

SPRING MIGRATION & BREEDING SEASON BIRD SURVEYS ON WETLAND RESERVE EASEMENTS IN MISSOURI 2019

Report to the Natural Resources Conservation Service, Missouri WET Biologists & WRE Landowners



MISSION

The Missouri River Bird Observatory is a 501(c)3 non-profit entity dedicated to the conservation of Missouri's migratory and resident birds through scientific research, community outreach, K-12 education and conservation policy advocacy.

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The Wetland Bird Survey project would not have been possible without the hard work of our seasonal technicians from 2015 to present.

REPORT CONTENTS

General Report

Background and Survey Methods	4
Note to Landowners	5
Contributions of Easements to Missouri Bird Populations in 2019	6
Rail and Bittern Detections 2015-2019	8
Guilds of Birds Supported by Missouri's Wetland Easements	9
Example Bird Detection Map	10

Reports on Individual Easements

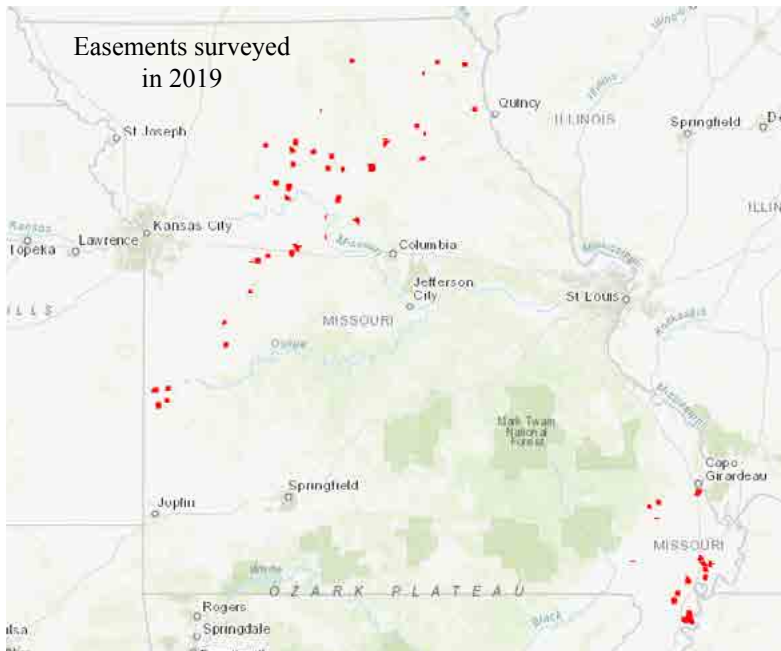
WET Region 1	11
WET Region 2	48
WET Region 3	66
WET Region 4	87
Codes for bird names on landowners' detection maps	118
Photo credits	120



2019 SURVEY SUMMARY

- MRBO surveyors received a sample of 60 wetland easements from NRCS staff. Of these, 54 sites were surveyed. Five sites were inaccessible due to the extreme flooding conditions across the state and one was not surveyed to avoid interfering with the landowner's hunting activities.
- Surveys aimed at documenting migration were conducted from late March to May 15th, beginning in southeast Missouri and ending in the northern part of the state. Breeding season surveys were conducted from May 15th to June 30th following a similar geographic pattern.
- Surveyors documented over 19,000 individual birds, almost 14,000 during migration and over 5,000 during breeding season. This is a typical migration to breeding season ratio, as more birds come through Missouri on their migratory journey than breed here. Some birds documented during the migration period also represent species that have wintered here.
- While migration is always extremely variable in terms of bird numbers and breeding season is more predictable, this year's flooding rendered many sites unusually unsuitable for species that require shallow water levels. This phenomenon resulted in lower numbers of birds overall than has been typical since 2015.

BACKGROUND & METHODS



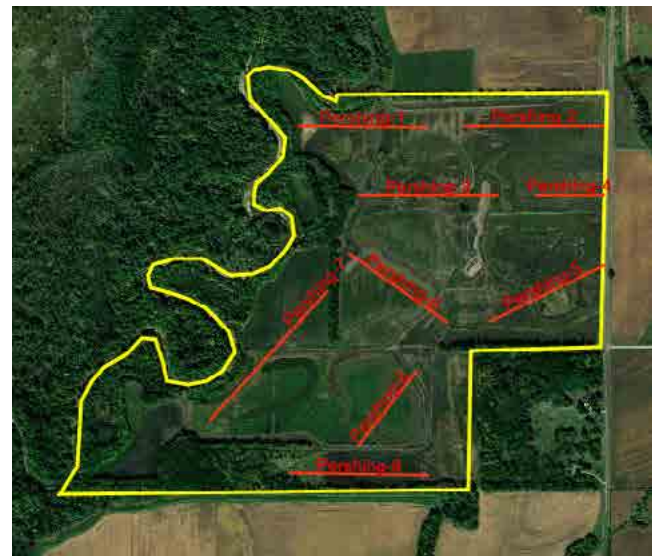
Throughout the Midwest, populations of many marsh-dwelling bird species are in decline and several are listed as species of conservation concern. Wetland habitat loss and degradation, two key factors affecting nearly 80% of migratory land and water bird species, come from agricultural activities and development. This is one of the many reasons cooperative programs with private landowners, such as the Wetland Reserve Easement Program (WREP), are crucial tools for conservation. Sites such as high-quality WREP with high resource abundance are particularly important for waterfowl and wading birds; individuals of these guilds may remain at the same site for weeks during migration stopover.

WREPs are often established for purposes of conserving game birds but clearly benefit non-game birds of many species. More than 150 species other than waterfowl use wetlands as critical wintering, breeding and migration stopover habitat. Wetland easements therefore represent an untold contribution to ecological diversity in general, while at the same time providing excellent recreational opportunities for landowners and their associates.

The Missouri River Bird Observatory (MRBO) began surveying WREP sites in 2014. Each year we survey 30-60 easements throughout the state using the line-transect method. Observers walk each transect at approximately one mile/hour, and record all birds seen and heard on an iPad application. Survey transects are systematically laid on all properties to maximize coverage of emergent marsh and mudflat habitat.



The term *emergent marsh* refers to this type of habitat where vegetation grows out of shallow sheet-water. Emergent marsh is often bordered by gradual slopes consisting of mudflats and then upland areas where the vegetation becomes slightly different. This continuum of habitat is extremely important to about 200 bird species, plus insects, amphibians and mammals. These habitats also take on floodwaters, providing a hugely valuable ecological service to everyone downstream.



An example of a survey transect design. Transects are laid out to get ideal coverage of marsh habitat. Bottomland forest and upland areas are often included in the coverage incidentally.

Structure of this Report

Unlike previous years, in which we printed separate copies of individual reports for each landowner, this year we have compiled all the wetland survey data in to this one book. Landowner names and locations are kept private by referring to each easement only by its USDA agreement number. We believed it would be of interest to landowners to be able to see data from other easements across the state. This book is separated into four sections, one for each Wetland Emphasis Team region. These regions are: Wet I (northwest; biologist Mike McClure), Wet II (northeast; biologist Shawn Duckworth), Wet III (southeast; biologist Tommy Marshall) and Wet IV (southwest, biologist Neal Young).

LETTER TO LANDOWNERS

Dear

Please accept our heartfelt thanks as conservationists for what you do to provide habitat for birds and other wildlife on your property.

You may have seen the recent news that came out from Cornell University, the Smithsonian Institution and others that we've lost about 3 billion birds (about 30% of North America's bird population) over the past 50 years. Birds associated with prairies (grasslands) are faring the worst, but other species, even some that are considered common, are not doing much better. However, the Cornell study found that this wasn't true of waterfowl and a few other bird species that inhabit wetlands – and this is largely because landowners like yourself have set aside habitat for wildlife.

The following report shows that Missouri's wetland easements provide habitat for a lot of marsh-dependent species, but also for grassland birds, forest birds and a group of birds called "aerial insectivores" – birds that forage entirely by hunting insects on the wing. These are the swifts, swallows and nighthawks, and their populations are doing badly. Your property makes a significant contribution to the conservation of all of these species.

Your easement also provides an important ecological service to humans: by taking on water that would otherwise add to downstream flooding of fields and towns. The spring and summer of 2019 saw significant floods throughout Missouri, and those would have been even worse were it not for the thousands of wetland easements that private landowners maintain across our watersheds. The background photo on this page is an example of this.

The extreme water levels this year not only made surveying quite a challenge, but also changed conditions on the ground considerably. In many places, birds that require shallow to moderate levels of water, such as herons and sandpipers, were pushed to higher areas to wade. As you probably know, it is very typical to have a far higher number and diversity of birds during migration than during breeding season. If your easement has been surveyed more than once, please note that we make every effort to time the survey dates as close as possible between years. The extremely variable nature of migration can result in remarkably different numbers of birds between years even if the habitat remains very similar.

While Missouri has over 100 bird species that nest here, we have another 200+ that only stop by during migration or winter here. Breeding birds are often more specific about their habitat requirements, so the birds that remained on your property during the breeding season indicate the quality habitat you are providing just as well as large numbers of migrants do.

As mentioned on the previous page, in this report we refer to properties only by their easement number so that all landowners' personal information remains private. Your easement # is _____; we have bookmarked its place in this report with a brochure that provides more information about the Missouri River Bird Observatory.

If you have any questions or comments on the surveys, your results, or Missouri bird conservation in general, please do not hesitate to contact us.

Sincerely,

Dana Ripper & Ethan Duke
Missouri River Bird Observatory Founders/Directors
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Conservation is a state of harmony between man and land.
-Aldo Leopold

TOTAL CONTRIBUTIONS OF MISSOURI'S WETLAND EASEMENTS TO BIRD POPULATIONS IN 2019

Species	Migration	Breeding	Total
Acadian Flycatcher		7	7
Alder Flycatcher		14	14
American Bittern	71	10	81
American Coot	554	1	555
American Crow	79	28	107
American Golden Plover	14		14
American Goldfinch	85	48	133
American Kestrel	1		1
American Pipit	8		8
American Redstart	3	3	6
American Robin	34	8	42
American White Pelican	120	54	174
American Wigeon	2		2
American Woodcock	3		3
Bald Eagle	49	17	66
Baltimore Oriole	23	27	50
Bank Swallow	10	1	11
Barn Swallow	128	67	195
Barred Owl	28	8	36
Bell's Vireo		95	95
Belted Kingfisher	16	8	24
Black-and-White Warbler	9	1	10
Black-capped Chickadee	35	7	42
Black-crowned Night-Heron	6		6
Black-necked Stilt		12	12
Black-throated Green Warbler	1		1
Blackbird spp.	11		11
Blue Grosbeak		11	11
Blue Jay	138	26	164
Blue-gray Gnatcatcher	88	82	170
Blue-winged Teal	2723	21	2744
Blue-winged Warbler	5		5
Bobolink	1	2	3
Bonaparte's Gull	1		1
Brown Thrasher	73	20	93
Brown-headed Cowbird	265	110	375
Bufflehead	2		2
Canada Goose	417	233	650
Carolina Chickadee	21	4	25
Carolina Wren	61	42	103
Caspian Tern	1		1

Species	Migration	Breeding	Total
Cattle Egret	1	1	2
Cedar Waxwing		32	32
Chickadee spp.	6	5	11
Chimney Swift	14	2	16
Chipping Sparrow	8	5	13
Cliff Swallow	9	42	51
Common Gallinule	2	1	3
Common Grackle	309	159	468
Common Merganser	1		1
Common Nighthawk		1	1
Common Yellowthroat	210	457	667
Cooper's Hawk	2		2
Crow spp.	3	2	5
Dickeissel	8	502	510
Double-crested Cormorant	288	2	290
Downy Woodpecker	45	29	74
Duck spp.	26	25	51
Eastern Bluebird	27	8	35
Eastern Kingbird	23	78	101
Eastern Meadowlark	121	47	168
Eastern Phoebe	22	5	27
Eastern Townhee	33	12	45
Eastern Wood Pewee		52	52
European Starling	62	47	109
Field Sparrow	242	96	338
Fish Crow	64	15	79
Flycatcher spp.	3	2	5
Forster's Tern	2	1	3
Fox Sparrow	2		2
Franklin's Gull	18		18
Gadwall	79		79
Golden-crowned Kinglet	2		2
Golden-winged Warbler	6		6
Grasshopper Sparrow	8	3	11
Great Blue Heron	70	134	204
Great Egret	80	96	176
Great Horned Owl	8		8
Great-crested Flycatcher	16	46	62
Great-tailed Grackle	3		3
Greater White-fronted Goose	4		4
Greater Yellowlegs	234		234

TOTAL CONTRIBUTIONS OF MISSOURI'S WETLAND EASEMENTS TO BIRD POPULATIONS IN 2019

Species	Migration	Breeding	Total	Species	Migration	Breeding	Total
Green Heron	12	31	43	Pileated Woodpecker	18	18	36
Green-winged Teal	209	2	211	Prothonotary Warbler	5	64	69
Gray Catbird	18	73	91	Purple Martin	3	19	22
Hairy Woodpecker	5	4	9	Red-bellied Woodpecker	70	56	126
Henslow's Sparrow	5	3	8	Red-eyed Vireo	3	12	15
Hooded Merganser	67	9	76	Red-headed Woodpecker	37	20	57
Horned Lark	15	3	18	Red-shouldered Hawk	16	11	27
House Sparrow		7	7	Red-tailed Hawk	9	3	12
House Wren	26	11	37	Red-winged Blackbird	202	6	208
Indigo Bunting	11	421	432	Ring-billed Gull	8		8
Kentucky Warbler		1	1	Ring-necked Duck	35		35
Killdeer	102	97	199	Rock Pigeon		21	21
King Rail	2	2	4	Rose-breasted Grosbeak	10		10
Least Bittern	1	27	28	Ruby-crowned Kinglet	27		27
Least Flycatcher	3		3	Ruby-throated Hummingbird		4	4
Least Sandpiper	19		19	Ruddy Duck	17		17
Lesser Scaup	17		17	Rusty Blackbird	7		7
Lesser Yellowlegs	241		241	Sandhill Crane	6	2	8
Lincoln's Sparrow	8		8	Sandpiper spp.	450	2	452
Long-billed Dowitcher	53		53	Savanna Sparrow	71		71
Louisiana Waterthrush	6	8	14	Scarlet Tanager	1		1
Magnolia Warbler		1	1	Scissor-tailed Flycatcher	1		1
Mallard	113	73	186	Sedge Wren	11	5	16
Marsh Wren	86	2	88	Sharp-shinned Hawk	1		1
Mississippi Kite		4	4	Slate-colored Junco	1		1
Mourning Dove	100	67	167	Snow Goose	7	1	8
Nashville Warbler	2		2	Solitary Sandpiper	47	2	49
Nelson's Sparrow	1		1	Song Sparrow	181	99	280
Northern Bobwhite	34	46	80	Sora	333		333
Northern Cardinal	256	254	510	Sparrow spp.	52		52
Northern Flicker	26	11	37	Spotted Sandpiper	19	7	26
Northern Harrier	21		21	Summer Tanager	1	10	11
Northern Mockingbird	1	3	4	Swainson's Thrush	1		1
Northern Parula	35	37	72	Swallow spp.	13	7	20
Northern Pintail	2	3	5	Swamp Sparrow	469		469
Northern Rough-winged Swallow	55	31	86	Tennessee Warbler	1		1
Northern Shoveler	540		540	Tree Swallow	895	45	940
Northern Waterthrush	21		21	Tufted Titmouse	55	24	79
Orange-crowned Warbler	1		1	Turkey Vulture	77	32	109
Orchard Oriole	5	47	52	Vesper Sparrow	1		1
Ovenbird	2	5	7	Virginia Rail	35		35
Pectoral Sandpiper	449		449	Warbling Vireo	33	54	87
Peregrine Falcon	2		2	Western Palm Warbler	11		11
Pied-billed Grebe	93	22	115	White-breasted Nuthatch	11	6	17

TOTAL CONTRIBUTIONS OF MISSOURI'S WETLAND EASEMENTS TO BIRD POPULATIONS IN 2019

Easement Coverage and Bird Detections

2015
30 easements surveyed
153 species detected
10,248 total detections:
8,123 during migration
2,125 during breeding season

2016
58 easements surveyed
193 species detected
24,523 total detections:
17,575 during migration
6,948 during breeding season

2017
32 easements surveyed
188 species detected
18,649 total detections:
11,715 during migration
6,934 during breeding season

2018
62 easements surveyed
216 species detected
37,349 total detections:
26,904 during migration
10,445 during breeding season

2019
54 easements surveyed
191 species
19,209 total detections
13,929 during migration
5,290 during breeding season

Species	Migration	Breeding	Total
White-crowned Sparrow	8		8
White-eyed Vireo	5	17	22
White-rumped Sandpiper		3	3
White-throated Sparrow	103		103
Wild Turkey	13	3	16
Willow Flycatcher		10	10
Wilson's Snipe	382		382
Wilson's Warbler	1		1
Winter Wren	1		1
Wood Duck	192	345	537
Wood Thrush	2	8	10
Woodpecker spp.	3		3
Yellow Rail	2		2
Yellow Warbler	24	20	44
Yellow-billed Cuckoo		73	73
Yellow-breasted Chat	4	72	76
Yellow-crowned Night-Heron	2	11	13
Yellow-headed Blackbird	13		13
Yellow-rumped Warbler	96		96
Yellow-throated Vireo	14	17	31
Yellow-throated Warbler	1	2	3
	13929	5290	19209



RAIL & BITTERN DETECTIONS 2015-2019

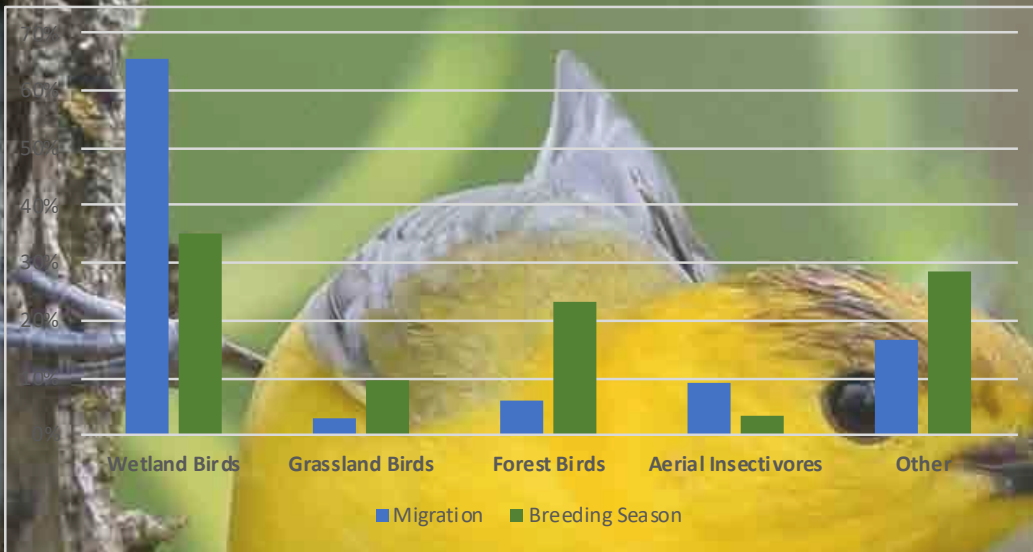
This project was originally started to document rails and bitterns, collectively known as “secretive marshbirds” for their cryptic habits. In 2014 we began recording all birds seen and heard, regardless of species, but remain interested in tracking numbers of secretive marshbirds. Most of the species in this group are considered to be of conservation concern, as their numbers appear to be declining throughout their ranges. Our surveys suggest that current numbers in Missouri appear to be stable.

Species	2015		2016		2017		2018		2019	
	Migration	Breeding	Migration	Breeding	Migration	Breeding	Migration	Breeding	Migration	Breeding
American Bittern	36	9	30	2	15	5	61	1	71	10
King Rail	1	2	3	5	7	3	5	3	2	2
Least Bittern		6	4	12	6	31	3	23	1	27
Sora	129	7	156	7	173	6	66	8	333	
Virginia Rail	7		3		2		26		35	
Yellow Rail	2								2	
Unknown Rail	3		1				1			
Grand Total	175	24	196	26	203	45	161	35	444	39

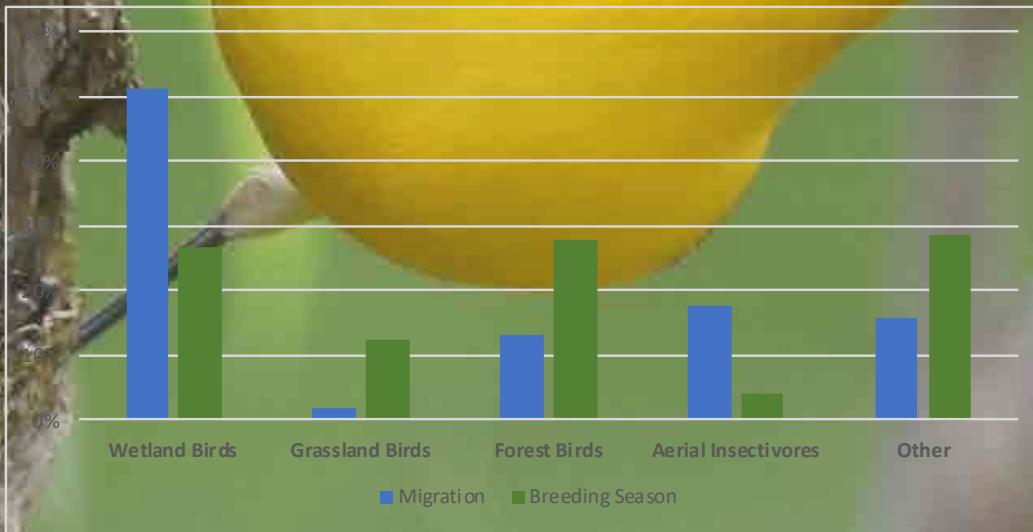
BIRDS SUPPORTED BY MISSOURI'S WETLAND EASEMENTS

While wetland easements are designed to reestablish hydrological function and natural marsh and bottomland forest habitat, they support many other species of birds that are dependent on a variety of habitats. The graphs below show the proportion of birds we recorded by their ecological categories. Note that since our survey transects are specifically set up to cover emergent marsh, other habitat types are not well-represented; therefore easements probably support even more non-wetland birds than we have measured. The "Other" category includes species that regularly use a variety of different habitat types.

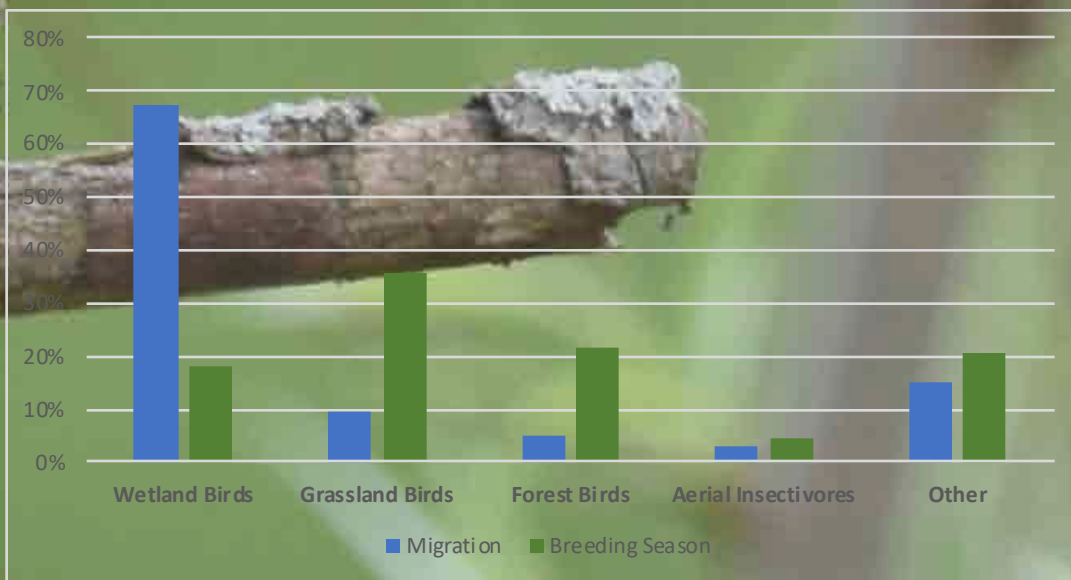
WET REGION 1



WET REGION 2



WET REGION 3





EXAMPLE BIRD DETECTION MAP



The map at left is an example of mapped data from one WRE during migration. Reports to each individual landowner include migration and breeding season maps for your properties. Use these maps along with the reference list of four-letter bird codes on page 118. (We can not fit all the species' names on a map) All mapped data are stored in ArcGIS Online and are available to landowners, WET Biologists and other NRCS and MDC staff. ArcGIS Online can be queried to show maps from multiple survey years side-by-side to facilitate understanding of the changes in bird use on a property.

WET REGION 1 OVERVIEW

Survey coverage in WET Region 1 in 2019.

<i>Easement</i>	<i>County</i>	<i>Site Acreage</i>	<i># Transects</i>	<i>Migration Visit</i>	<i>Breeding Visit</i>
666412040098P	Livingston	78	2	4/23	inaccessible
66642401008ZW	Chariton	431	8	4/20	6/27
66642496009NG	Chariton	108	5	4/21	6/27
66642496009NC	Chariton	97	3	4/19	6/6
66642401008ZX	Chariton	290	5	4/17	6/5
666424020092S	Chariton	169	4	4/17	6/5
66642496009Q1	Chariton	125	6	4/21	6/26 & 6/27
75642499000SL	Carroll	153	4	4/15	5/31
66642496009Q2	Carroll	599	9	5/1 & 5/2	6/22 & 6/24
66642498009BL/6664240800MZ1	Chariton	293	6	4/21	inaccessible
666424010091D	Chariton	165	3	4/23	inaccessible
666424010090F	Chariton	201	6	4/19	6/4
7564240900P3D	Linn	304	9	4/22	6/3
6664241301CTQ	Chariton	207	5	landowner hunting	excluded
6664241000Z0F	Carroll	428	12	4/16	6/1
66642498009Z6	Linn	90	3	4/25	6/6
666424040099C	Carroll	237	6	4/23	inaccessible

Species	Migration		Breeding 2018	Species	Migration		Breeding 2018
	2018	2019			2018	2019	
American Bittern		1		Northern Mockingbird			1
American Coot		1		Northern Rough-winged Swallow		5	2
American Crow			2	Orchard Oriole			1
American Goldfinch		3	1	Pectoral Sandpiper	3		
American Robin			1	Pied-billed Grebe		1	
American White Pelican	3			Red-bellied Woodpecker	1		3
Bald Eagle	1	1		Red-eyed Vireo			2
Baltimore Oriole			1	Red-headed Woodpecker	1		3
Bank Swallow		2		Red-shouldered Hawk		1	2
Barn Swallow		6	8	Savannah Sparrow	1	1	
Barred Owl		2	1	Scarlet Tanager			1
Bell's Vireo			1	Solitary Sandpiper		3	
Belted Kingfisher		1		Song Sparrow	3	4	
Black-capped Chickadee		2	1	Sora		1	
Blue-gray Gnatcatcher		2		Swamp Sparrow	1	10	
Blue Jay	4	2		Tree Swallow		42	
Blue-winged Teal	2	32		Turkey Vulture		1	1
Brown Thrasher		1	1	Warbling Vireo		1	
Brown-headed Cowbird		4	1	White-throated Sparrow		1	
Canada Goose	4	19		Wild Turkey			1
Carolina Wren			1	Wilson's Snipe		1	
Common Grackle	1		1	Wood Duck		3	
Common Yellowthroat		1	6	Wood Thrush			2
Dickcissel			5	Yellow-billed Cuckoo			2
Downy Woodpecker		1		Yellow-throated Vireo			1
Eastern Phoebe		1	1	Grand Total	38	183	80
Eastern Towhee		1					
Eastern Tufted Titmouse		1	1				
Eastern Wood-Pewee			1				
Field Sparrow		1	1				
Gray Catbird			1				
Great Blue Heron			1				
Great Crested Flycatcher			4				
Greater Yellowlegs	2						
Horned Lark	1						
Indigo Bunting			7				
Killdeer	2	1	5				
Lesser Yellowlegs		9					
Long-billed Dowitcher	6						
Mallard		3					
Marsh Wren		1					
Mourning Dove	1	3	1				
Northern Bobwhite			1				
Northern Cardinal	1	6	3				

2019 Survey Dates

Migration: April 23rd.

