



COMMUNITY SCIENCE BIRD MONITORING AT CITY CREEK CANYON

2020 Project Report

PROJECT OVERVIEW

City Creek Canyon is a large and intact natural area adjacent to downtown Salt Lake City, UT, and its ecological health needs to be maintained to provide drinking water, wildlife habitat, and natural space for people to enjoy. Evaluating the bird community can provide information about the health of the ecosystem as a whole, and also help us better understand how the canyon provides habitat to species of interest. Since 2011, Tracy Aviary has conducted a community science bird monitoring project in City Creek Canyon. Here, we summarize results from our 2020 project season.

STUDY SITES

We generated 31 sampling points through the riparian corridor in City Creek Canyon 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



City Creek Sampling Points



BIRD SURVEY METHODS

Breeding season point count surveys



During May – July of 2020, 10 community scientists conducted 3 breeding season point count surveys at City Creek. 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, 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 3 breeding season surveys at City Creek, we had 590 bird observations and detected 45 species. During 7 non-breeding season surveys, we had 682 bird observations and detected 57 species. We had a total species list of 66 species at City Creek in 2020.



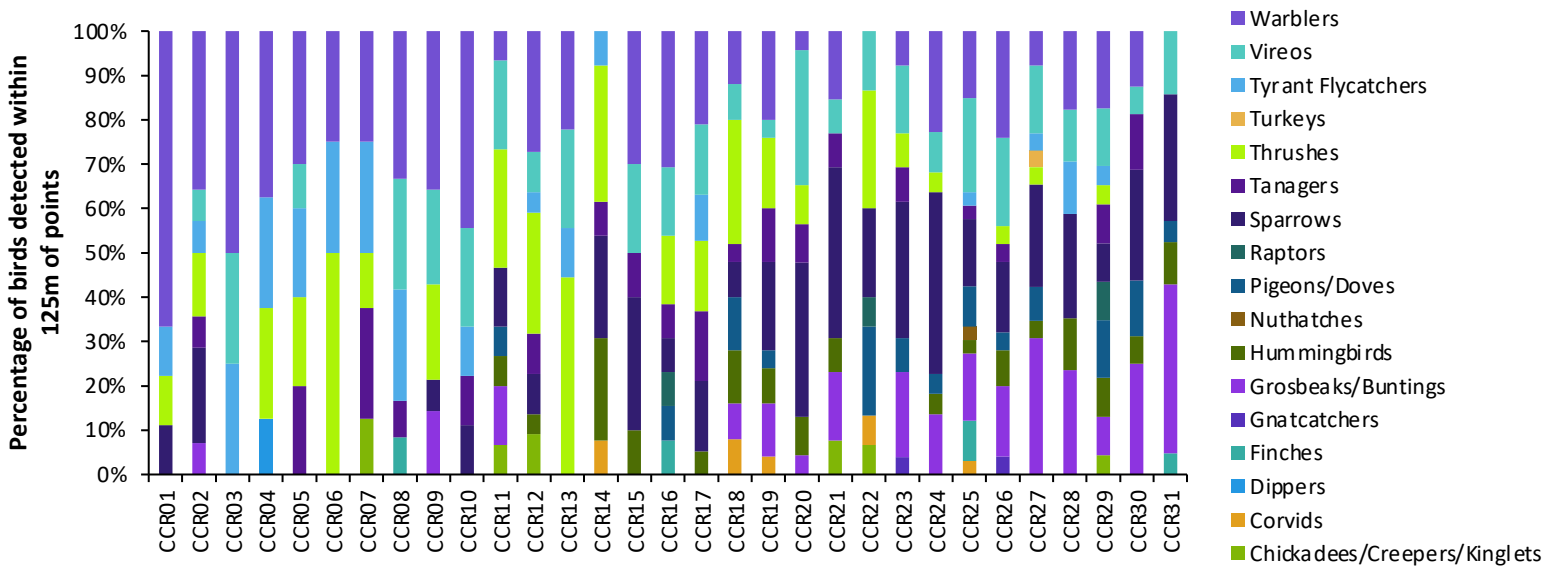
Song Sparrows are common at City Creek.

Since we began monitoring in 2011, we've detected 123 species that use habitat at City Creek Canyon.

