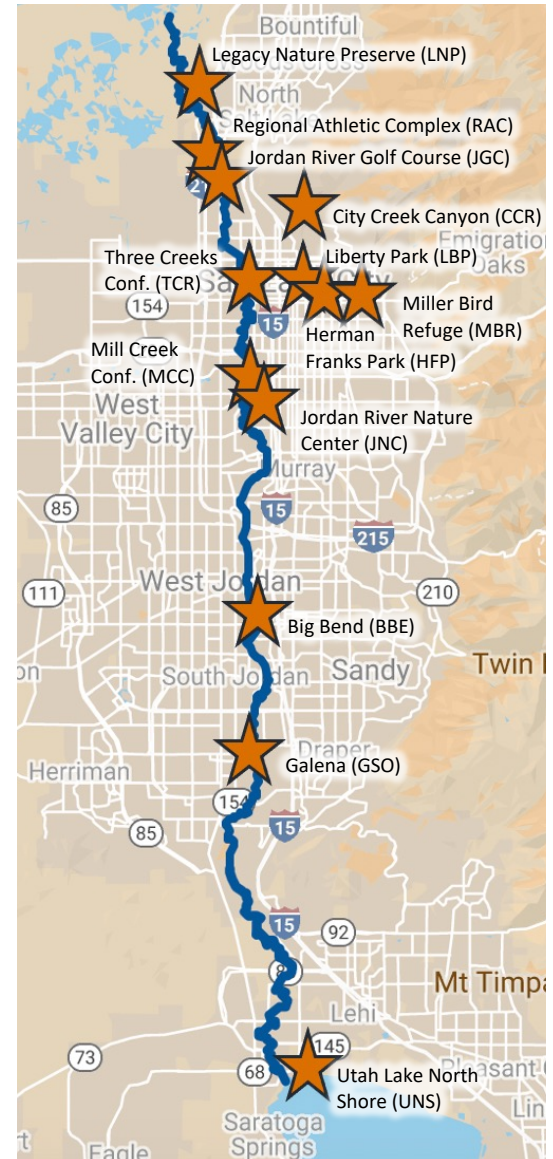
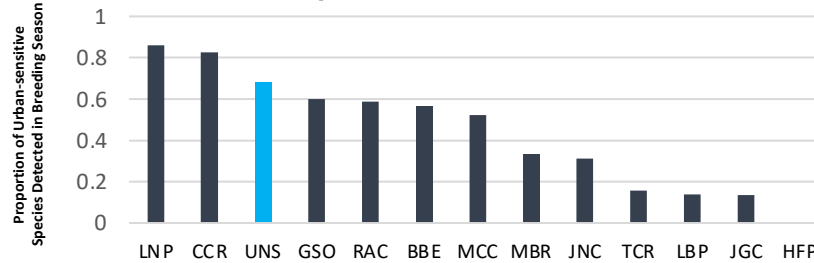


Figure 2. Graphs showing a comparison of species richness and the proportion of native, riparian-associated, and urban-sensitive bird species at Utah Lake North Shore (light blue) and other bird monitoring sites (dark blue).

UTAH LAKE NORTH SHORE

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

Species	Number of Observations (detections/survey)	
	BSS	NBS
Red-winged Blackbird	15.5	66.14
Yellow Warbler	13.67	0.71
American Robin	8.67	20
Song Sparrow	8.67	8.57
Bullock's Oriole	6.83	0
Western Wood-pewee	6.83	0.57
Brown-headed Cowbird	6	0
Franklin's Gull	5.83	428.57
California Gull	4.83	643
American Goldfinch	4.5	12.14
Unknown Bird	4.5	0
Unknown Gull	4.17	747.14
Mourning Dove	3.83	4.57
Western Kingbird	3.83	0.71
Black-billed Magpie	3	10.86
Western Meadowlark	3	0.14
Canada Goose	2.67	14.86
Killdeer	2.67	4.86
Black-capped Chickadee	2.33	3.71
Caspian Tern	2.33	0.71
White-faced Ibis	2.33	3.71
Ring-necked Pheasant	2.17	1.29
Yellow-headed Blackbird	2	0
European Starling	1.83	506.43
Red-tailed Hawk	1.83	2.71
Unknown Swallow	1.83	1.86
Sandhill Crane	1.67	3
Spotted Sandpiper	1.5	0.14
Mallard	1.33	7.71
Warbling Vireo	1.33	0.14
American Coot	1.17	0
Barn Swallow	1.17	1.43
Black-chinned Hummingbird	1.17	0.71
American Avocet	1	7.29
Willow Flycatcher	1	0
Cinnamon Teal	0.83	0.86
Eurasian Collared-dove	0.83	3
Turkey Vulture	0.83	4.71
American White Pelican	0.67	3.29
Black-necked Stilt	0.67	0
Eastern Kingbird	0.67	0
American Kestrel	0.5	2.43
Blue Grosbeak	0.5	0.43
Common Yellowthroat	0.5	0.29

