

**Bird Surveys on Selected Louisville  
Open Space Properties**

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**Spotted Towhee (Dr. Kerrie Bryan)**

## Introduction

Quantitative bird surveys were conducted on Hecla Lake and Damyanovich Open Space properties and along the Coal Creek Riparian Corridor in June 2015 to determine what species are using each of these very different areas. This is the best time to census birds, because birds found in a particular area are commonly nesting and raising their young. Both resident and migrant species (those that winter to the south and return to Colorado to breed in the summer) are counted. Other species, such as owls, breed much earlier in the year and are usually missed on breeding bird counts; however, talking to residents and being familiar with birds in the area can help the bird observer add species, which may be missed in June.

All surveys began within one-half hour of sunrise and ended before 7:00 AM. Early morning is the time when birds are most active, whether singing, building a nest, or feeding young. The type of survey that was conducted depended on the terrain and shape of the area where the birds were to be counted. For instance, the birds at Hecla Lake were counted using a point-counting method. Coal Creek and Damyanovich bird counts were conducted on 50 – 225 m transects. All birds within 100 m of a transect or point were counted with the exception of nestlings or dependent young. Care was taken not to count the same bird twice. Birds heard, but not seen, were counted. Most birds flying over the observer while a count was in progress were counted unless it was obvious to the observer that the birds were not using the habitat.

### Coal Creek Riparian Corridor

This corridor, which includes parts of the Coal Creek Golf Course and land adjacent to Coal Creek as it winds through Louisville (Figure 1), has by far the most bird life of any of the three areas surveyed this year. Both the number of species and number of individuals are very high. This is due to the wide variety of habitat, from a well-manicured golf course with mature trees and lakes to riparian woodland, a “woodlot” adjacent to 96<sup>th</sup> St., and to backyards with bird feeders in Dutch Creek adjacent to the Coal Creek Trail. Due to the record-breaking moisture in May of this year, Coal Creek was still flowing at the end of June. Data for the Coal Creek Riparian Corridor are shown on Table 1.

**Transect 1** began 200 m east of the golf course clubhouse at the west end of a group of trees through which Coal Creek flows. Thirteen species and 29 individuals were counted. Highlights were a pair of house wrens nesting in a bird box and a very noisy family of crows flying in the trees at dawn.

**Transect 2** was very productive with 22 bird species and 50 individuals! This transect began at a falls on the creek and proceeded through an elongate group of trees in the golf course to a lake. A birdhouse on a post by hole 4 on the golf course had a pair of

### Coal Creek Riparian Corridor (cont.)

nesting house wrens. A pair of red-tailed hawks constantly dive-bombed and screamed at the observer on the transect. A few days later, Open Space technicians discovered a juvenile red-tailed hawk by hole 4, strongly suggesting that a red-tailed hawk nest had been nearby. Three great blue herons, a mallard, red-winged blackbirds, and swallows were at the lake — the swallows were fly-catching by skimming low over the water. Other birds counted indicate that the woods afforded many nest sites by having a good mix of brush and trees.

**Transect 3** produced 22 species and 68 individuals. It began at the junction of the Coal Creek Trail with the trail, which comes from the bicycle underpass under Cherry Street, and ends where the Coal Creek Trail gently curves to the south. The wide variety of woodland and open meadow birds reflects the excellent habitat and presence of water. The fact that many backyards in the Dutch Creek neighborhood have bird feeders also attracts many birds. Six singing house wrens is a large number for the small size of the transect; however, female wrens sing and males vs. females cannot be distinguished by sight, so six birds may only represent three pairs. Three territorial yellow warblers is also represents high number of nesting pairs. A pair of Say's phoebes was nesting in the bicycle tunnel near the beginning of the transect. A western kingbird pair was nesting in a ponderosa pine in the same area.

In late spring, a great-horned owl pair nested in a cavity in a large cottonwood tree about 30 m from the south entrance of the bicycle underpass. The owls were successful in raising three young despite proximity to the trail! Historically, the cottonwood where the owls nested was a tree where the same red-tailed hawk pair nested for at least seven years. No doubt, the presence of the owls (from January until May) deterred the hawks from using the same nest this year.

