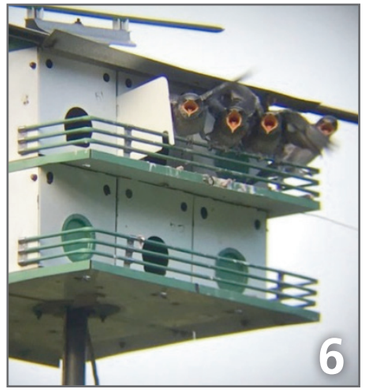
FALL 2022 VOLUME 80.3

BLUE JAY



Jared Clarke presents four years of monitoring data from an establishing Purple Martin colony in southern Saskatchewan.

David Larson reviews Robert E. Wrigley's new book, *Tiger Beetles of Manitoba: Ecology, Life History and Microsculpture.*

In this issue's installment of The Nature Notebook, Jared Clarke questions the lack of bees this spring, and where all the insects are in general.

Birds of Saskatchewan describes the records and status of the 437 species of wild birds reported in the province to 31 December 2016. Philip S. Taylor presents, in chronological order, a summary of additional important bird records to 31 December 2021.

Learn about Victoria Hartley-Cox, the recipient of the 2022 Margaret Skeel Graduate scholarship!

In this issue's edition of Human Nature, Last Mountain Bird Observatory banding assistant Angela Tremka shares her experiences at LMBO, as well as the value the station provides.

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FROM THE PRESIDENT

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Nature Saskatchewan owns or holds leases to eight properties around the province that we protect as nature sanctuaries. These sanctuaries provide some haven for flora and fauna within the mixed grassland, aspen parkland, boreal transition, and mid-boreal upland and lowland ecoregions, and represent the ecological character of these diverse regions.

ON THE FRONT COVER
Fireweed (Ihkapaskwa) - a treasured medicine of the boreal forest. Photo credit: Randy McCulloch.

ON THE BACK COVER
A young Harris's Sparrow perched on a thinning shrub before taking off for its journey south. Photo credit: Abbie Reilander.

To look after these sanctuaries, we are very fortunate to have a dedicated group of people within our Nature Saskatchewan community who have taken on the official role of stewards. These folks are active supporters of our mission, working toward our desire to "protect and preserve." They also have strong personal connections and commitment to the land that they steward.

The stewards look after the welfare of the sanctuaries in a variety of ways. They work to ensure that the sanctuaries have management plans and biodiversity surveys. They maintain signage, access, trails and fences. They lead tours for school groups and other visitors. And they monitor for, and work to address, both natural threats — such as disease, flooding or invasive species — and human-caused disturbances.

Their much-appreciated work ensures that our sanctuaries are protected and maintained for their own sake, and for enjoyment by those who visit them.

We wish to recognize:

- **Boyd Metzler** for the Crooked Lake Fen sanctuary, a pristine and undisturbed spot with an unusual habitat in the Qu'Appelle valley.
- **Brian Irving** for the Van Brienen Land sanctuary, an area comprising some woodland, lake, and hay land transitioning back to aspen forest.
- **Yvonne Hotzak** for the Brandon Lands sanctuary, a small parcel on the east bank of a shallow valley, connected to other land held by Nature Saskatchewan supporters.

Ken Ludwig

- **Dallas Fairburn** for the Satherstrom sanctuary, another small parcel with some wetland and aspen bluff that continues to evolve.
- **Mo Alain and Gloria Stang** for the Rendek Elm sanctuary, an area around a river confluence that has been featured in a video by the Hudson Bay Tourism Society.
- **Doug Pegg, Doug Phillips and Rick Douslin** for the Maurice Street sanctuary, offering some higher ground along the Saskatchewan River.
- **Darlene Roth** for the Turtle Lake sanctuary along the east shore of Turtle Lake, one of the busiest of the sanctuaries for visitor activity.
- **Jason Stimson** for the Daisy Meyers sanctuary, our newest sanctuary rolling north off the South Saskatchewan River.

We thank you all for your dedication and the work you have given, for so long, for these sanctuaries.

BLUE JAY

Blue Jay, founded in 1942 by Isabel M. Priestly, is a journal of natural history and conservation for Saskatchewan and adjacent regions. It is published quarterly by Nature Saskatchewan.

