
MBFI BIRD MONITORING REPORT: 2022



Bobolink (Dolichonyx oryzivorus), photo by Lynnea Parker

Prepared for:

Manitoba Beef and Forage Initiative
220-530 Century Street,
Winnipeg, Manitoba, R3H 0Y4

January 19, 2023

Technical Report Prepared by:

Lynnea Parker
Project Coordinator
Critical Wildlife Habitat Program
Box 24, 200 Saulteaux Crescent
Winnipeg, Manitoba R3J 3W3

Timothy Poole
Species at Risk Biologist
Wildlife Branch
Natural Resources and Northern Development
Government of Manitoba
Box 24, 200 Saulteaux Crescent
Winnipeg, Manitoba R3J 3W3

Table of Contents

Table of Figures	3
Introduction	4
Methods	4
Site Locations	4
Site Descriptions	5
Breeding Bird Surveys	8
Results and Discussion	9
Site Conditions	9
Avian Monitoring Outcomes	11
Conclusion	19
Appendix I	20
Appendix II	21
Appendix III	23

Table of Figures

Figure 1: MBFI Farm Site Locations.....	4
Figure 2: First Street Pasture legal descriptions and land cover.....	5
Figure 3: Johnson Pasture legal descriptions and land cover	6
Figure 4: Brookdale Pasture legal descriptions and land cover	7
Figure 5: Point count coverage for First Street Pasture and Johnson Farm	9
Figure 6: Point count coverage of the Brookdale Farm	10
Figure 7: Proportion of species present by primary habitat type at the First Street Pasture (N = 26).....	11
Figure 8: Locations of species at risk detected at the First Street Pasture.....	14
Figure 9: Proportion of species present by primary habitat type at Johnson Farm (N = 30)	15
Figure 10: Locations of species at risk detected at the Johnson Farm	16
Figure 11: Proportion of species present by primary habitat type at Brookdale Farm (N = 38)	17
Figure 12: Locations of species at risk detected at the Brookdale Farm	18

Introduction

Manitoba Beef and Forage Initiative (MBFI) operates three experimental farm properties near Brandon, Manitoba. These properties are the First Street Pasture, Johnson Farm, and Brookdale Farm (Figure 1). In June of 2022 the Wildlife Branch conducted an In-kind avian survey at each property to assess general bird diversity and abundance. This report details the finding of the bird surveys with a focus on grassland birds, occurrences of species at risk, and other species of conservation interest.

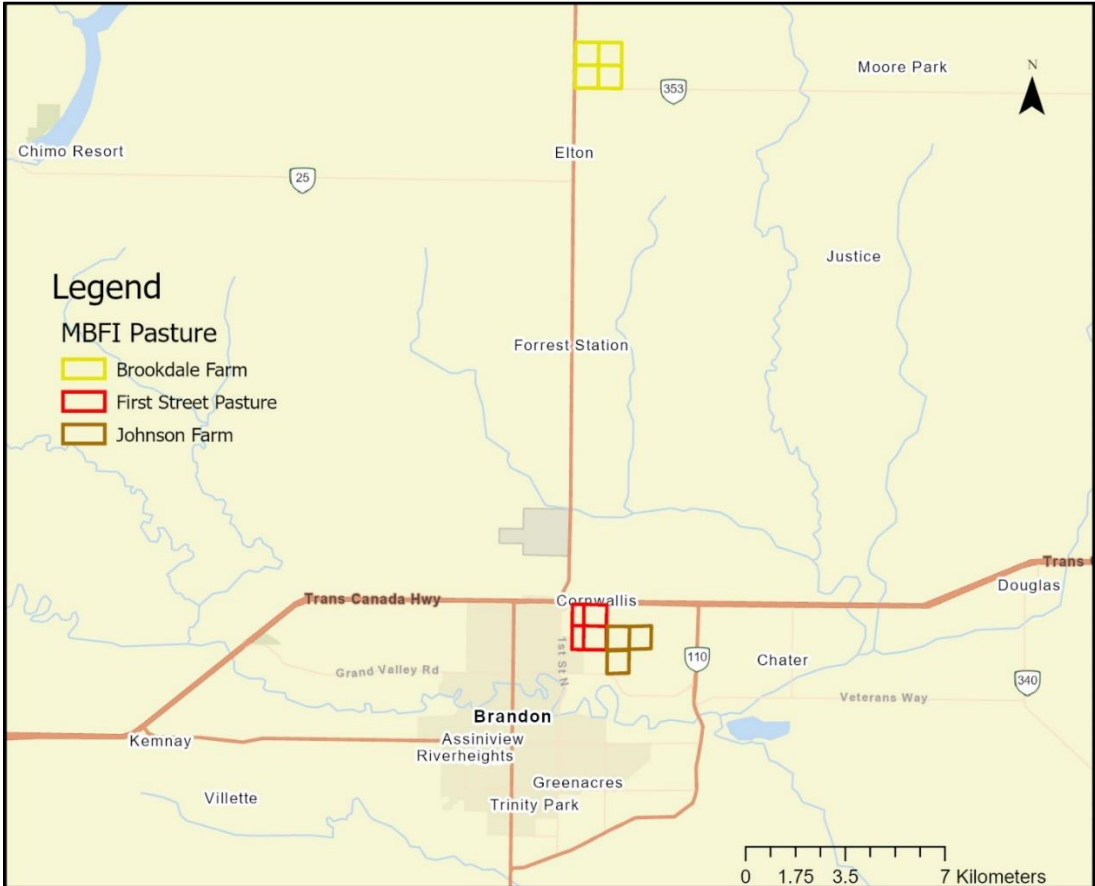


Figure 1: MBFI Farm Site Locations

Methods

Site Locations

The First Street Pasture (approx. 470 acres) and Johnson Farm (approx. 480 acres) are located together on the northeast side of the city of Brandon. Both pastures can be accessed from Lori Road and 17th Street East. The west half of the First Street Pasture is located within the Municipality of Brandon while the east half of the pasture and Johnson Farm are located within the Municipality of Cornwallis. The Brookdale Pasture is owned by Ducks Unlimited and is a full section of land (640 acres) located in the Rural Municipality of Elton at the junction of HWY 10 and PR 353, 18km north of Brandon from the TransCanada HWY.

Site Descriptions

First Street Pasture

The ENW and NE quarters of section 36-10-19-W were not formally surveyed this year (Figure 2). Both of these quarters include tame grassland and wetland habitats. ESW-36-10-19-W was characterized by tame grassland with a single hedgerow of trees located in the southern half of the property. The grass was of intermediate height and not as long and dense as grass observed at the Johnson Farm. SE-36-10-19-W had tame grassland and contained a cemetery site along the southern fence line that was bordered by tall conifer trees. In the northwest corner of the quarter section there was a thicket of dense bushes and trees surrounding a small wetland.