Breeding Season: inaccessible due to high water!

Acreeage: 78

Notes: This easement showed a great deal of improvement in 2019 in terms of bird diversity and species representation. During migration, it provided habitat to several wetland-dependent species, such as Solitary Sandpiper, Sora (below), Wood Duck, Mallard, Blue-winged Teal and Pied-billed Grebe.



Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern	1		20	4		2		4
American Coot	3		138	19				
American Crow		2	1		6		2	
American Goldfinch	4	6		4	2	1		1
American Robin				1				
American Tree Sparrow			8					
American Wigeon			4					
Bald Eagle	1	1	2	2				
Baltimore Oriole					3		3	
Bank Swallow				4			1	
Barn Swallow	13		2	25	8	4	7	2
Barred Owl			1		1		1	
Bell's Vireo					1	2	2	5
Black-crowned Night-Heron				2		1		
Blue Jay					1		2	
Blue-gray Gnatcatcher	1		1	3				1
Blue-winged Teal	50	24	524	87				
Brown Thrasher	1		7	1	2	2	2	1
Brown-headed Cowbird		1	4	4		4	7	4
Canada Goose	14	7	6	18				
Carolina Wren				2				
Chimney Swift	7							
Chipping Sparrow		1		1				
Cliff Swallow	13				11	17	1	
Common Grackle	5			5	5		5	2
Common Yellowthroat	13	8		4	12	21	27	11
Dickcissel					2	5	48	
Downy Woodpecker		1						
Eastern Kingbird					4			4
Eastern Meadowlark	7	2		1	5	1	3	
Eastern Towhee							1	
Eastern Wood-Pewee							1	
Field Sparrow	6	2	5	1	2	5	4	1
Gray Catbird		1			1	6	9	8
Great Blue Heron	11	2		12	19	9	12	3
Great Egret		6	1	10	1	1		
Great Horned Owl				2				
Greater White-fronted Goose				1				
Greater Yellowlegs	3	3	66	8			1	
Green Heron					1	2	3	

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Green-winged Teal			67				1	
Hooded Merganser	1							
Indigo Bunting					3	2	3	10
Killdeer	1	4		4	4	12	8	1
Least Bittern						1		2
Least Sandpiper	1		1	4				
Lesser Yellowlegs	40	20	17	28				
Lincoln's Sparrow			5					
Long-billed Dowitcher	1							
Louisiana Waterthrush		3						
Mallard	4	2	41	9			6	
Marsh Wren	2	3	1	1				
Mourning Dove		1	1	1	3	2	7	2
Nelson's Sparrow		2						
Northern Bobwhite		1			4		2	
Northern Cardinal	1	1	1	7	3	2	6	8
Northern Flicker			1					
Northern Harrier			5					
Northern Parula		1		1	1			1
Northern Rough-winged Swallow						21		
Northern Shoveler			97	3				
Orchard Oriole	3				3	1	4	4
Pectoral Sandpiper	53			2				
Pied-billed Grebe			11	16				
Pileated Woodpecker							3	
Prothonotary Warbler	1							
Red-bellied Woodpecker	1			2	1		2	
Red-eyed Vireo						1	1	
Red-headed Woodpecker				2			1	1
Red-shouldered Hawk	1						1	
Red-tailed Hawk					1			1
Ring-necked Duck				4				
Ruby-crowned Kinglet				1				
Ruby-throated Hummingbird					2		1	
Ruddy Duck			1					
Rusty Blackbird			200					
Savannah Sparrow	2	5	30	4				
Solitary Sandpiper	6		2					
Song Sparrow	4	5	2	12	3	17	15	5

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Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Sora	4	6		12				
Spotted Sandpiper	1	2		1		1		
Swamp Sparrow	5	7	47	17				
Tree Swallow	7		28	30				
Tufted Titmouse				1		1		
Turkey Vulture	72		2	1	1			
Upland Sandpiper							1	
Virginia Rail			3					
Warbling Vireo	1	2				1	3	2
White-breasted Nuthatch							1	
White-eyed Vireo	1							
White-throated Sparrow	1	1		2				
Wild Turkey					2			
Willow Flycatcher						4	4	2
Wilson's Snipe	5	6	9	12				
Wood Duck		5	2	2	4	19	3	12
Wood Thrush							1	
Yellow Warbler	1				2			
Yellow-billed Cuckoo					7	1	7	2
Yellow-breasted Chat					4	1	3	
Yellow-headed Blackbird				11				
Yellow-rumped Warbler			3	1				
Yellow-throated Warbler		1						
Grand Total	379	145	1400	412	138	170	228	100

Notes: This easement continues to provide a large, quality wetland habitat for both migrants and breeding birds. Of particular note during the 2019 migration visit, Yellow-headed Blackbirds (right) made a rare appearance. While overall numbers were slightly down, this was largely due to the “snapshot” nature of survey timing. For example, in 2018 we happened to be on site to document a large flock of Mallards and Northern Shovelers, along with an unusual flock of Rusty Blackbirds. Species diversity and overall numbers of most wetland-dependent species have been holding steady on this easement over the years it has been surveyed.



Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019
American Bittern		1				
American Coot	6	209				
American Wigeon		4				
Bald Eagle	1	1			1	
Barn Swallow	2	9	3	5	10	
Barred Owl				1		1
Blue-gray Gnatcatcher	1					1
Blue-winged Teal	11	110	61		1	
Canada Goose	4	2			5	
Carolina Wren					1	
Chimney Swift					1	
Cliff Swallow					10	
Common Grackle					8	1
Common Merganser	6					
Common Yellowthroat	7			19	8	13
Dickcissel				1	4	1
Eastern Kingbird						1
Eastern Meadowlark					1	
Eastern Tufted Titmouse	1				1	
Eastern Wood-Pewee					1	2
Gadwall		1				
Gray Catbird				1	2	2
Great Blue Heron	1	1	2		5	7
Greater Yellowlegs	187	24	19			
Green Heron					1	
Green-winged Teal		13				
Hooded Merganser					1	
Hudsonian Godwit	6					
Indigo Bunting				3	6	15
Killdeer	7	5	3	11	8	1
King Rail	2					
Least Bittern					1	
Least Sandpiper			5		1	
Lesser Yellowlegs	52	1				
Mallard		3			1	2
Marsh Wren	7		1	2		
Nelson's Sparrow		2				
Northern Bobwhite					4	
Northern Cardinal			2	1	2	
Northern Flicker					1	

Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019
Northern Rough-winged Swallow				1		4
Northern Shoveler		39	25			
Pectoral Sandpiper	103	72	38			
Pied-billed Grebe		7				
Pileated Woodpecker	1					
Prothonotary Warbler						2
Purple Martin				1	2	
Red-bellied Woodpecker						2
Red-tailed Hawk					1	
Ruby-throated Hummingbird					1	
Savannah Sparrow	1		2			
Semipalmated Sandpiper					8	
Solitary Sandpiper			1			
Song Sparrow	1	1	2	10	7	9
Sora	16	1	5			
Swamp Sparrow	10	2				
Tree Swallow		3	1			2
Turkey Vulture	1		1		1	
Virginia Rail		1				
Warbling Vireo	1		1	2	1	
White-eyed Vireo				1		
Wilson's Snipe	14	13	13			
Wood Duck			3	1	11	13
Yellow-billed Cuckoo					2	1
Yellow-headed Blackbird		1				
Yellow-throated Vireo				1	1	1
Grand Total	449	538	188	61	120	81



Notes: This easement experienced a great deal of flooding this year, but still provided habitat for marsh-dwelling species that require a variety of vegetation structure and water levels, such as Sora, Wilson's Snipe, and Great Blue Heron (left). There were few exposed mudflats during the shorebird migration period, but we did document Pectoral and Least Sandpipers and Greater Yellowlegs. Blue-winged Teal and Northern Shovelers were relatively abundant in the open water portions of the easement.

2019 Survey Dates

Migration: April 19th. Breeding Season: June 27th.

Acreage: 97

66642496009NC

Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019
Alder Flycatcher				2		
American Bittern	1					
American Coot			1			
American Crow			2		2	
American Goldfinch	10			12	4	1
American Robin		2				
Bald Eagle					3	
Baltimore Oriole				4	5	1
Barn Swallow			10	3	1	1
Black-capped Chickadee					1	1
Blue Grosbeak					1	1
Blue Jay	2	2	4	3	1	
Blue-gray Gnatcatcher		1	1	1		
Blue-winged Teal	2	1	52			
Brown Thrasher		3		5	3	
Brown-headed Cowbird	4	10	15	8	1	
Canada Goose			2	22	12	2
Carolina Wren					1	
Cedar Waxwing				3		
Cliff Swallow				9	1	
Common Gallinule						1
Common Grackle						2
Common Tern				1		
Common Yellowthroat	3			16	7	4
Dark-eyed Junco		2				
Dickcissel				10	9	2
Downy Woodpecker		1				
Eastern Kingbird	1			4		2
Eastern Meadowlark	1	2	2		1	2
Eastern Towhee		1				
Eastern Wood-Pewee				1	1	4
Eurasian Collared-Dove					1	
Field Sparrow		2	2		1	
Gadwall		2				
Gray Catbird				7	3	3
Great Blue Heron	1	1		1	1	1
Great Crested Flycatcher				1	1	
Greater White-fronted Goose			1			
Greater Yellowlegs		3				
Green Heron					1	
House Wren		1	1			

Notes: This easement provided migration habitat for a slightly higher diversity of species and a larger number of individual birds than it has during previous survey years. The site had relatively large flocks of waterfowl and a good representation of swallows. Songbird species such as Common Yellowthroat, Orchard Oriole (below photos; female top, male bottom) and Eastern Wood-Pewee were present on the easement during breeding season.



66642496009NC

Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019
Indigo Bunting				11	5	8
Killdeer			1		1	
Least Bittern				1		
Least Flycatcher				1		
Lesser Yellowlegs		13	3			
Magnolia Warbler				2		
Mallard			7		1	8
Marsh Wren	7			1		
Mourning Dove		1	3	1	5	
Northern Bobwhite	3			2		
Northern Cardinal	3	6	2	1	3	2
Northern Flicker		1				1
Northern Parula						1
Northern Shoveler			3			
Orchard Oriole				3	1	2
Pectoral Sandpiper		3				
Pied-billed Grebe		2	2			
Pileated Woodpecker				1		
Red-bellied Woodpecker	1	1	2		1	1
Red-headed Woodpecker	1		1		2	
Ring-necked Duck			2			
Ruby-crowned Kinglet	1	1				
Savannah Sparrow	1	3				
Sedge Wren						1
Snow Goose	2					
Solitary Sandpiper	1					
Song Sparrow	2	1	2		3	
Sora	2		4	1		
Spotted Sandpiper		1				
Summer Tanager					1	
Swamp Sparrow	7	2	13			
Tree Swallow			34	1		
Tufted Titmouse			2		1	
Turkey Vulture			5			
Warbling Vireo	1				1	
Western Palm Warbler	2					
White-rumped Sandpiper					1	
Wilson's Snipe		1	4			
Wood Duck			1			
Yellow Warbler				1		
Yellow-billed Cuckoo						1
Yellow-rumped Warbler	3	10				
Grand Total	62	80	184	140	88	53
		19				

Species	Migration		Breeding Season	
	2018	2019	2018	2019
American Bittern	2			
American Coot	25	5		
American Crow	3	2	1	1
American Goldfinch	5	4	6	2
American Kestrel	1			
Bald Eagle	3	2	2	
Baltimore Oriole			5	2
Barn Swallow		2	2	2
Barred Owl	3		2	
Bell's Vireo			2	1
Belted Kingfisher	1			2
Black-capped Chickadee	1			
Blue Grosbeak			1	
Blue Jay	3	2	1	4
Blue-gray Gnatcatcher		1		
Blue-winged Teal	21	213		
Brown Thrasher	4	1	1	
Brown-headed Cowbird	3	9	1	3
Canada Goose	12	17		
Carolina Wren	1			
Chipping Sparrow		3		
Cliff Swallow			5	3
Common Grackle	2	3	11	7
Common Yellowthroat			12	33
Downy Woodpecker			1	
Eastern Kingbird			3	3
Eastern Towhee				2
Eastern Wood-Pewee			1	
Field Sparrow	10	8	3	3
Grasshopper Sparrow	1			
Gray Catbird			5	3
Great Blue Heron	1	1	13	2
Great Crested Flycatcher			1	
Great Egret		1		
Greater Yellowlegs		4		
Green Heron				1
Green-winged Teal	10	1		
Hermit Thrush	1			
Hooded Merganser	1	4		
House Sparrow				5

Notes: This is one of just a few easements on which the numbers of most species stayed relatively steady between 2018 and 2019. Both diversity and numbers of migrating and breeding birds remained consistent overall. Highlights included an abundance of Blue-winged Teal during migration and of Common Yellowthroat (below), a warbler species, during breeding season. The site also provided habitat for migrating shorebirds such as Lesser Yellowlegs.



Species	Migration		Breeding Season	
	2018	2019	2018	2019
House Wren		1		
Indigo Bunting			7	9
Killdeer	1	2	7	
Lesser Yellowlegs	3	13		
Louisiana Waterthrush	2			
Mallard	5	3		2
Marsh Wren	5			
Mourning Dove	5	2	14	6
Northern Cardinal	9	3	7	10
Northern Flicker	4		1	
Northern Harrier	1			
Northern Parula		1	1	
Northern Shoveler	15	1		
Orchard Oriole			5	7
Pied-billed Grebe	6			
Red-bellied Woodpecker	7	1	3	1
Red-headed Woodpecker			1	
Red-shouldered Hawk			1	
Red-tailed Hawk	3			
Ruby-crowned Kinglet	4			
Savannah Sparrow	1			
Solitary Sandpiper		1		
Song Sparrow	5	2	4	4
Sora	2			
Swamp Sparrow	55	4		
Tree Swallow	2	5	2	
Tufted Titmouse	3		3	1
Turkey Vulture		8		
Virginia Rail	5			
Warbling Vireo			5	10
Western Palm Warbler	1			
White-breasted Nuthatch	1			
White-throated Sparrow		4		
Wild Turkey	2		1	
Willow Flycatcher			1	1
Wilson's Snipe		4		
Wood Duck	6	7	3	3
Yellow Warbler			5	3
Yellow-billed Cuckoo			5	
Yellow-breasted Chat			5	3
Yellow-rumped Warbler	5			
Grand Total	274	345	163	139

Species	Migration			Breeding Season		
	2015	2016	2019	2015	2016	2019
American Avocet	1					
American Coot	18		17			
American Crow		1			2	
American Goldfinch					2	
American Robin	1	1	4			1
Bald Eagle			1	1		
Baltimore Oriole		3			6	
Bank Swallow		5				
Barn Swallow	12	6	14		3	
Bell's Vireo					1	
Belted Kingfisher			1	1	1	
Black-capped Chickadee					1	
Blue Jay		3	3		2	
Blue-gray Gnatcatcher					2	
Blue-winged Teal	22	17	130			
Brown Thrasher		1	2			
Brown-headed Cowbird	4	2	7		1	
Canada Goose	9	18	9		1	1
Carolina Wren			2		1	
Chimney Swift		2				
Chipping Sparrow		1				
Cliff Swallow		232			9	
Common Grackle		9	2		16	4
Common Yellowthroat		1			3	3
Dickcissel					17	14
Downy Woodpecker		1				
Eastern Bluebird			3			1
Eastern Kingbird					1	3
Eastern Meadowlark	1	8	6		7	4
Eastern Phoebe	1		3			
Eastern Towhee		1				
Field Sparrow		1	1			1
Forster's Tern		1				
Gray Catbird					2	
Great Blue Heron		2		2	2	
Great Crested Flycatcher					2	
Great Egret		1				
Greater Yellowlegs	6		7			
Green Heron					1	3
Green-winged Teal			6			
Indigo Bunting		1			3	4

Species	Migration			Breeding Season		
	2015	2016	2019	2015	2016	2019
Killdeer	8	4	5		7	6
Lesser Scaup			9			
Lesser Yellowlegs	48	18	46			
Lincoln's Sparrow		1				
Long-billed Dowitcher		2				
Mallard	1		1			
Mourning Dove	2	6	1		1	2
Nashville Warbler		1				
Northern Bobwhite					2	1
Northern Cardinal			4		3	5
Northern Flicker	3	3	1		1	1
Northern Parula		2			1	
Orchard Oriole						3
Pectoral Sandpiper		13	45			
Pied-billed Grebe		1	2			
Red-bellied Woodpecker		1	2		1	2
Red-headed Woodpecker		3	1		1	
Ring-necked Duck			3			
Sandpiper Species	1					
Savannah Sparrow		10	4			
Semipalmated Plover	2					
Solitary Sandpiper			3			
Song Sparrow		3				1
Sora			4			
Spotted Sandpiper	2	6				
Summer Tanager						1
Swamp Sparrow			6			
Tree Swallow	1	18	10		1	2
Tufted Titmouse		1			1	
Turkey Vulture			1			
White-breasted Nuthatch		1				
White-crowned Sparrow		1				
White-throated Sparrow			3			
Wild Turkey					2	
Wilson's Snipe	2	1	16			
Wood Duck		1		10	9	
Yellow Warbler						1
Yellow-billed Cuckoo					2	2
Yellow-breasted Chat						1
Grand Total	145	430	385	14	120	67

Notes: There has been a significant increase in bird numbers and diversity since we first surveyed this easement in 2015. Highlights include good numbers of migrating shorebirds and marshbirds, including Lesser Yellowlegs, Solitary Sandpiper, Sora, and Wilson's Snipe. The high numbers of Dickcissel (background picture), a grassland-dependent species, along with the presence of Northern Bobwhite indicate that the drier areas of this easement provide attractive habitat for breeding grassland birds.

66642496009Q1

2019 Survey Dates

Migration: April 21st. Breeding Season: June 26th and 27th.

Acreage: 125

Species	Migration		Breeding Season	
	2018	2019	2018	2019
American Bittern		10		
American Coot	186	29		
American Crow			2	
American Golden-Plover	3			
Bald Eagle	1		1	
Baltimore Oriole				4
Barn Swallow	14	3	18	10
Bell's Vireo			1	
Belted Kingfisher		1		
Blue-gray Gnatcatcher			2	
Blue-winged Teal	52	26	1	1
Brown Thrasher	4	2	2	
Brown-headed Cowbird			1	
Canada Goose	17	13	49	
Chimney Swift			7	
Cliff Swallow			15	
Common Grackle			7	4
Common Yellowthroat		7	6	7
Dickcissel			4	7
Eurasian Collared-Dove			1	
European Starling			6	40
Gadwall	1			
Gray Catbird			3	4
Great Blue Heron	3	1	20	6
Great Egret			3	
Greater Yellowlegs	22			
Green Heron			1	
Hooded Merganser		11	6	
Indigo Bunting			4	6
Killdeer	1		20	2
Least Bittern		1	1	5
Least Sandpiper	3			
Lesser Scaup	8			
Lesser Yellowlegs	1			
Mallard			10	5
Marsh Wren		3		
Mourning Dove			4	1
Northern Bobwhite			3	

66642496009Q1

Species	Migration		Breeding Season	
	2018	2019	2018	2019
Northern Cardinal	1		1	3
Northern Mockingbird			1	
Northern Rough-winged Swallow		1		9
Northern Shoveler	4	3		
Orchard Oriole			1	
Pectoral Sandpiper	77		2	
Pied-billed Grebe	2			2
Purple Martin			2	
Red-bellied Woodpecker			1	
Red-shouldered Hawk			1	
Rock Pigeon			2	
Savannah Sparrow		1		
Sedge Wren				1
Semipalmated Plover	1			
Semipalmated Sandpiper	5		7	
Song Sparrow	5	8	9	5
Sora	3	22	1	
Swamp Sparrow	2	4		
Tree Swallow	37			1
Turkey Vulture		1		
Warbling Vireo			3	
White-eyed Vireo		1		
Wild Turkey			1	
Willow Flycatcher			3	
Wilson's Snipe	1	2		
Wood Duck		2	47	9
Yellow-billed Cuckoo				1
Yellow-headed Blackbird	4			
Yellow-rumped Warbler	4			
Grand Total	469	152	281	133



Notes: This easement was notable in 2019 for its high numbers of marsh-dependent birds, such as Sora, American Bittern (top right) and Least Bittern (bottom right). The site and the easement that borders it represent a healthy wetland complex that provides habitat for a diversity of bird species and also provides a valuable ecological service by taking on floodwaters. Other highlights from this year's surveys include good numbers of Hooded Merganser, American Coot, and Blue-winged Teal.

75642499000SL

2019 Survey Dates

Migration: April 15th Breeding Season: May 31st.

Acres: 153

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Alder Flycatcher										4
American Bittern			2	3				1		
American Coot	5	159	256	1100	55					
American Crow					2		1		3	
American Goldfinch		1	1			1	2		5	2
American Kestrel					1					
American Wigeon				3	2					
Bald Eagle	2	3	2	2	1	4	2		1	
Baltimore Oriole		1					10	5	1	1
Barn Swallow	1	5		2	1	1	4	7	3	1
Barred Owl								2	1	
Bell's Vireo						1	5	3	3	8
Belted Kingfisher					1					
Black-capped Chickadee					1		3	1	1	1
Black-crowned Night-Heron					1					
Blue Jay			1		3		3			
Blue-gray Gnatcatcher	2			1				1		2
Blue-winged Teal	14	319	430	122	126					4
Brown Thrasher	1		4			1		1	1	1
Brown-headed Cowbird					2		1			4
Canada Goose	5	15	12	9	7					35
Carolina Wren								1	1	
Cedar Waxwing										3
Common Gallinule				1						
Common Grackle							5		6	
Common Merganser			2							
Common Yellowthroat	7	7	1			8	15	15	11	11
Cooper's Hawk		1								
Dickcissel						3	2	5	15	5
Downy Woodpecker					2					
Eastern Bluebird								1		
Eastern Kingbird	1									2
Eastern Meadowlark	3									
Eastern Phoebe	1		1	1	1					
Eastern Wood-Pewee								1		1
Franklin's Gull			1							
Gadwall			25	12	4					
Gray Catbird							2	3	4	
Great Blue Heron		4	3	6	1	3	14	14	5	1

75642499000SL

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Great Egret		10	2	14		8	1			
Great-tailed Grackle							4			
Greater Yellowlegs	19	12	6	3	5					
Green Heron						2	1	1	1	1
Green-winged Teal	4	1		92	10					
Hooded Merganser	2				1			2		
House Wren							2		3	2
Indigo Bunting		1					3	7	2	9
Killdeer	2		2	1	2		3	3	2	
Lark Sparrow								1		
Least Bittern		1	1	1		2		1		
Lesser Yellowlegs	83	11	5	7						
Lincoln's Sparrow		1								
Long-billed Dowitcher					7					
Mallard			7	6	3	1			5	
Marsh Wren		11			2					
Mourning Dove							3	8	3	2
Nelson's Sparrow			1							
Northern Bobwhite							1	1		
Northern Cardinal			1		7		1	1	4	15
Northern Flicker										1
Northern Parula		2	1		1	1	2	1		2
Northern Pintail			2							
Northern Rough-winged Swallow		5								
Northern Shoveler		34	126	537	8					
Orchard Oriole						5		3	2	2
Pectoral Sandpiper		1	96	7						
Pied-billed Grebe	4	4	12	19	2					2
Pileated Woodpecker			1	1	1	1	1	4		1
Prothonotary Warbler		3					2	2	2	6
Purple Martin					1					
Red-bellied Woodpecker		1			2		2	2	2	1
Red-eyed Vireo										2
Red-headed Woodpecker							1	1		
Red-shouldered Hawk			1		1		1	1	3	1
Ring-necked Duck				3						
Ruby-crowned Kinglet					3					
Savannah Sparrow			5	1						
Sedge Wren		4								
Snow Goose					1					1

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Snowy Egret		1	2							
Solitary Sandpiper		1			1					
Song Sparrow				2						2
Sora	3	18	6	5	4					
Spotted Sandpiper		5								
Summer Tanager								1		
Swamp Sparrow	13	6	2	8	19					
Tree Swallow	6	133	28	36	13	1				
Tufted Titmouse							1		1	1
Virginia Rail	1									
Warbling Vireo		4				3		6	3	4
White-eyed Vireo								1		
White-throated Sparrow			1	1	1					
Willow Flycatcher		1								
Wilson's Phalarope		6								
Wilson's Snipe	1	7	5	33	29					
Wood Duck		3	1	1	6	9	19	10	11	3
Wood Thrush						1				
Yellow Warbler						3				
Yellow-billed Cuckoo						1	4	5	3	2
Yellow-breasted Chat						1	1		1	1
Yellow-rumped Warbler			1	8	10					
Grand Total	182	801	1056	2048	351	66	122	123	110	147



Notes: As in previous years, this easement harbored a remarkable amount of avian diversity during this year's surveys. Highlights included many breeding Prothonotary Warblers (left) and good numbers of Wilson's Snipe (right) during migration. Though our survey occurred just two days later than in 2018, due to the extremely variable nature of migration, numbers of several species were significantly different. This does not reflect any detrimental changes in the habitat provided by this site in 2019.