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Editorial Information

Blue Jay welcomes all submissions, preferably by e-mail (although hand-written or typed manuscripts will be considered to accommodate those who do not have access to computer equipment), polished or in need of some editorial assistance. All items for publication should be sent to the editor electronically (in a Microsoft Word document) by e-mail or on CD. Hard copies and CDs can be mailed to the editor at the address above.

Submission deadlines

January 1 for the Spring issue, April 1 for the Summer issue, July 1 for the Fall issue, and October 1 for the Winter issue. For detailed information, please see the "Guidelines for Authors" under the Publications section of the Nature Saskatchewan website.

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FIDELITY TO A BUILDING HIBERNACULA BY BIG BROWN BATS (*EPTESICUS FUSCUS*)

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Gary Falkenstein

For most bat species in Canada, hibernacula are found underground in rock crevices, caves or mines.[1] Big brown bats (*Eptesicus fuscus*) are one of the few species which occur in Canada, including in Saskatchewan, that will successfully hibernate in anthropogenic structures (buildings).[2,3] In the United States, this species is among the most flexible in terms of types of hibernation sites used[4] and in a large survey study, from 1 to 87 individuals were found hibernating at the same time in a single building.[5] However there are few data on whether individual animals re-use the same sites on an annual basis, like they do for summer maternity colony sites in buildings.[1]

Over the past 30+ years, the senior author has routinely rescued individuals (4-25 annually) of this species during the winter from a variety of anthropogenic structures across southern Saskatchewan. In the vast majority of instances, the animals became evident to humans due to their activity within buildings. They were typically emaciated and dehydrated, and weigh 16 g or less, suggesting that the hibernaculum being used were not ideal.[2] Furthermore, the vast majority of individuals rescued were juveniles attempting to hibernate over their first winter.

It was thus of great interest when the senior author was alerted to individuals of this species found within a hibernation site in a dwelling on 12 March 2021. Nine individuals (eight females and one male), all ~20 g, were uncovered in a basement wall during renovation in a house located in the Lakewood subdivision of northwestern Regina, SK. The animals were collected and kept in hibernation by RMB until the first week of May. All nine bats were then released on the south shore of the lake at the Condie Wildlife Refuge. The Refuge is approximately 7 km from the building where they had been hibernating. Prior to being released, all individuals were injected with passive integrated transponders (PIT) tags following the same protocol used for this species from studies by our group in Cypress Hills, SK.[6,7] These tags, which are about the size of a grain of rice, are injected under the skin between the scapulae and allow for individual identification using a reader that can scan the tags.

On 20 November 2021, two individuals were discovered hibernating in the chimney of the same dwelling. To the best of our knowledge, no bats spent the summer in the building in which hibernation occurred. They were discovered in the chimney after noise was generated by further basement renovation. Both were healthy and had been PIT tagged. One female (21 g) and one male (20 g) at the time they were removed from the chimney were kept in hibernation over the winter and released again in spring 2022. These data provide some evidence that even when disturbed and relocated during hibernation, individuals will return to the same site to hibernate during the subsequent winter. There is considerable evidence that females of this species show a high degree of fidelity to anthropogenic summer maternity colony sites and to natural hibernation sites[5], but further study is needed to determine if our observations are reflective of the same type of winter fidelity to anthropogenic sites.

Acknowledgements

RMB is grateful to NSERC (Natural Sciences and Engineering Research Council – Canada) for their continued support of his research.

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DEMOGRAPHICS OF AN ESTABLISHING PURPLE MARTIN COLONY NEAR EDENWOLD, SK (2018-2021)