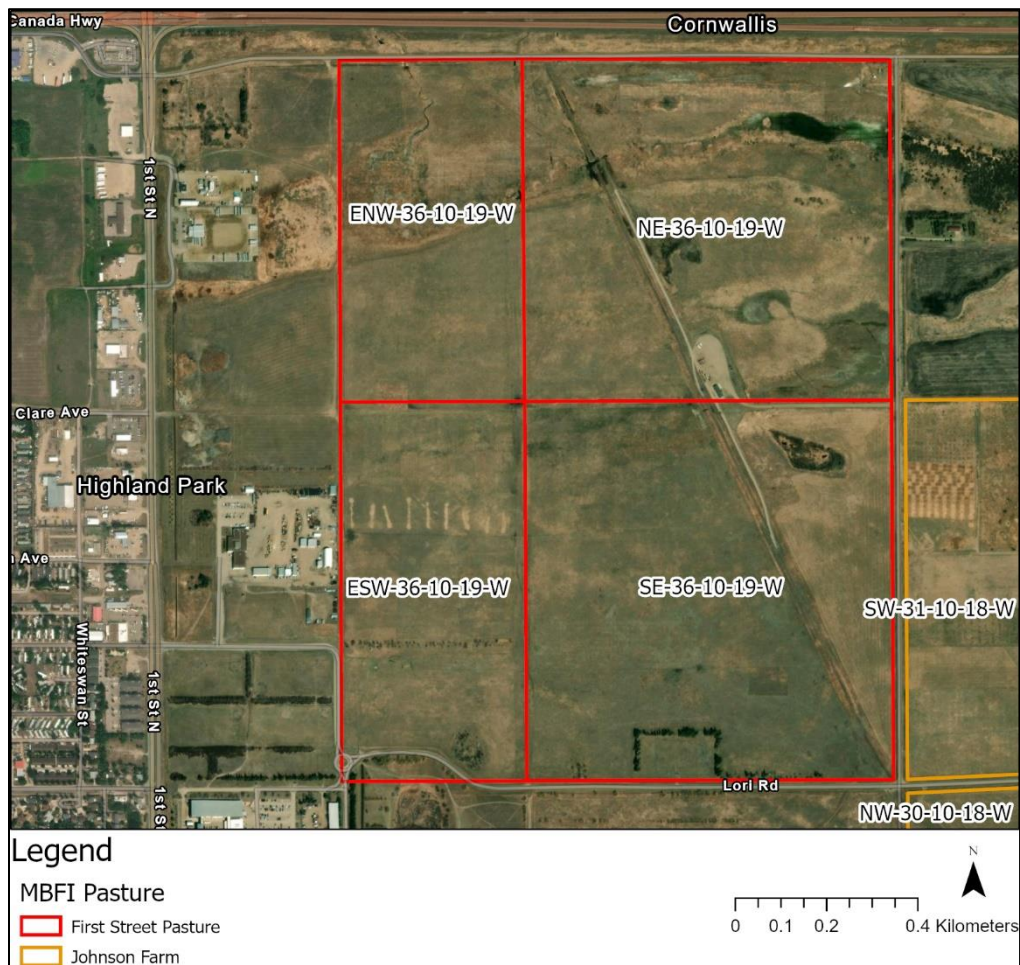


Figure 2: First Street Pasture legal descriptions and land cover

Johnson Farm

The Johnson Farm includes three full quarter sections of pasture (Figure 3). NW-30-10-18-W was characterized by lush, tall brome grass that was over a meter in height in some areas. Within the fenced pasture there were no trees, shrubs, or wetland areas. The quarter did not appear to have been recently grazed and no cows were on site during the survey. SE-31-10-18-W had extensive electric-wire cross-fencing that broke up the quarter into 50m x 350m paddocks. Paddocks on the south half of the quarter were characterized by bare ground and appeared to have been cultivated and seeded. Paddocks on the north half were characterized by tall, dense brome grasses. The paddocks did not appear to have been recently grazed and there were no cows present at the time of the survey. SW-31-10-18-W also had extensive cross-fencing, however paddock sizes were larger and of variable dimension. Grasses were generally tall and ungrazed, however the height varied by paddock. This quarter included a sparsely treed yard site with outbuildings.

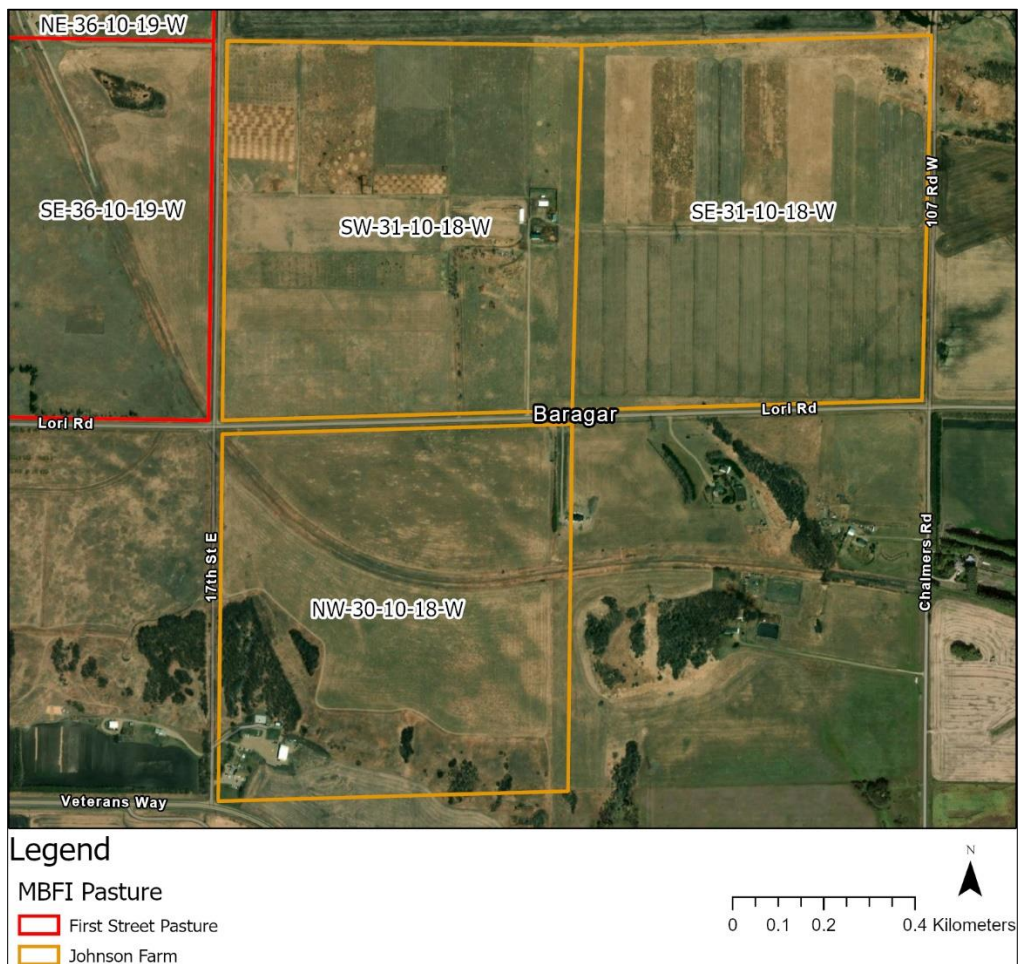


Figure 3: Johnson Pasture legal descriptions and land cover

Brookdale Farm

The Brookdale Farm includes a full section of land (Figure 4). The property contains an estimated 240 acres of wetland habitat with the remaining acres in forest, grassland, and cropland.¹ The property is multi-use with sections allocated for pasture, hay, and crop.

Upon visiting the farm, wetlands were frequently bordered by trees and shrub thickets. Some pasture areas within each quarter section appeared to have been recently cultivated and seeded and were characterized by bare-ground at the time of the survey. Areas of perennial forage were dominated by tall, dense brome grass. In SE-31-12-18-W cows were present. A wooded yard site with corrals was located in SW-31-12-18-W. At the time of the survey water levels in all four quarters were high and wetlands were full and some pasture areas were flooded. NW-31-12-18-W was not surveyed in 2022.



Figure 4: Brookdale Pasture legal descriptions and land cover

¹ MBFI. (N.d.). Farm Stations. Accessed October 20, 2022 from <https://www.mbf.ca/farm-station>

Breeding Bird Surveys

Point Count Protocol

Breeding bird surveys were conducted using Birds Canada's point count monitoring protocol. Surveys needed to be completed between May 28th and July 7th. Surveys started 30 minutes before sunrise and were completed by 10am. Conditions for surveys included a maximum allowable wind speed of 25km/hr and no precipitation. The maximum observation distance was 200m. The distance to each bird detected by sight and/or sound was recorded as 0-50m, 50-100m, or 100-200m. Exact distance and direction was only recorded for species at risk. The minute interval that each species was first detected during each point count was also recorded (e.g., Western Meadowlark at minute 1, Red-winged blackbird at minute 3). The highest breeding evidence code ([Appendix 1](#)) was also recorded for each species overall (e.g., observed in suitable habitat = H, singing = S, breeding pair = P). Area delineation for highest breeding evidence was based on ATLAS square boundaries, thus the Frist Street Pasture and Johnson Farm were combined.

Point Count Locations

Pre-determined, fixed point count locations were provided by Birds Canada. Each quarter section was considered one site, with each site having up to four point counts. Point count locations were based on a grid, whereby each point was 200 meters from the quarter section boundary and 400 meters from another point count.

Results and Discussion

Site Conditions

First Street Pasture and Johnson Farm

Avian monitoring was conducted on June 22nd, 2022. Survey start time was 5:00am and was completed at 8:52am. Survey conditions were good with a starting temperature of 14°C and wind speed of 0 km/hr. Finishing temperature was 22°C with wind speed of 5km/hr. There was zero precipitation and cloud cover. 17 of 21 point count stations were completed (Figure 5). One quarter section at the First Street Pasture was not surveyed because two of four point counts for Site 2 were located in inaccessible wetland areas.