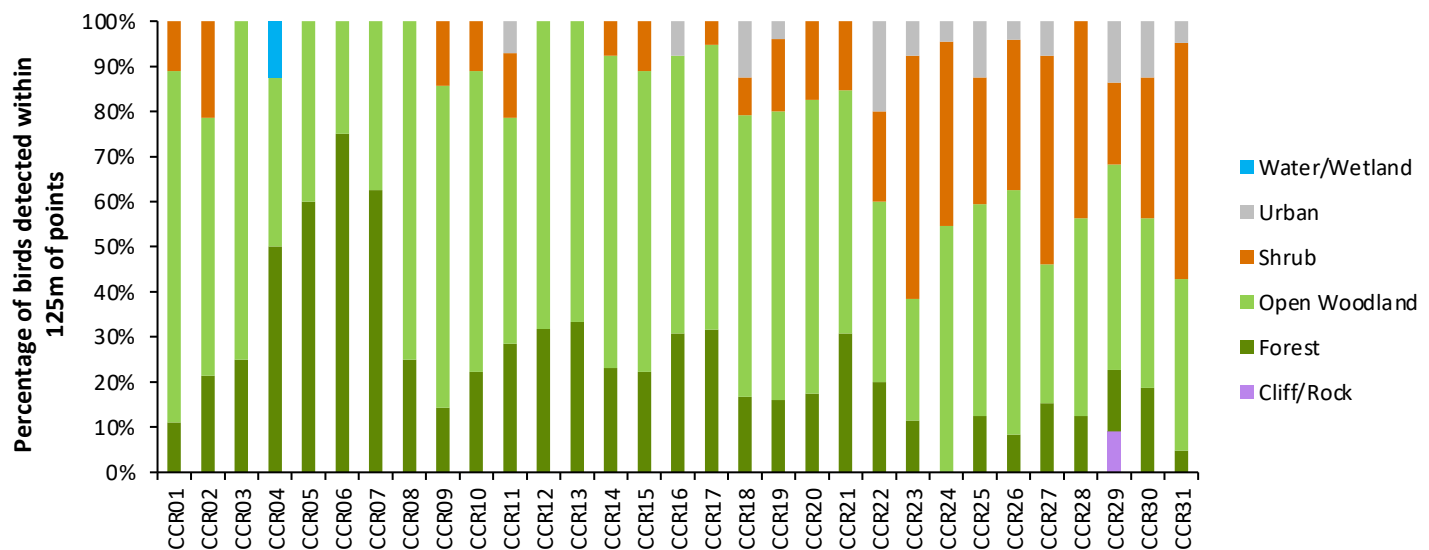
BREEDING SEASON COMMUNITY COMPOSITION

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

Families



Habitat Guilds



CITY CREEK CANYON

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

Species	Number of Observations (detections/survey)															
	2013		2014		2015		2016		2017		2018		2019		2020	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Acorn Woodpecker	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.57
American Crow	0	3.6	0	0.8	0.8	0	0	0	0	0	0	1.1	0	0.13	0	0.43
American Dipper	1.1	2.1	1.7	1.6	2.5	1.4	1.3	0.6	0	0.8	1	1	0.67	1.13	0.67	0.71
American Goldfinch	0	0.8	0.6	0.1	1	0.3	1.8	0.8	1.5	0.2	0.3	0.6	0	0	0	0
American Kestrel	0	0.7	0	0.4	0	0.6	0.3	0.3	0	0.2	0	0.3	0	1	0	0.14
American Pipit	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
American Robin	11.5	10	31.9	27.2	18.3	1.8	28.3	4	11	10.2	15.3	3.4	17	18	16.33	6.29
Bald Eagle	0	0.3	0	0.2	0	0.3	0	0	0	0.1	0	0	0	0.13	0	0.14
Barn Swallow	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belted Kingfisher	0	0.6	0.1	0.4	0.8	0	0	0.2	0	0	0	0.3	0	0.25	0	0
Black-and-white Warbler	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Black-billed Magpie	0	5.2	0.7	5.6	0	12.3	0	6.9	0	15.8	0	4	0	5.5	0.67	4
Black-capped Chickadee	9.5	18.1	12.4	19.8	4	13.8	8.5	12	3.5	13.7	6.3	17.7	10	21.13	1.67	9.29
Black-chinned Hummingbird	0.6	0	3.1	0.1	1.5	0.1	1.5	0	2.5	0.2	1.3	0.3	2	0.13	5.33	2.57
Black-headed Grosbeak	7.9	0	3.4	0	10.3	0.2	6	0	3.5	0	10.7	0	4.67	0	4.67	0
Black-throated Gray Warbler	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Blue Jay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14
Blue-gray Gnatcatcher	0	0.6	1.1	0.8	1	0.3	0.5	1.7	1.5	1.7	1.3	0.1	1.33	0.38	1	0.57