Western meadowlarks and vesper sparrows could be heard in the meadows of Warembourg Open Space to the south of the creek. High numbers of doves were attracted to the feeders along the trail. Grackles were in post-breeding flocks, as seen on other transects. The goldfinches were in pre-breeding flocks taking advantage of thistle, Mullein and other seed-bearing plants for food.

The bird count along **transect 4a** resulted in eight species and 40 individuals. This transect extended from County Line Road to the 96<sup>th</sup> Street bridge, and is, therefore, subjected to a great deal of traffic noise even at 5:30 AM. Grackles accounted for 16 of the individual birds! Grackles bred in this area and along transect 4b. Other birds of interest include two more pairs of house wrens and a one pair of northern flickers.

## **Coal Creek Riparian Corridor (cont.)**

**Transect 4b** produced 12 bird species and 64 individuals, even though it is along a busy highway. It followed the Coal Creek Trail from 96<sup>th</sup> Street to a private road, which comes out on highway 42 between 96<sup>th</sup> Street and the next bicycle underpass to the east. The total number of birds was greatly enhanced by 26 magpies in several flocks! Undoubtedly, the flocks included young that had fledged in late spring. A relatively large woodlot lies south of the trail. In the woods near the creek, red-winged blackbirds bred in an area of cattails.

**Transect 5** extends along the Coal Creek Trail from the private driveway and the end of transect 4b to the highway 42 bicycle underpass. Twenty bird species and 59 individuals were counted along this transect. In this area, the creek is set back behind private property; however, the observer could easily see and hear birds in the trees by the creek. Red-winged blackbirds nested in cattails along the creek. Cliff swallows built their nest in the roof of the highway 42 underpass through which Coal Creek flows. Four western meadowlarks and one eastern meadowlark (rare) were heard in the meadows north of the highway. The fact that a savannah sparrow (first time for this count) was also heard in the meadow attests to the wetness of the ground. Six house wrens are again quite high for one transect and point to the richness of this riparian habitat.

A Swainson's hawk pair nested in the woods at the south of the end of the transect. This species is nesting with more frequency in town and favors nest sites in trees near open meadows or prairie.

Despite being along a busy highway, transect 5 continues to attract a wide variety of nesting bird species due to a dense mixture of bushes and trees.

## **Hecla Lake Open Space**

Hecla Lake is one of the smaller open space areas in Louisville (Figure 2); however, it is quite heavily used, particularly by residents of the Balfour Senior Living Community and residents of a new housing development west of the lake. The area consists of a lake bordered by grass, sparse low bushes, and a few scattered cottonwood trees in a narrow corridor around the lake. A housing development lies within 100 m of the northern side of the lake. In the yards of these houses are many trees and shrubs. South of the lake is an open field, which has sparse vegetation. The lake was full of water this summer, which was a welcome contrast to 2012 when the lake was virtually dry. Birds were counted for five minutes from five different points ~ 175 m apart along a 0.8 km path around the lake. The results of the bird count are displayed on Table 2. The night before the count, the Louisville area experienced driving rain and small hail. Many leaves were on the ground the next morning, but the weather was absolutely perfect for a bird count.



## Hecla Lake Open Space (cont.)

The number of species among the points varied between seven and 13, and the number of individuals, from 25 to 41. Table 2 reveals that the number of individuals directly reflects the number of common grackles. The large number of grackles is due to the fact that most grackles had completed nesting and many of the birds were full-grown young grackles. Even though the grackles did not nest at Hecla Lake (no habitat), they had probably nested nearby. Of the six Canada geese present, only the two adults not the four goslings were counted.

The osprey did not nest near Hecla Lake, but it commonly used the lake for fishing. It probably nested at Boulder Reservoir or Sawhill Ponds Open Space. The same is true of the great blue heron, which came from one of the nearby heron rookeries (a colony of herons that nests in trees). If the count had been done earlier in June, more western meadowlarks might have been heard. The presence of red-winged blackbirds reflects the importance of a few clumps of cattails in the pond.