66642496009Q2

2019 Survey Dates
 Migration: May 1st and 2nd.
 Breeding Season: June 22nd and 24th.
Acreage: 599

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Acadian Flycatcher							1	1
Alder Flycatcher						2		
American Avocet	16							
American Coot	57	14	612	12				
American Crow	1		1	2		3	6	3
American Goldfinch		6		2			1	4
American Pipit			1					
American Robin			1			2		2
American White Pelican				62				
American Wigeon	1							
Baird's Sandpiper			5					
Bald Eagle	3	5	6	1		2		2
Baltimore Oriole	3			5	1	1	3	1
Bank Swallow	9							
Barn Swallow	17	3	4	1	2	2	6	1
Barred Owl		2					1	
Bell's Vireo						1		2
Belted Kingfisher	2		1	1			1	
Black Tern						3		
Black-and-White Warbler				1				
Black-capped Chickadee	2		2	2	1	3		
Blue Jay	2	5	6	3	4		2	3
Blue-gray Gnatcatcher	2			9		1	1	5
Blue-winged Teal	84	357	81	37			2	
Bonaparte's Gull			1					
Brown Thrasher	3		3	1	1	1	1	1
Brown-headed Cowbird		5	10	3	1	1	13	2
Canada Goose	79	73	57	13	7	43	5	16
Carolina Wren			4		2	2	3	2
Caspian Tern				1				
Cattle Egret				1				
Cedar Waxwing						23		
Chestnut-sided Warbler	1							
Chimney Swift				2			2	
Cliff Swallow	105			4		1		
Common Grackle	8	16		9	3	10	5	23
Common Tern	1					1		
Common Yellowthroat	8	2		23	3	15	8	12
Dickcissel				1	4	6	32	7
Double-crested Cormorant		12	1	1				1

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Downy Woodpecker	1			2			3	4
Dunlin	1		2					
Eastern Bluebird		1						
Eastern Kingbird	6	2		3	1	8	2	2
Eastern Meadowlark	1		1	1	3	1	2	2
Eastern Phoebe			1		1	2	1	
Eastern Towhee			1					
Eastern Tufted Titmouse	2		1		2	1	5	
Eastern Wood-Pewee					1	2	1	4
European Starling		1						
Field Sparrow	1	4	7		1	3	3	
Fish Crow			75	6				
Forster's Tern				1				
Franklin's Gull				18				
Gadwall	5	1	10					
Gray Catbird					2			
Great Blue Heron	10	19	5	8	18	16	9	3
Great Crested Flycatcher	1			1	1	2	3	
Great Egret				10		8		
Great Horned Owl	1						1	
Greater White-fronted Goose			320					
Greater Yellowlegs	18	4	10	4				
Green Heron	1							1
Green-winged Teal			72	1				
Hairy Woodpecker				1				
Hooded Merganser				2				
House Wren				1				
Indigo Bunting					4	9	9	14
Killdeer	11	4	4	2	5	3	17	5
Lark Sparrow	2							
Least Bittern	1							
Least Flycatcher						1		
Least Sandpiper	21		4					
Lesser Scaup	5		24					
Lesser Yellowlegs	28	49	28	2				
Lincoln's Sparrow	3			1				
Long-billed Dowitcher	132							
Louisiana Waterthrush	3	1						
Mallard	9	6	12	2	5	9	13	2
Marsh Wren	21	5		37				

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Meadowlark Sp					3			
Mourning Dove	1	1			1	4	3	7
Nashville Warbler	1							
Northern Bobwhite	5		1	1	2	4	10	2
Northern Cardinal	2	5	5	10	2	5	5	11
Northern Flicker	2	1	1	1				1
Northern Harrier			1					
Northern Parula	1	1	1	3		3	3	2
Northern Rough-winged Swallow			3	2				
Northern Shoveler	5	16	112					
Northern Waterthrush				1				
Orchard Oriole	2					1		
Pectoral Sandpiper	138	131	94				5	
Pied-billed Grebe		2	1	5				
Pileated Woodpecker	1	2	1	2	1	3	1	
Prothonotary Warbler	2			3		1	2	4
Purple Martin				1		1	18	1
Red-bellied Woodpecker	3	1	1	2	1		5	2
Red-eyed Vireo					1			1
Red-headed Woodpecker		1		2		1	2	
Red-shouldered Hawk	1			1		3	2	1
Ring-billed Gull				1				
Ring-necked Duck		2	38					
Ross's Goose		4						
Ruddy Duck	1		2					
Rusty Blackbird			2					
Savannah Sparrow	5	17	4	3				
Sedge Wren	6	1						
Semipalmated Plover	2		1					
Semipalmated Sandpiper	2		1				1	
Sharp-shinned Hawk			1	1				
Solitary Sandpiper	7	8		2				
Song Sparrow	2	2		2	1	1	3	
Sora	16	9	1	30				
Spotted Sandpiper	11	5	2	4				
Swainson's Thrush	1			1				
Swamp Sparrow	20	13	16	6				
Tennessee Warbler	1							
Tree Swallow	552	438	136	105		8	2	1
Turkey Vulture	6	2			22		7	

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Unknown Sandpiper				13				
Virginia Rail		1						
Warbling Vireo	7	5		4	3	2	8	11
Western Palm Warbler	2							
White-breasted Nuthatch				1				1
White-crowned Sparrow		9						
White-eyed Vireo								1
White-rumped Sandpiper							55	
White-throated Sparrow	7	49	1	34				
Wild Turkey			1				2	
Wilson's Phalarope	1							
Wilson's Snipe	1	25	15	1				
Wood Duck	7	4	9	2	63	30	81	22
Wood Thrush				1		1		1
Yellow Warbler	2	1		2	1			2
Yellow-billed Cuckoo					2	4	6	5
Yellow-breasted Chat				1			1	1
Yellow-crowned Night-Heron								1
Yellow-rumped Warbler	2	33	1	9				
Yellow-throated Vireo				1			3	4
Grand Total	1552	1386	1827	565	181	261	387	213

Notes: Our migration survey of this site occurred slightly later than usual due to flood conditions on the easement in early to mid-April, which resulted in a somewhat different species composition than in previous years. Shorebirds were largely absent due to both timing and lack of mudflat habitat, while American White Pelicans (below) and Sora were documented in relatively large numbers. In addition to the emergent marsh, this site provides quality breeding habitat for a diversity of forest birds, including vireos (such as Warbling Vireo, background photo on the first page of this easement's report), warblers, and flycatchers.



Species	Migration					Breeding Season				
	2014	2016	2017	2018	2019	2014	2016	2017	2018	2019
Acadian Flycatcher						2				
Alder Flycatcher								3		
American Bittern			2	2	2					
American Coot	7									
American Crow		1	6	8	2	5		1	15	
American Goldfinch		7	9	1	7	2		3	5	
American Tree Sparrow				1						
Bald Eagle		2	2		4		1		1	
Baltimore Oriole							1	1	2	
Barn Swallow		10	6	3	2				2	
Barred Owl			1	3		1		1	1	
Bell's Vireo									2	
Belted Kingfisher				1			2	1		
Black-capped Chickadee					1		3	1		
Black-crowned Night-Heron										
Blue Jay		2	43	2	1		1			
Blue-gray Gnatcatcher			1	2	8		2		1	
Blue-winged Teal	252	72	82	148	111			3		
Brown Thrasher	1							1	1	
Brown-headed Cowbird			11	8	24	2		4	2	
Canada Goose	5	7	10	18	9		1	2	2	
Carolina Wren								1	1	
Chimney Swift									2	
Chipping Sparrow					1					
Cliff Swallow		18								
Common Grackle			5	1	3	7	7	2		
Common Yellowthroat	11	6	11	1	5	15	19	25	22	
Dickcissel						1	1	15	35	
Double-crested Cormorant			3							
Downy Woodpecker			1	1	1				1	
Dunlin	25									
Eastern Kingbird			1			1	3	6	3	
Eastern Meadowlark	1	1		5			2	1	5	
Eastern Wood-Pewee							1	1	2	
Field Sparrow				2		1			1	
Fish Crow				2						
Gadwall				9	1					
Gray Catbird		1	1			4	5	13	8	
Great Blue Heron	1	6	10	8	1	6	9	5	20	
Great Crested Flycatcher									3	

Species	Migration					Breeding Season				
	2014	2016	2017	2018	2019	2014	2016	2017	2018	2019
Great Egret			20		1	1		13		
Greater Yellowlegs	32	5	1	8	6					
Green-winged Teal		3	4	3				2		
Hooded Merganser			4	2	6			1		
House Wren		1					1			
Indigo Bunting		1	1			9	10	11	13	
Killdeer	1		1	2	2	4	2		11	
Lark Sparrow						8				
Least Bittern	1									
Least Flycatcher	1									
Least Sandpiper		2								
Lesser Yellowlegs	14	45	14	10	1					
Lincoln's Sparrow	2			2						
Long-billed Dowitcher			2							
Louisiana Waterthrush			2							
Mallard		3	3	6	1			2	2	
Marsh Wren	1	2	2		1			1		
Mississippi Kite								5		
Mourning Dove		1	1	1	2		2	2	2	
Northern Bobwhite							2	1	1	
Northern Cardinal			5	6	10	1	1		3	
Northern Flicker		1	1	2				1	1	
Northern Harrier				3						
Northern Parula							1			
Northern Rough-winged Swallow		16		1						
Northern Shoveler	21			15	18					
Northern Waterthrush		1								
Orchard Oriole							3	8	2	
Pectoral Sandpiper	10	46	10							
Peregrine Falcon				1						
Pied-billed Grebe			1	4	3					
Pileated Woodpecker			1							
Prothonotary Warbler		1						2	1	
Red-bellied Woodpecker				8	3		2	2	5	
Red-eyed Vireo							1		1	
Red-headed Woodpecker	1			2	5		4	1	1	
Red-shouldered Hawk		2	2	1				2	2	
Red-tailed Hawk				2						
Ring-necked Duck					5					

66642498009BL/6664240800MZ1

Species	Migration					Breeding Season				
	2014	2016	2017	2018	2019	2014	2016	2017	2018	2019
Ruby-crowned Kinglet				2	2					
Rusty Blackbird				1						
Sandhill Crane	1									
Savannah Sparrow	1		1	2				1		
Sedge Wren		2	1							
Short-billed Dowitcher	15									
Solitary Sandpiper	31	1	4		2					
Song Sparrow	13	8	30	16	20		16	14	21	
Sora	3	1	5	1	10					
Spotted Sandpiper		7								
Swamp Sparrow	3	9	1	22	6					
Tree Swallow		309	8	7	5			1	1	
Tufted Titmouse	1		1	3	3	1	2		3	
Turkey Vulture			3	1				1		
Virginia Rail	1			1						
Warbling Vireo		1			1		1		1	
White-breasted Nuthatch							1		1	
White-crowned Sparrow			2							
White-throated Sparrow			2	2						
Willow Flycatcher						3	3	3	2	
Wilson's Snipe	1		1	12	10					
Wood Duck	2	6	13	12	6		13	14	3	
Wood Thrush									2	
Yellow Warbler		3					4	7	8	
Yellow-billed Cuckoo						2	3	2	9	
Yellow-breasted Chat									3	
Yellow-crowned Night-Heron						2				
Yellow-rumped Warbler			3	2						
Yellow-throated Vireo									1	
Grand Total	432	627	360	394	312	78	133	187	237	



Notes: MRBO has been surveying this easement longer than almost any other in our site sample. It continues to provide high-quality migration habitat for a variety of species, including the Sora pictured in the background. There were also good numbers of shorebirds, waterfowl and songbirds such as Swamp Sparrow (left). In 2019, due to high water in the surrounding area, surveyors were unable to reach the site during breeding season. Hopefully both migration and breeding season surveys will be possible in future years.

666424010091D

2019 Survey Dates
 Migration: April 23rd. Breeding Season: inaccessible due to high water.
Acreege: 165

Species	Migration			Breeding Season	
	2015	2018	2019	2015	2018
American Bittern			2		
American Coot	4	84			
American Crow			1		2
American Goldfinch			2		1
American Redstart					1
Bald Eagle		1	1		
Baltimore Oriole			1		1
Barn Swallow					4
Barred Owl		1		2	2
Blue Jay					2
Blue-winged Teal	33	76	14		
Bobolink					1
Brown Thrasher	1		1		
Brown-headed Cowbird			1		1
Canada Goose		2	5		
Cliff Swallow					6
Common Grackle			17		
Common Yellowthroat	3		5	1	12
Dickcissel					10
Eastern Kingbird					1
Eastern Wood-Pewee					1
Fish Crow					2
Gadwall	10				
Gray Catbird					2
Great Blue Heron		14	1	16	1
Great Egret	2		35	2	18
Greater Yellowlegs	7	7			
Green Heron				1	
Green-winged Teal		1			
Hermit Thrush	1				
Hooded Merganser	3	2			3
Mourning Dove			2		
Northern Cardinal			5		
Indigo Bunting					2
Killdeer	2				
King Rail		1	1		1
Least Bittern				2	1

Species	Migration			Breeding Season	
	2015	2018	2019	2015	2018
Least Sandpiper	2				
Lesser Yellowlegs	9	4	1		
Mallard	1			1	3
Marsh Wren		3			
Mourning Dove					2
Northern Bobwhite					3
Northern Cardinal		1			1
Northern Rough-winged Swallow		4			
Northern Shoveler		13			
Pectoral Sandpiper	1	12			
Pied-billed Grebe		2		1	
Pileated Woodpecker					1
Prothonotary Warbler				1	
Red-bellied Woodpecker			2		1
Red-headed Woodpecker	1				1
Red-shouldered Hawk					1
Solitary Sandpiper			1		
Song Sparrow	2	2	9	1	5
Sora	10	10	5		
Summer Tanager					1
Swamp Sparrow	3	32			
Tree Swallow		112			2
Tufted Titmouse			1		1
Turkey Vulture			1		
Virginia Rail	3	1	1		
White-rumped Sandpiper					1
Wild Turkey	1			1	
Willow Flycatcher				1	
Wilson's Snipe		9	15		
Wood Duck	1			5	2
Wood Thrush					1
Woodpecker Sp					1
Yellow Warbler				1	1
Yellow-billed Cuckoo					2
Yellow-crowned Night-Heron				1	
Grand Total	99	394	130	35	105

Notes: As in 2018, this easement contained an impressive diversity of marshbirds, particularly Sora, Virginia Rail (lower photo) and King Rail (upper photo). King Rail are very rare in the state of Missouri and it is notable that an individual was documented in both 2018 and 2019. As with other sites in the region, this easement was not accessible during the breeding season due to high water in the surrounding area.



666424010090F

2019 Survey Dates
 Migration: April 9th. Breeding Season: June 4th.
Acreage: 201

Species	Migration				Breeding Season			
	2015	2016	2018	2019	2015	2016	2018	2019
American Bittern				1				
American Coot			24	24				
American Crow			2	3		1	5	
American Goldfinch	3	4		1			1	2
American Robin		1		1				
American Tree Sparrow			1					
American Woodcock							1	
Bald Eagle		1		1				1
Baltimore Oriole	4					3	2	1
Bank Swallow						1		
Barn Swallow	5	5	1	2		3	5	
Barred Owl			1				1	
Bell's Vireo	2							1
Black-capped Chickadee	1			3			2	
Blue Grosbeak	1							
Blue Jay		2	4			3	3	
Blue-gray Gnatcatcher		1		4				
Blue-winged Teal	3	36	68	59				
Bobolink	1							
Brown Thrasher			1	2				
Brown-headed Cowbird	3		1	6		3	2	6
Canada Goose	2	11	6	18	6		6	14
Carolina Wren		2	1					
Chestnut-sided Warbler	1							
Cliff Swallow						11	1	
Common Grackle						1		
Common Yellowthroat	7	3				5	13	11
Dickcissel			1			7	5	
Dunlin			1					
Eastern Bluebird							1	
Eastern Kingbird	8	2				5	2	1
Eastern Meadowlark	6	2	4			5	3	
Eastern Phoebe	1			1		1		
Eastern Towhee								1
Eastern Wood-Pewee							2	1
Field Sparrow	3	3	1	3		1	2	1
Gadwall			24					
Grasshopper Sparrow	3							
Gray Catbird						3	2	1
Great Blue Heron	5	3	2	2	1	3	11	10

Species	Migration				Breeding Season			
	2015	2016	2018	2019	2015	2016	2018	2019
Great Crested Flycatcher							1	1
Great Egret	6		1		1			
Greater Yellowlegs	2		16	2				
Green Heron							1	2
Green-winged Teal			1	21				
Hooded Merganser		1						8
Indigo Bunting	5					5	8	11
Killdeer	4	4	3			3	10	
Lark Sparrow		1					1	
Least Bittern							1	2
Least Sandpiper	34							
Lesser Yellowlegs		12	20	35				
Lincoln's Sparrow				1				
Louisiana Waterthrush	3							
Mallard		1	10	3	2			2
Marsh Wren	3							
Mourning Dove		1	2	1			3	
Nashville Warbler	2							
Northern Bobwhite	1	1		4	2	5	8	
Northern Cardinal	1	1	4	5		2	7	8
Northern Flicker			1			1	2	
Northern Mockingbird			1					
Northern Parula		1				1	1	2
Northern Rough-winged Swallow				13				6
Northern Shoveler			8	2				
Orchard Oriole		1					3	2
Osprey			1					
Pectoral Sandpiper	8	46	46					
Peregrine Falcon			1					
Pied-billed Grebe			4	3				
Pileated Woodpecker						1	1	1
Prothonotary Warbler	4					1		1
Purple Martin							2	
Red-bellied Woodpecker			2			2	4	2
Red-eyed Vireo		2						
Red-headed Woodpecker						1	1	
Red-shouldered Hawk		3				2		2
Ring-billed Gull			1					
Ring-necked Duck				4				

666424010090F

Species	Migration				Breeding Season			
	2015	2016	2018	2019	2015	2016	2018	2019
Rose-breasted Grosbeak	1							
Savannah Sparrow		5	3	1				
Sedge Wren	1							
Semipalmated Plover	7							
Solitary Sandpiper	5	2	1					
Song Sparrow	1	2	11	3			5	2
Sora	2	1		12				
Spotted Sandpiper	2							
Swamp Sparrow	8	1	25					
Tree Swallow	4	3	16	40		3	3	
Tufted Titmouse	1	1	1	2		1	3	2
Turkey Vulture	6	4	1			1		4
Unknown Swallow				12				
Vesper Sparrow			1					
Virginia Rail			1	2				
Warbling Vireo	4						4	3
Western Palm Warbler			1					
White-rumped Sandpiper			1					
Wild Turkey	1						1	
Willow Flycatcher							1	
Wilson's Snipe		8	8	21				
Wood Duck	1	8	4	6	19	101	5	25
Yellow Warbler	1							
Yellow-billed Cuckoo						1	4	1
Yellow-breasted Chat						2	1	2
Yellow-headed Blackbird				2				
Yellow-rumped Warbler			6	2				
Yellow-throated Vireo	2						1	
Grand Total	179	194	346	328	30	191	158	140

Notes: This site is remarkable for how steady its bird numbers and diversity are across years. As in previous survey years, the easement hosted a variety of shorebirds, marshbirds and waterfowl during both spring migration and the breeding season. Highlights included breeding Hooded Merganser and Green Heron, and high numbers of Wilson's Snipe and Sora during migration along with two Yellow-headed Blackbirds (right).



PERSHING 7564240900P3D

2019 Survey Dates

Migration: April 22nd. Breeding Season: June 3rd.

Acreege: 304

Species	Migration			Breeding Season			Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019		2017	2018	2019	2017	2018	2019
Acadian Flycatcher						1	Gray Catbird				3	3	2
American Bittern	1	1	4				Great Blue Heron	3	4	1	1	3	1
American Coot	1	17					Great Crested Flycatcher				1	2	1
American Crow	1	1	4		5	2	Greater Yellowlegs			3			
American Goldfinch		1	13	6	6	3	Green Heron					1	
American Robin		15	2		1		Green-winged Teal		15				
Bald Eagle						1	Hairy Woodpecker		1	1			
Baltimore Oriole					3		Henslow's Sparrow						1
Barn Swallow		8	2	4	8		Hooded Merganser					1	
Barred Owl					2		Indigo Bunting				12	10	13
Bell's Vireo				4	2	3	Kentucky Warbler				1		
Belted Kingfisher	1						Killdeer						1
Black-capped Chickadee	1				1		King Rail	2	1				
Blue Jay	2	2	5		1	1	Least Bittern	3			1	3	1
Blue-gray Gnatcatcher		1	6		1	2	Mallard	5	9	2	2	3	3
Blue-winged Teal	76	30	29			3	Marsh Wren	13					
Brown Thrasher		3			1		Mourning Dove				1	4	
Brown-headed Cowbird	2		3		1	3	Nashville Warbler	1					
Canada Goose	5	2	4			46	Nelson's Sparrow		2				
Carolina Wren			1			1	Northern Bobwhite		1	1	1	15	
Chestnut-sided Warbler	1						Northern Cardinal	1	4	5	4	6	9
Common Gallinule	1			3			Northern Flicker		5			2	
Common Grackle			1	1	4	1	Northern Parula	1		2			3
Common Yellowthroat	7		3	15	28	19	Northern Shoveler		10				
Cooper's Hawk			1				Orchard Oriole				3		2
Dickeissel	1			32	79	24	Pectoral Sandpiper		4				
Downy Woodpecker			1	1	1		Peregrine Falcon		2				
Duck Sp					3		Pied-billed Grebe	2	5	2			
Eastern Bluebird			2				Pileated Woodpecker		2				
Eastern Kingbird				5	2	3	Prothonotary Warbler	2			2		2
Eastern Meadowlark	1		3			1	Purple Martin					3	2
Eastern Tufted Titmouse					3		Red-bellied Woodpecker				3	1	7
Eastern Phoebe			1			1	Red-eyed Vireo						1
Eastern Wood-Pewee					3	2	Red-headed Woodpecker				2	5	
Field Sparrow	4	7	4	4	2	3	Red-shouldered Hawk			2		1	1
Fish Crow		1	1		1		Red-tailed Hawk		1		1		
Gadwall		5					Rose-breasted Grosbeak						2

PERSHING STATE PARK 7564240900P3D

Species	Migration			Breeding Season		
	2017	2018	2019	2017	2018	2019
Ruby-crowned Kinglet		2				
Ruby-throated Hummingbird				1		
Savannah Sparrow		1	1			
Solitary Sandpiper	1		1			
Song Sparrow	2	6	6	3	1	3
Sora	29	10	14			
Summer Tanager						1
Swamp Sparrow	9	12	10			
Tree Swallow	1		1	2	2	1
Turkey Vulture	1	1	17		1	
Virginia Rail		3	1			
Warbling Vireo	3		3	2	1	1
White-breasted Nuthatch				1		
White-eyed Vireo						1
White-throated Sparrow	3	1				
Wild Turkey					3	
Wilson's Snipe	11	7	17			
Wood Duck	9	23	12	42	36	8
Wood Thrush	1					
Yellow Rail			1			
Yellow-billed Cuckoo				4	7	2
Yellow-breasted Chat	1			3	2	6
Yellow-crowned Night-Heron					4	
Yellow-rumped Warbler	4					
Yellow-throated Vireo				1		1
Grand Total	213	226	196	170	288	189

Notes: This wetland site, located at Pershing State Park, is accessible to the public and represents an excellent example of wetland restoration. Since hydrological function and vegetation restoration occurred at this site, it has consistently provided high-quality migration and breeding habitat for a variety of waterbirds. Sora, Wilson's Snipe and Swamp Sparrow are regular visitors and King and Virginia Rails have been documented here. The drier, upland portion on the east side of the site also provides habitat for breeding grassland birds, such as Dickcissel, Field Sparrow, and Yellow-breasted Chat (below).



6664241000Z0F

2019 Survey Dates

Migration: April 16th. Breeding Season: June 1st.

Acreage: 428

Species	Migration	Breeding Season	Species	Migration	Breeding Season
American Bittern	7		Northern Flicker		1
American Coot	11		Northern Parula	1	1
American Crow	6	1	Northern Shoveler	4	
American Goldfinch	16	2	Orchard Oriole		3
Bald Eagle	1	1	Pied-billed Grebe	2	
Baltimore Oriole		1	Pileated Woodpecker		1
Barn Swallow	1	2	Red-bellied Woodpecker	5	2
Bell's Vireo		12	Red-eyed Vireo		1
Black-capped Chickadee	2		Red-headed Woodpecker		1
Blue Grosbeak		1	Ring-necked Duck	3	
Blue Jay	3		Ruby-crowned Kinglet	4	
Blue-gray Gnatcatcher	3	1	Scissor-tailed Flycatcher	1	
Blue-winged Teal	183	4	Snow Goose	4	
Brown Thrasher	2		Solitary Sandpiper	1	
Brown-headed Cowbird	6	3	Song Sparrow	3	
Canada Goose	16		Sora	12	
Carolina Wren	2	1	Swamp Sparrow	17	
Common Grackle	7	2	Tree Swallow	19	2
Common Yellowthroat		19	Tufted Titmouse	1	2
Dickcissel		11	Turkey Vulture	6	
Downy Woodpecker	1		Warbling Vireo		4
Eastern Kingbird		5	White-throated Sparrow	11	
Eastern Meadowlark	3	2	Wild Turkey		2
Eastern Phoebe	1	1	Wilson's Snipe	9	
Eastern Wood-Pewee		1	Wood Duck	7	26
Field Sparrow	34	17	Yellow-billed Cuckoo		1
Great Blue Heron	2	2	Yellow-breasted Chat		4
Great Crested Flycatcher		2	Yellow-rumped Warbler	1	
Great Egret		13	Grand Total	456	203
Great-tailed Grackle	2				
Greater Yellowlegs	2				
Green Heron		1			
Grey Catbird		3			
House Wren		1			
Indigo Bunting		15			
Killdeer	1	1			
Lesser Yellowlegs	1				
Mallard	5	6			
Mourning Dove	3				
Northern Bobwhite	9	4			
Northern Cardinal	9	12			

Notes: This easement was surveyed for the first time in 2019, and displayed high diversity and numbers of both marsh-dependent and upland species. Highlights included large flocks of Blue-winged Teal and many American Bitterns (background photo) during migration, and robust populations of breeding Common Yellowthroat, Dickcissel, Field Sparrow and others.

