

Quantitative Breeding Bird Surveys 2001

Results of breeding bird surveys in the Coal Creek riparian woodland in June 2001 underscore the importance of adjacent habitat and buffering from human disturbance. Counts of nesting birds in five 100-meter transects within open space are presented in Table 3. Note that Transect #1, in an area of the creek with good riparian habitat but with golf course on both sides, had an average of 9 nesting pairs and 9 species, while Transect #2, also within the golf course but with a poorer quality understory, had only 7 pairs and 7 species. In contrast, Transect #4, with undeveloped land on both sides (east of 96<sup>th</sup> Street), had 22 pairs and 20 species. More impressive yet was Transect #5, with an even wider zone of undeveloped land on both sides. This transect, adjacent to the Warembourg parcel, had 33 pairs and 25 species. Transect #3 was intermediate in nesting density and richness, with 13 pairs and 11 species. This transect was along a reach of the stream east of the golf course with a wide area of undeveloped land on the

Table 3A

Mean Number of Territorial Males (Nesting Pairs) along Five 100-meter Transects\*  
Coal Creek Open Space Breeding Bird Survey, Louisville, Colorado, June 2001

<b>Species</b>	<b>#1</b>	<b>#2</b>	<b>#3</b>	<b>#4</b>	<b>#5</b>
Mourning Dove	0.5	0	0.5	1.0	1.5
Yellow-billed Cuckoo	0	0	0	0	0.5
Northern Flicker	1.0	0.5	0	1.0	1.0
Downy Woodpecker	0.5	0.5	0	0.5	1.0
Western Wood-Pewee	0	0	0	0	1.0
Cordilleran Flycatcher	0	0	0	0.5	0
Blue Jay	0	0	0.5	0.5	1.0
American Crow	0	0	0	0	1.0
Black-capped Chickadee	1.0	1.0	2.0	1.0	2.0
Brown Creeper	0	0	0	0	0.5
House Wren	1.0	0	0.5	2.0	2.0
American Robin	1.0	1.0	0.5	1.5	2.0
Gray Catbird	0	0	0	0	1.0
Brown Thrasher	0	0	0	1.0	0

Warbling Vireo	0	0	0	0.5	1.0
Yellow Warbler	1.0	0.5	0	1.0	1.5
Blue Grosbeak	0	0	0	0	0.5
Indigo Bunting	0	0	0	0.5	1.0
Spotted Towhee	0	0	0	0	1.0
Song Sparrow	0	0	0	1.0	0.5
Bullock's Oriole	0	0	0	0.5	1.0
Common Grackle	1.0	1.0	1.5	0.5	0.5
Brewer's Blackbird	0	0.5	0.5	1.0	1.0
Red-winged Blackbird	0	0	1.0	1.5	1.5
House Finch	1.0	0	1.5	1.0	1.5
American Goldfinch	0	0	0.5	1.0	1.5
Lesser Goldfinch	0	0	1.0	0.5	1.0
<b>Mean No. of Pairs</b>	<b>9</b>	<b>7</b>	<b>13</b>	<b>22</b>	<b>33</b>
<b>Total No. of Species</b>	<b>9</b>	<b>7</b>	<b>11</b>	<b>20</b>	<b>25</b>

\*Transects: #1 - golf, good understory; #2 - golf, poor understory; #3 - residential + undeveloped; #4 - undeveloped both sides (narrow); #5 - undeveloped both sides (wide)

south but a narrow zone on the north adjacent to a residential neighborhood and heavily used path.

Not only the numbers of birds and species, but also the "quality" of the species was greater in the less developed reaches of Coal Creek. Transects #4 and #5 included species such as the yellow-billed cuckoo, cordilleran flycatcher, western wood-pewee, brown thrasher, gray catbird, and spotted towhee, all of which generally require relatively intact habitat with low levels of human disturbance. In comparison, birds observed along Transects #1 and #2 consisted of common suburban species such as the northern flicker, American robin, black-capped chickadee, common grackle, Brewer's blackbird, and house finch.

Quantitative Breeding Bird Surveys – 2008

In mid-June 2008 surveys along the same transects used in 2001 were conducted to assess the number and abundance of the breeding birds. Results are compiled in table 3B.