A great-horned owl pair raised three chicks in a cottonwood about 150 m south of the open space. They successfully fledged in late May. The adults undoubtedly fished in the lake to feed their young.

All of the other species on Table 2 probably nested in habitats close to the lake.

## Damyanovich Open Space

This is the first year that birds have been counted in the breeding season on Damyanovich Open Space. Three transects were established on the property (Figure 3). All transects were done on Sunday in hopes that traffic on highway 36 adjacent to the property on the west side would be lighter than during the week and that road construction would have stopped. By the second transect, however, traffic noise had become loud but not so loud as to interfere with the count. Heavy equipment was parked at the west end of transect 1 along a new dirt road used to haul equipment in and out of the construction site.

**Transect 1** was the farthest transect to the north. It runs parallel to an irrigation ditch, the sides of which are almost completely covered by brush. Cottonwood trees, which line the ditch on the north, have almost completely died. Water was running in the ditch when the count was done. Due to the large amount of spring rain, vegetation (i.e., grasses and weeds) was thick and shoulder high. A white-tailed deer was seen near the beginning of the transect. Results of the bird counts are shown in Table 3.

Mallards flew out of the water as the observer walked near the ditch. Birds attracted to this treed and brushy area include house wren, kestrel, and starling all of which may have nested in holes in the dead trees. A large magpie nest was visible

## Damyanovich Open Space (cont.)

in one tree, but was not possible to determine if it had been used this year. Flocks of grackles included family groups that had already dispersed from their nesting sites; thus, they did not necessarily nest in Damyanovich. This transect had the most species and individuals of any of the three transects due to its length, varied habitat (meadow, brush, trees), and constant source of water (at least this year due to the snowy winter and wet spring). The fact that it is adjacent to prairie to the north attracts meadowlarks, kingbirds and hawks.

**Transect 2** followed a brush and Russian olive-filled, wet ditch with intermittent areas of cattails. The grass and weeds were shoulder-high along this transect. Eight species and 20 individuals were counted even with traffic noise noticeably louder. Five of the individuals constituted a single magpie family! Red-winged blackbirds were nesting in the cattails, and the other species were apparently also nesting along the ditch.

**Transect 3** was quite short (Figure 3). It started on the west in a few small trees and proceeded through a grassy, round depression and ended at a cottonwood tree. Eight species and 16 individuals were counted. Of these, the starlings were nesting in a hole in the cottonwood. The lesser goldfinches and bunting *sp.* primarily nest in July in the foothills; therefore, they were using the weeds (i.e., thistles) as a food source. It was difficult to determine if the other species were nesting or had nested in the area, but they were using the open space for food or water.

## Discussion and Comparison to Other Years

May of 2015 was one of the wettest on record. It rained nearly every day and snowed in the high country (> 2,500 m). The rain also kept streams full and caused vegetation to grow fast. The precipitation influenced bird life by delaying some nesting attempts or even by totally destroying nests. For these reasons, even though the bird counts were done relatively late in the nesting season, many birds were still raising young.

Twenty-one species and 163 individuals were counted at Hecla Lake on one morning. This compares to 27 species and 96 to 97 individuals counted during two counts on different mornings at Hecla Lake in late June of 2012. The fact that fewer species were found in 2015 is partly the direct result of the construction of many houses west of the lake and may be partly due to the fact that only one transect was done in 2015 vs. 2012 (2 transects). The loss of habitat and increased population density close to a small open space area surely has a major impact.

At Hecla Lake, the large number (73) of grackles counted in 2015 vs. 18 in two counts in 2012 accounts for the wide disparity in numbers of individuals in 2015 vs. 2012. Large numbers (27) of mallards, killdeer, and Canada geese also contributed to larger numbers in 2015 even though fewer species were counted. Only one western

## **Discussion and Comparison to Other Years (cont.)**

meadowlark was counted this year, because not much habitat is left; none were counted in 2012, but they had finished nesting by the time the count was done that year.