Broad-tailed Hummingbird	2.6	0.3	5.4	0.3	1.8	0.2	3	0.3	1.5	0.3	3.7	0.4	1.67	0	2.33	0.43
Brown Creeper	0	0.9	0.1	2	0	3.2	0	0.8	0	1.3	0	1	0	0.63	0.33	2.86
Brown-headed Cowbird	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0
Bullock's Oriole	0	0	0	0	0.5	0	0.3	0	0	0	0	0	0	0	0	0
California Quail	0	0.2	0.1	0.1	0.3	0	0.3	0.2	0	0.2	0	0	0	0	0	0
Canada Warbler	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Canyon Wren	0	0.6	0	0.2	0	0.2	0	0.9	0	0.6	1	1	0.33	0.63	0.33	0.71
Cassin's Vireo	0	0	0	0.1	0	0	0	0.2	0	0	0	0	0	0	0	0
Cassin's Finch	0	0.2	0	0	0.3	0	0.3	0	0	0	0.3	0	0	0	0	0.71
Cedar Waxwing	0	0	0	3.1	0	0	0.8	0	0	4.4	0	0	0	0	0	0.14
Chipping Sparrow	3.6	0.1	8.1	0	8.5	0	6.8	0.3	2	0.8	7.3	0	3	0	2	0
Chukar	0	0.1	0	0	0	1.3	0	0.4	0	0.1	0	0	0	0	0	2
Clark's Nutcracker	0	1.6	0	1.8	0	0.1	0	0	0	0	0	0	0	0	0	0
Common Raven	0.3	1.9	0	0.9	0	1.1	0	0.6	0	0.9	0	0.7	0	0.13	0.33	2
Common Redpoll	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Yellowthroat	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0
Cooper's Hawk	0.1	0.7	0.9	1.1	0.3	0.7	0.3	0.3	0	0.3	1	0.4	0.33	0.38	0.33	0.71
Cordilleran Flycatcher	9.5	0	9.7	0	8	0	12	0	8.5	0	9.3	0.1	6.67	0	6.67	0.43
Dark-eyed Junco	0.3	10.7	0.4	6.6	1.8	4.7	0	6.7	0	4	0.7	4.4	0.67	7.88	0.33	7.57
Downy Woodpecker	0.3	0.9	0.7	1.8	0.3	0.8	0.3	0.4	0	0.2	0.3	0.6	1.33	0.75	0	0.43
Dusky Flycatcher	1.1	0	0.9	0	1	0	1.3	0.1	0.5	0	0	0.1	2.33	0	1.67	0
Eurasian Collared-Dove	0	0.1	0	0.7	0	0	0	0.1	0	0	0	0	0	0	0	0
European Starling	0	2.2	0	0.3	0	0.8	0	0.6	0	0	0	0	0	0.25	0	0
Evening Grosbeak	0	0	0	0	0	0	0	1.1	0	0.3	0	0	0	0	0	0
Ferruginous Hawk	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13	0	0
Flammulated Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CITY CREEK CANYON