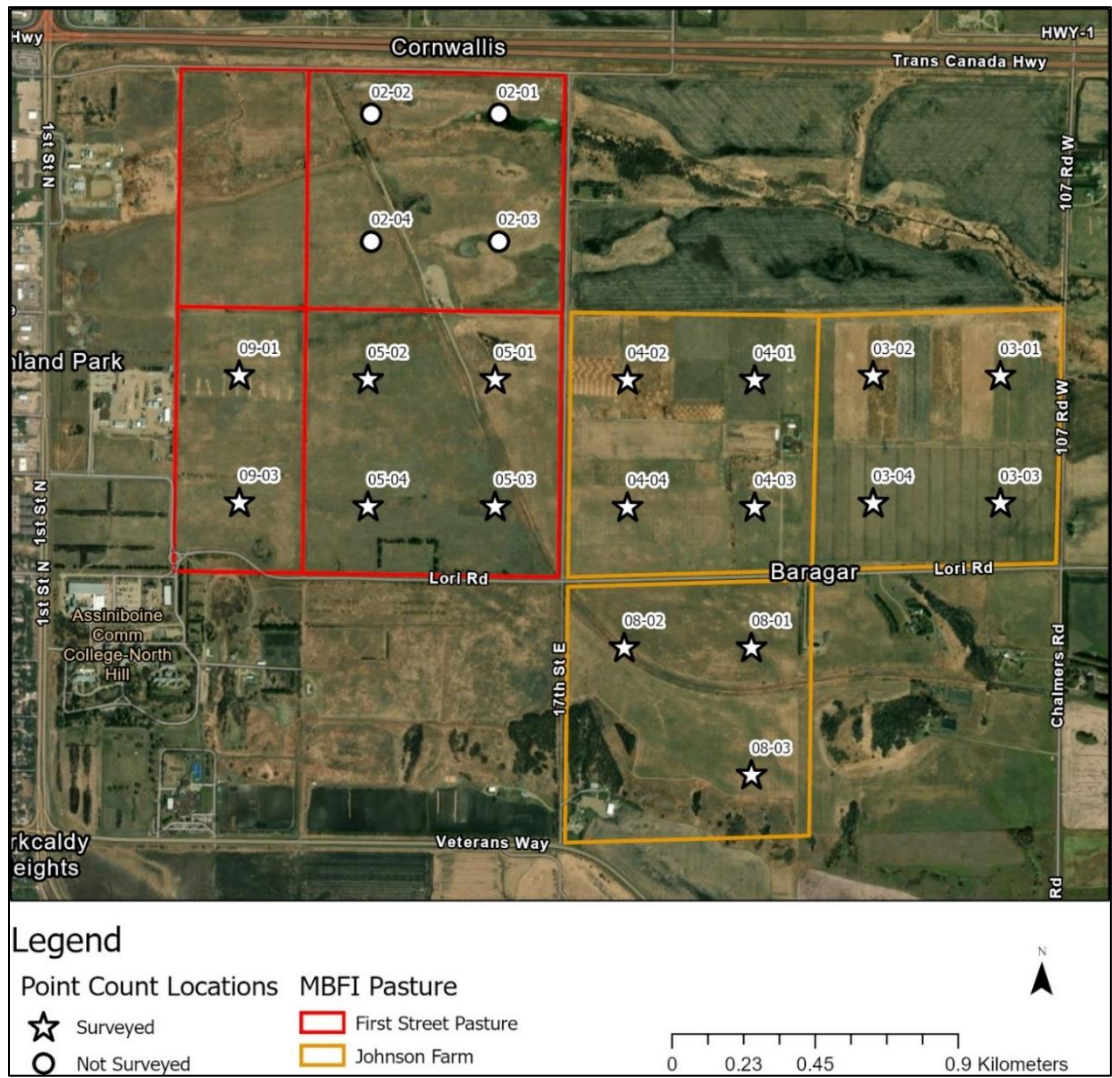


Figure 5: Point count coverage for First Street Pasture and Johnson Farm

Brookdale Farm

Avian monitoring was conducted on June 23rd, 2022. Survey start time was 5:08am and was completed at 8:34am. Survey conditions were good with a starting temperature of 16°C and wind speed of 0 km/hr. Finishing temperature was 23°C with wind gusts of 10km/hr. There was zero perception and cloud cover. 11 of 16 point count locations were completed (Figure 6). One quarter section was not completed (Site 10) due to time constraints and difficulty of navigating the terrain and high water levels. Point count 01-02 in the SE quarter was missed due to difficulties navigating flooded areas.

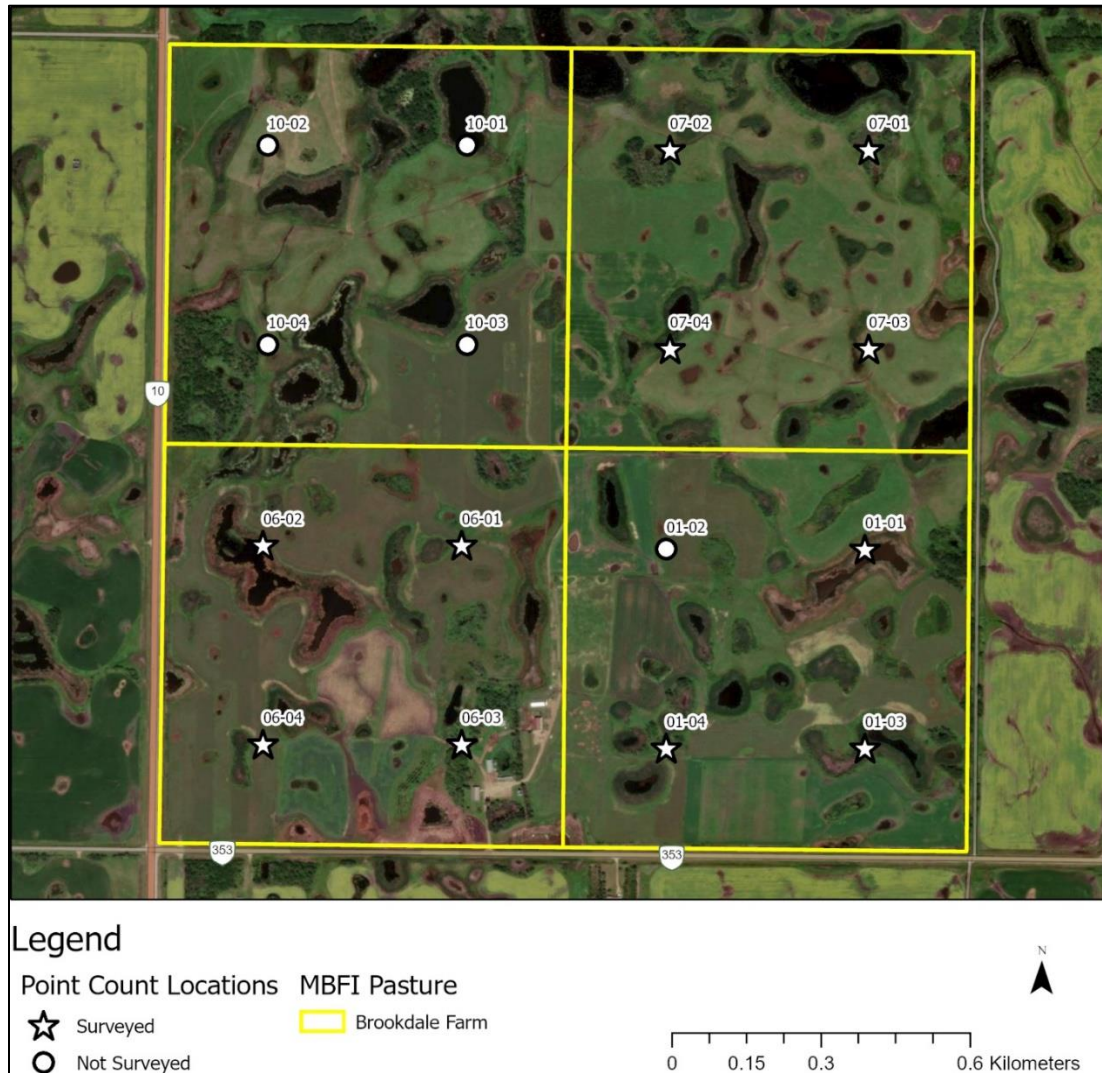


Figure 6: Point count coverage of the Brookdale Farm

Avian Monitoring Outcomes

First Street Pasture

At the First Street Pasture, a total of 106 birds of 26 species were recorded during the survey ([Appendix II](#)). The Shannon Diversity Index score was 2.819. The top five most abundant birds were: Western Meadowlark (*Sturnella neglecta*), Clay-colored Sparrow (*Spizella pallida*), Grasshopper Sparrow (*Ammodramus savannarum*), Savannah Sparrow (*Passerculus sandwichensis*), and Upland Sandpiper (*Bartramia longicauda*). These species were not unexpected due to the open grassland habitat and intermediate grass height. Species primarily associated with grassland habitats were the most common as a result, followed by forest birds, habitat generalists, and wetland birds (Figure 7). Species were categorized by habitat type ([Appendix III](#)) based on primary breeding habitat identified in a 2016 report by the Partners in Flight Science Committee.² For species not included in the 2016 report, the habitat category was chosen based on the author's working knowledge of the species primary habitat preferences in southwestern Manitoba.