Table 3B

Mean Number of Territorial Males (Nesting Pairs) along Five 100-meter Transects\*  
Coal Creek Open Space Breeding Bird Survey, Louisville, Colorado June 2008

Species	#1	#2	#3	#4	#5
Mallard			0.5		
Great Blue Heron			0.5		
Swainson's Hawk				0.5	
Red-tailed Hawk			0.5		
Prairie Falcon			0.5		
Killdeer			2		
Rock Pigeon	0.5			3	
Mourning Dove	0.5	0.5	1	1	1
Belted Kingfisher			0.5	1	0.5
Downy Woodpecker	0.5	0.5	0.5	0.5	
Northern Flicker	0.5	0.5	1	0.5	0.5
Say's Phoebe	0.5				
Cordilleran Flycatcher				0.5	
Blue Jay			0.5	1	1
Black-billed Magpie		0.5	0.5	1	0.5
American Crow	2				
Cliff Swallow			0.5		25
Barn Swallow			0.5		
Black-capped Chickadee	1		0.5	1	
White-breasted Nuthatch			0.5		
House Wren		0.5	1	1.5	0.5
American Robin	2	1	2	2	3
European Starling	0.5	0.5	1	1.5	0.5
Yellow Warbler		1		1	2
Vesper Sparrow			0.5		1
Song Sparrow		0.5		3	1
Red-winged Blackbird		0.5	1	3	5
Western Meadowlark	0.5	0.5		1	1
Brewer's Blackbird			2	0.5	
Common Grackle	1.5		1.5	2	1
Brown-headed Cowbird	1	0.5	0.5	1.5	0.5
Bullock's Oriole			0.5		0.5
House Finch	2	2	4		
American Goldfinch	1	0.5	1.5	1	
House Sparrow	1	1	3		2
<b>Mean No. Pairs:</b>	<b>14</b>	<b>10.5</b>	<b>38.5</b>	<b>29.5</b>	<b>46</b>
<b>Total No. Species:</b>	<b>15</b>	<b>15</b>	<b>27</b>	<b>21</b>	<b>18</b>

In comparison to the 2001 data, the following observations are made:

- The total number of species observed increased in the reaches of Coal Creek through the golf course and the Dutch Creek Park area (Tables 3A and 3B, Transects 1 through 3, Figure 1).
- Total species in the more closely wooded reaches were about steady (Transect 4) and distinctly fewer (Transect 5).
- Opportunistic generalists including rock pigeon, black-billed magpie, American crow, European starling, red-winged blackbird, Brewer's blackbird, common grackle, house finch and house sparrow were distinctly more abundant in 2008 than had been the case in 2001. This was especially true in the closely wooded sections (Transects 4 and 5).
- Species that had been observed along Transects 4 and 5 in 2001 and were noted at that time as indicators of high quality riparian habitat were almost entirely missing in 2008. Yellow-billed cuckoo, western wood-pewee, brown thrasher, gray catbird, and spotted towhee all of which were observed in 2001 surveys and were noted as generally requiring "relatively intact habitat with low levels of human disturbance" were absent in 2008 surveys. The lone carry over of sensitive indicator species was the Cordilleran flycatcher that occurred along Transect 4 in both 2001 and 2008.
- In terms of numbers of breeding pairs observed, the numbers were higher along each of the five transects in 2008. However if the above-listed opportunistic generalist species are discounted, the totals show that the golf course levels were virtually unchanged (Transects 1 and 2), there was a large increase in the Dutch Creek Park area (Transect 3), a small decline along Transect 4 and a large decrease along Transect 5.

Cause of declines in the closely wooded reach of Coal Creek between 96<sup>th</sup> St. and Highway 42 are not completely clear. It must be realized that the observations of 2001 and 2008 represent a small sample size and thus are associated with some chance that results do not represent trends that would have been the case if they had been repeated, for example, ten times over in both years. Specifically, the possibility that at least some of the sensitive species encountered in 2001 were just chance transients is

non-negligible. Despite this chance for error, the original observation of six sensitive species in 2001 and the absence of five of those six in 2008 is difficult to ignore and suggestive of the following:

- The construction of the 96<sup>th</sup> St. bridge overhead along with the approach fills between 2001 and 2008 and the removal of approximately 200 feet of riparian woodland doubtless has had at least some effect.
- The introduction of a well-used 10 foot wide hard-surfaced path through the riparian zone with consequent increased human traffic is likewise a change since 2001 that could reasonably be associated with effects on more sensitive species. It should be noted that elsewhere along the Coal Creek riparian corridor, the path is well-separated from the creek corridor itself and that it was more or less forced close to the creek in this reach in order to cross a railroad track (i.e. under the RR bridge over the creek).
- Besides the bridge and path / foot traffic, habitat effects of other construction in the area are notable. Specifically, the private residence comprising much of the floodplain along Transect 5 is much more actively manicured than in 2001, and two very large new residences have been constructed on the bluff immediately overlooking this riparian area along with their access road across Coal Creek and through the riparian zone.
- The cumulative effects of these changes between 2001 and 2008 may have simply crossed an invisible threshold for many of the sensitive species now apparently missing.