66642498009Z6

2019 Survey Dates
 Migration: April 25th. Breeding Season: June 6th.
Acres: 90

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern			1					
American Coot		5	28	1				
American Crow	2		7				2	
American Goldfinch	8	3		2	1		1	2
American Robin				1				
Baltimore Oriole	1				3		1	1
Bank Swallow					1			
Barn Swallow		2	1		1	1	8	
Barred Owl			1			1	1	
Bell's Vireo					1			
Belted Kingfisher	1			1				
Black-capped Chickadee		3	1	4	1			1
Blue Jay			2	1		3		
Blue-gray Gnatcatcher				1		2		
Blue-winged Teal		30	59	21				
Brown Thrasher			1	1				
Brown-headed Cowbird	4		1	2	1	1	1	1
Canada Goose	2	9	6	4		16		
Cedar Waxwing						3		
Common Yellowthroat	14	3	1	6	7	3	8	22
Common Grackle				182	2	4		11
Dickcissel					1		2	
Downy Woodpecker		1	1				1	
Eastern Kingbird						2	2	1
Eastern Meadowlark							1	
Eastern Phoebe				1				1
Eastern Towhee	1		1	1	2	1		1
Eastern Wood-Pewee								1
Field Sparrow	2		2		4		1	2
Gray Catbird	2	1			3	4	5	2
Great Blue Heron	1		3		2		5	1
Great Crested Flycatcher	1			1				2
Great-tailed Grackle				1				
Greater Yellowlegs			2					
Green Heron	1							1
House Wren	3			4	2	1	2	2
Indigo Bunting	2				6	2	3	1
Killdeer		1		1			1	
King Rail		1				1		

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Least Bittern						2	1	
Least Flycatcher						1		
Lesser Yellowlegs		18						
Long-billed Dowitcher		6						
Mallard		1	1	1		3		
Marsh Wren		1	2	1				
Mourning Dove	2		1	1		2	2	1
Nashville Warbler	1	1						
Northern Cardinal		1	1	4	1	1	2	4
Northern Flicker				1			1	2
Northern Harrier			1					
Northern Parula	1			2				2
Northern Rough-winged Swallow		2						
Northern Waterthrush	1							
Pied-billed Grebe			3			1		
Pileated Woodpecker							1	
Prothonotary Warbler							1	
Purple Martin				1			3	1
Red-bellied Woodpecker			1	1			2	2
Red-eyed Vireo	1				1			
Red-headed Woodpecker	2		1		1			
Red-shouldered Hawk					1		1	
Red-tailed Hawk			1					
Rose-breasted Grosbeak	2						1	
Ruby-crowned Kinglet	1		1					
Rusty Blackbird			2					
Sedge Wren	1		1				2	
Solitary Sandpiper		1		1				
Song Sparrow	2	1	5	5	4		4	2
Sora	8	5	2	16				
Spotted Sandpiper		1	1	1				
Swamp Sparrow	2	2	21	1				
Tree Swallow		53	5	1			2	
Tufted Titmouse		4		1				1
Turkey Vulture		6						
Virginia Rail			3	2				
Warbling Vireo	3				1			1
Western Palm Warbler	1							
White-throated Sparrow	2	2	11	2				

66642498009Z6

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Wild Turkey		1	1	1	3	1		
Willow Flycatcher							2	
Wilson's Snipe		1	5					
Wood Duck		2	3	2		8	1	2
Yellow Warbler	2					1		1
Yellow-billed Cuckoo	1						2	2
Yellow-breasted Chat					2			
Yellow-crowned Night-Heron							1	
Yellow-rumped Warbler			1	1				
Yellow-throated Vireo					1			
Grand Total	78	170	192	285	53	66	76	78

Notes: This easement had higher numbers of birds during both migration and breeding season in 2019 than in any previous year. Migration highlights included a substantial number of Sora (left), Swamp Sparrow, American Coot and Blue-winged Teal. The wetland also provided quality breeding habitat for a number of species dependent on both wetland and forest, such as Common Yellowthroat (right, photo from this easement in 2018).



666424040099C

2019 Survey Dates
Migration: April 23rd.
Breeding Season: inaccessible due to high water.
Acreage: 237

Species	Migration 2019
American Bittern	5
American Coot	3
Bald Eagle	1
Blue-winged Teal	57
Common Gallinule	2
Eastern Meadowlark	19
Grasshopper Sparrow	3
Greater Yellowlegs	29
Nelson's Sparrow	1
Pied-billed Grebe	4
Red-headed Woodpecker	2
Savannah Sparrow	1
Sora	41
Solitary Sandpiper	1
Swamp Sparrow	5
Virginia Rail	1
Wilson's Snipe	8
Wood Duck	2
Yellow Rail	1
Grand Total	193



Notes: This is an exciting new property that was added to our survey schedule in 2019. Though the species list may appear short, there are several species of conservation concern represented, along with high numbers of secretive marshbird species. Sora and American Bittern (top right) were present in significant numbers, and the counts of Greater Yellowlegs, Pied-Billed Grebe (lower right) and Wilson's Snipe indicate that this easement has a variety of habitat structure available for other wetland-dependent migrants. Eastern Meadowlark (below), Grasshopper Sparrow and Nelson's Sparrow are all grassland-dependent species, showing that this site has the potential for supporting a wide variety of birds. High water in the vicinity rendered the site inaccessible to surveyors during the breeding season.



WET REGION 2 OVERVIEW

Survey coverage in WET Region 2 in 2019.

<i>Easement</i>	<i>County</i>	<i>Site Acreage</i>	<i># Transects</i>	<i>Migration Visit</i>	<i>Breeding Visit</i>
6664241000NKC	Randolph	788	15	4/25 & 4/26	6/8 & 6/9
66642412018GC	Shelby	73	2	5/4	6/24
66642411014GR	Clark	76	2	5/5	6/10
6664241101527	Saline	49	2	4/15	6/17
66642495009DQ and 666424100YC6	Howard	213	3	5/6	6/18
6664241201973	Lewis	98	3	5/3	6/21
66642411015RZ	Macon	52	2	4/28	6/7
66642412018GC	Shelby	98	2	5/4	6/24
66642495009CD and 66642498009YF	Knox	94	4	5/4	6/11
66642412018JK	Shelby	44	2	5/6	6/9
66642405009HG	Macon	127	1	4/27	6/7
5464241501JT8	Clark	241	4	5/5	6/25
66642496009R9	Adair	151.3	3	5/3	6/26
5464241501G4D	Monroe	132	3	5/5	6/11

Species	2019	
	Migration	Breeding Season
American Coot	91	
American Crow	3	1
American Goldfinch	6	2
Bald Eagle	2	
Baltimore Oriole	1	3
Bank Swallow	4	
Barn Swallow	15	1
Barred owl	2	2
Bell's Vireo		5
Black-capped Chickadee	1	
Black-crowned Night-Heron	1	
Blue Jay	2	
Blue-gray Gnatcatcher	5	
Blue-winged Teal	161	
Brown Thrasher	4	5
Brown-headed Cowbird	22	1
Canada Goose	13	
Carolina Wren	5	2
Chipping Sparrow		1
Cliff Swallow	6	
Common Grackle	4	10
Common Yellowthroat	14	20
Dickcissel		47
Double-crested Cormorant	8	
Downy Woodpecker		1
Eastern Bluebird	1	4
Eastern Kingbird	1	9
Eastern Meadowlark	2	12
Eastern Phoebe	3	1
Eastern Towhee	4	1
Eastern Wood-Pewee		2
European Starling	11	7
Field Sparrow	8	7
Grasshopper Sparrow	2	
Gray Catbird	1	1
Great Blue Heron	2	9
Great Crested Flycatcher		3
Green Heron		2

Species	2019	
	Migration	Breeding Season
Henslow's Sparrow	1	
House Sparrow		2
House Wren	6	2
Indigo Bunting		22
Killdeer	10	20
Least Bittern		2
Least Flycatcher	1	
Lesser Yellowlegs	13	
Long-billed Dowitcher	4	
Louisiana Waterthrush	2	
Mallard	5	7
Marsh Wren	3	
Mourning Dove	2	7
Norther Parula	7	5
Northern Cardinal	5	11
Northern Flicker	1	
Northern Rough-winged Swallow	11	4
Northern Shoveler	11	



2019

Species	Migration	Breeding Season
Orchard Oriole		3
Pectoral Sandpiper	1	
Pied-billed Grebe	17	7
Pileated Woodpecker	1	
Prothonotary Warbler	2	2
Purple Martin		5
Red-bellied Woodpecker		2
Red-shouldered Hawk	1	
Red-tailed Hawk	1	
Ring-necked Duck	2	
Rose-breasted Grosbeak	1	
Ruby-crowned Kinglet	1	
Savannah Sparrow	5	
Scarlet Tanager	1	
Solitary Sandpiper	2	
Song Sparrow	12	22
Sora	39	
Swamp Sparrow	2	
Tennessee Warbler	1	
Tree Swallow	277	
Tufted Titmouse	3	
Turkey Vulture	7	2
Virginia Rail	1	
Warbling Vireo	4	3
White-eyed Vireo	1	
White-throated Sparrow	1	
Wild Turkey	2	
Wilson's Snipe	1	
Wood Duck	6	18
Yellow Warbler	7	4
Yellow-billed Cuckoo		2
Yellow-breasted Chat		3
Yellow-crowned Night-Heron	1	
Yellow-rumped Warbler	1	
Yellow-throated Vireo	1	1
Grand Total	895	318

Notes: This easement, surveyed for the first time in 2019, displayed its habitat quality by the diversity of birds documented. It provided an important haven for aerial insectivores (birds that hunt insects on the wing) such as Tree Swallow and Barn Swallow, while also providing habitat for waterfowl and songbirds. Highlights included large numbers of Pied-billed Grebe and Sora, two marsh-dependent species that are targets of our surveys. There were also large numbers of songbirds during the breeding season, such as Common Yellowthroat, Indigo Bunting, and grassland-obligates like Eastern Meadowlark (top photo) and Dickcissel (bottom photo).



	2019		2019	
	Migration	Breeding Season	Migration	Breeding Season
American Bittern	1			
American Goldfinch		1		
American Robin	1			
American Woodcock	3			
Barred Owl	1			
Bald Eagle	2			
Baltimore Oriole	1			
Barn Swallow	5	1		
Black-and-White Warbler	2			
Brown-headed Cowbird	1			
Blue Jay	1			
Brown Thrasher		1		
Blue-winged Teal	40			
Canada Goose	12			
Carolina Wren		1		
Common Grackle	3			
Common Yellowthroat	4	4		
Eastern Kingbird	3	1		
Eastern Wood-Pewee		1		
Great Blue Heron	1			
Great Crested Flycatcher		1		
Gray Catbird	1	2		
Green Heron		1		
Golden-winged Warbler	2			
Indigo Bunting		2		
Killdeer		1		
Northern Cardinal	1	1		
Northern Parula	1	1		
Northern Waterthrush	2			
Northern Rough-winged Swallow	5			
Pileated Woodpecker	1			
Red-bellied Woodpecker	1	1		
Red-headed Woodpecker	1	2		
Sedge Wren	2			
Sora	14			
Solitary Sandpiper	2			
Song Sparrow	1	4		
Spotted Sandpiper	2			
Swamp Sparrow			1	
Tree Swallow				4
Tufted Titmouse			1	
Warbling Vireo			2	
Wild Turkey			1	
Wilson's Warbler			1	
Wood Duck			3	1
Western Palm Warbler			1	
White-throated Sparrow			1	
Yellow-billed Cuckoo				1
Yellow Warbler			2	
Yellow-rumped Warbler			2	
Yellow-throated Vireo			2	2
Grand Total			135	34

Notes: For its size, this easement provided habitat for a wide diversity of bird species. Waterfowl, marshbirds and forest birds were all present, indicating a good variety in available habitat. Highlights included a high density of Sora, good numbers of Blue-winged Teal, and an interesting representation of migrating warblers. Wilson's, Golden-winged (below) and Black-and-White Warblers are not often documented on our surveys.



2019

Species	Migration	Breeding Season
American Crow	1	1
American Goldfinch	2	
Barred Owl		1
Baltimore Oriole	1	
Blue-gray Gnatcatcher	2	
Brown-headed Cowbird	5	2
Blue Jay		1
Blue-winged Teal	2	
Canada Goose	2	
Chipping Sparrow	1	
Common Yellowthroat	7	4
Downy Woodpecker	1	
Eastern Kingbird		1
Eastern Meadowlark	1	
Eastern Phoebe		1
Eastern Wood-Pewee		1
Field Sparrow		2
Great Blue Heron	1	4
Great Crested Flycatcher	1	1
Gray Catbird		1
Grasshopper Sparrow	2	2
Hairy Woodpecker		1
Indigo Bunting	1	7
Killdeer		1
Least Flycatcher	1	
Louisiana Waterthrush		1
Mallard	3	
Northern Cardinal	2	1
Northern Flicker		1
Northern Parula	1	
Ovenbird	1	
Pied-billed Grebe	1	
Pileated Woodpecker		1
Purple Martin		1
Red-bellied Woodpecker		1
Red-headed Woodpecker	1	
Red-shouldered Hawk	1	1
Ruby-throated Hummingbird		1
Song Sparrow	4	2

2019

Species	Migration	Breeding Season
Tufted Titmouse		2
Turkey Vulture	2	16
White-breasted Nuthatch	2	1
Wood Duck		3
Yellow-throated Vireo	1	
Grand Total	50	63

Notes: Another new survey site for 2019, this easement contained an interesting mix of marsh, forest and grassland birds. The Ovenbird (top photo, taken on-site) is a migrant uncommonly encountered on surveys. Grasshopper sparrow (lower photo) is also atypical, and is a species of conservation concern. The presence of a large number of Turkey Vultures suggest that there may be an important roost site in the area. This species, which is often misunderstood, provides the valuable ecological service of removing disease from the environment. We look forward to further surveys on this site.



6664241101527

2019 Survey Dates

Migration: April 15th. Breeding Season: June 17th.

Acreage: 49

Species	Migration		Breeding Season	
	2018	2019	2018	2019
American Bittern	1			
American Coot	8			
American Crow	3	2	3	
American Goldfinch			2	
American Redstart				1
Bald Eagle		1		
Bank Swallow	1		8	
Barn Swallow	1	1		
Barred Owl		2		
Belted Kingfisher	1	1	1	1
Blue Jay		2		
Blue-gray Gnatcatcher			1	
Blue-winged Teal	33			
Brown Thrasher				1
Brown-headed Cowbird	1	3	1	
Canada Goose	2	2		
Carolina Wren		3	1	
Common Yellowthroat			7	5
Dickcissel			12	13
Double-crested Cormorant	2			
Downy Woodpecker				1
Eastern Bluebird	1	1		
Eastern Kingbird			1	
Eastern Meadowlark			1	
Eastern Phoebe		1		
Eastern Towhee	1			
Eastern Wood-Pewee				1
Field Sparrow		2		2
Gadwall	2			
Gray Catbird			2	4
Great Blue Heron	1	1		1
Great Horned Owl	1			
Greater Yellowlegs	4			
Green-winged Teal	1			
Indigo Bunting			5	6
Killdeer	1	1	1	
Lesser Scaup	6			
Lesser Yellowlegs	1			
Louisiana Waterthrush		1		
Mallard	20			

6664241101527

Species	Migration		Breeding Season	
	2018	2019	2018	2019
Marsh Wren	1			
Mourning Dove				1
Northern Bobwhite			2	1
Northern Cardinal	1	3	3	1
Northern Flicker	1		1	
Northern Parula			1	2
Northern Shoveler	2			
Orchard Oriole			1	
Pied-billed Grebe	1			
Pileated Woodpecker	1			1
Red-bellied Woodpecker	1	2	5	1
Red-shouldered Hawk	1			
Red-tailed Hawk	1		1	1
Ruby-crowned Kinglet		1		
Song Sparrow	3	2	1	
Sora	1	4		
Swamp Sparrow	6	23		
Tree Swallow	4	1		2
Tufted Titmouse		1	1	
Turkey Vulture		1		
Unknown Rail	1			
White-throated Sparrow	2	1		
Willow Flycatcher			1	
Wilson's Snipe	4	4		
Wood Duck	1	2	9	2
Wood Thrush			1	1
Yellow Warbler			3	3
Yellow-billed Cuckoo				1
Yellow-breasted Chat				1
Yellow-throated Vireo				1
Grand Total	127	70	76	55

Notes: Our second year of surveys on this easement yielded slightly fewer birds simply due to timing and local conditions. However, the suite of birds present indicated that the site is providing important habitat for migrating marsh-dependent birds. Swamp Sparrow was abundant and more Sora were detected this year than in 2018. The easement also provided breeding habitat for several species that are associated with marsh or wet forest, such as Yellow Warbler (lower left photo), Yellow-billed Cuckoo (lower right photo) and Common Yellowthroat. The site's drier areas provided habitat for Dickcissel (photo below) and Field Sparrow, species associated with prairies.

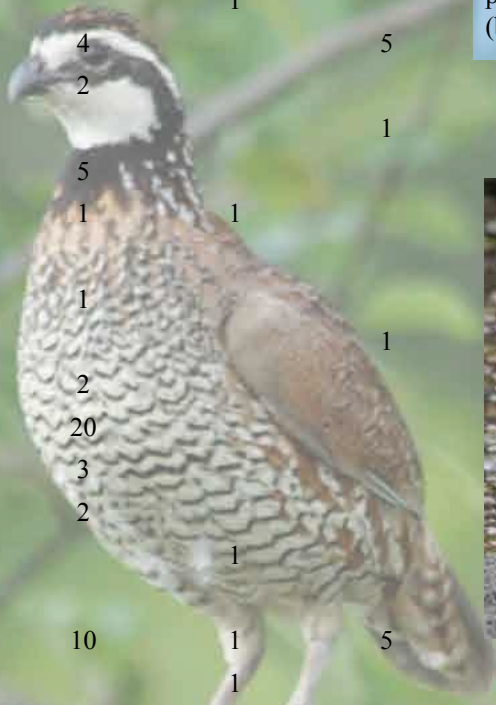


Species	Migration		Breeding Season	
	2018	2019	2018	2019
American Bittern		4		
American Crow	2	1	1	
American Goldfinch	2	1		1
Barred Owl	1			
Baltimore Oriole		1		2
Barn Swallow		2		5
Black-capped Chickadee	1			
Blue-gray Gnatcatcher		1		1
Brown-headed Cowbird	1	1	2	
Blue Jay	1	1	1	
Brown Thrasher		1		
Blue-winged Teal		23		
Canada Goose	2	35	1	
Carolina Wren	1	2		4
Common Grackle		7		6
Common Yellowthroat		15	3	7
Dickcissel		1		3
Downy Woodpecker	1	1		4
Eastern Bluebird	1	4		
Eastern Kingbird		3		3
Eastern Meadowlark				2
Eastern Wood-Pewee			1	3
Field Sparrow	3	2		
Forster's Tern		1		
Great Blue Heron		1		4
Great Crested Flycatcher				1
Gray Catbird		1		1
Green Heron		1		
Greater Yellowlegs		5		
Green-winged Teal				2
Hooded Merganser		3		
House Wren		3	1	
Indigo Bunting		5	5	9
Killdeer		3		
Least Flycatcher		1		
Lesser Yellowlegs		6		
Louisiana Waterthrush				1
Mallard		3		2
Marsh Wren		3		
Mourning Dove	1			

66642495009DQ AND 666424100YC6

Species	Migration		Breeding Season	
	2018	2019	2018	2019
Northern Bobwhite		3	4	1
Northern Cardinal	3	4		5
Northern Flicker	1			
Northern Parula				1
Northern Waterthrush		3		
Northern Rough-winged Swallow		6		1
Orchard Oriole		1		
Ovenbird			1	
Pied-billed Grebe		4		5
Pectoral Sandpiper		2		
Pileated Woodpecker				1
Rose-breasted Grosbeak		5		
Red-bellied Woodpecker	1	1	1	
Ruby-crowned Kinglet	1			
Red-headed Woodpecker	1	1		
Red-shouldered Hawk				1
Savannah Sparrow		2		
Sora		20		
Solitary Sandpiper		3		
Song Sparrow	1	2		
Summer Tanager			1	
Swamp Sparrow	1			
Tree Swallow		10	1	5
Tufted Titmouse	1		1	
Virginia Rail		8		
Warbling Vireo		3		1
White-breasted Nuthatch	1			
White-eyed Vireo			1	
Wild Turkey	1			
Wood Duck		7		24
Western Palm Warbler		3		
White-throated Sparrow	1			
Yellow-breasted Chat		2	1	2
Yellow-billed Cuckoo			2	2
Yellow Warbler		2		2
Yellow-rumped Warbler	1	3		
Yellow-throated Vireo		1		
Grand Total	32	240	28	113

Notes: MRBO surveyed one small portion of this dual-easement property in 2018, and the entire property in 2019; this is the primary reason for the significantly higher number of birds documented in 2019. Taken together, these two easements comprise an important habitat complex. Highlights included relatively large numbers of Sora and Virginia Rail (top photo), American Bittern, Pied-billed Grebe, Wood Duck and other wetland-dependent species. Upland species included Northern Bobwhite (background photo) and Rose-breasted Grosbeak (bottom photo).



Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
American Bittern	4		Orchard Oriole		4
American Coot	1		Pied-billed Grebe	1	
American Crow	1		Pileated Woodpecker	1	
Barred Owl	1		Prothonotary Warbler		2
Baltimore Oriole	3	4	Red-bellied Woodpecker	1	2
Barn Swallow	6	1	Red-eye Vireo	1	
Black-and-White Warbler	3		Red-headed Woodpecker	5	
Black-capped Chickadee	1		Sedge Wren	1	
Belted Kingfisher	1		Sora	9	
Blue-gray Gnatcatcher	1		Solitary Sandpiper	5	
Brown-headed Cowbird	1	1	Song Sparrow	4	2
Blue Jay	45		Swamp Sparrow	2	
Brown Thrasher	2		Tree Swallow	1	1
Blue-winged Teal	75		Tufted Titmouse	2	
Canada Goose	7		Warbling Vireo	1	
Carolina Wren	1		White-breasted Nuthatch	3	
Common Grackle	5		Wild Turkey	1	
Common Yellowthroat	19	7	Wood Duck	3	14
Downy Woodpecker	1	1	Wood Thrush	1	
Eastern Bluebird	2		Yellow-breasted Chat	1	
Eastern Kingbird	2		Yellow Warbler	7	
Eastern Towhee	3		Yellow-throated Vireo	1	
Eastern Wood-Pewee		2	Grand Total	272	63
Great Blue Heron		1			
Great Crested Flycatcher	2	2			
Gray Catbird	1				
Green Heron	5				
Greater Yellowlegs	1				
Golden-winged Warbler	1				
House Wren	1				
Indigo Bunting	1	10			
Killdeer	3	1			
Lincoln's Sparrow	2				
Marsh Wren	1				
Mississippi Kite		1			
Northern Bobwhite	1				
Northern Cardinal	4	5			
Northern Flicker	1				
Northern Parula	3	2			
Northern Waterthrush	4				
Northern Rough-winged Swallow	3				

Notes: This new survey site contained an extremely high diversity of species for its size. Of particular note were the numbers of marshbirds and shore birds, such as Sora, Solitary Sandpiper and American Bittern. The presence of a Mississippi Kite (photo below) on this easement during breeding season is also remarkable.



66642411015RZ

2019 Survey Dates

Migration: April 28th. Breeding Season: June 7th.

Acreage: 52

Species	2019	
	Migration	Breeding Season
American Goldfinch	1	
Bald Eagle	1	
Blue-gray Gnatcatcher	2	1
Brown-headed Cowbird		1
Brown Thrasher	1	
Blue-winged Teal	22	
Canada Goose	2	4
Chipping Sparrow		1
Common Grackle	1	
Common Yellowthroat	1	1
Eastern Meadowlark	3	2
Eastern Phoebe	1	
Eastern Wood-Pewee		1
Great Blue Heron	1	2
Great Egret	1	
House Wren	1	
Indigo Bunting		1
Killdeer	4	2
Lesser Yellowlegs	5	
Mourning Dove	1	
Northern Cardinal		1
Northern Parula		1
Pileated Woodpecker		1
Prothonotary Warbler		1
Red-bellied Woodpecker	1	2
Red-headed Woodpecker		1
Solitary Sandpiper	1	
Song Sparrow		3
Spotted Sandpiper	2	
Tree Swallow	3	3
Tufted Titmouse	1	
Wood Duck	1	3
Yellow-billed Cuckoo		1
Yellow-rumped Warbler	2	
Grand Total	59	33

Notes: Another new property in the MRBO survey sample, in 2019 this easement provided open mudflat habitat for migrating shorebirds. This was unusual due to the extreme flooding in most locations in Missouri. Species using this property included Lesser Yellowlegs (top photo) and Solitary Sandpiper (bottom; both photos taken on site). A mix of open water and emergent marsh resulted in the presence of Blue-winged Teal, Canada Geese, and wading birds such as Great Blue Heron. This easement is under new ownership and we look forward to keeping the new landowner apprised of project findings.



Species	2019	
	Migration	Breeding Season
American Bittern	2	
American Crow	1	
American Goldfinch	1	
American Redstart	1	
Bald Eagle	1	
Baltimore Oriole	4	
Barn Swallow	5	
Black-and-White Warbler	2	
Blue-gray Gnatcatcher	1	
Blue Jay	2	
Brown Thrasher	1	
Blue-winged Teal	3	
Blue-winged Warbler	3	
Canada Goose	4	
Carolina Wren	1	1
Common Yellowthroat	8	3
Downy Woodpecker	1	
Eastern Kingbird	1	
Eastern Wood-Pewee		1
Great Blue Heron		1
Great Crested Flycatcher	1	1
Gray Catbird	2	3
Great Egret	1	
Green Heron	2	
Greater Yellowlegs	11	
Golden-winged Warbler	1	
Indigo Bunting	1	2
Marsh Wren	1	
Mourning Dove	2	1
Northern Cardinal	2	4
Northern Parula	3	1
Northern Waterthrush	7	
Northern Rough-winged Swallow	5	
Orchard Oriole	1	
Pied-billed Grebe	1	
Purple Martin		3
Rose-breasted Grosbeak	1	
Red-bellied Woodpecker	1	1
Red-headed Woodpecker	2	

Species	2019	
	Migration	Breeding Season
Red-shouldered Hawk	1	
Sedge Wren	1	
Sora	10	
Solitary Sandpiper	2	
Song Sparrow	4	
Summer Tanager	1	
Swamp Sparrow	5	
Tufted Titmouse	1	
Turkey Vulture	3	
Warbling Vireo	2	
White-eyed Vireo	1	
Wood Duck	5	
Western Palm Warbler	3	
White-throated Sparrow	2	
Yellow Warbler		2
Yellow-rumped Warbler	6	
Yellow-throated Vireo	3	
Yellow-throated Warbler		1
Grand Total	137	25

Notes: This new survey site was largely flooded during the migration season, providing habitat for wetland-dependent birds such as Greater Yellowlegs, Solitary Sandpiper (photo below) and Sora. During the breeding season, a dearth of water on most of the easement resulted in habitat for forest birds including Eastern Wood-Pewee, Northern Parula and Gray Catbird. The presence of water in some few areas resulted in the presence of breeding Common Yellowthroat, Yellow Warbler, and Great Blue Heron.



Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
American Bittern	2		Pileated Woodpecker		1
American Crow	1	1	Red-bellied Woodpecker		1
American Goldfinch	3	5	Red-eyed Vireo	1	
Baltimore Oriole	1		Red-headed Woodpecker	1	
Belted Kingfisher	1		Sedge Wren	3	
Black-capped Chickadee	1		Solitary Sandpiper	8	6
Black-throated Green Warbler	1		Spotted Sandpiper	3	
Blue Grosbeak		1	Tufted Titmouse	2	2
Blue Jay	2		Turkey Vulture	1	
Blue-gray Gnatcatcher	2	3	Warbling Vireo	2	3
Brown Thrasher	1		Western Palm Warbler	1	
Brown-headed Cowbird	2	6	White-breasted Nuthatch	1	
Canada Goose	4		White-eyed Vireo	1	
Cedar Waxwing		2	White-throated Sparrow	1	
Common Yellowthroat	26	11	Willow Flycatcher		1
Downy Woodpecker	1		Wood Duck	1	6
Eastern Kingbird	2	3	Yellow Warbler	1	
Eastern Meadowlark	1		Yellow-breasted Chat		1
Field Sparrow	2	1	Yellow-throated Vireo		1
Grasshopper Sparrow	1		Grand Total	100	85
Gray Catbird	2	6			
Great Blue Heron		1			
Great Crested Flycatcher	2	2			
Green Heron	2				
House Wren	1				
Indigo Bunting		10			
Killdeer		2			
Louisiana Waterthrush		1			
Mallard		2			
Marsh Wren	1				
Mourning Dove	1	1			
Nashville Warbler	1				
Northern Cardinal	3	4			
Northern Parula	1				
Northern Waterthrush	1				
Orange-crowned Warbler	1				
Orchard Oriole	2				
Ovenbird	1	1			

Notes: This easement, also new to our survey sample, was unique in having Solitary Sandpiper and Ovenbird still present during the breeding season; these species merely stopped over at most sites during migration. Other notable species included two American Bittern (below) and a large number of Common Yellowthroat during both migration and breeding season.



66642412018JK

2019 Survey Dates
 Migration: May 9th Breeding Season: June 6th.
Acreege: 44

Notes: This easement contained good wetland species diversity, particularly for its size. Highlights included flocks of American White Pelicans (top photo) and Lesser Yellowlegs (lower photo) during migration as well as Solitary Sandpiper and Blue-winged Teal. During the breeding season, several songbirds were present including Common Yellowthroat, Indigo Bunting (middle photo) and Song Sparrow.



Species	2019	
	Migration	Breeding Season
American Crow	1	1
American Goldfinch	2	1
American Robin		2
American White Pelican	31	
Barred Owl		1
Baltimore Oriole	1	
Blue-gray Gnatcatcher		2
Brown-headed Cowbird	2	1
Blue Grosbeak		1
Blue-winged Teal	9	
Canada Goose	2	
Common Yellowthroat	8	3
Dickcissel	1	2
Eastern Kingbird	1	1
Field Sparrow		1
Great Blue Heron	1	1
Great Crested Flycatcher		2
Gray Catbird	1	2
Indigo Bunting	2	6
Lesser Yellowlegs	20	
Mallard	1	1
Mourning Dove	2	1
Northern Cardinal	3	4
Northern Flicker		1
Northern Parula		1
Northern Waterthrush	1	
Red-headed Woodpecker	1	
Sora	1	
Solitary Sandpiper	6	
Song Sparrow	2	5
Tufted Titmouse	1	
Warbling Vireo	1	
Wood Duck	2	2
White-throated Sparrow	2	
Yellow-billed Cuckoo		2
Grand Total	105	44

66642405009HG

2019 Survey Dates
 Migration: April 27th. Breeding Season: June 6th.
Acreege: 127

Notes: Another new site in our survey sample for 2019, this easement held some notable species during both migration and breeding season. Bald Eagles (top photo) were present during both surveys. In migration, we documented birds with a variety of different habitat affinities, such as Sora, Pileated Woodpecker, and Rose-breasted Grosbeak (bottom photo, taken on site).

Species	2019	
	Migration	Breeding Season
American Crow	1	
American Goldfinch	5	
Bald Eagle	2	3
Blue-gray Gnatcatcher	3	
Brown-headed Cowbird	1	1
Canada Goose	5	4
Common Yellowthroat	4	1
Eastern Towhee	2	
Great Blue Heron		1
Great Crested Flycatcher	1	3
Gray Catbird		1
House Wren	3	
Indigo Bunting		1
Northern Cardinal	4	
Northern Parula	2	
Pileated Woodpecker	1	
Prothonotary Warbler		1
Rose-breasted Grosbeak	1	
Red-bellied Woodpecker	1	
Red-headed Woodpecker	3	3
Sora	1	
Song Sparrow	1	2
Swamp Sparrow	1	
Tree Swallow	2	3
Tufted Titmouse	2	
White-eyed Vireo	1	
Wood Duck	3	2
White-throated Sparrow	3	
Yellow-breasted Chat		2
Yellow-rumped Warbler	2	
Grand Total	55	28



5464241501JT8

2019 Survey Dates
 Migration: April 27th. Breeding Season: June 6th.
 Acreage: 241

Species	2019	
	Migration	Breeding Season
American Crow	5	
Bald Eagle	2	
Baltimore Oriole	2	1
Barn Swallow	2	
Black-capped Chickadee	1	
Black-crowned Night-Heron	2	
Brown-headed Cowbird	1	
Black-and-white Warbler	1	
Blue Jay	2	
Blue-winged Teal	64	
Canada Goose	3	
Common Grackle	1	3
Common Yellowthroat	19	9
Dickcissel	2	4
Downy Woodpecker	2	1
Eastern Kingbird	5	1
Eastern Meadowlark	3	1
Eastern Wood-Pewee		1
Great Blue Heron	1	2
Great Crested Flycatcher	1	
Gray Catbird	2	
Green Heron	1	1
Greater Yellowlegs	1	
House Wren	1	
Indigo Bunting		5
Killdeer	1	
Least Bittern		1
Mallard	2	7
Northern Cardinal	4	3
Pileated Woodpecker	1	
Prothonotary Warbler		1
Red-bellied Woodpecker	3	
Red-headed Woodpecker	1	3
Red-shouldered Hawk	1	
Sora	9	
Song Sparrow	12	12
Tree Swallow	53	2
Warbling Vireo	1	

Species	2019	
	Migration	Breeding Season
White-breasted Nuthatch	1	
Wood Duck	2	15
Western Palm Warbler	1	
White-throated Sparrow	1	
Yellow-rumped Warbler	1	
Yellow-throated Vireo	2	1
Grand Total	220	74

Notes: As the background photo shows, this easement had an abundance of emergent marsh habitat, which resulted in robust concentrations of waterbirds such as Sora, Blue-winged Teal and Black-crowned Night-Heron (top photo). During the breeding season, the presence of Least Bittern, Green Heron and Great Blue Heron indicate that quality habitat was maintained throughout the season.



Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
American Coot	7		Ruby-crowned Kinglet	1	
American Robin	1	2	Red-headed Woodpecker		4
Bald Eagle	2	1	Ring-necked Duck	2	
Barn Swallow	1		Sedge Wren	2	
Brown-headed Cowbird	1		Sora	24	
Blue Jay	2	1	Song Sparrow	4	3
Brown Thrasher	1		Spotted Sandpiper	1	
Blue-winged Teal	45		Swamp Sparrow	5	
Canada Goose	6		Tree Swallow	49	
Chimney Swift	9		Virginia Rail	10	
Cliff Swallow	1		Warbling Vireo	3	3
Common Grackle	1		White-breasted Nuthatch		2
Common Yellowthroat	22	11	Wood Duck	2	3
Double-crested Cormorant		1	Western Palm Warbler	2	
Eastern Kingbird	2	1	White-throated Sparrow	1	
Eastern Wood-Pewee		2	Yellow-billed Cuckoo		1
Great Blue Heron		1	Yellow Warbler	2	
Great Crested Flycatcher	2	1	Yellow-rumped Warbler	3	
Great Horned Owl	1		Grand Total	271	46
Gray Catbird	3	3			
Green Heron		1			
Hairy Woodpecker		1			
House Wren	2	1			
King Rail	1				
Mallard	2				
Marsh Wren	21				
Mourning Dove	2				
Nashville Warbler	1				
Northern Cardinal	3				
Northern Flicker		1			
Northern Waterthrush	1				
Northern Shoveler	11				
Orchard Oriole	1				
Pied-billed Grebe	5				
Purple Martin		1			
Rose-breasted Grosbeak	2				
Red-bellied Woodpecker	1	1			

Notes: This site supported excellent diversity during migration, with highlights that included large numbers of Marsh Wren, Common Yellowthroat and Blue-winged Teal. A single King Rail, one of the rarest marshbird species in Missouri, was also documented, along with songbirds such as Northern Waterthrush (below; photo taken on site). During the breeding season, MRBO surveyors had to walk the perimeter of the easement due to high water in the interior.



Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
American Crow	1		Northern Parula	1	2
American Goldfinch	1	1	Northern Waterthrush	1	
American Redstart	1		Northern Rough-winged Swallow	1	
Barred Owl	1		Orchard Oriole		1
Baltimore Oriole	2		Pileated Woodpecker	1	
Barn Swallow	4		Prothonotary Warbler		1
Belted Kingfisher	1		Red-bellied Woodpecker	1	2
Blue-gray Gnatcatcher	1		Red-eyed Vireo	1	
Brown-headed Cowbird	1	1	Red-shouldered Hawk	1	
Blue Jay	4		Savannah Sparrow	1	
Blue-winged Teal	30	1	Sedge Wren		1
Blue-winged Warbler	2		Sora	1	
Canada Goose	6		Song Sparrow	4	4
Carolina Wren	1	1	Spotted Sandpiper	4	
Chimney Swift	1		Swamp Sparrow	1	
Common Grackle	4		Tufted Titmouse	2	
Common Yellowthroat	9	1	Warbling Vireo	4	
Dickcissel	3	13	White-breasted Nuthatch	1	
Downy Woodpecker		2	Wild Turkey	1	
Eastern Kingbird		3	Wood Duck	17	5
Eastern Meadowlark	1	1	Yellow Warbler	1	
Eastern Wood-Pewee		2	Yellow-rumped Warbler	1	
Gadwall	1		Yellow-throated Vireo	1	
Great Blue Heron	3	3	Grand Total	154	67
Great Crested Flycatcher	2	1			
Great Horned Owl	1				
Gray Catbird	3	2			
Great Egret	2				
Green Heron	1				
Golden-winged Warbler	2				
House Wren		2			
Indigo Bunting	1	9			
Killdeer	3	5			
Least Bittern		1			
Least Sandpiper	1				
Lesser Yellowlegs	7				
Lincoln's Sparrow	1				
Mallard	3	1			
Marsh Wren	1				
Northern Cardinal	1	1			

Notes: This easement hosted a broad diversity of species during both migration and the breeding season. Highlights included several warbler species along with good numbers of marshbirds and waders, such as Green Heron (below; photo taken on site). The large number of Dickcissels present in June indicates that this site provides breeding habitat for grassland-dependent birds as well as marsh-dwelling species.



WET REGION 3 OVERVIEW

Survey coverage in WET Region 3 in 2019.

<i>Easement</i>	<i>County</i>	<i>Site Acreage</i>	<i># Transects</i>	<i>Migration Visit</i>	<i>Breeding Visit</i>
66642407009TC	Pemiscot	5570	31	inaccessible	inaccessible
666424000B3V	Bollinger	88	4	4/4	5/18
66642412018ZW	New Madrid	66	3	4/1	5/24
66642412018DW, 6664240900X2K and 666424010090Y	Bollinger	206	10	4/3	5/20
6664241000ZN0	Stoddard	80	2	4/2	5/18
66642496009JJ	New Madrid	232	4	inaccessible	5/26
66642407009TT	New Madrid	270	7	3/29	5/25
5464241601L6G	New Madrid	292	6	inaccessible	inaccessible
66642496009JZ	Stoddard	132	3	4/1	5/22
66642496009J5	New Madrid	147	3	4/4	5/26
5464241601L6T	New Madrid	181	3	inaccessible	inaccessible
6664240000B4V	Scott	435	5	inaccessible	inaccessible
6664240800MYJ	New Madrid	147	5	4/2	5/21
5464241801QFT	New Madrid	263	10	3/29	5/23
666424005009GX	New Madrid	386	8	3/31	5/23 & 5/24

666424000B3V

2019 Survey Dates
 Migration: April 4th. Breeding Season: May 18th.
Acres: 88

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Acadian Flycatcher							3	1
Alder Flycatcher					6			2
American Bittern					1			
American Coot	1		95					
American Crow	1	3	7	2	8	10	10	
American Goldfinch	1	3			2		1	1
American Redstart						2		
American Robin				1				
American Wigeon			10					
Bald Eagle						1	1	1
Barn Swallow			1			2	3	
Barred Owl			2	1	1		1	
Belted Kingfisher			1	1	1			
Black-crowned Night-Heron			3				2	
Blackpoll Warbler						1		
Blue Jay	5	1	1		1	2	3	1
Blue-gray Gnatcatcher	1	2	6	1	1		2	1
Blue-winged Teal	15		62	4	1	12		
Brown Thrasher				2				1
Brown-headed Cowbird			1	5		1	4	1
Canada Goose	5	2	2	2	19	6	1	
Carolina Chickadee	1	4	1	3	2	3	3	1
Carolina Wren			2					
Chimney Swift					1			
Common Grackle				9	17	41	1	1
Common Merganser	9							
Common Nighthawk						2		1
Common Yellowthroat		1			1	1	2	9
Dickcissel							1	
Double-crested Cormorant	10							
Downy Woodpecker	1		1	2			3	1
Eastern Kingbird						2		
Eastern Wood-Pewee					2	1	1	
Fish Crow			2	3				
Gadwall			861					
Golden-Crowned Kinglet		2						
Gray Catbird					2	1	1	1
Great Blue Heron	20		4		9	3	2	1
Great Crested Flycatcher						2	1	

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Great Egret					22	20	1	
Great-tailed Grackle						2		
Greater Yellowlegs	15		10	1				
Green Heron					1	1		1
Green-winged Teal			500					
Hooded Merganser			1					
Indigo Bunting					2	5	7	4
Killdeer						1	2	
Least Bittern							1	
Least Flycatcher					1			
Lesser Yellowlegs			1					
Little Blue Heron						23	2	
Louisiana Waterthrush					1	2		
Mallard	6		4			2	2	
Mourning Dove				3			1	
Northern Cardinal		4	2	6		9	5	4
Northern Parula			1				1	
Northern Shoveler			6			15		
Northern Waterthrush						1		
Orchard Oriole							1	
Pectoral Sandpiper			300					
Peregrine Falcon			1					
Pied-billed Grebe			3					
Prothonotary Warbler					3		4	4
Purple Martin							2	2
Red-bellied Woodpecker		1	1	1	2	1		
Red-eyed Vireo					1		3	1
Red-shouldered Hawk	1		1	1	2	1	1	
Red-tailed Hawk						1		
Ring-necked Duck			6	2				
Ruby-crowned Kinglet		1						
Ruby-throated Hummingbird						1		
Rusty Blackbird			270	4				
Solitary Sandpiper		1	2					
Song Sparrow				1				1
Summer Tanager					1			
Swamp Sparrow				6				
Tennessee Warbler						1		
Tree Swallow	10							
Tufted Titmouse		3	1		1		1	

666424000B3V

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Unknown Duck	2			7				
Unknown Woodpecker				1				
Warbling Vireo							1	1
Western Palm Warbler		5						
White-eyed Vireo							2	1
White-throated Sparrow				2				
Wild Turkey					1			
Willow Flycatcher						1		
Wilson's Snipe			1	1				
Wood Duck	2		9	5	3	7		
Wood Thrush		2			2	2	3	1
Yellow-billed Cuckoo					5	2	4	1
Yellow-crowned Night-Heron						1		
Yellow-rumped Warbler			19	6				
Yellow-throated Warbler	1		4					
Grand Total	107	35	2205	83	123	192	90	45

Notes: This easement provides a good example of the variability of migration. In 2018, surveyors happened to arrive at this site at exactly the right time for documenting hundreds of birds as they used the area for temporary stopover habitat. In 2019, though surveys were conducted just two days later than in the previous year, the “snapshot” we got of bird use was far lower. However, during both seasons the diversity of species using this easement was high, particularly among songbirds. Wood Thrush (lower left) and Prothonotary Warbler (lower right; both photos taken on site) were among these species, along with birds like Common Yellowthroat, Indigo Bunting and Yellow-billed Cuckoo.



66642412018ZW

2019 Survey Dates
 Migration: April 1st. Breeding Season: May 24th.
Acres: 66

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern				2				1
American Coot			12					
American Goldfinch						2		
American Kestrel					1			
American Robin	1		1	3		1	1	1
Barred owl				1				
Bald Eagle		2						
Baltimore Oriole						3	4	
Barn Swallow		4	3		10	10	5	4
Belted Kingfisher				1				
Brown-headed Cowbird			2	2				1
Blue Jay		3	1				2	2
Black-necked Stilt					2			
Bobolink				1			1	
Brown Thrasher	1		1	1				
Blue-winged Teal	8	111	72	10	1		1	
Canada Goose	6		3					
Carolina Wren	1		2	1	1	1	3	
Cedar Waxwing								20
Chipping Sparrow		6	1					
Cliff Swallow					5	10	15	12
Common Grackle		10	3	9	4	6	2	
Common Nighthawk					1		1	
Common Yellowthroat							6	3
Double-crested Cormorant				25				
Dickcissel					14	16	18	9
Downy Woodpecker								1
Eastern Kingbird						1		
Eastern Meadowlark		8			1		1	
Eastern Towhee			1	2			1	
European Starling		5			2	1		
Field Sparrow	3	6	5	5	1		2	2
Gadwall			8					
Great Blue Heron					5			
Great Crested Flycatcher							1	1
Great Egret					14	4		
Green Heron					2		3	1
Grasshopper Sparrow					3	3	5	

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Greater Yellowlegs	16	14	2				1	
Green-winged Teal		3	2					
Horned Lark		1					2	
House Wren				1		1		
Indigo Bunting					2		5	5
Killdeer	2	2	1		2		4	1
Little Blue Heron					4			
Least Bittern							3	1
Lesser Yellowlegs	16	12	1					
Lincoln's Sparrow	2	1						
Loggerhead Shrike		1						
Mallard		4	2	2	5		5	9
Mourning Dove	2	3	3	7	4	6	2	1
Northern Bobwhite		7	1		1	3	3	3
Northern Cardinal	1	10	2	4	6	3	5	6
Northern Flicker			1					
Northern Harrier			1					
Northern Mockingbird		1				1		
Northern Parula	2							
Northern Rough-winged Swallow	1				3		4	
Northern Shoveler	33	12						
Pied-billed Grebe				3				
Pectoral Sandpiper	6							
Ring-billed Gull				3				
Red-bellied Woodpecker				1				
Red-headed Woodpecker						1		
Rock Pigeon			14		5	11		21
Red-tailed Hawk				1				1
Savannah Sparrow		22	2	12			1	
Semipalmated Plover	1							
Semipalmated Sandpiper							10	
Snowy Egret					6			
Sora	1	1		3			4	
Solitary Sandpiper	2	4						
Song Sparrow	1			2				
Swamp Sparrow	2	14	13	31				
Tree Swallow	5	3	5	5	5			
Tufted Titmouse		1	2				3	1
Virginia Rail				4				

66642412018ZW

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Wilson's Snipe	4	15						
Wood Duck		10	3	8	6	9	2	
Yellow-rumped Warbler	1							
Yellow-throated Vireo							1	
Yellow-throated Warbler					1			
Grand Total	118	306	171	163	111	90	141	109

Notes: This easement has consistently provided high quality habitat for wetland-dependent birds for the past four survey years. Species such as American Bittern (background photo, taken on site), Least Bittern and Pied-billed Grebe find migration and breeding habitat here. The site also supports a diversity of swallows, such as Northern Rough-winged Swallow (below) as well as Barn and Cliff Swallows. Also typically present are several species of waterfowl along with upland prairie birds such as Dickcissel and Northern Bobwhite.



66642412018DW, 6664240900X2K
AND 666424010090Y

2019 Survey Dates
Migration: April 3rd. Breeding Season: May 20th.
Acreage: 206

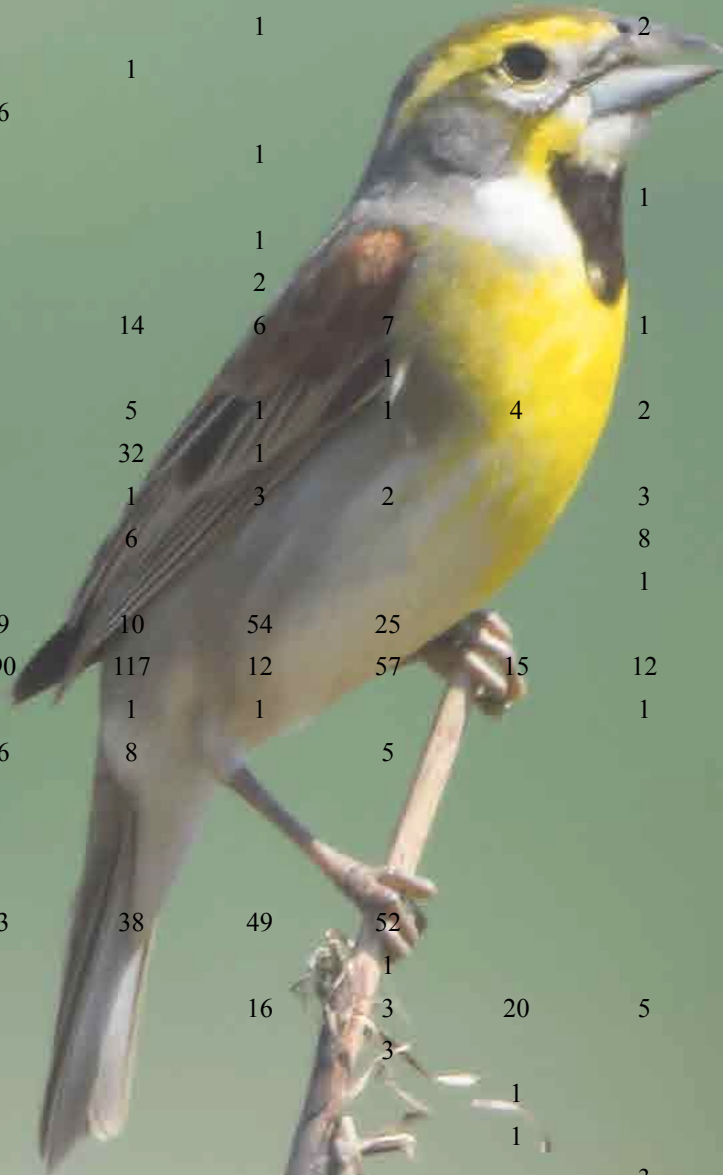
Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern			1		1	2		1
American Coot			137	1	11			
American Crow	6	8	8	4		1	4	1
American Goldfinch		1			1	8		
American Golden-Plover		1						
American Pipit			5					
American Robin				1				
American Wigeon		2						
American White Pelican	330							
Barred Owl				3	2	1		
Bald Eagle	2		2	1			1	1
Bank Swallow			10		13	8		
Baltimore Oriole							2	
Barn Swallow		14	10	2	6	27	4	3
Belted Kingfisher	3			1				
Bell's Vireo								3
Blue-gray Gnatcatcher			2			2	2	4
Brown-headed Cowbird				43			5	5
Blue Grosbeak								1
Blue Jay	3		2	1	1		5	
Black-necked Stilt		10				4		
Bobolink					1			
Brown Thrasher			1	2		2	2	
Bufflehead		1	1					
Blue-winged Teal	33	41	320	22	8	3		1
Carolina Chickadee	3			3				
Canada Goose	6		10	4	11	4	13	15
Carolina Wren			1	2		1	4	
Clay-colored Sparrow						1		
Cedar Waxwing								5
Chimney Swift								2
Cliff Swallow					12	16	1	
Common Grackle	15		3			4	4	1
Common Yellowthroat					1	9	12	27
Dickcissel					6		119	36
Downy Woodpecker			1	1				1
Dunlin		7					4	
Eastern Bluebird		1	2	1			1	
Eastern Kingbird					4	5	1	2

66642412018DW, 6664240900X2K AND 666424010090Y

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Eastern Meadowlark		1		11			2	
Eastern Phoebe			2					
Eastern Towhee				1				
Eastern Wood-Pewee						4	6	2
European Starling			1	30				
Fish Crow		2		8	3	2		
Field Sparrow	6	2	1	8		4	3	3
Gadwall			12					
Great Blue Heron	6	5		1	8	2	3	2
Great Crested Flycatcher							1	1
Great Horned Owl				1				
Great Egret				6		1	14	
Green Heron						2	2	
Greater Yellowlegs	33	26	24	2			1	
Green-winged Teal	6	1	197					
Henslow's Sparrow								1
Hermit Thrush			1					
Horned Lark		1						
Indigo Bunting						4	5	12
Killdeer	6	13				7	7	3
King Rail					2			1
Long-billed Dowitcher		13						
Little Blue Heron						8		
LeConte's Sparrow		1	1					
Least Bittern					1		1	4
Least Flycatcher							1	
Least Sandpiper		45				1		
Lesser Yellowlegs		53	14			2	1	
Lincoln's Sparrow		1						
Louisiana Waterthrush								1
Mallard			26	3		3		
Marsh Wren					2	2		2
Mourning Dove			2	4		1	3	1
Northern Cardinal		2		6		2	5	6
Northern Flicker				1			1	
Northern Harrier			1	3				
Northern Rough-winged Swallow				1				
Northern Shoveler	42	7	35	16				
Ovenbird								3

66642412018DW, 6664240900X2K AND 666424010090Y

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Palm Warbler						1		
Pied-billed Grebe	6		2		2	2		5
Pectoral Sandpiper		362	2	22		38	1	
Pileated Woodpecker					1			
Prothonotary Warbler								1
Purple Martin							3	
Red-breasted Merganser						3		
Red-bellied Woodpecker			1			2	4	2
Ruby-crowned Kinglet		1						
Red-headed Woodpecker	6						1	
Ring-necked Duck			1					
Red-shouldered Hawk						1	1	
Red-tailed Hawk			1					
Rusty Blackbird			2					
Savannah Sparrow		14	6	7		1		
Snow Goose				1				
Sora		5	1	1	4	2		
Solitary Sandpiper		32	1					
Song Sparrow		1	3	2		3		
Spotted Sandpiper		6				8		
Summer Tanager						1	1	1
Swamp Sparrow	9	10	54	25				
Tree Swallow	90	117	12	57	15	12	7	
Tufted Titmouse		1	1			1	1	
Unknown Sandpiper	6	8		5			16	
Warbling Vireo							1	
White-eyed Vireo								2
Willow Flycatcher								1
Wilson's Snipe	3	38	49	52				
Wild Turkey				1				
Wood Duck			16	3	20	5	5	2
White-throated Sparrow				3				
Yellow-breasted Chat					1		1	1
Yellow-billed Cuckoo					1			2
Yellow Warbler						3		1
Yellow-rumped Warbler			1	1				
Grand Total	638	854	994	383	139	226	287	181



Notes: As it has in past years, this easement provided good migratory stopover habitat for a variety of shorebirds and waterfowl, and offered breeding habitat to marsh birds and grassland birds. Though the site did not contain as many Dickcissels (background photo, taken on site) due to water levels, this is an example of a grassland bird benefitting from a wetland easement. Other highlights included high numbers of Wilson's Snipe and Eastern Meadowlark during migration.