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Species	Number of Observations (detections/survey)															
	2013		2014		2015		2016		2017		2018		2019		2020	
	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS	BSS	NBS
Fox Sparrow	3.4	0	2.3	0	2.5	0	0.5	0	2	0.2	1.3	0.1	2	0.25	1.33	0
Gadwall	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Golden Eagle	0	1.1	0	0.4	0	0.3	0	0.4	0	0.4	0	0.4	0	0.5	0	1.14
Golden-crowned Kinglet	0	1.8	0.1	2	0	0.2	0	1	0	0.3	0	0.6	0	0.5	0	1.14
Gray Catbird	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14
Gray-crowned Rosy-finch	0	0	0	0	0	0	0	5.6	0	0	0	0	0	0	0	0
Great Horned Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.67	0
Great-blue Heron	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Green-tailed Towhee	0.8	0.1	0.1	0	0	0	0.3	0	0	0	0.7	0	0	0	1.33	0
Hairy Woodpecker	0	0	0	0.2	0	0.1	0	0	0	0	0	0.1	0	0	0	0
Hammond's Flycatcher	0.1	0.2	1.1	0	0.5	0	0.3	0.1	0	0.4	1	0.1	0.67	0	0.33	0
Hermit Thrush	0	0.2	1.9	0.2	0	0	0.3	0.6	0	0.3	1	0.1	0.33	0.25	0	0
House Finch	0.9	4.1	2.1	3.1	1.8	5	5.3	4.2	1.5	6.7	1	4.6	0.33	8.88	0.33	1.86
House Sparrow	0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0
House Wren	0	0	0.1	0	0	0	0	0	0	0	0.3	0	0	0	0	0
Lazuli Bunting	20.9	0.6	25.6	0	29.3	0.9	23	1.3	28.5	1	27.7	0.1	26	0	16.67	1.57
Lesser Goldfinch	0	0.4	1	0.3	2	0.6	2.8	2	1.5	1.2	2.7	2.3	1	5.38	1.33	6.29
Lincoln's Sparrow	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Long-eared Owl	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0
MacGillivray's Warbler	10.8	0.4	7.1	0	6	0	8.5	0	3	0.1	7	0	9.67	0.38	8.67	0.14
Mallard	0.1	1.2	1	2.6	1.8	0.4	0.5	3	0	0.6	0.7	1.1	1.67	1.13	0	0.86
Merlin	0	0	0	0	0	0.2	0	0	0	0.1	0	0	0	0.13	0	0
Mountain Bluebird	0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mountain Chickadee	1.3	6.2	3.6	3.7	1.3	1.1	0.5	0.1	0.5	0.1	1	2	1.67	1.25	0.33	2.29
Mourning Dove	5.8	0.4	7.1	0	6.5	0.1	16.5	0.2	3	0.3	16	0.4	1.67	0	9	0.29
Muscovy Duck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14
Nashville Warbler	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0
Northern Flicker	1	8.2	1.6	6.8	1.5	4.4	0.5	4.4	3	3.1	0.3	4.6	0.67	5.88	17	5.14
Northern Goshawk	0	0	0	0.1	0	0.1	0	0.1	0.5	0.2	0	0.1	0.33	0.13	0.33	0.43
Northern Harrier	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13	0	0
Northern Pygmy-Owl	0	0	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0.13	0.33	0.29
Northern Rough-winged Swallow	0	1	0.3	0	0	0.1	0	0	0	0	0.3	0	0.67	0	0	0
Northern Saw-whet Owl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.33	0
Northern Shrike	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Olive-sided Flycatcher	0	0.1	0	0	0	0	0.3	0	0	0	0.3	0	0	0	0	0
Orange-crowned Warbler	1.8	0.3	2	0.3	2.8	0	2	0.3	1	0.2	2.7	0	2.33	0	1.33	0.14
Osprey	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0
Pacific Wren	0	0.1	0	0.8	0.3	0.4	0.5	0.4	1	0.4	1.7	0.6	1	0.25	0	0.43
Peregrine Falcon	0	0	0	0	0	0	3	0.1	1	0.4	1.3	0.6	2.33	0.38	3.67	0.14
Pine Siskin	1.9	0.3	1.3	0.9	1	3	4.8	0	0	2.2	2.3	2.6	1.33	0.13	0.67	1.57
Pinyon Jay	0	3.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plumbeous Vireo	0.6	0.2	3.6	0.2	2.3	0.4	3.5	0.8	2	0.3	5	0	2.33	0	3	0.29
Prairie Falcon	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0
Red Crossbill	0	0	0	0	0.3	0	0	0	0	0.1	0	0	0	0	0	0