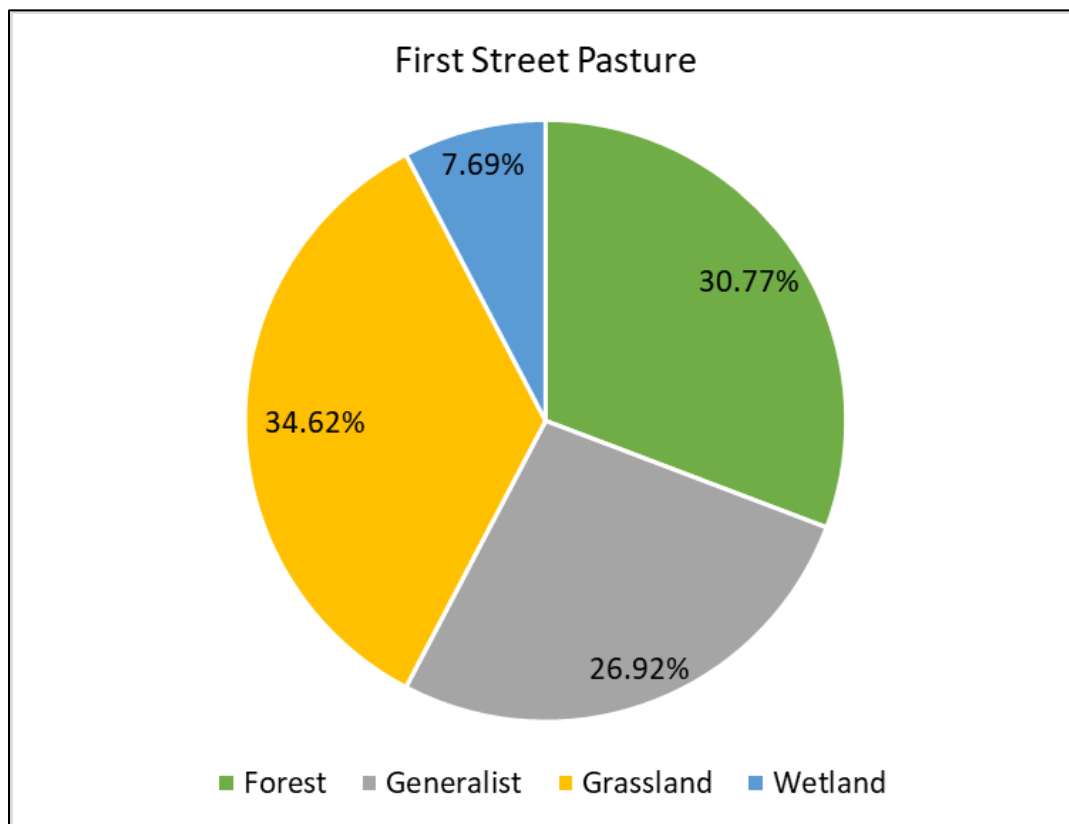


Figure 7: Proportion of species present by primary habitat type at the First Street Pasture (N = 26)

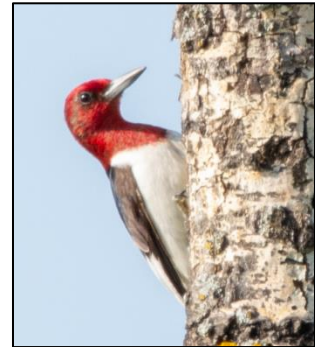
² Rosenberg, K. V., Kennedy, J. A., Dettmers, R., Ford, R. P., Reynolds, D., Alexander, J. D., et al. (2016). Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. *Partners in Flight Science Committee*. 119 pp.



Grasshopper Sparrow, photo by Christian Artuso

The Grasshopper Sparrow is a grassland bird ranked as a rare breeder (S2B) in Manitoba by the provincial Conservation Data Centre (CDC) and is therefore a species of interest.³ Higher than average spring rainfall may have contributed to the high abundance of this species during this survey as, according to the Manitoba Breeding Bird Atlas, this species is more abundant during periods of higher precipitation when grasses become lush.^{4,5} The Grasshopper Sparrow's preferred habitat includes idle haylands and moderately grazed pastures with denser vegetation and sparse to absent shrub and tree cover.⁵ Like many obligate grassland birds in Manitoba, the Breeding Bird Atlas found the Grasshopper Sparrow's distribution to be mostly limited to the southwest corner and it seldom occurs east of Carberry.⁵ In the First Street Pasture, this species was detected at 5 of 6 point count locations (Figure 8, page 15).

A single Red-headed Woodpecker (*Melanerpes erythrocephalus*), was observed in a row of mature deciduous trees in ESW-36-10-19-W. In 2021 this species is listed as Endangered in Canada under the federal Species at Risk Act.⁶ The Red-headed Woodpecker can be found nesting in mature deciduous trees or dead snags with sparse or heavily grazed understory. The main threat to this species in Canada is habitat loss associated with the removal of mature trees and standing deadwood.⁷



Red-headed Woodpecker, photo by Lynnea Parker

³ Manitoba Conservation Data Centre. (N.d.). Southwest Manitoba Uplands ecoregion: Grasshopper Sparrow. Government of Manitoba. Accessed October 13, 2022 from <https://www.gov.mb.ca/nrnd/fish-wildlife/cdc/ecoregions/index.html>

⁴ Frey-Sam, J. (2022, May 31). Sodden spring ranks second in history. *Brandon Sun*. Accessed from <https://www.brandonsun.com/local/2022/05/31/sodden-spring-ranks-second-in-history>

⁵ De Smet, K. D. (2018). Grasshopper Sparrow in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Bird Studies Canada. Winnipeg, Manitoba. Accessed October 13, 2022 from <http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?sp=GRSP&lang=en>

⁶ Government of Canada. (2021, Feb 02). Species at risk public registry: Red-headed Woodpecker (*Melanerpes erythrocephalus*). Accessed October 13, 2022 from <https://species-registry.canada.ca/index-en.html#/species/57-403>

⁷ Harry A. G. Harris. (2018). Red-headed Woodpecker in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Bird Studies Canada. Winnipeg, Manitoba. Accessed October 13, 2022 from <http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?sp=RHWO&lang=en>



Bobolink, photo by
Lynnea Parker

A second species at risk observed during the survey was Bobolink (*Dolichonyx oryzivorus*). In 2017 this charismatic blackbird was listed as Threatened in Canada.⁸ It was found at two of six point count locations at the First Street Pasture. Because NE-36-10-19-W was not surveyed this year, it is anticipated that the abundance of Bobolink is actually higher than what was detected. Bobolink prefer hayland and pasture habitat with tall, dense grasses and wet meadows.⁹ The habitat in the NE quarter closer to the wetland edges is likely to provide ideal habitat for this species. Threats to Bobolink in Canada include destruction of nests from hay cutting, loss of pastureland to cultivation and urbanization, overgrazing, and pesticides.