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Introduction

The Purple Martin (*Progne subis*; hereafter martin) is North America's largest swallow species and are a fairly common summer resident across the southern half of Saskatchewan.[1,2] Martins nest in secondary cavities, such as those made by a woodpecker, and do not create their own nesting cavity. Interestingly, martins east of the Rocky Mountains now rely almost exclusively on human-made cavities in the form of Purple Martin "condos" or gourds.[2] Continued access to quality nesting structures is important for the species to thrive. However, population trends across North America from Breeding Bird Surveys (BBS) show a 33 per cent population decline in martins, from an estimated 13 million birds in the 1970s to 8.7 million today, with these declines being most pronounced in eastern North America.[3,4] The causes for this widespread population decline are unclear, but severe weather events amplified by climate change, introduced species such as House Sparrows (*Passer domesticus*) and European Starlings (*Sturnus vulgaris*) that compete with martins for nest cavities, and pesticides such as neonicotinoids are believed to all play a role.[1] However, it is thought that there are currently more available cavities through human-provided housing than ever before.[1] Interestingly, BBS data from Saskatchewan depict the reverse population trend, where martins have been increasing by 3.55 per cent per year in the Prairie Pothole region and 6.96 per cent per year in the Prairie Taiga Plains since the 1970s.[5] Perhaps an increase in suitable nest sites with the installation of human-provided cavities on the previously treeless prairies has spurred this growth, as increasing trends are the case in Alberta province-wide and in the Manitoba Pothole region.[5]

Through research, education and networking, groups such as the Purple Martin Conservation Association (PMCA) work closely with martin "landlords" to help monitor and provide nesting habitat for martins.[6] The PMCA encourages landlords to regularly monitor the nest contents of each cavity throughout the breeding season and submit these data for continent-wide analysis by the PMCA.

Here I present four years of colony monitoring data from an establishing Purple Martin colony in southern Saskatchewan.

Methods

Study Site

The Saw-whet Purple Martin colony is located at the Saw-whet Acres Research Station near Edenwold, Saskatchewan (50° 39′ 31″ N, 104° 17′ 58″ W). The station is situated on the southern edge of the Aspen Parkland eco-region and is surrounded by cropland and tame pastureland, with numerous small wetlands and one small lake 500 m north of the yard. The small lake is roughly 1 km by 1 km in size. The yard site is treed with large spruce trees (*Picea* sp.), hybrid poplars (*Populus* sp.) and Trembling Aspen (*Populus tremuloides*).

Colony Management

From 2010 to 2017, two aluminum Trio Grandpa Purple Martin houses, each with 12 nesting cavities, were present in the yard site and between three and six pairs used the two houses annually. A concerted effort to attract a larger colony of martins began in 2018. In 2018, there were 28 cavities available, which included the addition of a 16-gourd rack with 16 plastic Troyer Horizontal Gourds and the two existing aluminum houses. However, I modified the two aluminum houses from 12 cavities each to six so that a pair had access to two cavities (I blocked off six entrance holes and connected the two cavities to give the birds more room). In 2019, the total number of available cavities grew to 34 as I added six large natural gourds to the colony on an additional pole system. Lastly, in 2020, I installed a new T14 wooden house with 14 cavities and another gourd rack with 12 plastic Troyer Vertical Gourds. I discontinued the use of the original Trio Grandpa houses and installed four of the six natural gourds below the T14 house, for a total of 46 available cavities in the colony. The 2021 configuration was unchanged from 2020. Figure 1 shows the different houses and gourds.

All housing units were on metal or wood poles approximately 5 to 6 m above ground and each of the racks or houses could be lowered and raised by a pulley system. The poles were spaced between 6 and 17 m apart from each other and the closest poles were 8 and 12 m from an active house. Additionally, all gourds had screw-off lids, making it possible to inspect the contents; the aluminum and wooden houses could be easily opened as well.

Predator guards at the base of the poles prevented ground predators such as raccoons (*Procyon lotor*) from climbing the poles. Prefabricated raptor guards were installed on the plastic gourds and the T14 housing had metal guards attached to prevent access by owls and hawks, but not the natural gourds. The gourd raptor guards were installed hastily in 2020 when a Great Horned Owl nest (*Bubo virginianus*) was found only 30 m from the colony. The aluminum housing did not have raptor guards.

Non-native nest-competitive species were also managed at the colony as it has been demonstrated these species are able to outcompete martins for cavities, thereby reducing martin nesting success.[7] House Sparrows and European Starlings were dissuaded or eliminated from the colony by using nest removal, trapping and shooting.

FIGURE 1: Top left - Trio Grandpa Aluminum House. Top right - T14 Wooden house. Bottom Right – Natural Gourds rack. Bottom Centre - Troyer Horizontal Plastic Gourds, 16 rack. Bottom Left – Troyer Vertical Gourds with raptor guards.