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Red-breasted Nuthatch	0.4	3.8	1.1	1.3	1.3	0.1	0.3	0	0.5	1.1	3	2.1	0.67	0.38	0.67	0
Red-naped Sapsucker	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0
Red-tailed Hawk	0.5	1	0.6	1.6	0.5	3	1.3	1.4	1.5	1.1	0	0.6	2	2	1.67	2
Ring-billed Gull	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Rock Pigeon	0	0	0	0	0	0.1	2	1.4	0	0.2	0	6	16.67	0	0	4.29
Ruby-crowned Kinglet	0.1	1.7	0.1	5.2	0	2.1	0.3	3.7	0	0.8	0.3	2.3	0	0.38	0.33	1.43
Ruffed Grouse	0	0	0.4	0.2	0.5	0	0.3	0	0	0	0	0	0	0	0	0
Rufous Hummingbird	0	0.2	0	0	0	0	0	0.1	0	0	0	0.3	0	0	0	0
Sharp-shinned Hawk	0	0.4	0	0.2	0.3	0.3	0.3	0.3	0	0.3	0	0.3	0	0	0	0.71
Song Sparrow	10.3	2.4	11	3.8	8	3	17.3	2.4	9.5	2.9	20.7	1.7	11.33	1.75	11.33	3.43
Spotted Towhee	18.9	4.2	23.9	7.6	20.3	2.2	26	4.4	19.5	2	25.7	3.7	15.67	4.75	17.33	4
Steller's Jay	0.3	9.4	1.1	11.7	1.8	1.1	0.3	0.1	0	5.7	0	0.9	0.33	1.63	1.33	1.29
Swainson's Hawk	0	0.1	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0
Swainson's Thrush	11.4	0.3	9.9	0	11.8	0	16.3	0	7.5	0	12.3	0	11.33	0	5	0
Townsend's Warbler	0	0.9	0	0.1	0	0	0	0	0	0	0	0.4	0	0	0	0
Townsend's Solitaire	0.3	1.8	1	1.2	0.3	0.4	0.8	0.3	3.5	0.6	1	0.6	0.33	1.25	0	1.14
Townsend's Warbler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tree Swallow	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey Vulture	0	0.6	0.1	1.2	0	1	0	0.8	0	1.4	0.3	0	0.33	0.25	0	0
Violet-green Swallow	0	0	0.6	0	0.3	0	0.3	0.2	0	0	0	0	0.33	0	0	0
Virginia's Warbler	0.3	0.3	1.4	0.6	0	0.1	0	0.7	0.5	0.1	0	0	1	0	0	0
Warbling Vireo	32.1	0.7	31.3	0.3	23.8	0.2	35.3	1	19	0.3	30.3	1.1	26.33	0.25	20.33	0.71
Woodhouse's Scrub-Jay	0.1	5	0.6	7.1	0.3	3.1	0	3.2	1	3.7	0	1.9	0.33	3.75	0.67	5.29
Western Kingbird	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
Western Meadowlark	0	0	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0
Western Screech-Owl	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	4.33	0
Western Tanager	11.9	0.4	9.4	0.1	11	0.2	10	0.3	10.5	0	10.3	0.1	12	0.13	10.33	0.14
Western Wood-pewee	0.1	0	0.4	0	0.3	0.1	0.3	0.1	1	0.1	0.3	0.1	0	0	0	0
White-breasted Nuthatch	0	0	0	0.1	0	0	0.3	0	0	0	0	0	0	0	0	0
White-crowned Sparrow	0	0	0	0.2	0	0	0	0	0	0.1	0	0.1	0	0	0.33	0.43
White-throated Swift	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Wild Turkey	0.4	1	0.1	0	0.8	0	1.5	0	0	2.4	0	0.6	3	2.63	0.33	3.43
Wilson's Snipe	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14
Wilson's Warbler	0.1	0	0	0.1	0	0	0	0	0	0.1	1	0	0.67	0	0	0
Winter Wren	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0
Yellow Warbler	29.1	0	35	0	36.3	0.1	28.8	0	16.5	0.7	27.7	0.9	22.33	0.63	23	0.86
Yellow-breasted Chat	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow-rumped Warbler	0.1	0.4	0.1	1.8	0	2.7	0	2	1	0.1	0	2.4	1	0	0	0.57

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 City Creek project partners.