A species that was expected to occur due to the size of the open grassland, but was not detected, was Sprague's Pipit (*Anthus spragueii*). This species is listed federally under the Species at Risk Act as Threatened.¹⁰ Its absence may be due to an insufficient amount of thatch, or because the site was dominated by tall tame forages rather than shorter, mixed-grass prairie. While Sprague's Pipit prefers native grasslands as its primary habitat, in southwestern Manitoba it can be found in some tame hayfields and pastures.¹¹ It is therefore more likely that the grass structure and amount of thatch present throughout the property was insufficient for providing suitable habitat.



Sprague's Pipit, photo by
Christian Artuso

⁸ Government of Canada. (2021, Feb 02). Species at risk public registry: Bobolink (*Dolichonyx oryzivorus*). Accessed October 13, 2022 from <https://species-registry.canada.ca/index-en.html#/species/1087-746>

⁹ McCracken, J. D. (2018). Bobolink in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Bird Studies Canada. Winnipeg, Manitoba. Accessed October 13, 2022 from <http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?sp=BOBO&lang=en>

¹⁰ Government of Canada. (2021, Feb 02). Species at risk public registry: Sprague's Pipit (*Anthus spragueii*). Accessed October 13, 2022 from <https://species-registry.canada.ca/index-en.html#/species/573-229>

¹¹ De Smet, K. D. (2018). Sprague's Pipit in Artuso, C., A. R. Couturier, K. D. De Smet, R. F. Koes, D. Lepage, J. McCracken, R. D. Mooi, and P. Taylor (eds.). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Bird Studies Canada. Winnipeg, Manitoba. Accessed October 13, 2022 from <http://www.birdatlas.mb.ca/accounts/speciesaccount.jsp?sp=SPPI&lang=en>

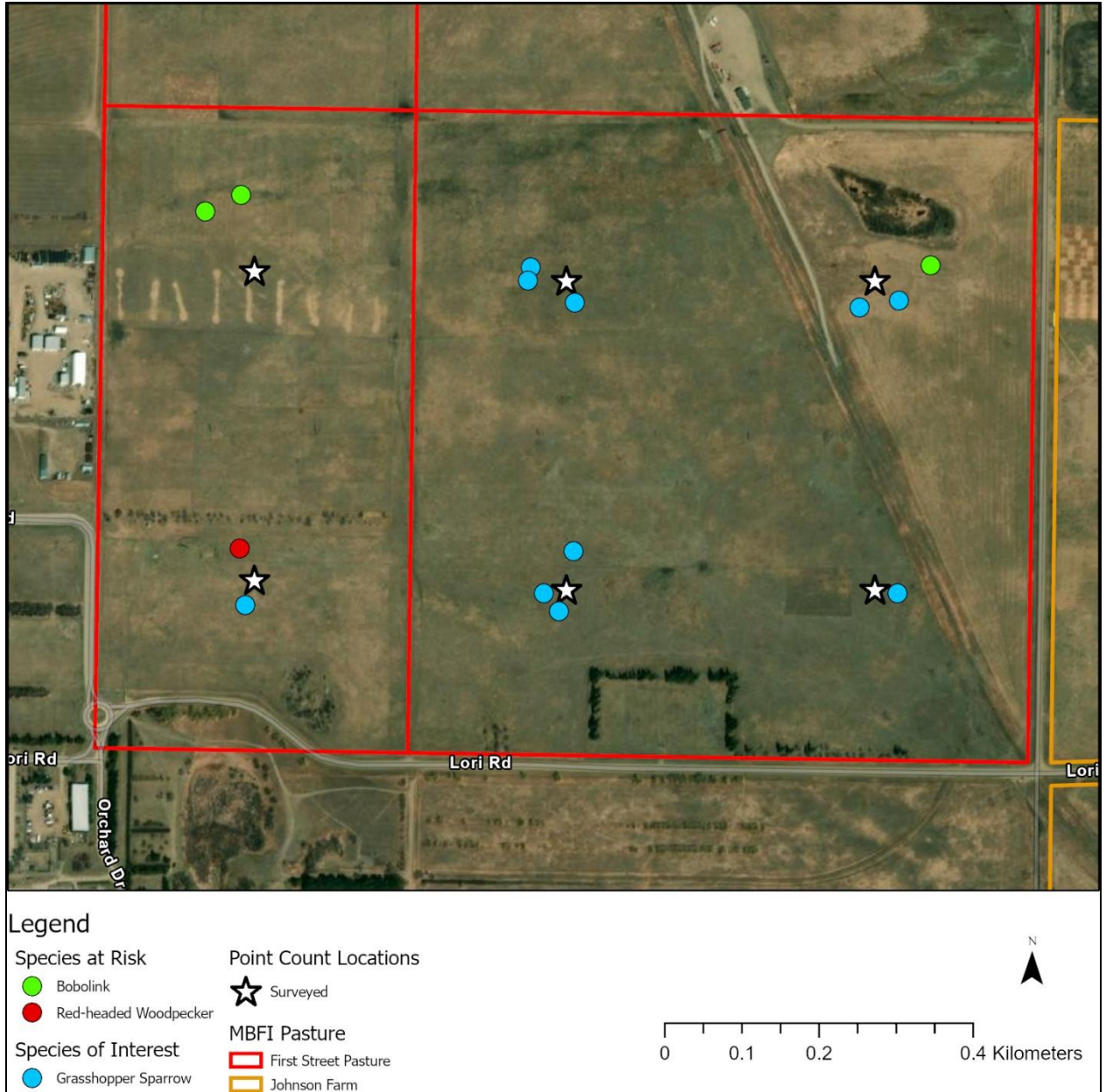


Figure 8: Locations of species at risk detected at the First Street Pasture

Johnson Farm

At the Johnson Farm, a total of 161 birds of 30 species were recorded during the survey ([Appendix II](#)). The Shannon Diversity Index score was 2.788. The First Street Pasture was ranked by the index as being more diverse despite having less species and individuals than the Johnson Farm because the abundance of individuals was more evenly distributed among the species present. At the Johnson Farm, the top five species accounted for 60% of the bird abundance, whereas at the First Street Pasture the top five species accounted for 52% of the bird abundance. The top five most abundant birds at Johnson Farm were: Clay-colored Sparrow, Western Meadowlark, Savannah Sparrow, Vesper Sparrow (*Pooecetes gramineus*), and Bobolink. These species have a preference for grassland habitats, which was expected for Johnson Farm. Because the Johnson Farm supported slightly more diverse habitats than the First Street Pasture and both grassland and habitat generalists were the most abundant bird species as a result (Figure 9).

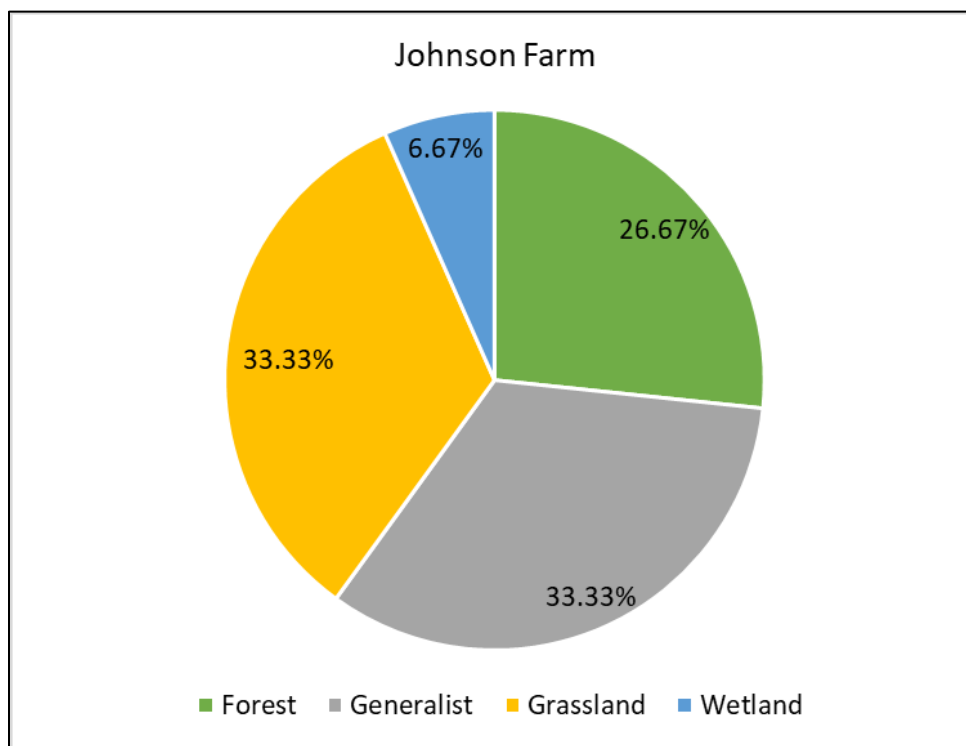


Figure 9: Proportion of species present by primary habitat type at Johnson Farm (N = 30)

One Grasshopper Sparrow and one Bobolink were observed in NW-30-10-18 (Figure 10, page 16). The abundance of these two species at this site was lower than expected, possibly due to exceedingly tall grasses throughout the quarter. Alternatively, nine Bobolink were detected at site SW-31-10-18-W where the grass was of more intermediate height.