Nest monitoring

Generally, nest checking began for the nesting season when martins were observed entering the housing with green leaves. From that point, all housing was lowered every three-to-seven days, depending on nesting stage, and each cavity was examined for nest construction, eggs, or chicks. Clutch initiation dates and hatch days were also calculated and recorded. Nest checks followed the guidelines set by the Purple Martin Conservation Association Project NestWatch program.[8] A nest was deemed occupied if eggs were present. A nest was deemed fledged if the nestlings were absent after 27 days.

Adults were aged based on plumage characteristics by viewing them through binoculars or a spotting scope and the ages of the pair were recorded for each cavity.[9] Birds were aged as either After-Second Year (ASY; which are two years old or older), Second-Year (SY; one-year old birds) or the age was not identified and recorded as Unknown.

Results

From 2018 to 2021, a total of 124 nests were initiated at the Saw-whet colony. Occupancy grew from 11 active nests (39%) in 2018 to 44 active nests (96%) in 2021, as the number of available cavities grew (Table 1). During the same period, the proportion of known SY birds decreased from 45% in 2018 to 6% in 2021 (Table 2).

The first day of egg laying for each clutch varied considerably over the four years, ranging over 35 days (Figure 2). The first egg of the year was laid on 31 May in both 2018 and 2019, 25 May in 2020 and 4 June in 2021. The late date for 2021 was likely due to a cold snap with freezing rain in late May. The latest egg laying began on 4 July in 2018 and 2020, 1 July in 2019, and 29 June in 2021. ASY females tended to nest earlier than SY females (Figure 2). Over all four years, the mean date of the first egg laid of each clutch was 11 June (Julian date = 162).

In total, 653 eggs were laid at the colony between 2018 and 2021 (Table 3). The mean number of eggs per nest varied between 5.0 and 5.4 per year (Figure 3). Hatch rate over the four years was 87.1% (n=567), with yearly hatch rates ranging between 77.5% and 92.7%, with 2019 being the lowest (Table 3). The mean number of chicks that hatched per nest each year was constant at 4.6 or 4.7, except in 2019 when it dropped to 4.1 (Figure 3). Thirty-nine chicks (6.7%) that hatched died before reaching fledging age, while 532 chicks survived to fledge (94.1%; Table 3). The percentage of chicks that fledged from those that hatched varied per year from 92.2% to 96.1% (Table 3) and the mean number of fledglings per nest ranged between 3.8 and 4.5 (Figure 3). The overall percentage of fledglings from eggs laid was 82%, but annually varied from 71.8% to 89.1% (Table 3).

Clutch size ranged from two to seven eggs. Out of 124 nests, one nest contained two eggs (0.8%), one nest contained three eggs (0.8%), 17 nests contained four eggs (13.7%), 56 nests contained five eggs (45.2%), 44 nests contained six eggs (35.5%), and five nests contained seven eggs (4.0%). Two of the clutches that contained seven eggs fledged all seven chicks, both in 2020.

YEAR	AVAILABLE CAVITIES	CAVITIES OCCUPIED	% OCCUPIED
2018	28	11	39%
2019	34	26	76%
2020	46	43	94%
2021	46	44	96%

TABLE 1. The number of cavities available and occupied by Purple Martins at the Saw-whet colony, near Edenwold, SK, 2018 - 2021. Occupancy was defined by eggs being laid in a cavity.