The Transect 3 area south of the Dutch Creek Park area has a fairly wide open space on the south side of the creek corridor that extends all the way across the Warembourg parcel to Dillon Road and has remained similar in condition during the 2001 to 2008 period. So, although residential development lies immediately north and the Coal Creek Trail is also situated close to the creek corridor, avian use of this segment seems to have increased since 2001. Much of the increase in total numbers is in opportunistic/generalists listed above, but birds such as American robin, northern flicker, black-capped chickadee, American goldfinch, and Bullock's oriole, are also on the increase. While none of these latter are highly sensitive and indicative of pristine riparian condition, their

increase is desirable nonetheless. Some of the change may relate to the maturation of residential landscaping plants in the Dutch Creek area.

The golf course transects (1 and 2) are in the midst of what has probably been a comparatively stable environment over the 2001 to 2008 period. It is not pristine riparian vegetation, but its physical and biological attributes are part of a fixed pattern inherent in the golf course layout. In 2001 the golf course transects had the fewest breeding pairs and fewest total species of the five transects. In 2008, they likewise are the lowest but the absolute numbers have risen by half and more. Again this may relate to the maturation of landscape trees and shrubs in the golf course and perhaps nearby residential areas.

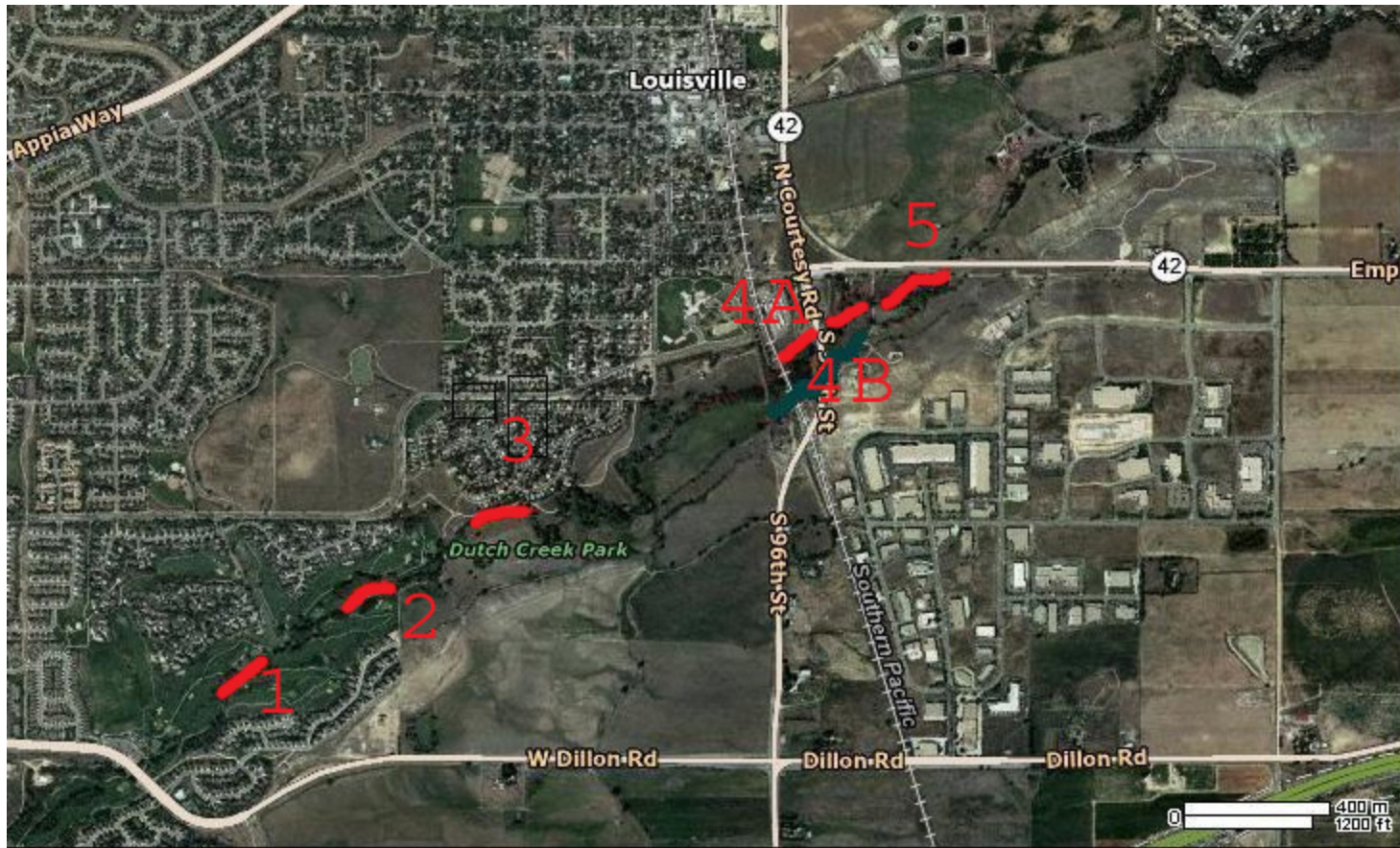


Figure 1. Coal Creek Breeding Bird Survey Transect Locations