Four species of aerial insectivore were detected on the Johnson Farm, and while none are currently considered species at risk, they could become listed in the near future. Aerial insectivores are a category of bird experiencing the steepest declines in Canada; since 1970, populations of these types of birds have declined by

59%.¹² Aerial insectivores feed on insects while flying and include swallows, swifts, flycatchers, and nightjars.¹³ The species detected were: Least Flycatcher (*Empidonax minimus*), Purple Martin (*Progne subis*), Eastern Kingbird (*Tyrannus tyrannus*), and Western Kingbird (*Tyrannus verticalis*). One additional species, the Tree Swallow (*Tachycineta bicolor*) was observed at the First Street Pasture.

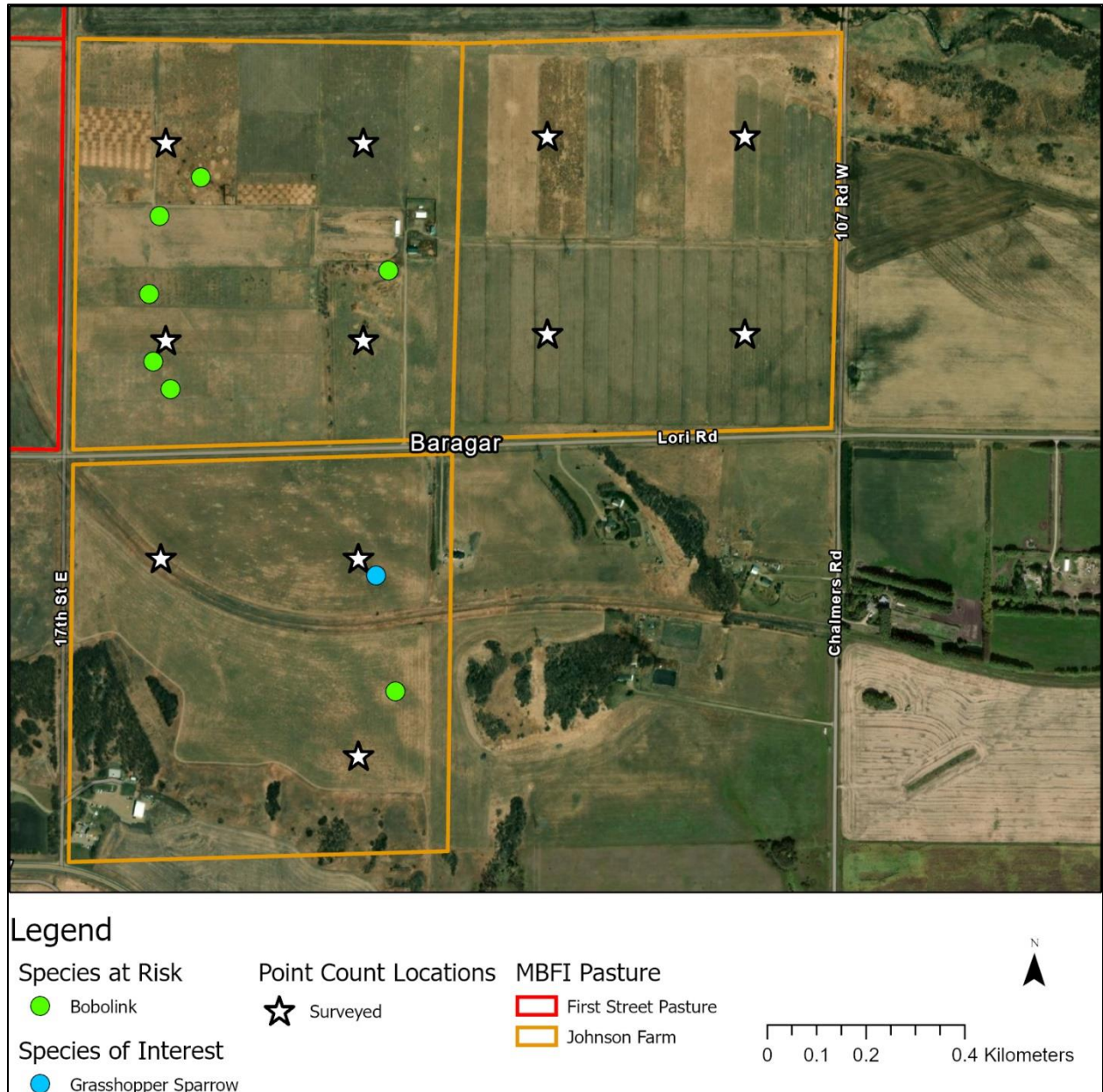


Figure 10: Locations of species at risk detected at the Johnson Farm

¹² North American Bird Conservation Initiative Canada. (2019). The State of Canada's Birds, 2019. *Environment and Climate Change Canada*, Ottawa, Canada. 12 pages. Accessed from www.stateofcanadasbirds.org

¹³ Birds Canada. (N.d.). Aerial insectivores. Accessed October 24, 2022 from <https://www.birdscanada.org/bird-science/aerial-insectivores>

Brookdale Farm

At the Brookdale Farm, a total of 268 birds of 38 species were recorded during the survey ([Appendix II](#)). The Shannon Diversity Index score was 2.679. Despite the Brookdale Farm having the most varied habitat types, it had the lowest index score of the three MBFI properties. This was primarily because five of the 38 species accounted for 60% of the total bird abundance. These species were: Red-winged Blackbird (*Agelaius phoeniceus*), Clay-colored Sparrow, Common Yellowthroat (*Geothlypis trichas*), Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), and Marsh Wren (*Cistothorus palustris*). Species observed at this pasture were mostly habitat generalists or associated with wetlands (Figure 11).

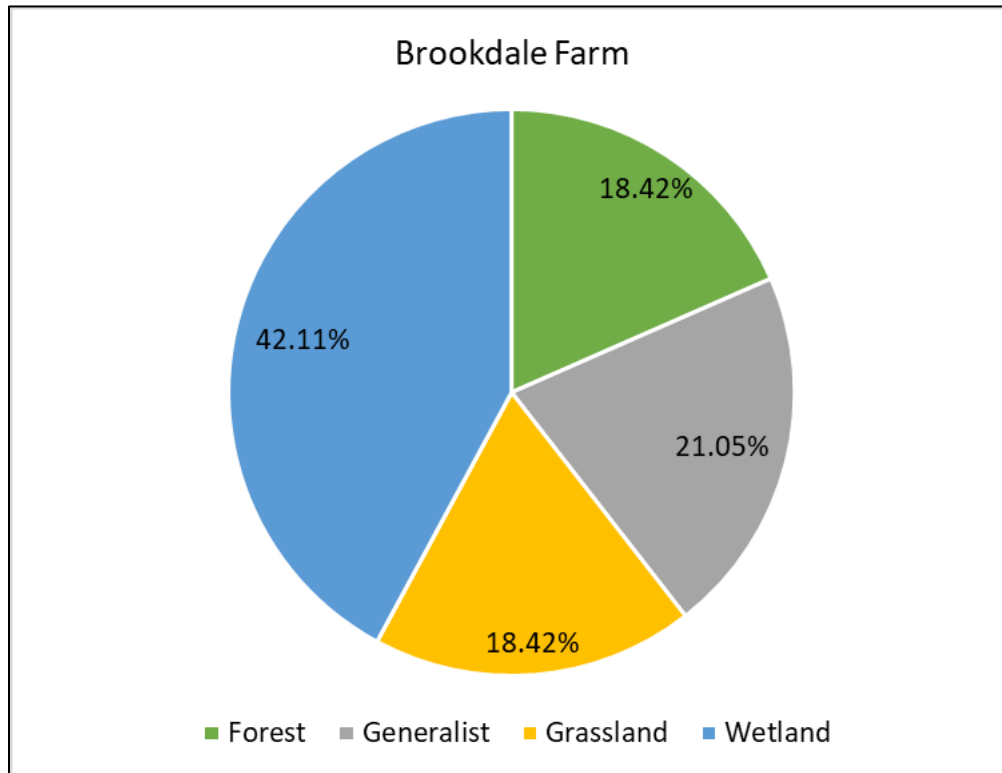


Figure 11: Proportion of species present by primary habitat type at Brookdale Farm (N = 38)

The grassland patches surrounding open wetlands provided suitable habitat for Bobolink, which can tolerate smaller patch sizes. Five individuals were observed at five point count locations (Figure 12). Due to the terrain and pothole nature of the landscape, the grassland patches were of insufficient size and vegetation structure to support most grassland obligate species.