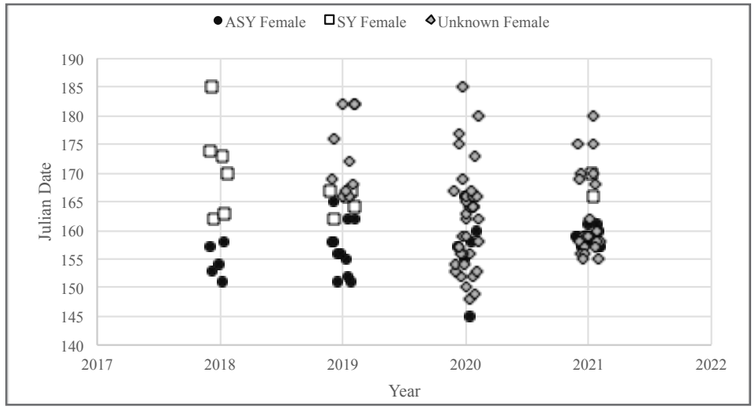

FIGURE 2: Known dates of the first eggs laid by adult female Purple Martins at the Saw-whet colony, near Edenwold, SK, 2018 - 2021. ASY females (2-year old birds or older) are shown as black circles. SY females (1-year old birds) are shown as white squares. Unknown age females are shown as gray diamonds. A Julian Date of 150 is 30 May, 160 is 9 June, 170 is 19 June, 180 is 29 June.

YEAR	ASY (N)	SY (N)	UNKNOWN (N)	TOTAL BREEDING ADULTS
2018	50% (11)	45% (10)	5% (1)	22
2019	44% (24)	22% (12)	33% (18)	54
2020	24% (21)	2% (2)	73% (63)	86
2021	57% (50)	6% (5)	38% (33)	88

TABLE 2. Percentage breakdown of age of adult Purple Martins at the Saw-whet colony, near Edenwold, SK, 2018 - 2021. ASY is After-Second Year (i.e., a two-year-old bird or older), SY is Second-Year (i.e., a one-year-old bird), Unknown Age (i.e., age of bird was not determined).

Discussion

The quick establishment of the Saw-whet colony to almost full occupancy at 43 and 44 pairs in just three years was surprising but consistent with other colony establishments that are managed similarly.[2,10] Undoubtedly it helped that pairs of martins were already nesting in the Trio Grandpa houses prior to 2018, so some birds were already aware of the presence of nesting sites. There is also an existing colony in Edenwold 4 km SE of the Saw-whet colony that may have helped in attracting birds to the area.

Over the four years the martins at the Saw-whet colony showed considerable range in clutch initiation, from 25 May to 4 June (Figure 2). In 2021, egg-laying may have been delayed by a late-May freezing rain event, versus the apparent ideal nesting conditions in May 2020. Purple Martins are known to adjust their egg-laying based on local temperature conditions.[11] When they lay eggs earlier, martins fledged more young.[11]

Generally, a new nesting site is colonized by SY birds in the early years of a colonies establishment, and then in later years ASY birds will dominate once the colony reaches full capacity or its maximum carrying capacity.[6] ASY birds begin to arrive back in Saskatchewan in mid-April, while SY birds do not start to return until mid-May, a full month later (Jared B. Clarke *unpublished data*).[1,6] Therefore, older birds are able to claim cavities long before SY birds can. Table 1 shows that the proportion of SY birds decreased over the four years, although the relatively high number of unknown aged birds in 2019 to 2021 do not allow for a robust conclusion. ASY males and SY males are easy to distinguish based on plumages and territorial behaviours. The subtle differences between the female plumages proved to be more difficult to confirm. However, a clear pattern to support that more ASY birds were present in 2021, compared to 2019 and 2020, is seen in the timing of egg laying in Figure 2. Because SY females arrive at least one month behind ASY females, they will be delayed in pair bonding, nest building and then egg laying. Some ASY females who do not have an ASY mate may be delayed too, as they wait for an SY male to arrive. However, Figure 2 shows a clear distinction between known ASY females who began laying eggs earlier than known SY females in 2018, 2019 and 2021. In 2021, 33 of the 44 nests are tightly clustered around the known ASY females' egg laying time. This contrasts to the 2020 data, where the middle cluster of nests between Julian date 162 and 170 could be made up of many SY birds.