Species	Number of Observations (detections/survey)	
	BSS	NBS
Downy Woodpecker	0.5	1.43
Forster's Tern	0.5	0
Great Blue Heron	0.5	1.14
House Finch	0.5	7.57
Northern Shoveler	0.5	5.71
N. Rough-winged Swallow	0.5	0.43
Ring-billed Gull	0.5	334.29
Rock Pigeon	0.5	10
Unknown Hummingbird	0.5	0.29
Western Grebe	0.5	0.86
Western Tanager	0.5	0.14
Wilson's Warbler	0.5	0.71
Clark's Grebe	0.33	0.86
Cliff Swallow	0.33	0
Common Nighthawk	0.33	0
Double-crested Cormorant	0.33	13
Green-winged Teal	0.33	27.71
House Wren	0.33	0
Lesser Goldfinch	0.33	1
Unknown Duck	0.33	41.57
American Pipit	0.17	10.29
American Wigeon	0.17	2.57
Bank Swallow	0.17	0.14
Black-crowned Night-heron	0.17	0
Belted Kingfisher	0.17	0
California Quail	0.17	9
Cedar Waxwing	0.17	5.29
Cooper's Hawk	0.17	0.43
Common Raven	0.17	0.86
Evening Grosbeak	0.17	5
Great Horned Owl	0.17	0.43
Lesser Yellowlegs	0.17	0
Marsh Wren	0.17	0.14
Ruby-crowned Kinglet	0.17	0.29
Say's Phoebe	0.17	0.29
Brewer's Blackbird	0.17	0
Snowy Egret	0.17	0
Solitary Sandpiper	0.17	0
Unknown Blackbird	0.17	0
Unknown Falcon	0.17	0
Unknown Flycatcher	0.17	0
Unknown Sandpiper	0.17	0
Unknoww Teal	0.17	0
Unknown Warbler	0.17	0.71

UTAH LAKE NORTH SHORE

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

Species	Number of Observations (detections/survey)	
	BSS	NBS
Unknown Woodpecker	0.17	0
Yellow-rumped Warbler	0.17	2
American Crow	0	5.29
American Tree Sparrow	0	1.29
Bald Eagle	0	1.86
Blue-gray Gnatcatcher	0	0.71
Bonaparte's Gull	0	0.43
Brewer's Sparrow	0	0.43
Brown Creeper	0	0.57
Calliope Hummingbird	0	0.14
Cassin's Vireo	0	0.14
Common Goldeneye	0	1.29
Common Merganser	0	6.29
Dark-eyed Junco	0	12.86
Fox Sparrow	0	0.29
Gadwall	0	2.43
Harris's Sparrow	0	0.14
Herring Gull	0	0.43
House Sparrow	0	0.14
Iceland Gull	0	0.14
Lazuli Bunting	0	0.43
Lesser Scaup	0	1.86

Species	Number of Observations (detections/survey)	
	BSS	NBS
Lincoln's Sparrow	0	0.43
MacGillivray's Warbler	0	0.29
Merlin	0	0.29
Mexican Duck	0	0.14
Neotropic Cormorant	0	0.14
Northern Flicker	0	9.86
Northern Harrier	0	1.29
Northern Mockingbird	0	0.14
Northern Pintail	0	3
Orange-crowned Warbler	0	0.14
Pied-billed Grebe	0	0.14
Pine Siskin	0	0.57
Prairie Falcon	0	0.14
Sharp-shinned Hawk	0	0.57
Spotted Towhee	0	4.29
Townsend's Solitaire	0	0.14
Tree Swallow	0	0.14
Violet-green Swallow	0	0.14
Unknown Grebe	0	5.71
Unknown Sparrow	0	0.43
White-breasted Nuthatch	0	0.14
White-crowned Sparrow	0	9.86

PHOTOS FROM THE FIELD



Acknowledgements: We'd like to thank the extremely dedicated team of volunteers from Tracy Aviary's Community Science Program who braved early mornings and long hours to collect these data. Thanks also to the Utah Lake North Shore partners.