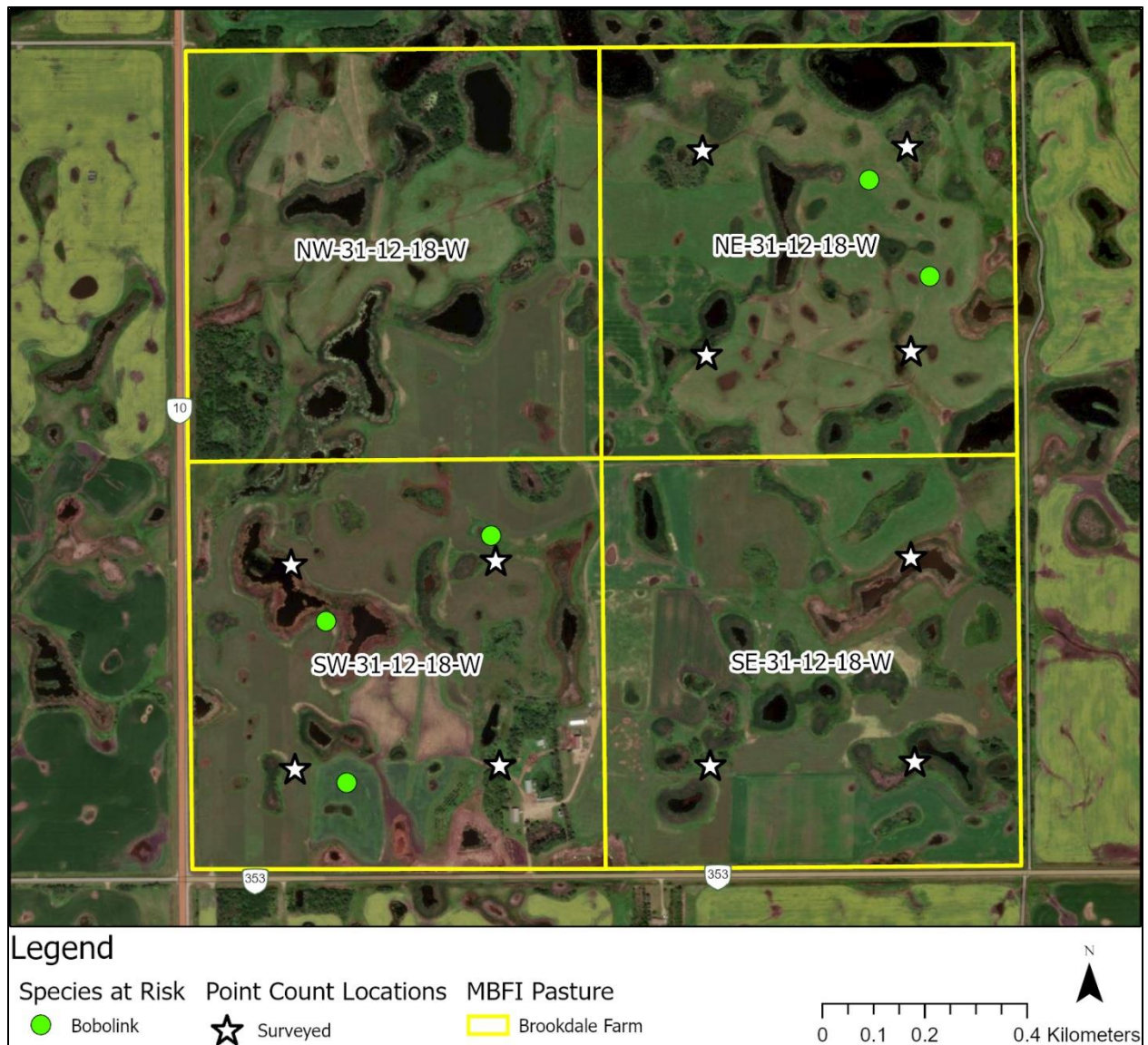


Figure 12: Locations of species at risk detected at the Brookdale Farm

Two aerial insectivores were observed at this property, including Eastern Phoebe (*Sayornis phoebe*) and Eastern Kingbird.

The habitat composition and structure at the Brookdale Farm was most conducive for supporting waterfowl. As such, it was expected that waterfowl would be found at the property. A total of six duck and one goose species were detected, namely, Mallard (*Anas platyrhynchos*), Blue-winged Teal (*Anas discors*), Green-winged Teal (*Anas carolinensis*), Redhead (*Aythya americana*), Ruddy Duck (*Oxyura jamaicensis*), Gadwall (*Mareca strepera*), and Canada Goose (*Branta canadensis*).

Conclusion

MBFI properties support a diversity of habitat generalist, grassland, wetland, and forest avian species, including two federally listed species at risk. 2022 marked an exceptional year for spring and early summer precipitation resulting in high water levels and tall, dense vegetation at all three farm properties. As such, the relative abundance and diversity of grassland obligate birds was lower than what might be observed in a drier year. The very tall, dense grass on the Johnson and Brookdale pastures in particular were thought to provide minimal habitat value for grassland songbirds. While some species prefer lush grassland, such as Bobolink and Grasshopper Sparrow, in many areas the grass was too tall to provide suitable habitat. Alternatively, the grass conditions on the Brookdale pasture was deemed beneficial for supporting nesting waterfowl.

Appendix I

Breeding Evidence Codes sourced from Artuso, C., Couturier, A. R., De Smet, K. D., Koes, R. F., Lepage, D., McCracken, J., et al. (2018). *The Atlas of the Breeding Birds of Manitoba, 2010-2014*. Winnipeg, Manitoba: Bird Studies Canada. Retrieved from <https://www.birdatlas.mb.ca/mbdata/codes.jsp?lang=en&pg=breeding>

OBSERVED	CONFIRMED
X Species observed during its breeding season, but not in suitable nesting habitat (no breeding evidence found).	NB Nest building, including the carrying of nesting material, by all species except wrens and woodpeckers.
POSSIBLE	DD Individual attempting to draw attention away from a nest or young by feigning injury or by using any other distraction display.
H Species observed in suitable nesting habitat during its breeding season.	NU Empty nest used during the atlas survey period, or the shells of eggs laid during the same period.
S Individual singing or producing other sounds associated with breeding (e.g., calls or drumming) in suitable nesting habitat during the species' breeding season.	FY Recently fledged (nidicolous species) or downy (nidifugous species) young incapable of sustained flight.
PROBABLE	AE Adult occupying, leaving or entering a probable nest site (visible or not) and whose behaviour suggests the presence of an occupied nest.
M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.	FS Adult carrying a fecal sac.
P Pair observed in suitable nesting habitat during the species' breeding season.	CF Adult carrying food for young.
T Presumed territory based on the presence of an adult bird, whether producing sounds associated with breeding (e.g., song, other calls or drumming) or not, at the same place, in suitable nesting habitat, on at least two visits, one week or more apart, during the species' breeding season.	NE Nest containing one or more eggs.
D Breeding behaviour involving a male and female (e.g., display, courtship feeding and copulation) or antagonistic behaviour between two or more individuals (e.g., territorial disputes or chases), in suitable nesting habitat during the species' breeding season.	NY Nest with one or more young (seen or heard).
V Bird visiting a probable nest site in suitable nesting habitat during the species' breeding season.	
A Agitated behaviour or alarm call of an adult in suitable nesting habitat during the species' breeding season.	
B Brood patch or cloacal protuberance on an adult individual caught in suitable nesting habitat during the species' breeding season.	
N Nest-building by wrens or nest hole excavation by woodpeckers.	