Species	2019	
	Migration	Breeding Season
American Crow	1	
American Pipit	1	
Barn Swallow		4
Belted Kingfisher	2	1
Blue-gray Gnatcatcher	2	
Brown-headed Cowbird	4	1
Blue Jay	2	
Brown Thrasher	2	
Blue-winged Teal	14	
Carolina Chickadee	2	
Canada Goose	2	7
Common Grackle		1
Common Yellowthroat		3
Dickcissel		7
Downy Woodpecker	1	
Eastern Bluebird	2	
Eastern Kingbird		3
Eastern Meadowlark	1	1
Eastern Towhee	3	
European Starling	6	
Field Sparrow	4	2
Gadwall	4	
Great Blue Heron	1	
Greater Yellowlegs	5	
Hooded Merganser	10	
Indigo Bunting		4
Killdeer	3	2
Mallard	2	5
Mourning Dove	5	
Northern Cardinal	8	2
Northern Harrier	1	
Northern Mockingbird		1
Northern Pintail		1
Northern Shoveler	16	
Pied-billed Grebe	2	
Red-bellied Woodpecker	1	1
Red-tailed Hawk	1	
Red-winged Blackbird		6
Snow Goose	1	
Song Sparrow	3	

Species	2019	
	Migration	Breeding Season
Swamp Sparrow	2	
Tufted Titmouse	1	
Unknown Sandpiper	30	1
Wilson's Snipe	4	
Wood Duck	1	
White-throated Sparrow	1	
Yellow-breasted Chat		2
Yellow-rumped Warbler	1	
Grand Total	153	55

Notes: This easement, new to our sample in 2019, was particularly notable for containing 30 sandpipers who's ID stumped our survey crew! Other highlights included good numbers of waterfowl, such as Blue-winged Teal, Hooded Merganser, and Northern Shoveler, and a high diversity of species for the size of the easement. Belted Kingfisher (below) was present during both migration and the breeding season, as were Mallard and Canada Goose.



66642496009JJ

2019 Survey Dates

Migration: inaccessible due to high water.

Breeding Season: May 26th.

Acreage: 232

Notes: It was fortunate that surveyors were able to access this easement in late May, when many other sites in southeast Missouri were still under water. Highlights included numerous Great Egrets (background photo) and Black-necked Stilts, as well as other wetland-associated birds such as Prothonotary Warbler and Mississippi Kite. We anticipate adding to this site's species list in future survey years.



Species	2019 Breeding Season
Acadian Flycatcher	1
American Crow	1
American Goldfinch	1
Belted Kingfisher	1
Blue-gray Gnatcatcher	5
Brown-headed Cowbird	2
Blue Jay	1
Black-necked Stilt	5
Carolina Chickadee	2
Carolina Wren	2
Eastern Towhee	1
Eastern Wood-Pewee	1
Great Crested Flycatcher	1
Great Egret	16
Indigo Bunting	10
Mississippi Kite	1
Northern Cardinal	6
Northern Parula	1
Prothonotary Warbler	3
Purple Martin	1
Red-bellied Woodpecker	1
Red-eyed Vireo	1
Summer Tanager	3
Tufted Titmouse	1
White-eyed Vireo	1
Wood Duck	2
Yellow-billed Cuckoo	3
Grand Total	74

66642407009TT

2018 Survey Dates

Migration: March 29th. Breeding Season: May 25th.

Acreege: 270

Species	Migration		Breeding Season	
	2018	2019	2018	2019
American Coot		100		
American Crow		1		
American Goldfinch			1	
American Robin		3		
Bald Eagle		2		
Barn Swallow			2	
Bell's Vireo			2	2
Blue-gray Gnatcatcher				1
Brown-headed Cowbird	1	2		1
Blue Grosbeak				2
Blue Jay		3		
Black-necked Stilt	15			1
Bonaparte's Gull	3			
Brown Thrasher	1	3		
Blue-winged Teal	67	22	2	
Carolina Wren	1	2	2	
Chipping Sparrow	1			1
Common Grackle	1	14	15	4
Common Yellowthroat			9	2
Dickcissel			84	78
Downy Woodpecker		1		
Eastern Kingbird			5	2
Eastern Meadowlark	10	24	7	8
Eastern Phoebe	1			
Eastern Towhee	1	3	1	3
Field Sparrow	8	26	16	10
Fox Sparrow	1			
Gadwall	38	4		
Great Blue Heron		1	1	
Great Crested Flycatcher				1
Golden-crowned Kinglet		1		
Great Horned Owl			1	
Great Egret		4		
Green Heron				2
Grasshopper Sparrow			3	
Greater Yellowlegs	41	13		
Green-winged Teal	150	60		
Hairy Woodpecker		1		
House Wren	1			
Indigo Bunting			5	8

Notes: This site was surveyed at an opportune time to get a snapshot of migratory bird use. Large numbers of waterfowl and shorebirds were present, such as American Coot, Pectoral Sandpiper and Least Sandpiper. The easement contained a diversity of both wetland species (such as Green Heron, lower photo) and grassland species (such as Yellow-breasted Chat), during the breeding season.



66642407009TT

Species	Migration		Breeding Season	
	2018	2019	2018	2019
Killdeer	12	5	7	5
King Rail				1
Long-billed Dowitcher		42		
Least Bittern				1
Least Sandpiper		232	2	
Lesser Yellowlegs	64		1	
Lincoln's Sparrow			1	
Mallard	10	12	4	4
Mourning Dove	2	3	3	
Northern Bobwhite		7	16	17
Northern Cardinal	2	7	6	4
Northern Flicker	2	4	1	
Northern Harrier	4	2		
Northern Mockingbird			1	
Northern Shoveler	67	8		
Orchard Oriole			3	1
Pied-billed Grebe	2	1		
Peregrine Falcon	1			
Pectoral Sandpiper	17	315		
Pileated Woodpecker		1		
Purple Martin			1	
Red-bellied Woodpecker	1	2	6	2
Red-winged Blackbird		122		
Ring-billed Gull		1		
Ring-necked Duck	4			
Red-tailed Hawk		1		
Rusty Blackbird		1		
Savannah Sparrow	6		1	
Semipalmated Plover	1			
Sora		4		
Song Sparrow		6		
Spotted Sandpiper	4			
Swamp Sparrow	14	36		
Tree Swallow		12		
Unknown Blackbird		11		
White-breasted Nuthatch			1	
White-eyed Vireo				2
Wilson's Snip	194	18		
Yellow-Breasted Chat			8	5
Yellow-billed Cuckoo			1	5
Grand Total	749	1164	220	173

Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
Alder Flycatcher		1	Northern Shoveler	12	
American Coot	2		Pied-billed Grebe		1
American Crow	1		Pileated Woodpecker		1
American Robin	1		Red-bellied Woodpecker	2	
Belted Kingfisher		1	Red-shouldered Hawk	1	
Bell's Vireo		4	Sora	1	
Blue-gray Gnatcatcher	1	5	Song Sparrow	1	
Brown-headed Cowbird	4	1	Swamp Sparrow	13	
Blue Jay	1		Tufted Titmouse	1	
Brown Thrasher	2	2	White-crowned Sparrow	1	
Blue-winged Teal	37		Wilson's Snipe	1	
Carolina Chickadee	3		Wood Duck	4	
Canada Goose	8		Wood Thrush		1
Carolina Wren	2	1	Yellow-breasted Chat		6
Common Grackle		1	Yellow-throated Vireo		1
Common Yellowthroat		3	Grand Total	154	71
Dickcissel		8			
Downy Woodpecker	2				
Eastern Bluebird	2				
Eastern Kingbird		1			
Eastern Phoebe	1				
Eastern Towhee	5	1			
Eastern Wood-Pewee		1			
Field Sparrow	19	5			
Fox Sparrow	2				
Great Blue Heron		1			
Great Crested Flycatcher		1			
Greater Yellowlegs	2				
Hairy Woodpecker	1				
Indigo Bunting		13			
Killdeer	1	6			
Least Bittern		1			
Mallard	4				
Mourning Dove	4	2			
Northern Cardinal	7	2			
Northern Flicker	1				
Northern Harrier	1				

Notes: This easement, new to our sample in 2019, contained a diversity of waterfowl and other wetland-dependent species during migration. Like many sites in southeast Missouri, a mixture of grassland, wetland and forest birds were present during breeding season. The site supported high numbers of Indigo Bunting (below, photo taken on site).



MDC SWIFT DITCH 66642496009J5

2019 Survey Dates

Migration: April 4th. Breeding Season: May 26th.

Acreage: 147

Species	2019	
	Migration	Breeding Season
American Coot	1	
American Crown	3	
Bell's Vireo		2
Blue Grosbeak		1
Blue Jay	3	
Blue-gray Gnatcatcher	6	2
Blue-winged Teal	49	
Brown-headed Cowbird	13	2
Canada Goose	2	
Carolina Chickadee	6	
Carolina Wren	1	1
Common Grackle	5	1
Common Yellowthroat		3
Downy Woodpecker	1	1
Eastern Bluebird	1	
Eastern Kingbird		1
Eastern Towhee	1	
Eastern Wood-Pewee		2
Field Sparrow	11	5
Golden-crowned Kinglet	1	
Gray Catbird		1
Great Blue Heron	3	1
Great Egret	3	
Greater Yellowlegs	11	
Green Heron		2
Indigo Bunting		6
Kentucky Warbler		1
Killdeer		1
Lesser Yellowlegs	1	
Mallard	1	
Mourning Dove	2	
Northern Cardinal	9	4
Northern Harrier	1	
Northern Shoveler	11	
Orchard Oriole		3
Pectoral Sandpiper	3	
Pileated Woodpecker	1	1
Prothonotary Warbler		1
Red-bellied Woodpecker	2	1

Species	2019	
	Migration	Breeding Season
Ruby-crowned Kinglet	2	
Solitary Sandpiper	2	
Sora	1	
Summer Tanager		1
Swamp Sparrow	7	
Tufted Titmouse	1	
Wilson's Snipe	6	
Wood Duck	3	
Wood Thrush		3
Yellow-billed Cuckoo		4
Yellow-breasted Chat		3
Yellow-rumped Warbler	4	
Grand Total	181	55

Notes: This publicly accessible wetland, owned and managed by the Missouri Department of Conservation, was close to inaccessible due to flooding. It is a long, narrow site with several habitat subtypes, such as open water, flooded forest and marsh. This is reflected in the bird species documented, particularly during migration. Field Sparrow (below; photo taken on site) were common along with several other grassland, wetland and forest species.



6664240800MYJ

2019 Survey Dates
 Migration: April 2nd. Breeding Season: May 21st.
Acreage: 147

Species	2019	
	Migration	Breeding Season
Alder Flycatcher		1
American Bittern	1	2
American Crow	2	
American Robin	1	
Barn Swallow		1
Bell's Vireo		1
Blue Jay		2
Blue-winged Teal	2	
Brown Thrasher	1	
Brown-headed Cowbird		2
Carolina Wren	2	3
Common Grackle	10	2
Common Yellowthroat		5
Dickcissel		66
Downy Woodpecker	1	
Eastern Kingbird		2
Eastern Meadowlark	15	6
Eastern Towhee		1
Field Sparrow	15	3
Great Blue Heron	2	
Hooded Merganser	4	
Indigo Bunting		5
Killdeer	5	2
Mallard	7	2
Mourning Dove	4	2
Northern Bobwhite	3	4
Northern Harrier	4	
Pectoral Sandpiper	1	
Red-tailed Hawk	1	

Species	2019	
	Migration	Breeding Season
Rusty Blackbird	1	
Savannah Sparrow	11	
Sedge Wren	2	
Solitary Sandpiper		1
Swamp Sparrow	32	
Wilson's Snipe	45	
Yellow-breasted Chat		1
Grand Total	174	114



Notes: This easement contained an impressive number of Wilson's Snipe (above; photo taken on site) during migration and of Dickcissel (left; photo taken on site) during the breeding season. Other highlights included Eastern Meadowlark, Northern Bobwhite, and Northern Harrier, a hawk of marshes and grasslands.

Species	2019	
	Migration	Breeding Season
American Golden-Plover	14	
Barn Swallow		5
Black-necked Stilt		6
Brown-headed Cowbird		14
Carolina Wren		1
Cliff Swallow		6
Common Grackle		2
Dickcissel		33
Eastern Kingbird		1
Eastern Wood-Pewee		1
Horned Lark	15	3
Indigo Bunting		2
Killdeer	22	12
Mallard	1	
Mourning Dove	5	8
Northern Harrier	1	
Northern Mockingbird		2
Pectoral Sandpiper	2	
Purple Martin		1
Red-winged Blackbird	80	
Swamp Sparrow	1	
Grand Total	141	97



Notes: This site is scheduled for wetland reconstruction and this year provided a good opportunity to get a “before” picture. Habitat generalist species and birds that prefer short vegetation or bare ground, such as Killdeer (left) were present. During the breeding season, surveyors only walked the perimeter of the property in order to avoid disturbing crops. Dickcissel were numerous in the hedgerows on the easement border.

666424005009GX

2019 Survey Dates

Migration: March 31st. Breeding Season: May 23rd and 24th.

Acreage: 386

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Alder Flycatcher										1
American Bittern		3	1	4	7				1	
American Coot	9	1		7	1					
American Crow									2	
American Goldfinch			7			2	8	27	6	4
American Kestrel							1			
American Robin	2	1	3	11	7	2		5	2	
American Tree Sparrow		3								
American Woodcock				1						
Bald Eagle		1		2	1			1	2	1
Baltimore Oriole								1	3	
Barn Swallow	1				4			2	1	2
Barred Owl								1	1	1
Bell's Vireo						7	6	7	2	3
Black-necked Stilt	10	3	21			2		8		
Blue Grosbeak							1			1
Blue Jay		1	5	2	1		1	3	3	
Blue-gray Gnatcatcher				1						2
Blue-headed Vireo		2								
Blue-winged Teal	53	253	114	19	18				2	
Bobolink								2		2
Brown Thrasher	2		2	5	3		1	1	1	3
Brown-headed Cowbird			9	4	5		1	5	1	5
Canada Goose								18		
Carolina Chickadee					2					1
Carolina Wren		1		4	1				4	
Cedar Waxwing									3	
Chipping Sparrow		1	7	1						1
Cliff Swallow						2		2		
Common Grackle		9	6	1			8	44	8	3
Common Nighthawk								1		
Common Yellowthroat						5	9	14	16	8
Dickeissel						79	89	144	130	50
Double-crested Cormorant				18						
Downy Woodpecker				1						2
Eastern Bluebird				1						
Eastern Kingbird										1
Eastern Meadowlark	7	9	5	7	8	10	12	8	5	3
Eastern Towhee		2	6	8	5	2	2	4	4	1

666424005009GX

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Eastern Wood-Pewee							1	1	1	
European Starling		1			3		1	2		
Field Sparrow	7	33	34	37	51	7	3	24	18	10
Fish Crow									2	
Grasshopper Sparrow			5			3			1	1
Gray Catbird								1		
Great Blue Heron	1		1	1	1					
Great Crested Flycatcher									1	
Greater Yellowlegs	13	212	36	6	2					
Green Heron						1		5	1	1
Green-winged Teal	6	78		7						
Hairy Woodpecker									1	
Henslow's Sparrow								2		
House Finch			5							
House Wren				1						
Indigo Bunting						4	4	13	14	4
Killdeer	18	3	6	10	9	6	6	9	9	3
King Rail		2	1	1		2	2	1	2	
LeConte's Sparrow			1							
Least Bittern			1						2	
Lesser Yellowlegs	2	6	27	2				3		
Lincoln's Sparrow		3	6					2	1	
Little Blue Heron								1		
Long-billed Dowitcher								1		
Louisiana Waterthrush										3
Mallard	10	3	6	12	3	2	1	10	3	1
Marsh Wren					2					
Mississippi Kite								1		
Mourning Dove	3	2	5	3	9	4	7	14	9	3
Northern Bobwhite					2				4	6
Northern Cardinal	1	1	4	7	6		2	5	3	7
Northern Flicker	1	1	1	4	9				3	
Northern Harrier		4	1	1	7					
Northern Mockingbird								2	1	
Northern Shoveler	4	22		20	8					
Orchard Oriole							3	2	1	
Pectoral Sandpiper		501	35	5					1	
Pied-billed Grebe	1	1		2						
Pileated Woodpecker									1	
Purple Martin								1		

666424005009GX

Species	Migration					Breeding Season				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Red-bellied Woodpecker		2	1	2	1				1	1
Red-headed Woodpecker									1	1
Red-tailed Hawk					1					
Ruby-throated Hummingbird						1				
Savannah Sparrow	6	2		18	5				1	
Scarlet Tanager						1				
Sedge Wren										2
Solitary Sandpiper		2	30							
Song Sparrow			3	1	2					
Sora	1	1	3	1		1			1	
Spotted Sandpiper								1		1
Summer Tanager							1			
Swamp Sparrow	35	31	49	110	9					
Tree Swallow		8						1		
Tufted Titmouse				2					1	
Vesper Sparrow				3						
Virginia Rail					3					
Warbling Vireo									1	
Western Sandpiper	3		20							
White-crowned Sparrow					4					
White-eyed Vireo						1			1	1
Wilson's Snipe	1	99	134	57	57				1	
Wood Duck	2		10				2	13	13	
Yellow-billed Cuckoo						1	1		2	2
Yellow-breasted Chat						2	1	5	6	7
Yellow-throated Warbler										1
Grand Total	208	1311	615	411	412	148	174	419	310	151



Notes: This easement once again contained high diversity and numbers of wetland and grassland species. Though the migration survey date was similar to previous years, due to the variable nature of migration, we did not document as many waterfowl as in the past. However, numbers of some other wetland species were up, such as American Bittern. This site consistently supports good numbers of grassland birds during the breeding season, such as Yellow-breasted Chat (left). Unfortunately, no King Rails were documented this year for the first time since we have been surveying this site.

WET REGION 4 OVERVIEW

Survey coverage in WET Region 4 in 2019.

<i>Easement</i>	<i>County</i>	<i>Site Acreage</i>	<i># Transects</i>	<i>Migration Visit</i>	<i>Breeding Visit</i>
66642405009G7 (east)	Saline	94	3	not included in sample	6/30
66642400008YJ	Johnson	147	3	4/10	5/29
666424020096S	Henry	166	5	4/5	inaccessible
6664249900B3K	Johnson	186	4	4/13	5/31
6664240900X1B	Johnson	39.3	2	4/12	5/29
65642497009XR	Henry	124	4	4/5	5/28
6664241000Y51	Pettis	33	1	4/10	5/30
6664241000YHC	Saline	174	7	4/20	5/26
66642412018CM	Saline	82	3	4/15	5/27
66642400008YH	Johnson	240	4	4/13	5/30
66642404009B2	Vernon	205	4	4/8	6/13
66642496009PQ	Pettis	70	2	4/10	5/30
66642405009G7 (west)	Saline	157	3	4/15	6/30
75642400000LM	Vernon	787	11	4/9/2019 6 of 11 transects completed	6/20 & 6/21
66642411013WF	Vernon	40	2	4/8	6/13
66642497009R2	Vernon	456	9	4/6	6/14

66642405009G7 (EAST)

2019 Survey Dates
 Migration: not included in sample.
 Breeding Season: June 30th.
 Acreage: 94

Species	Migration			Breeding Season			
	2016	2017	2018	2016	2017	2018	2019
American Coot			1				
American Crown		1					
American Goldfinch				1			
American Kestrel		1					
American Tree Sparrow			13				
Bald Eagle			1				
Bank Swallow				9			
Barn Swallow		2			2	1	
Black-capped Chickadee		2					
Belted Kingfisher	1		1	1			
Bell's Vireo						1	
Blue-gray Gnatcatcher		1					
Brown-headed Cowbird		2					
Blue Jay		1			1		
Brown Thrasher	1	1				2	
Blue-winged Teal	29	16	100				
Canada Goose	1	2					
Carolina Wren		1					1
Cliff Swallow				97	33	67	19
Common Grackle					36		29
Common Yellowthroat		2		2	3	1	2
Dickcissel				1		11	1
Eastern Bluebird	2						
Eastern Kingbird				1			
Eastern Meadowlark	1		2		1		
Eastern Phoebe		1					
Eastern Wood-Pewee							1
Field Sparrow	3		3				
Gadwall			1				
Great Blue Heron		1	2	1	2	3	2
Gray Catbird	1						1
Great Egret			1				
Green Heron				1	1		
Greater Yellowlegs	11	1	5				
Green-winged Teal			139				
Hooded Merganser						3	
Indigo Bunting				6	3	3	4
Killdeer	2	1	8	4	3	11	
Long-billed Dowitcher			4				
Least Sandpiper	2						
Lesser Yellowlegs	6	17	1				
Mallard			78				

66642405009G7 (EAST)

Species	Migration			Breeding Season			
	2016	2017	2018	2016	2017	2018	2019
Marsh Wren		1					
Mourning Dove				2			
Northern Cardinal		3	1			1	
Northern Harrier			1				
Northern Rough-winged Swallow	4	1			8		7
Northern Shoveler			3				
Orange-crowned Warbler		2					
Pectoral Sandpiper		1					
Pileated Woodpecker				1			
Prothonotary Warbler	1			1			
Purple Martin				2			
Red-bellied Woodpecker	1					1	
Ring-necked Duck			30				
Red-shouldered Hawk			1	1			
Savannah Sparrow	29		9				
Sedge Wren		1					
Song Sparrow		2	10				
Spotted Sandpiper	1	1					
Swamp Sparrow	11	6	42				
Tree Swallow	3	120	2		1		2
Turkey Vulture	1	1			1		
Warbling Vireo				1			
White-eyed Vireo						1	
Wilson's Snipe			5				
Wild Turkey					1		
Wood Duck					11	20	16
Western Palm Warbler	1						
White-throated Sparrow			5				
Yellow-billed Cuckoo							2
Yellow-crowned Night-Heron							4
Grand Total	112	192	469	132	108	126	91

Notes: This site was not originally on the survey list this year but we had the opportunity to survey it during the breeding season. This resulted in the exciting find of four Yellow-crowned Night-Herons (right), a species that is not common in central Missouri. This easement and the adjacent easement to the west absorbed enormous amounts of flood water from the Blackwater River throughout the spring and summer. By the end of June, the site wasn't completely underwater but all pools remained full.



66642400008YJ

2019 Survey Dates
 Migration: April 10th. Breeding Season: May 29th.
Acreage: 147

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern	2							
American Coot	58	6	260	90				
American Crow		3				2		
American Goldfinch		2			2	1		
American White Pelican	14		15	15				
American Wigeon			1					
Bald Eagle	1	1		1	1			
Baltimore Oriole								1
Bank Swallow					2	15		
Barn Swallow		2	1	1		18	14	
Barred Owl							1	
Bell's Vireo					1	2		4
Belted Kingfisher		1					2	
Black Tern							1	
Black-capped Chickadee			1					
Blue Grosbeak								1
Blue Jay					1		1	
Blue-gray Gnatcatcher	3					1	2	1
Blue-winged Teal	136	50	81	69	6	1		
Brown Thrasher				2			2	1
Brown-headed Cowbird	1							
Canada Goose	12	14	10	18	28	28		30
Carolina Wren			1					
Cliff Swallow						82		
Common Grackle		1				1	6	2
Common Nighthawk						5		
Common Yellowthroat	4				4	8	5	7
Cooper's Hawk		1						
Dickcissel							4	
Double-crested Cormorant	9	24	16	70				
Downy Woodpecker		1		1				1
Eastern Bluebird							1	
Eastern Kingbird	1					3	1	2
Eastern Meadowlark				1				
Field Sparrow		2						
Fish Crow	8		1				1	
Forster's Tern								1
Franklin's Gull			12					
Gadwall			595	34				
Gray Catbird						1		1

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Great Blue Heron	9	2	2	1	2	1	28	1
Great Egret		14	17			5	7	
Greater White-fronted Goose						1		
Greater Yellowlegs	10	1	2	9				
Green Heron		2					1	
Green-winged Teal			43					
Henslow's Sparrow								1
Hooded Merganser				1				
Indigo Bunting					1	1		2
Killdeer		1		2	2			2
Lark Sparrow	1							
Least Bittern			1		9	13	2	
Least Sandpiper						5		
Lesser Scaup			5	2				
Lesser Yellowlegs	2	8	6	2				
Louisiana Waterthrush								1
Mallard			2			1	5	
Marsh Wren	1	1	2					
Mourning Dove		1		2		1	2	2
Northern Cardinal	2	3			1	3	1	3
Northern Shoveler	2	15	29	7				
Orchard Oriole					1	2		2
Palm Warbler	1							
Pectoral Sandpiper			5	5				
Peregrine Falcon				2				
Pied-billed Grebe		5	4	1		2		
Pileated Woodpecker		1						
Prothonotary Warbler	1							
Purple Martin			2					
Red-bellied Woodpecker		1			2	1		2
Red-eyed Vireo							1	
Red-shouldered Hawk		1					1	
Red-tailed Hawk		1				1		
Redhead	1							
Ring-necked Duck	3			3			1	
Ruddy Duck				17				
Sandhill Crane	2	2		2	1	2	2	
Savannah Sparrow	2							
Sedge Wren		4						
Slate-colored Junco				1				
Solitary Sandpiper		1						
Sora	12	13	1			3		

66642400008YJ

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Swamp Sparrow	2	5	1	6				
Tree Swallow	26	8	13	18		69		
Tufted Titmouse		2						
Turkey Vulture		1		6		1		
Virginia Rail	1							
Warbling Vireo	4				2		1	
Western Palm Warbler		1						
Willow Flycatcher						2		2
Wilson's Snipe	3		3					
Wood Duck	2	9		1	21	6	47	6
Yellow Warbler						3		
Yellow-billed Cuckoo					1			1
Yellow-breasted Chat								1
Grand Total	336	211	1132	405	91	291	141	78



Notes: The high species diversity on this site was similar to previous years. Highlights from 2019 included good numbers of American White Pelican, Ruddy Duck, Double-crested Cormorant and Tree Swallow (left; photo taken on site) during migration. It is always a pleasure to see the Sandhill Cranes (background) that are on or near this site every year.