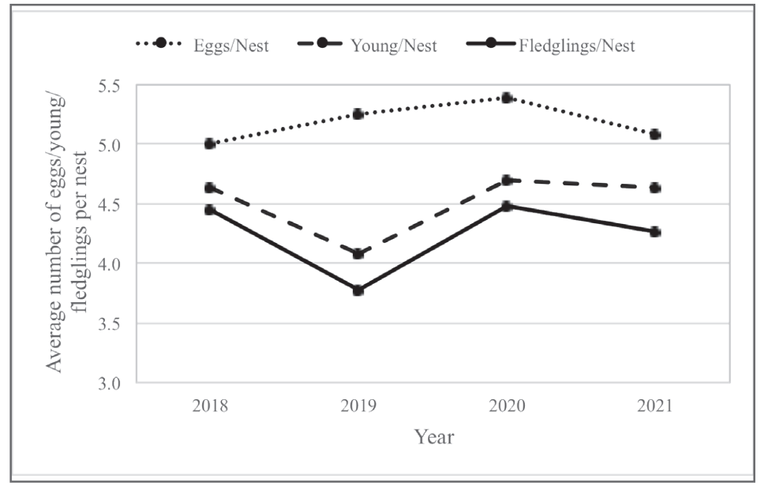

FIGURE 3: The mean number of Purple Martin eggs, young and fledglings at the Saw-whet colony, near Edenwold, SK, 2018 - 2021.

YEAR	EGGS	YOUNG	FLEDGED	% HATCHED	EGG TO FLEDGE %	HATCHLINGS TO FLEDGE %
2018	55	51	49	92.7%	89.1%	96.1%
2019	142	110	102	77.5%	71.8%	92.7%
2020	232	202	193	87.1%	83.2%	95.5%
2021	224	204	188	91.1%	83.9%	92.2%
Total	653	567	532			
Average				87.1%	82.0%	94.1%

TABLE 3. The total number of eggs, young and fledglings from the Saw-whet colony each year, near Edenwold, SK, 2018 - 2021. Additionally, the percentage of eggs that hatched, fledged, and the percentage of hatchlings that fledged.

The annual mean clutch sizes of between 5.0 and 5.4 eggs per clutch is consistent with other documented clutch sizes across the prairies in the northern limits of the martin's range. In Edmonton, AB, an average clutch size of 4.8 eggs per nest out of 55 nests over two years was reported for 1965 and 1966, while near Saskatoon, SK an average clutch size of 5.1 eggs per nest from 89 nests was reported in 2012.[2,12]

Two clutches of five eggs and one clutch of six eggs failed to hatch in 2019 (Figure 3), which reduced the hatch rate for that year. These clutch failures may have resulted from the loss of one of the adult martins within

Clutches with seven eggs are rare but occurred in 4% of the nests at the Saw-whet colony between 2018 and 2021. Photo taken on 8 June 2019.

It's hatch day in this cavity, with four chicks having already hatched, one egg pipping, and the other egg still not hatched. Notice the beautifully lined nest with green leaves, which is typical of Purple Martins in this area. Photo taken on 22 June 2019.

At only seven days old, these five nestlings' eyes are not even open yet! Photo taken on 2 July 2020.

These three nestlings, who are approximately 25 days old, may leave the nest in just a few more days from their T14 cavity. Photo taken on 8 July 2020.

the breeding pairs, possibly from an aerial predator such as a Cooper's Hawk (*Accipiter cooperii*) or Merlin (*Falco columbarius*). Cooper's Hawks were documented nesting within 50 m of the colony in 2018 and were regularly seen in the yard in 2019 and 2020. In one observation, at dusk on 20 May 2020, an adult Cooper's Hawk successfully grabbed a roosting adult martin off the T14. Any females depredated while incubating would result in a clutch failure and therefore reduce hatch rates, although above observed predation was prior to nest laying in 2020. The PMCA's 25-year hatch-rate average (1995-2019) for the Great Plains region is 4.05 per nest which is still lower than all four years at the Saw-whet colony, including 2019.[13]

It is surprising that the fledgling rate in 2021 was not lower, given the extreme drought conditions faced in southern Saskatchewan that summer.[14,15] This suggests that the adult martins were able to find enough prey to feed to the nestlings; however, the fledglings' body condition could have been poorer than in past years. Most of the small, shallow wetlands around the colony were dry in 2021, but the large lake 500 m north of the colony and a large wetland within 50 m of the colony still contained water and therefore suitable habitat for the martins' insect prey. If these two bodies of water were to dry up, it could be disastrous for the birds' productivity.

Overall, productivity at the Saw-whet colony has been high over the last four years, as it has grown to full capacity in just three years. As a result of the predator guards, elimination of non-native nest competitors and close monitoring of nests, many pressures are removed for breeding martins at this colony and the data and results presented here represent a highly managed Purple Martin colony.