Appendix II

Full species list detailing conservation status (if applicable), the number of point counts (PC) the species was detected at, the total number of individuals (# Inds.), species abundance (AB), and breeding bird ATLAS code (BBA) for breeding evidence at each MBFI property. Species of conservation concern are shown in red font.

Common Name	Species at Risk Status*	First Street Pasture				Johnson Farm				Brookdale Farm			
		# PC	# Inds.	AB	BBA	# PC	# Inds.	AB	BBA	# PC	# Inds.	AB	BBA
American Bittern										4	4	0.36	S
American Coot										5	7	0.64	M
American Crow		2	2	0.17	S	1	2	0.18	S	2	3	0.27	S
American Goldfinch		1	1	0.08	S	2	3	0.27	S				
American Redstart		1	1	0.08	S	1	1	0.09	S				
American Robin						2	2	0.18	S	1	1	0.09	S
Baltimore Oriole										1	1	0.09	S
Black Tern										2	5	0.45	H
Black-billed Magpie						2	3	0.27	S				
Blue-winged Teal										2	3	0.27	P
Bobolink	Threatened	3	5	0.42	M	6	10	0.91	M	5	5	0.45	H
Brewer's Blackbird		1	1	0.08	H					1	2	0.18	H
Brown-headed Cowbird						2	2	0.18	S	2	3	0.27	S
Canada Goose		1	1	0.08	X					1	2	0.18	X
Cedar Waxwing		1	1	0.08	S								
Chipping Sparrow			2	0.17	S	2	2	0.18	S				
Clay-colored Sparrow			10	0.83	M	11	27	2.45	M	8	16	1.45	M
Common Grackle			8	0.67	M	3	6	0.55	M	1	1	0.09	S
Common Yellowthroat						1	1	0.09	S	9	16	1.45	M
Eastern Kingbird			3	0.25	S	1	1	0.09	S	1	1	0.09	S
Eastern Phoebe										1	1	0.09	S
Gadwall										1	1	0.09	H
Grasshopper Sparrow			10	0.83	M	1	1	0.09	M				
Gray Catbird										1	1	0.09	S
Green-winged Teal										2	3	0.27	H
House Sparrow						2	5	0.45	S				
House Wren			1	0.08	S	4	5	0.45	S	1	1	0.09	S
Killdeer			1	0.08	S	1	1	0.09	S				
Least Flycatcher						1	1	0.09	S				
Mallard						3	3	0.27	H	2	4	0.36	H
Marsh Wren										5	11	1.00	M
Mourning Dove			6	0.50	S					2	3	0.27	H
Purple Martin						2	2	0.18	S				
Redhead										2	2	0.18	H

Common Name	Species at Risk Status*	First Street Pasture				Johnson Farm				Brookdale Farm			
		# PC	# Inds.	AB	BBA	# PC	# Inds.	AB	BBA	# PC	# Inds.	AB	BBA
Red-headed Woodpecker	Endangered		1	0.08	H								
Red-tailed Hawk						1	1	0.08	H				
Red-winged Blackbird			7	0.58	M	5	9	0.82	M	11	101	9.18	M
Ring-necked Grebe										1	1	0.09	H
Ruddy Duck										2	2	0.18	H
Savannah Sparrow			9	0.75	M	10	22	2.00	M	6	6	0.55	A
Sedge Wren						1	1	0.09	S	4	6	0.55	S
Song Sparrow										5	10	0.91	M
Sora			1	0.08	S	1	1	0.09	S	8	9	0.82	M
Tree Swallow			3	0.25	H								
Upland Sandpiper			9	0.75	M	3	6	0.55	M				
Vesper Sparrow			3	0.25	M	8	12	1.09	M	1	1	0.09	S
Virginia Rail										4	6	0.55	S
Warbling Vireo			1	0.08	S	3	3	0.27	S	1	1	0.09	S
Western Kingbird			1	0.08	S	2	2	0.18	S				S
Western Meadowlark			17	1.42	M	11	25	2.27	M	3	4	0.36	S
Wilson's Snipe										3	3	0.27	S
Yellow Warbler			1	0.08	S	1	1	0.09	S	3	5	0.45	S
Yellow-headed Blackbird										7	16	1.45	M
Totals:		6	106			11	161			11	268		

*Listed under Schedule I of the Species at Risk Act (Federal)

Appendix III

Full species list for each MBFI property detailing primary habitat type the species is associated with and classification (if applicable). Habitat designations partially sourced from Rosenberg, K. V., Kennedy, J. A., Dettmers, R., Ford, R. P., Reynolds, D., Alexander, J. D., et al. (2016). Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. *Partners in Flight Science Committee*. 119 pp.

First Street Pasture			Johnson Farm		
Species	Habitat	Classification	Species	Habitat	Classification
American Goldfinch	Forest		American Goldfinch	Forest	
American Redstart	Forest		American Redstart	Forest	
Cedar Waxwing	Forest		American Robin	Forest	
Chipping Sparrow	Forest		Chipping Sparrow	Forest	
House Wren	Forest		House Wren	Forest	
Red-headed Woodpecker	Forest		Least Flycatcher	Forest	Aerial insectivore
Warbling Vireo	Forest		Warbling Vireo	Forest	
Yellow Warbler	Forest		Yellow Warbler	Forest	
American Crow	Generalist		American Crow	Generalist	
Brewer's Blackbird	Generalist		Black-billed Magpie	Generalist	
Common Grackle	Generalist		Brown-headed Cowbird	Generalist	
Killdeer	Generalist		Common Grackle	Generalist	
Mourning Dove	Generalist		Common Yellowthroat	Generalist	
Red-winged Blackbird	Generalist		House Sparrow	Generalist	
Tree Swallow	Generalist	Aerial insectivore	Killdeer	Generalist	Shorebird
Bobolink	Grassland		Purple Martin	Generalist	Aerial insectivore
Clay-colored Sparrow	Grassland		Red-tailed Hawk	Generalist	Bird of Prey
Eastern Kingbird	Grassland	Aerial insectivore	Red-winged Blackbird	Generalist	
Grasshopper Sparrow	Grassland		Bobolink	Grassland	
Savannah Sparrow	Grassland		Clay-colored Sparrow	Grassland	
Upland Sandpiper	Grassland	Shorebird	Eastern Kingbird	Grassland	Aerial insectivore
Vesper Sparrow	Grassland		Grasshopper Sparrow	Grassland	
Western Kingbird	Grassland	Aerial insectivore	Savannah Sparrow	Grassland	
Western Meadowlark	Grassland		Sedge Wren	Grassland	
Canada Goose	Wetland	Waterfowl	Upland Sandpiper	Grassland	Shorebird
Sora	Wetland		Vesper Sparrow	Grassland	
			Western Kingbird	Grassland	Aerial insectivore
			Western Meadowlark	Grassland	
			Mallard	Wetland	Waterfowl
			Sora	Wetland	

Brookdale Farm		
Species	Habitat	Classification
Eastern Phoebe	Forest	Aerial insectivore
Baltimore Oriole	Forest	
Gray Catbird	Forest	
House Wren	Forest	
Warbling Vireo	Forest	
Yellow Warbler	Forest	
American Robin	Forest	
American Crow	Generalist	
Brown-headed Cowbird	Generalist	
Mourning Dove	Generalist	
Common Grackle	Generalist	
Song Sparrow	Generalist	
Brewer's Blackbird	Generalist	
Red-winged Blackbird	Generalist	
Common Yellowthroat	Generalist	
Eastern Kingbird	Grassland	Aerial insectivore
Clay-colored Sparrow	Grassland	
Vesper Sparrow	Grassland	
Bobolink	Grassland	
Savannah Sparrow	Grassland	
Western Meadowlark	Grassland	
Sedge Wren	Grassland	
Wilson's Snipe	Wetland	Shorebird
Mallard	Wetland	Waterfowl
Blue-winged Teal	Wetland	Waterfowl
Green-winged Teal	Wetland	Waterfowl
Canada Goose	Wetland	Waterfowl
Redhead	Wetland	Waterfowl
Ruddy Duck	Wetland	Waterfowl
Gadwall	Wetland	Waterfowl
Yellow-headed Blackbird	Wetland	
Marsh Wren	Wetland	
Sora	Wetland	
American Coot	Wetland	
Virginia Rail	Wetland	
Black Tern	Wetland	
American Bittern	Wetland	
Ring-necked Grebe	Wetland	