Species	Migration			Breeding Season	
	2015	2016	2019	2015	2016
American Bittern			1		
American Coot			3		
American Crow		7			
American Goldfinch	1	2			
American Kestrel				1	2
American Pipit			2		
American White Pelican			1		
Barred Owl			2		
Bald Eagle	1	2	4	2	
Barn Swallow	2	4			1
Bell's Vireo				1	3
Brown-headed Cowbird	3	2	4		1
Blue Jay		3	2		
Bonaparte's Gull			1		
Brown Thrasher	2		1		
Blue-winged Teal	87	46	273		
Carolina Chickadee		1	1		
Canada Goose	1		8		
Carolina Wren			1		
Common Grackle					2
Common Yellowthroat		1		2	3
Double-crested Cormorant		1	127	19	1
Dickcissel					35
Eastern Kingbird					1
Eastern Meadowlark		4			2
European Starling	1	1	5		3
Fish Crow	1		8		
Field Sparrow	3	6	6		3
Great Blue Heron	8	1	4	6	5
Great Horned Owl		1			
Gray Catbird					2
Great Egret	4			10	
Greater Yellowlegs	128	4	39		
Green-winged Teal		2	48		
Hudsonian Godwit	2				
Indigo Bunting				1	4
Killdeer		2	1		
Lesser Yellowlegs		33	17		
Mallard			11		
Mourning Dove	4	1	1		3

Species	Migration			Breeding Season	
	2015	2016	2019	2015	2016
Northern Cardinal	1	4	7		1
Northern Harrier		1			
Northern Parula		1			
Northern Shoveler		3	91		
Orchard Oriole					2
Pectoral Sandpiper		53			
Purple Martin		3			
Ring-billed Gull			3		
Red-bellied Woodpecker			1		1
Red-eyed Vireo		1			
Red-shouldered Hawk		2			
Savannah Sparrow	5	7			
Sedge Wren	1				
Sora		1		4	
Solitary Sandpiper		1			
Song Sparrow			3	1	
Swamp Sparrow	4		6		
Tree Swallow		1	2		
Wilson's Snipe	14	20			
Wood Duck		4	2	2	
Western Palm Warbler		1			
White-throated Sparrow			1		
Yellow-breasted Chat				1	2
Yellow-billed Cuckoo				2	
Yellow-rumped Warbler	1				
Grand Total	281	227	689	52	77

Notes: It is unusual for an easement to be accessible during migration and not during the breeding season, but that was the case here due to extreme flooding in the area. The migration survey resulted in far higher numbers of many species than in 2015 or 2016. Highlights included good numbers of Greater and Lesser Yellowlegs (right), Blue- and Green-winged Teal, Double-crested Cormorants and Northern Shovelers. Four Bald Eagles were also present.



6664249900B3K

2019 Survey Dates

Migration: April 13th. Breeding Season: May 31st.

Acreage: 186

Species	Migration		Breeding Season	
	2015	2019	2015	2019
Alder Flycatcher				2
American Coot	7	2		
American Goldfinch		1		
American Robin		1		
Bald Eagle				1
Baltimore Oriole				1
Barn Swallow		1		1
Black-capped Chickadee		2		
Blue-gray Gnatcatcher		2		1
Brown-headed Cowbird		5		1
Blue Jay		1		
Brown Thrasher		5		
Blue-winged Teal	210	32		1
Carolina Chickadee	1			
Canada Goose	11	5	1	50
Carolina Wren		2		
Common Grackle		3		
Common Yellowthroat				5
Double-crested Cormorant	2			
Dickcissel				1
Downy Woodpecker				2
Eastern Meadowlark		2		
Eastern Wood-Pewee				1
European Starling		2		
Fish Crow	8	10		
Great Blue Heron	5	1	4	1
Great Crested Flycatcher				1
Gray Catbird				3
Great Egret			3	1
Green Heron			1	1
Greater Yellowlegs		5		
Hooded Merganser			1	
Indigo Bunting				8
Killdeer		2		
Least Sandpiper		1		
Lesser Yellowlegs		17		
Mallard				2

Species	Migration		Breeding Season	
	2015	2019	2015	2019
Mourning Dove		1		2
Northern Cardinal	1	5		4
Northern Flicker		1	1	
Northern Shoveler	10	35		
Pied-billed Grebe	2			
Pectoral Sandpiper		12		
Pileated Woodpecker	2			
Prothonotary Warbler				2
Red-bellied Woodpecker		2		1
Ruby-crowned Kinglet		4		
Red-eyed Vireo				1
Red-headed Woodpecker		1		
Sandhill Crane		3		1
Savannah Sparrow		2		
Solitary Sandpiper				1
Spotted Sandpiper		1		1
Swamp Sparrow	1	6		
Tree Swallow	28	3		3
Tufted Titmouse		2		
Turkey Vulture		2		
White-crowned Sparrow		1		
Wilson's Snipe		1		
Wood Duck	2		1	1
White-throated Sparrow		1		
Yellow-billed Cuckoo				2
Yellow-rumped Warbler		5		
Grand Total	296	190	12	107



Notes: This easement had a far higher diversity of species during both migration and the breeding season this year than during a previous survey several years ago. One highlight was impressive numbers of Canada Geese which were nesting on site (photo, left). Wetland-dependent species such as Great Blue Heron, Great Egret and Green Heron were present during breeding season as they were during the 2015 survey, but were joined by individuals of other species to result in a more diverse and numerous group of birds.

6664240900X1B

2019 Survey Dates
 Migration: April 12th. Breeding Season: May 29th.
Acreage: 39.3

Species	Migration				
	2015	2016	2019	2016	2019
American Bittern			1		
American Crow			2	1	2
American Goldfinch		4	1		3
American Robin		1	1		
Barred Owl	1		1		
Bald Eagle		2			
Barn Swallow		1			
Belted Kingfisher		1		1	
Bell's Vireo				2	1
Blue-gray Gnatcatcher					1
Brown-headed Cowbird		13	2	2	2
Blue Grosbeak					1
Blue Jay		17			2
Brown Thrasher		1	2		
Blue-winged Teal	11				
Blue-winged Warbler		1			
Canada Goose	8		2		
Carolina Wren		1	1		
Cliff Swallow				1	
Common Yellowthroat				1	7
Dickcissel					9
Downy Woodpecker		1	1		
Eastern Bluebird		3		1	
Eastern Kingbird				1	1
Eastern Meadowlark		7			
Eastern Phoebe			1		
Eastern Towhee		1	1	1	
Fish Crow		4	3		3
Field Sparrow		3	5	2	3
Great Blue Heron		1		2	
Gray Catbird				4	
Green Heron				2	2
Greater Yellowlegs		1			
Henslow's Sparrow		4		5	
Hooded Merganser			1		
Indigo Bunting				1	7
Killdeer	2				
Mourning Dove		1			1

Species	Migration				
	2015	2016	2019	2016	2019
Northern Bobwhite				1	
Northern Cardinal	1	1	5	2	5
Northern Parula	1	2			
Pileated Woodpecker		1			
Red-bellied Woodpecker		1		1	
Red-shouldered Hawk				1	
Red-tailed Hawk				1	
Sedge Wren	1				
Sora	2				
Swamp Sparrow	1	2	6		
Tree Swallow			8		
Tufted Titmouse			2	1	
Turkey Vulture		3			
White-eyed Vireo					1
Wilson's Snipe	4		4		
Wild Turkey			1		
Wood Duck	3			1	5
Wood Thrush					1
White-throated Sparrow			1		
Yellow-breasted Chat				1	4
Yellow-billed Cuckoo				1	
Grand Total	35	81	53	37	61

Notes: Particularly for its size, this easement provided habitat for a good number of birds in both seasons. Similar to some other sites, this property was home to more wetland birds during migration and a mix of wetland and grassland birds during breeding season. The photos of American Goldfinch and Northern Cardinal, below, were taken on the site during the breeding season.



65642497009XR

2019 Survey Dates

Migration: April 5th.. Breeding Season: May 28th.

Acres: 124

Species	Migration		Breeding Season	
	2018	2019	2018	2019
Acadian Flycatcher			2	1
American Crow	2	2	3	2
American Goldfinch	1	1		
American Pipit	4			
American White Pelican	23			
Bald Eagle	1		2	
Barred Owl	1	3	4	
Bell's Vireo			1	
Black-capped Chickadee			2	1
Blue Jay	2	4	1	
Blue-gray Gnatcatcher			2	7
Blue-winged Teal	16	3		
Brown Thrasher		1	1	1
Brown-headed Cowbird	2	10	1	3
Canada Goose	14			
Carolina Chickadee	3			
Carolina Wren	6	4	3	4
Cattle Egret				1
Common Grackle		2		
Common Yellowthroat			6	11
Dark-eyed Junco	6			
Double-crested Cormorant	127	17		
Downy Woodpecker	2	3	1	
Eastern Bluebird	1			
Eastern Kingbird			1	1
Eastern Meadowlark	1			
Eastern Phoebe	2			
Eastern Wood-Pewee			1	2
Fish Crow	6	1	7	1
Great Blue Heron	3	2	1	
Great Crested Flycatcher			1	
Great Egret	23			16
Greater Yellowlegs	3	4		
Green-winged Teal	18			
Hooded Merganser				1
Indigo Bunting			9	13
Killdeer	8		1	
Lesser Yellowlegs	4	1		
Louisiana Waterthrush			1	
Mallard	8			1

Notes: Lower numbers of birds during migration this year in comparison to 2018 was based primarily on the timing of just a few species - Double-crested Cormorant, American White Pelican, Great Egret and a few species of waterfowl. This year, Great Egrets were present during breeding season instead (photo below). Other highlights included a sizable flock of Tree Swallows during migration and breeding Prothonotary Warbler, Common Yellowthroat and Indigo Bunting.



Species	Migration		Breeding Season	
	2018	2019	2018	2019
Mourning Dove	2	3		
Northern Cardinal	11	10	7	4
Northern Flicker		1		
Northern Harrier	1	1		
Northern Parula			2	3
Northern Shoveler	2			
Pectoral Sandpiper	3			
Pileated Woodpecker	2		2	
Prothonotary Warbler			2	4
Purple Martin			1	
Red-bellied Woodpecker	2	4	4	1
Red-eyed Vireo			2	1
Red-headed Woodpecker		1	1	
Red-shouldered Hawk	1			
Red-tailed Hawk	1			
Ruby-crowned Kinglet		1		
Ruby-throated Hummingbird			2	1
Savannah Sparrow	6			
Solitary Sandpiper		1		
Song Sparrow	9	3		
Swamp Sparrow	17	5		
Tree Swallow		28		
Tufted Titmouse	1	1	5	
Turkey Vulture	5	1	12	2
White-breasted Nuthatch	1			1
White-crowned Sparrow		1		
White-eyed Vireo				1
White-throated Sparrow	2	3		
Wild Turkey	1		3	
Wilson's Snipe		2		
Winter Wren		1		
Wood Duck	3	3	10	5
Yellow-bellied Sapsucker	1			
Yellow-billed Cuckoo			3	2
Yellow-breasted Chat			1	
Yellow-rumped Warbler	2	4		
Yellow-throated Vireo				1
Grand Total	363	143	108	94

6664241000Y51

2019 Survey Dates
 Migration: April 10th. Breeding Season: May 30th.
Acres: 33

Species	Migration		Breeding Season		Species	Migration		Breeding Season	
	2018	2019	2018	2019		2018	2019	2018	2019
American Coot	45				Ruby-throated Hummingbird			1	
American Crow			1		Song Sparrow		1		
American Goldfinch			1	1	Swamp Sparrow	1	1		
Barn Swallow				2	Tree Swallow			3	
Black-capped Chickadee			1		Tufted Titmouse			1	
Bell's Vireo			1		Willow Flycatcher			1	
Brown-headed Cowbird		1	1		Wood Duck			4	
Blue Jay		1	1		Yellow-breasted Chat			3	1
Brown Thrasher	3	1			Yellow-billed Cuckoo			1	1
Blue-winged Teal	9	26			Grand Total	98	91	48	23
Canada Goose	15	4	1	1					
Carolina Wren		1	3						
Common Merganser	1								
Common Yellowthroat			4	2					
Dickcissel			4	3					
Eastern Meadowlark		2							
Eastern Phoebe			1						
Eastern Wood-Pewee				1					
European Starling		5							
Field Sparrow	1	1							
Gadwall	9								
Great Blue Heron	1		2	3					
Gray Catbird			1						
Greater Yellowlegs	4								
Green-winged Teal		17							
Hooded Merganser			1						
Indigo Bunting			3	2					
Killdeer			1	1					
Lesser Scaup	6								
Mourning Dove		5	2						
Northern Cardinal		5	3	3					
Northern Shoveler		20							
Orchard Oriole			1						
Pied-billed Grebe	3								
Purple Martin			1						
Red-bellied Woodpecker				1					

Notes: This site and an easement adjacent to it together provide an important habitat complex for wetland birds. This easement had good numbers of Blue- and Green-winged Teal and Northern Shoveler during migration. In the breeding season, Great Blue Herons were recorded along with a number of different songbirds such as Dickcissel, Yellow-billed Cuckoo and Common Yellowthroat (below).



Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
American Bittern	1		Willow Flycatcher		1
American Redstart	1		Wood Duck	16	13
Barn Swallow	1	2	White-throated Sparrow	2	
Black-capped Chickadee	2		Yellow-breasted Chat		2
Bell's Vireo		7	Yellow-crowned Night-Heron		1
Blue-gray Gnatcatcher	1		Yellow-rumped Warbler	6	
Brown-headed Cowbird	3		Yellow-throated Vireo	1	
Blue Jay	1	1	Grand Total	99	76
Brown Thrasher	1	1			
Blue-winged Teal	11	1			
Carolina Chickadee	1				
Canada Goose	3				
Carolina Wren	6	1			
Common Yellowthroat		9			
Downy Woodpecker	3	1			
Fish Crow	2	4			
Field Sparrow	7	5			
Great Crested Flycatcher		5			
Gray Catbird		1			
Indigo Bunting		8			
Lincoln's Sparrow	2				
Louisiana Waterthrush	1				
Marsh Wren	1				
Northern Cardinal	4				
Northern Parula	2				
Pileated Woodpecker	4	3			
Prothonotary Warbler		1			
Red-bellied Woodpecker	2				
Red-eyed Vireo		1			
Red-shouldered Hawk	1				
Spotted Sandpiper		5			
Swamp Sparrow	8				
Tree Swallow		2			
Tufted Titmouse	1	1			
Turkey Vulture	1				
White-breasted Nuthatch	1				
White-crowned Sparrow	1				

Notes: This easement contained high-quality emergent marsh habitat during migration. In late May, a large portion of the property was flooded by the Blackwater River; the River was literally flowing through the easement (photo below). On the newly formed river bank, Spotted Sandpipers were recorded, unusual for central Missouri. The site contained good numbers of Wood Ducks, Common Yellowthroat, and Bell's Vireo. One Yellow-crowned Night-Heron was also recorded, which occurred at only one other central Missouri property.



66642412018CM

2019 Survey Dates
 Migration: April 15th. Breeding Season: May 27th.
Acreeage: 82

Species	2019		Species	2019	
	Migration	Breeding Season		Migration	Breeding Season
Acadian Flycatcher		1	Ruby-throated Hummingbird		2
American Bittern		1	Swamp Sparrow	23	
American Redstart		2	Tufted Titmouse		1
Barn Swallow	1	5	Turkey Vulture		1
Black-capped Chickadee		1	Warbling Vireo		1
Belted Kingfisher		1	White-breasted Nuthatch	1	
Bell's Vireo		2	White-eyed Vireo		1
Blue-gray Gnatcatcher	2	2	Wilson's Snipe	2	
Blue Jay	1		Wood Duck	2	5
Brown Thrasher	1		White-throated Sparrow	1	
Blue-winged Teal	3	3	Yellow-breasted Chat		1
Canada Goose	14		Yellow-billed Cuckoo		5
Common Merganser	1		Yellow-rumped Warbler	1	
Common Yellowthroat		14	Yellow-throated Vireo		1
Downy Woodpecker	1		Yellow-throated Warbler	1	
Eastern Kingbird		1	Grand Total	99	79
Eastern Wood-Pewee		1			
Fish Crow	4	1			
Field Sparrow	2				
Great Blue Heron	1	5			
Great Crested Flycatcher		1			
Greater Yellowlegs	1				
Hooded Merganser	1				
Indigo Bunting		5			
Least Bittern		5			
Least Sandpiper	8				
Lincoln's Sparrow	1				
Louisiana Waterthrush	1				
Marsh Wren	3				
Northern Cardinal	1	1			
Northern Mockingbird	1				
Northern Parula	1	2			
Northern Shoveler	9				
Pied-billed Grebe	1				
Pileated Woodpecker	1	1			
Red-bellied Woodpecker	1	2			
Ruby-crowned Kinglet	1				
Red-tailed Hawk	2				

Notes: This easement is quite unique in its location and surrounding topography. Due to the quality of its marsh habitat, the site contained a good diversity of wetland birds. Highlights included a large number of Swamp Sparrows (photo below) during migration and five Least Bitterns (a high number on one site, particularly a site of this size) during the breeding season.



6664240008YH

2019 Survey Dates

Migration: April 13th. Breeding Season: May 30th.

Acreege: 240

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Alder Flycatcher						1		2
American Bittern	1	1		1				
American Coot	1		15	25				
American Crow		1	5		2	4	4	1
American Goldfinch	3	11			2	5	2	
American Robin		1					1	
American White Pelican			7	10				
Bald Eagle		1				1		
Baltimore Oriole					1	1		2
Barn Swallow				1		3	3	1
Barred owl		1	1	1			2	
Bell's Vireo					4	2	2	1
Belted Kingfisher	1	1	1					
Black-capped Chickadee		5	3	5		1		
Blue Grosbeak							1	
Blue Jay	74	3	3	3	1	2	4	
Blue-gray Gnatcatcher	1	3		4		3		1
Blue-winged Teal	49	47	52	62				1
Brown Thrasher	1		1	4		1	2	1
Brown-headed Cowbird	30	14	1	15	4	3	6	8
Canada Goose	8	5	10	22	1	11	12	
Carolina Wren	2		3	1			3	
Cedar Waxwing						12		2
Chimney Swift	2							
Cliff Swallow						10		
Common Grackle	2			2	5	2	1	3
Common Yellowthroat	7				6	15	15	15
Cooper's Hawk		1						
Dickcissel					1	6	5	
Double-crested Cormorant	3		24	1				
Downy Woodpecker	1	1	1	1				
Eastern Bluebird	1	5						1
Eastern Kingbird					2	1		3
Eastern Meadowlark	2	6	6	3	2		1	
Eastern Phoebe						1		
Eastern Towhee	1			1				
Eastern Wood-Pewee						2		
European Starling						5		
Field Sparrow						4		

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Fish Crow	12		71	2	3		2	
Gray Catbird	1	1				1	3	5
Great Blue Heron	18	4	13	2	9	4	8	2
Great Crested Flycatcher	1				2	4	4	3
Great Egret	4	13		3	3	4	28	4
Great Horned Owl				1				
Great-tailed Grackle	1							
Greater Yellowlegs	18	6	10	1				
Green Heron	2				1		3	1
Green-winged Teal			18					
Hairy Woodpecker								1
Henslow's Sparrow							3	
Hooded Merganser		1	4		1		1	
House Wren	2						1	1
Indigo Bunting	1				12	4	13	15
Killdeer	6		3		1		1	
Least Bittern	1						1	
Least Flycatcher						1		
Least Sandpiper	1							
Lesser Scaup			2					
Lesser Yellowlegs		36	130	1				
Mallard			19	1				
Marsh Wren	1		1					
Mourning Dove	2	1	2	2	5		3	4
Northern Bobwhite	2				5		2	
Northern Cardinal	7	16	6	3	6	7	8	10
Northern Flicker	1	1	1		3	1		
Northern Parula						1		
Northern Pintail			7					
Northern Rough-winged Swallow	3			2				
Northern Shoveler			26					
Orchard Oriole					1	1		1
Osprey		1						
Pectoral Sandpiper	1		6					
Pied-billed Grebe			2	3				
Pileated Woodpecker	1	1			1	3		1
Prothonotary Warbler	2	2			2		3	5
Red-bellied Woodpecker	3	3	3	2	4	2	1	2
Red-eyed Vireo								1

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Red-headed Woodpecker	2	1		1	3			
Red-shouldered Hawk		2				1		1
Ring-necked Duck			3					
Rose-breasted Grosbeak	1				1			
Ruby-crowned Kinglet		2		1				
Ruby-throated Hummingbird	1							
Sandhill Crane				1				1
Savannah Sparrow			1					
Sedge Wren	4	2						
Solitary Sandpiper	1			1				
Song Sparrow		1	2	5				
Sora	2	2						
Spotted Sandpiper	3							
Summer Tanager					1			
Swainson's Thrush						1		
Swamp Sparrow	2	7	16	18				
Tree Swallow	10	13	1	36	6	13	17	1
Tufted Titmouse	2	3	1	1	2	2	2	1
Turkey Vulture		1	2	1	4			
Warbling Vireo	1	3					1	6
Western Palm Warbler		3						
White-breasted Nuthatch					1			
White-eyed Vireo							1	
White-throated Sparrow				2				
Wild Turkey			1					
Willow Flycatcher					1	2		
Wilson's Snipe		9	8	6				
Wood Duck	1	7	2	9	6	12	26	1
Wood Thrush	1					2		
Yellow Warbler						10		
Yellow-billed Cuckoo					3		3	1
Yellow-breasted Chat					1	2		
Yellow-rumped Warbler		7	1	5		1		
Yellow-throated Vireo					1			
Grand Total	344	256	496	274	121	176	200	112

Notes: This easement maintains relatively consistent numbers and diversity of birds. A highlight this year was observing one Sandhill Crane during both migration and the breeding season. Numbers of songbirds such as Common Yellowthroat, Warbling Vireo, and Indigo Bunting remained steady or increased. Waterfowl, shorebird and wading bird (such as Great Blue Heron) numbers were lower than in previous years, but this is likely a result of migration timing and/or flooding conditions.

66642404009B2

2019 Survey Dates

Migration: April 8th. Breeding Season: June 16th.

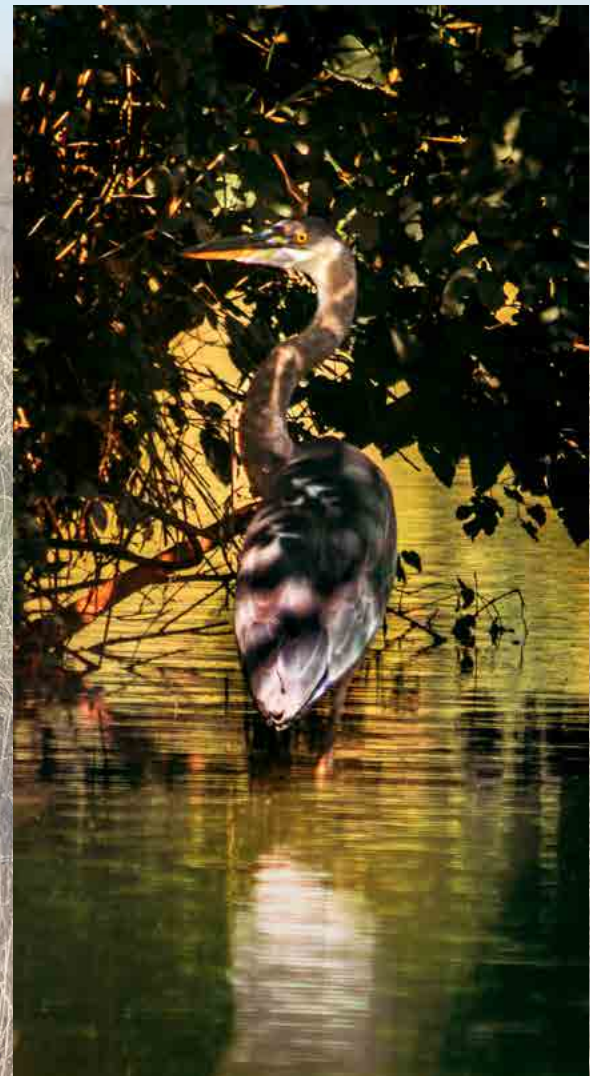
Acreage: 205

Species	Migration		Breeding Season	
	2015	2019	2015	2019
American Bittern	2		2	
American Coot	21	21		
American Crow	3	3		
American Goldfinch	1	3		
American Robin		1		
Bald Eagle	1	2		
Barn Swallow		2	1	3
Barred Owl		1		1
Bell's Vireo			2	12
Belted Kingfisher				1
Black-capped Chickadee		3		
Blue Jay		3		1
Blue-gray Gnatcatcher		4		
Blue-winged Teal	130	32		
Brown Thrasher	2	3		
Brown-headed Cowbird	2	1		1
Bufflehead		2		
Canada Goose	3	5		
Carolina Wren		2		2
Common Grackle				1
Common Yellowthroat	2		4	7
Dickcissel			1	2
Downy Woodpecker		2		
Eastern Bluebird		1		
Eastern Kingbird				1
Eastern Phoebe		1	1	
Eastern Wood-Pewee				2
Fish Crow		2		1
Gadwall	42	4		
Gray Catbird				2
Great Blue Heron				15
Great Egret		2	1	7
Greater Yellowlegs	9	6		
Green Heron			2	2
Green-winged Teal	2			
Hairy Woodpecker		1		
Hooded Merganser		21		
Indigo Bunting			5	10

66642404009B2

Species	Migration		Breeding Season	
	2015	2019	2015	2019
Kentucky Warbler			1	
Killdeer	1			3
Lesser Yellowlegs		1		
Mallard		1		
Mississippi Kite			2	
Northern Cardinal		5	1	7
Northern Flicker				1
Northern Mockingbird	1			
Northern Parula	1	2		
Northern Pintail				2
Northern Shoveler	10	9		
Ovenbird				1
Pied-billed Grebe	1	1		
Pileated Woodpecker	2			
Red-bellied Woodpecker		2		
Red-eyed Vireo				1
Red-headed Woodpecker				1
Red-shouldered Hawk	1	1	1	
Ring-necked Duck		2		
Ruby-crowned Kinglet		3		
Rusty Blackbird		1		
Sedge Wren	1			
Song Sparrow		1		
Sora	4			
Swamp Sparrow	4	16		
Tree Swallow	12	1	2	
Tufted Titmouse		2		
Turkey Vulture		1		
White-throated Sparrow		1		
Wild Turkey	1			1
Willow Flycatcher				2
Wilson's Snipe	11	2		
Wood Duck		4	11	6
Yellow Warbler				1
Yellow-billed Cuckoo				2
Yellow-breasted Chat			2	
Yellow-crowned Night-Heron		1		1
Yellow-rumped Warbler		15		
Grand Total	287	207	39	101

Notes: While bird numbers during migration were slightly lower this year than in 2015, the number of breeding birds was significantly higher. This easement contained a large number of Great Blue Herons (photo below) during the breeding season, along with several Great Egrets, Wood Ducks and songbirds like Bell's Vireo. Migration highlights included large numbers of Swamp Sparrows and Hooded Mergansers.