The number of species along the Coal Creek Corridor totaled 36, which is exactly the same number as in 2012; only 27 species were found in 2001. The number of individuals, 303, counted in 2015 was considerably lower than in 2012 when 336 individuals were counted. Many more grackles were counted in 2012 than in 2015, accounting for the difference in total numbers. In 2012, there was a severe drought on the eastern plains and the spring in Boulder County was drier than normal. Coal Creek was completely dry when the counts were done in late June. This year, the creek was overflowing in some areas in May when the birds started to nest, and the creek remained full when the counts were done. In 2012, the creek also had water in it in May; therefore, the presence of water, is a critical factor in determining whether a species will nest in a particular area. In 2012 birds were attracted to the Front Range from southeastern Colorado due to the presence of some water and lakes. The spring of 2001 followed a very dry year, 2000. This almost certainly affected the reproductive success of birds in 2000 and perhaps 2001 (see *Bird Surveys on Louisville Open Space*, 2012). Only 66 individuals were counted in 2001, an astonishingly low number, which may reflect the weather and also a difference in bird-counting and reporting methodology (see 2001 report).

Spotted towhee, savannah sparrow, and eastern meadowlark were species counted for the first time in 2015. The towhee normally nests in the foothills, but a few nest in Louisville every year, and it was found in the same location in 2001. A common species not seen in 2015 was the song sparrow.

Because this is the first year that Damyanovich Open Space has had bird counts conducted on it in the early summer, there is nothing with which to compare these results. The fact that this was a very wet spring predicted that breeding success of species in the area would be good. Also, plant life was flourishing, and this caused species (i.e., bunting, goldfinch) to use the area that would not ordinarily be there.

## **Conclusions**

Numbers and species of birds fluctuate from year to year, but the major fluctuation (increase) in numbers apparent in the survey data in the past 14 years is an explosion in the number of grackles. This increase in grackles may have a deleterious effect on other bird species. Grackles eat other birds' eggs and nestlings, and sometimes kill and eat other adult birds. They often roost in huge flocks numbering in the thousands in some states. They do not seem to be affected by people and nest just about anywhere; thus, this is a trend that is likely to continue. The numbers of grackles counted is dramatically affected by "luck" because they travel in large flocks.



## **Conclusions (cont.)**

The other trend revealed by these survey data is the decline in numbers of species at Hecla Lake Open Space. This decline is clearly due, in part, to the construction of new houses, resulting in loss of habitat and increase in pedestrian traffic around the lake.

Even though vehicular traffic has increased on highway 42 and 96<sup>th</sup> Street near the Coal Creek Riparian Area and numbers of people have increased on the Coal Creek Trail, the numbers of birds and bird species have remained stable or even increased. This attests to the integrity and richness of the habitat.

Damyanovich Open Space has potential for good numbers of bird and animal life, especially at its north end due to the large area of brush and presence of water. This was a construction year on highway 36. This factor probably kept some birds from nesting in the area.

## **Recommendations**

It is recommended that future counts be done near the beginning of June. Late May to early June is the best time to do breeding bird surveys in the Louisville area, because the males of virtually all species will still be singing to defend their territories and actively engaged in breeding. Surveys, in late June may not get an accurate count of resident birds, such as chickadees, house finches, woodpeckers, etc., that finish breeding by that time.

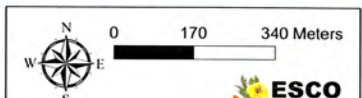
Leave some dead trees standing in Open Space areas, because they provide excellent homes for woodpeckers and, secondarily, for chickadees, nuthatches, and other birds that use woodpecker holes.

As population increases and puts more and more pressure on the Open Space areas in Louisville, it is crucial that they be monitored and protected as much as possible from disturbance.