PERRY CONSERVATION AREA 66642496009PQ

2019 Survey Dates

Migration: April 10th. Breeding Season: May 30th.

Acreage: 70

Species	Migraiton		Breeding Season		Species	Migraiton		Breeding Season	
	2018	2019	2018	2019		2018	2019	2018	2019
American Bittern	10	3			Lincoln's Sparrow	1			
American Coot	36				Marsh Wren	13	1		
American Crow		1	3		Mississippi Kite			1	
American Goldfinch		1			Mourning Dove		8	1	
American Robin		2			Northern Cardinal		3	2	2
Barred Owl	1				Northern Rough-winged Swallow	3			
Baltimore Oriole				1	Northern Shoveler	34			
Barn Swallow	11				Orchard Oriole				1
Belted Kingfisher		1			Pied-billed Grebe	3			
Bell's Vireo			2		Pileated Woodpecker		1		1
Blue-gray Gnatcatcher		1			Red-bellied Woodpecker		1	1	
Brown-headed Cowbird			1		Red-shouldered Hawk			1	1
Blue Jay		7			Sora	10			
Brown Thrasher		1			Song Sparrow	4			
Blue-winged Teal	23	12		1	Swamp Sparrow	17	4		
Canada Goose	3	7		1	Tree Swallow	210			2
Carolina Wren			1		Turkey Vulture		2		
Cliff Swallow	2				Virginia Rail	1			
Common Grackle			216		Warbling Vireo			2	
Common Yellowthroat	6		9	6	Wilson's Snipe	7			
Dickcissel			4		Wood Duck		2	3	
Eastern Phoebe		1			White-throated Sparrow		2		
Eastern Towhee			1		Yellow-breasted Chat			1	1
Eastern Wood-Pewee				1	Yellow-billed Cuckoo			1	1
Fish Crow		8	9		Grand Total	446	94	290	28
Great Blue Heron	6		1	4					
Great Egret	41		24						
Green Heron			1						
Greater Yellowlegs		1							
Great-tailed Grackle	1								
Green-winged Teal		12							
Hooded Merganser			1						
Indigo Bunting			3	2					
Killdeer			3						
King Rail	2								
Least Bittern				1					
Lesser Yellowlegs	1	1							

Notes: The publicly accessible wetland at Perry Conservation Area had quite different water levels and vegetation growth this year as compared to 2018. This resulted in fewer wetland-dependent species documented; however, the site still contained American Bittern and Blue- and Green-winged Teal in migration. Several Great Blue Herons and one Least Bittern were highlights during the breeding season.

66642405009G7 (WEST)

2019 Survey Dates
 Migration: April 15th. Breeding Season: June 30th.
Acres: 157

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
American Bittern			1					1
American Coot			8	1				
American Crow	1		3		1		3	
American Goldfinch	5	1						
American Wigeon			1					
Bald Eagle		1	2	2	1	1		
Bank Swallow								1
Baltimore Oriole					1			
Barn Swallow	1					1	2	
Black-capped Chickadee	1				4	3		1
Belted Kingfisher	1				2		2	
Bell's Vireo							1	
Blue-gray Gnatcatcher	2	1			2	4	1	1
Brown-headed Cowbird		1	6	5	1			2
Blue Grosbeak					3			
Blue Jay	26		1	1	1			3
Brown Thrasher	1		1					
Blue-winged Teal	44	18	79	13				
Canada Goose	7	7	12	25			1	
Carolina Wren		2	2	3	1			3
Cliff Swallow					11		85	
Common Grackle					1	1	20	
Common Yellowthroat		1			6	5	2	5
Dickcissel							3	1
Downy Woodpecker	1			2	1			1
Eastern Bluebird				1			5	1
Eastern Kingbird		3					1	
Eastern Meadowlark	1				1	1		
Eastern Phoebe	1							
Eastern Towhee	1							
Eastern Wood-Pewee					1	1	1	
European Starling	5	1	1		2			
Fish Crow		5	4	2			2	1
Field Sparrow	3			2	3		1	1
Gadwall			25					
Great Blue Heron	1		1		1	1	2	4
Great Crested Flycatcher					2	2	1	1
Green Heron					2		2	
Greater Yellowlegs	7		6	18				
Greater White-fronted Goose				2				

66642405009G7 (WEST)

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
House Wren					2		1	
Indigo Bunting					6	6	4	1
Kentucky Warbler		1						
Killdeer							2	
Lesser Yellowlegs	2			8				
Louisiana Waterthrush	1	2						
Mallard			14					
Marsh Wren		1						
Merlin		1						
Mourning Dove					1			
Northern Cardinal	3			1	2	4	1	1
Northern Flicker					2			
Northern Harrier		1	1					
Northern Parula	3	2			1	1	1	
Northern Waterthrush			1					
Northern Rough-winged Swallow	1					2		
Northern Shoveler			10					
Pied-billed Grebe	1		1					
Pectoral Sandpiper	4		7					
Pileated Woodpecker	3	2	1		3		2	1
Prothonotary Warbler	2	4			4	1	2	
Rose-breasted Grosbeak		1						
Red-bellied Woodpecker		3		2	4	2	1	1
Ruby-crowned Kinglet	2							
Red-eyed Vireo		1				1		
Red-headed Woodpecker	7	1		2	2	4	1	3
Ring-necked Duck			25					
Red-shouldered Hawk	1	2			1		2	
Red-tailed Hawk		1						
Ruby-throated Hummingbird						1		
Savannah Sparrow		6						
Sora		4						
Song Sparrow	3		5					
Swamp Sparrow			3	5				
Tree Swallow	25	77		10			2	
Tufted Titmouse	3	1		3	1	3	1	1
Turkey Vulture	1	2	3		1			
Vesper Sparrow				1				
Warbling Vireo					2	1		
White-breasted Nuthatch		1			2		1	

66642405009G7 (WEST)

Species	Migration				Breeding Season			
	2016	2017	2018	2019	2016	2017	2018	2019
Wilson's Snipe	2		1					
Wild Turkey					1			
Wood Duck	6	2	3	2	63	16	6	23
White-throated Sparrow	1							
Yellow-billed Cuckoo					2		1	
Yellow-crowned Night-Heron							1	
Yellow Warbler	1							
Yellow-rumped Warbler			1					
Yellow-throated Vireo					2			
Yellow-throated Warbler		1						
Grand Total	186	164	232	113	151	62	164	64

Notes: This site and its neighbor easement were heavily flooded by the Blackwater River in 2019. Nonetheless, this property still contained high numbers of Wood Ducks (background photo) and of a few shorebird species. Great Blue Heron numbers during the breeding season were slightly higher than in previous years and songbird and woodpecker numbers remain steady.

75642400000LM

2019 Survey Dates

Migration: April 9th (6 of 11 transects).

Breeding Season: June 20th and 21st.

Acreeage: 787

Species	Migration				Breeding Season			
	2014	2015	2018	2019	2014	2015	2018	2019
Acadian Flycatcher							1	
Alder Flycatcher							1	
American Bittern	1	3		4	1	1		
American Coot	5	204	160	23				1
American Crow	4		7	5		2	7	5
American Goldfinch		1	1	1		1		5
American Kestrel			1					
American Pipit			4	2				
American White Pelican		83	233	1				54
Bald Eagle	1		4	4	1		1	1
Barn Swallow	35	17	3	2	3	2		7
Barred Owl		1	3	1			2	1
Bell's Vireo						2	8	11
Belted Kingfisher		1	1					
Black-and-white Warbler								1
Black-capped Chickadee				2		1	1	
Black-crowned Night-Heron	1						1	
Blue Jay		1	4	5			1	1
Blue-gray Gnatcatcher				4		2	4	22
Blue-winged Teal	37	837	146	219			2	
Brown Thrasher			3	2			3	
Brown-headed Cowbird		1	68	4		1	4	10
Canada Goose	18	21	19	12			64	7
Carolina Chickadee			1			1		
Carolina Wren		1	6	4		2	8	5
Cliff Swallow								2
Common Gallinule			1					
Common Grackle							1	31
Common Tern								
Common Yellowthroat	5	3			3	14	17	22
Cooper's Hawk			1					
Dickcissel					17	23	59	27
Double-crested Cormorant	3	12	51	4				
Downy Woodpecker				4		1	2	1
Eastern Bluebird		1						
Eastern Kingbird							5	1
Eastern Meadowlark		2	2	2		1	1	
Eastern Phoebe			2					
Eastern Wood-Pewee						1	1	2
Field Sparrow			1	2			1	

75642400000LM

Species	Migration				Breeding Season			
	2014	2015	2018	2019	2014	2015	2018	2019
Fish Crow			3	1			3	1
Gadwall	16		8	25				
Golden-crowned Kinglet			3					
Grasshopper Sparrow	1							
Gray Catbird	1						4	2
Great Blue Heron		5	7	2	6	10	7	22
Great Crested Flycatcher						1	4	5
Great Egret	33		2			3	49	32
Greater White-fronted Goose		1						
Greater Yellowlegs	11	42	59	6			1	
Green Heron						2		3
Green-winged Teal		9	61	33				
Hairy Woodpecker								1
Hooded Merganser			2				1	
Horned Lark			1				1	
House Wren			1					
Indigo Bunting						8	14	44
Kentucky Warbler						1		
Killdeer			13	1	2	10	3	7
King Rail	1							
Least Sandpiper	13		1					
Lesser Scaup				6				
Lesser Yellowlegs	12	46	22					
Magnolia Warbler								1
Mallard		10	3	6				
Mississippi Kite							1	
Mourning Dove			2					9
Northern Bobwhite								2
Northern Cardinal		3	19	12		10	16	27
Northern Flicker			8	1			1	
Northern Harrier		1	2					
Northern Parula	1							1
Northern Rough-winged Swallow	5							
Northern Shoveler	6	54	236	150				
Orchard Oriole						1	5	4
Pectoral Sandpiper			27					
Pied-billed Grebe		4	4	4				
Pileated Woodpecker		10	1				1	
Prothonotary Warbler	3					6	5	14
Red-bellied Woodpecker	1	1	5	5		1	6	5

75642400000LM

Species	Migration				Breeding Season			
	2014	2015	2018	2019	2014	2015	2018	2019
Red-eyed Vireo							2	1
Red-headed Woodpecker			3				1	
Red-shouldered Hawk			3				2	2
Red-tailed Hawk			1	1				
Ruby-crowned Kinglet			2					
Ruby-throated Hummingbird							1	
Rusty Blackbird			71					
Savannah Sparrow			24	8				
Scissor-tailed Flycatcher							1	
Sedge Wren		1						
Semipalmated Sandpiper			11					
Solitary Sandpiper	11		1					
Song Sparrow		1	5	1				
Sora	3	2						
Spotted Sandpiper	1						1	
Summer Tanager								3
Swamp Sparrow	1	4	24	7				
Tree Swallow		100	19	13	1	5	2	5
Tufted Titmouse	3	1	5	4		2	7	4
Turkey Vulture	2	6	2	6	2		1	3
Virginia Rail	1							
Warbling Vireo						1		
White-breasted Nuthatch							1	1
White-eyed Vireo						1		4
White-rumped Sandpiper			3					
White-throated Sparrow	2		3	2				
Wild Turkey			3	1		1	4	
Wilson's Phalarope	31							
Wilson's Snipe		1	37	1				
Wood Duck			18	4		26	3	34
Yellow-billed Cuckoo							8	5
Yellow-breasted Chat						1	3	3
Yellow-crowned Night-Heron			1					4
Yellow-headed Blackbird	1							
Yellow-rumped Warbler			4	1				
Yellow-throated Vireo								2
Grand Total	270	1491	1608	617	36	147	357	471

Notes: This easement is one of the few we have been surveying since 2014, and it represents an outstanding contribution to bird habitat in southwest Missouri. This year, we were only able to survey a little more than half of the transects due to water levels. Numbers of some wetland-dependent species were slightly lower than in previous years, but most remained consistent. Breeding bird numbers were higher than ever, and this increase was consistent across many species. The photo of the Magnolia Warbler (background) was taken on site during the breeding season, which is notable since this is a species that typically only migrates through Missouri.

Species	Migration		Breeding Season		Species	Migration		Breeding Season	
	2018	2019	2018	2019		2018	2019	2018	2019
American Crow	1	5	4	4	Pileated Woodpecker			1	
American Pipit		1			Purple Martin				1
Bald Eagle	1	1	1	2	Red-bellied Woodpecker	1		1	
Barred Owl			2		Red-shouldered Hawk	1		1	
Black-capped Chickadee		1			Ruby-crowned Kinglet	1			
Blue-gray Gnatcatcher			1	1	Rusty Blackbird	50			
Blue-winged Teal	96	47			Solitary Sandpiper		2		
Brown-headed Cowbird		1	1	1	Song Sparrow	2	3		
Canada Goose	7	13	1		Swamp Sparrow	7	7		
Carolina Wren		1			Tufted Titmouse			2	
Common Merganser	2				Turkey Vulture				2
Common Nighthawk			1		Wild Turkey			1	
Common Yellowthroat			7	5	Wilson's Snipe	27	13		
Dickcissel			7		Wood Duck			1	
Double-crested Cormorant		21			Yellow-billed Cuckoo			1	
Dunlin	3				Grand Total	341	174	52	22
Eastern Bluebird	1	1							
Eastern Kingbird				1					
Eastern Phoebe		1							
Fish Crow			1						
Gadwall	2	2							
Great Blue Heron	4	2	1						
Great Crested Flycatcher			2						
Great Egret	1		11	1					
Great Horned Owl		1							
Greater Yellowlegs	13								
Green-winged Teal	22								
Indigo Bunting				1					
Killdeer	2	1							
Lesser Yellowlegs	2	1							
Mallard	3								
Mississippi Kite				2					
Mourning Dove			1						
Northern Cardinal	2		3	1					
Northern Pintail	1	2							
Northern Shoveler	43	42							
Pectoral Sandpiper	4	1							
Pied-billed Grebe		1							

Notes: Like many sites in Missouri in 2019, the water levels on this easement resulted in slightly lower bird numbers than last year. The property still had ample numbers of Wilson's Snipe, Blue-winged Teal and Northern Shoveler. Of note was the presence of two Mississippi Kites (photo below) during the breeding season.



66642497009R2

2019 Survey Dates

Migration: April 6th. Breeding Season: June 14th.

Acreage: 456

Species	2019	
	Migration	Breeding Season
Acadian Flycatcher		1
Alder Flycatcher		1
American Bittern	1	
American Coot	7	
American Crow	4	1
American Pipit	1	
American Goldfinch	1	3
American Robin	1	
Barred Owl	5	
Bald Eagle	2	1
Black-capped Chickadee	1	1
Bell's Vireo		3
Blue-gray Gnatcatcher	4	6
Brown-headed Cowbird	9	7
Blue Jay	6	
Brown Thrasher	6	
Blue-winged Teal	31	
Canada Goose	4	
Carolina Wren	4	5
Chipping Sparrow	2	1
Common Grackle		1
Cooper's Hawk	1	
Common Yellowthroat		25
Double-crested Cormorant	14	
Dickcissel		18
Downy Woodpecker	3	3
Eastern Bluebird	5	1
Eastern Kingbird		4
Eastern Meadowlark	6	
Eastern Phoebe	3	
Eastern Wood-Pewee		1
Fish Crow	3	3
Field Sparrow	9	4
Great Blue Heron	2	2
Great Crested Flycatcher		1
Great Horned Owl	1	
Gray Catbird		2
Great Egret		6
Greater Yellowlegs	1	
Henslow's Sparrow	4	
Hooded Merganser	2	
Indigo Bunting		21
Lesser Yellowlegs	1	

Species	2019	
	Migration	Breeding Season
Louisiana Waterthrush	1	
Marsh Wren	1	
Mourning Dove	3	
Northern Bobwhite	3	5
Northern Cardinal	26	15
Northern Flicker	3	
Northern Shoveler	17	
Pied-billed Grebe	4	
Pileated Woodpecker	1	1
Prothonotary Warbler		6
Red-bellied Woodpecker		1
Ruby-crowned Kinglet	2	
Red-headed Woodpecker	3	
Ring-necked Duck	3	
Red-shouldered Hawk	2	
Solitary Sandpiper	1	
Song Sparrow	9	
Swamp Sparrow	31	
Tufted Titmouse	6	
White-eyed Vireo		1
Wild Turkey	4	
Wood Duck	8	3
White-throated Sparrow	6	
Yellow-breasted Chat		7
Yellow-billed Cuckoo		4
Yellow-rumped Warbler	2	
Grand Total	289	165

Notes: This easement, new to our surveys in 2019, contained an impressive diversity of species along with good numbers. The site held grassland and forest birds as well as several marsh-dependent species. Five Barred Owls were recorded during migration; the background photo was taken on site.



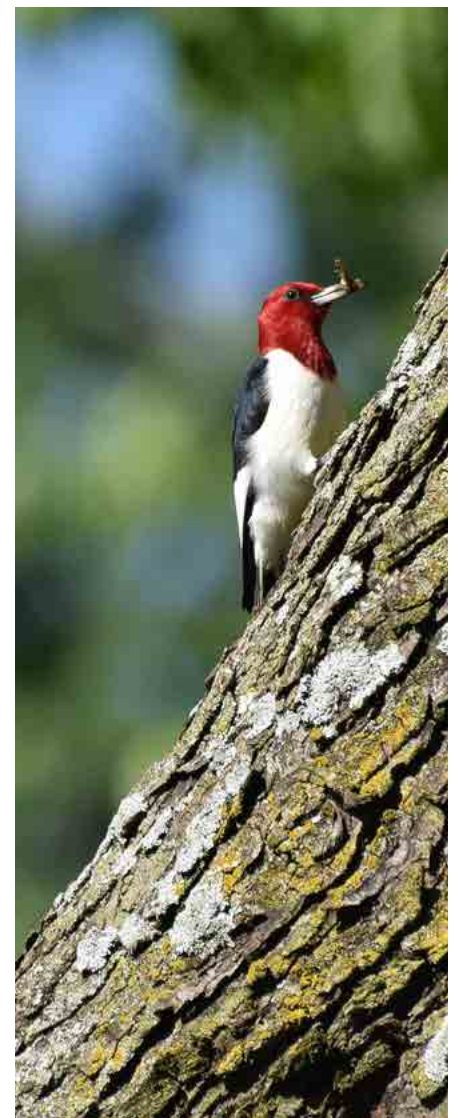
BIRD SPECIES NAME CODES FOR USE WITH SITE MAPS

Code	Species Name	Code	Species Name	Code	Species Name
ACFL	Acadian Flycatcher	BRTH	Brown Thrasher	FOSP	Fox Sparrow
ALFL	Alder Flycatcher		Black-throated Green	FOTE	Forster's Tern
AMAV	American Avocet	BTNW	Warber	FRGU	Franklin's Gull
AMBI	American Bittern	BUFF	Bufflehead	GADW	Gadwall
AMCO	American Coot	BWHA	Broad-winged Hawk	GBHE	Great Blue Heron
AMCR	American Crow	BWTE	Blue-winged Teal	GCFL	Great Crested Flycatcher
AMGO	American Goldfinch	BWWA	Blue-winged Warbler	GCKI	Golden-crowned Kinglet
AMGP	American Golden-Plover	CACH	Carolina Chickadee	GHOW	Great Horned Owl
AMKE	American Kestrel	CAEG	Cattle Egret	GRCA	Gray Catbird
AMPI	American Pipit	CAGO	Cackling Goose	GREG	Great Egret
AMRE	American Redstart	CANG	Canada Goose	GRHE	Green Heron
AMRO	American Robin	CARW	Carolina Wren	GRSP	Grasshopper Sparrow
AMWI	American Wigeon	CATE	Caspian Tern	GRYE	Greater Yellowlegs
AMWO	American Woodcock	CAWA	Canada Warbler	GTGR	Great-tailed Grackle
ATSP	American Tree Sparrow	CCSP	Clay-colored Sparrow		Greater White-fronted
AWPE	American White Pelican	CEDW	Cedar Waxwing	GWFG	Goose
BADO	Barred Owl	CHSP	Chipping Sparrow	GWTE	Green-winged Teal
BAEA	Bald Eagle	CHSW	Chimney Swift	GWWA	Golden-winged Warbler
BANO	Barn Owl	CLSW	Cliff Swallow	HAWO	Hairy Woodpecker
BANS	Bank Swallow	COGA	Common Gallinule	HESP	Henslow's Sparrow
BAOR	Baltimore Oriole	COGR	Common Grackle	HETH	Hermit Thrush
BARS	Barn Swallow	COHA	Cooper's Hawk	HOFI	House Finch
BASA	Baird's Sandpiper	COME	Common Merganser	HOLA	Horned Lark
BAWW	Black-and-white Warbler	CONI	Common Nighthawk	HOME	Hooded Merganser
BBCU	Black-billed Cuckoo	COTE	Common Tern	HOWR	House Wren
BBPL	Black-bellied Plover	COYE	Common Yellowthroat	HUGO	Hudsonian Godwit
BBSA	Buff-breasted Sandpiper	CSWA	Chestnut-sided Warbler	INBU	Indigo Bunting
BCCH	Black-capped Chickadee	DCCO	Double-crested Cormorant	KEWA	Kentucky Warbler
BCNH	Black-crowned Night-Heron	DEJU	Dark-eyed Junco	KILL	Killdeer
BEKI	Belted Kingfisher	DICK	Dickcissel	KIRA	King Rail
BEVI	Bell's Vireo	DOWO	Downy Woodpecker	LASP	Lark Sparrow
BGGN	Blue-gray Gnatcatcher	DUNL	Dunlin	LBDO	Long-billed Dowitcher
BHCO	Brown-headed Cowbird	EABL	Eastern Bluebird	LBHE	Little Blue Heron
BHVI	Blue-headed Vireo	EAKI	Eastern Kingbird	LCSP	LeConte's Sparrow
BLGR	Blue Grosbeak	EAME	Eastern Meadowlark	LEBI	Least Bittern
BLJA	Blue Jay	EAPH	Eastern Phoebe	LEFL	Least Flycatcher
BLPW	Blackpoll Warbler	EASO	Eastern Screech-Owl	LESA	Least Sandpiper
BLRA	Black Rail	EATO	Eastern Towhee	LESC	Lesser Scaup
BLTE	Black Tern	EAWP	Eastern Wood-Pewee	LETE	Least Tern
BLVU	Black Vulture	EUCD	Eurasian Collared-Dove	LEYE	Lesser Yellowlegs
BNST	Black-necked Stilt	EUST	European Starling	LISP	Lincoln's Sparrow
BOBO	Bobolink	EWPW	Eastern Whip-poor-will	LOSH	Loggerhead Shrike
BOGU	Bonaparte's Gull	FICR	Fish Crow	LOWA	Louisiana Waterthrush
BRCR	Brown Creeper	FISP	Field Sparrow	MALL	Mallard

Code	Species Name
MAWA	Magnolia Warbler
MAWR	Marsh Wren
MERL	Merlin
MIKI	Mississippi Kite
MODO	Mourning Dove
NAWA	Nashville Warbler
NESP	Nelson's Sparrow
NOBO	Northern Bobwhite
NOCA	Northern Cardinal
NOFL	Northern Flicker
NOHA	Northern Harrier
NOMO	Northern Mockingbird
NOPA	Northern Parula
NOPI	Northern Pintail
NOWA	Northern Waterthrush
	Northern Rough-winged Swallow
NRWS	
NSHO	Northern Shoveler
OCWA	Orange-crowned Warbler
OROR	Orchard Oriole
OSPR	Osprey
OVEN	Ovenbird
PBGR	Pied-billed Grebe
PEFA	Peregrine Falcon
PESA	Pectoral Sandpiper
PIWO	Pileated Woodpecker
PRAW	Prairie Warbler
PROW	Prothonotary Warbler
PUFI	Purple Finch
PUMA	Purple Martin
RBGR	Rose-breasted Grosbeak
RBGU	Ring-billed Gull
RBME	Red-breasted Merganser
RBWO	Red-bellied Woodpecker
RCKI	Ruby-crowned Kinglet
REDH	Redhead
REVI	Red-eyed Vireo
RHOW	Red-headed Woodpecker
RNDU	Ring-necked Duck
RNPH	Ring-necked Pheasant
ROGO	Ross's Goose
ROPI	Rock Pigeon
RSHA	Red-shouldered Hawk
RTHA	Red-tailed Hawk
RTHU	Ruby-throated Hummingbird
RUBL	Rusty Blackbird
RUDU	Ruddy Duck

Code	Species Name
RWBL	Red-winged Blackbird
SACR	Sandhill Crane
SAVS	Savannah Sparrow
SBDO	Short-billed Dowitcher
SCJU	Slate-colored Junco
SCTA	Scarlet Tanager
SCTA	Scissor-tailed Flycatcher
SEPL	Semipalmated Plover
SESA	Semipalmated Sandpiper
SEWR	Sedge Wren
SNEG	Snowy Egret
SNGO	Snow Goose
SORA	Sora
SOSA	Solitary Sandpiper
SOSP	Song Sparrow
SPSA	Spotted Sandpiper
SSHA	Sharp-shinned Hawk
STSA	Stilt Sandpiper
SUTA	Summer Tanager
SWSP	Swamp Sparrow
SWTH	Swainson's Thrush
TEWA	Tennessee Warbler
TRES	Tree Swallow
TUTI	Tufted Titmouse
TUVU	Turkey Vulture
UNKBL	Unidentified Blackbird
UNKDUCK	Unidentified Duck
UNKFL	Unidentified Flycatcher
UNKSA	Unidentified Sandpiper
UNKSW	Unidentified Swallow
UNKWO	Unidentified Woodpecker
UPSA	Upland Sandpiper
VEER	Veery
VESP	Vesper Sparrow
VIRA	Virginia Rail
WAVI	Warbling Vireo
WBNU	White-breasted Nuthatch
WCSP	White-crowned Sparrow
WEME	Western Meadowlark
WESA	Western Sandpiper
WEVI	White-eyed Vireo
WIFL	Willow Flycatcher
WILL	Willet
WIPH	Wilson's Phalarope
WISN	Wilson's Snipe
WITU	Wild Turkey
WIWA	Wilson's Warbler

Code	Species Name
WODU	Wood Duck
WOTH	Wood Thrush
WPWA	Western Palm Warbler
WRSA	White-rumped Sandpiper
WTSP	White-throated Sparrow
YBCH	Yellow-breasted Chat
YBCU	Yellow-billed Cuckoo
YBFL	Yellow-bellied Flycatcher
YBSA	Yellow-bellied Sapsucker
	Yellow-crowned Night-Heron
YCNH	
YERA	Yellow Rail
YEWA	Yellow Warbler
YHBL	Yellow-headed Blackbird
YRWA	Yellow-rumped Warbler
YSFL	Yellow-shafted Flicker
YTVI	Yellow-throated Vireo
YTWA	Yellow-throated Warbler



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MISSOURI RIVER
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