**Figure 1. Coal Creek Riparian Corridor Bird Transects**



Figure 1.  
2015 Bird Transect Locations  
Coal Creek  
City of Louisville, Colorado



**Figure 2. Hecla Lake Open Space Point Count Locations**





**Figure 3. Damyanovich Open Space Bird Transects**

Damyanovich Open Space: Bird Transects



Transect 1 = 213 m  
Transect 2 = 198 m  
Transect 3 = 98 m



**Table 1**  
**Coal Creek Bird Counts 2015**

Species	T1	T2	T3	T4a	T4b	T5	Total
Mallard		1					1
Great Blue Heron		3					3
Swainson's Hawk*						2	2
Red-tailed Hawk*	1	2					3
Cooper's Hawk	1						1
Eurasian Collared Dove	1		3				4
Mourning Dove		1	3	2	1	4	11
Northern Flicker		2		1		2	5
Downy Woodpecker		1					1
Western Wood Pewee			1			1	2
Say's Phoebe			1				1
Western Kingbird			1			1	2
American Crow	7	3	1				11
Eastern Blue Jay		1	2	1	1	1	6
Black-billed Magpie					26	1	27
Warbling Vireo		1					1
Cliff Swallow		1				15	16
Barn Swallow	1	2	3				6
Black-capped Chickadee		3	4			1	8
White-breasted Nuthatch			1				1
House Wren	3	2	6	2	2	6	21
American Robin	2	5	6	3	6	3	24
European Starling	3	6	5	5	2		21
Yellow Warbler	1	2	3			1	7
Spotted Towhee					1		1
Vesper Sparrow			1			2	3
Savannah Sparrow					2	1	1
Red-winged Blackbird		6	4		6	7	23
Western Meadowlark	1	1	3		1	4	10
Eastern Meadowlark						1	1
Common Grackle		1	9	16		3	29
Northern Oriole			1		1	1	3
House Finch	5	4	6				15
Lesser Goldfinch		1	3				4
American Goldfinch		1	1				2
House Sparrow	3			2	3	2	10
<b>Total species:</b>	13	22	22	8	12	20	36
<b>Individuals:</b>	22	50	68	40	64	59	303
<b>Date/weather:</b>	6/22/15	6/22/15	6/23/15	6/23/15	6/23/15	6/19/15	calm, clear (all)
<b>Temperature:</b>	21 Deg.C	17 Deg.C	19 Deg.C	19 Deg.C	19 Deg.C	16 Deg.C	

**Table 2**  
**Hecla Lake Bird Counts 2015**

Species	Point 1	Point 2	Point 3	Point 4	Point 5	Total
Canada Goose	2					6
Mallard	5	7				12
Osprey		1				1
American Kestrel	1		1			2
Great Blue Heron	1		1			2
Killdeer	1	7	1			9
Eurasian Collared Dove				1		1
Mourning Dove	2	2	2	1	2	9
Northern Flicker			1		2	3
Say's Phoebe	1					1
American Crow			2	1	1	4
Eastern Blue Jay	1		1	1		3
Cliff Swallow					1	1
Barn Swallow			2		3	5
American Robin	2		1	3	6	12
Red-winged Blackbird		2	1		1	4
Western Meadowlark		1				1
Common Grackle	14	21	8	24	6	73
House Finch	1		3		3	7
American Goldfinch					1	1
House Sparrow			1	5		6
<b>Species:</b>	11	7	13	7	10	<b>21</b>
<b>Individuals:</b>	31	41	25	36	26	<b>159</b>
Date: 6/19/15						
Clear; 15 deg. C; calm	Rain and hail the night before; lots of leaves down.					

**Table 3**  
**Damyanovich Bird Counts 2015**

<b>Species</b>	<b>Transect 1</b>	<b>Transect 2</b>	<b>Transect 3</b>	<b>Total</b>
Mallard	2			2
Double-crested Cormorant	1			1
American Kestrel	1			1
Western Kingbird	3			3
Black-billed Magpie	1	5	2	8
American Robin		1	3	4
House Wren	3		1	4
European Starling	2	2	2	6
Red-winged Blackbird	1	4		5
Bunting sp.			1	1
Western Meadowlark	3	2	2	7
Common Grackle	10	4		14
Northern Oriole	1			1
House Finch	1	1	2	4
Lesser Goldfinch			3	3
House Sparrow		1		1
<b>Species:</b>	12	8	8	<b>16</b>
<b>Individuals:</b>	29	20	16	<b>65</b>
<b>Date: 6/19/15</b>				
<b>Cloudy, 16 deg. C, calm</b>				