Acknowledgements

In the summer of 2017, while visiting Colette and Richard Stushnoff's farm to band hummingbirds, I was in awe of their full Purple Martin colony with 32 pairs! Listening to the clamorous chatter of these beautiful swallows as they soared and dove through the air, I was immediately drawn into their spell. This was where my love of the Purple Martin really started and I am forever grateful to Colette and Richard for setting me on this path. Thank you for your mentorship in establishing a colony of these amazing birds.

I would also like to thank Joe Siegrist and the Purple Martin Conservation Association for their guidance and support in growing and managing the martin colony. As well, thanks to Lorne Scott for building and delivering the T14 which greatly added to the colony in 2020, even if it didn't arrive in perfect condition — I don't think the martins mind, Lorne :).

In addition, I'd like to thank Kristen Martin and Ryan Fisher for their valuable comments on earlier drafts of this manuscript.

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MAGPIES ROOST AT SASKATOON IN RECORD NUMBERS

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We report a Black-billed Magpie (*Pica hudsonia*) roost within the city of Saskatoon, SK at Sutherland Beach along the South Saskatchewan River.

The roost, which drew more than 800 magpies on winter nights in 2021-22, is believed to be the largest roost recorded for the species. The next highest count in the eBird database is 673 at a summer roost in the Ladd Marsh Wildlife Area, Oregon.[1] Near Saskatoon, 525 magpies were reported in the summer of 1962.[2] The highest winter counts in eBird occurred at Springfield Lake, Idaho (378) and Calgary, Alberta (373).[3,4] Magpies have roosted at several sites along the North Saskatchewan River near Edmonton in dense thickets of trees and scrub, the largest hosting 180 birds.[5]

The Sutherland Beach off-leash dog park in Saskatoon is bordered on the west and north by the river, on the east by the former University of Saskatchewan Beef Research Station and on the south by Circle Drive. The roost is on a north-facing slope, leading down to the river in a broad expanse of deciduous trees (Manitoba maple, green ash, and further down the slope, cottonwood) and tall shrubs (red-osier dogwood, Saskatoon, choke cherry, caragana, European buckthorn and willow) (Figure 1).[6] During the winter, the weather conditions are harsh. In the three coldest months — December, January and February of winter 2021-22 — the average daily mean and daily minimum temperatures were -16.7˚C and -22.3˚C. The extreme low temperature was -40.4˚C.

The park is an eBird hotspot and 44 checklists, some of them historical, have been posted since 1967. The only magpie roost previously reported was on 22 November 2020, when Paul Riome saw 38 within a 50 m circle after sunset.[7] For more than 10 years, users of the off-leash park — near sunrise and sunset — have noticed the arrival and departure of flocks of magpies in increasing numbers over that time, but otherwise the existence of this major roost has gone unreported.

Carol Blenkin, a Saskatoon Nature Society member and long-time regular at the park, recently alerted Ron Jensen who was counting in the area for the Saskatoon Christmas bird count. From the parking lot at the southeast corner of the park between 16:10 and 17:18 h (sunset was 17:03 h) on 27 December 2021, Ron counted an astonishing 768 magpies flying into the park. This was more than double the magpie count from all other sectors combined. From the same location on 27 January 2022, John Patterson counted 785 magpies between 16:40 and 18:15 h (sunset was 17:45 h), recording their arrival in five-minute intervals. The peak arrival rate was an average of 34 birds per minute between five and 10 minutes after sunset (Figure 2).

FIGURE 1: Location of Sutherland Beach roost site and main magpie approach path.

In contrast to the extended evening gathering, dispersal from the roost in the morning is more compressed. On 27 March 2022 (sunrise at 06:53 h), an overcast morning, the dispersal of 689 magpies began at 06:23 h and was complete by 06:50 h (Figure 2). The majority left in periodic waves, as many as 300 birds at a time. On clear days, the dispersal seems to be shifted a few minutes earlier relative to sunrise.

Magpies do not enter the roost from all directions; rather, most birds approach the park along a narrow corridor, flying north on the tree-lined west side of Preston Avenue and the nearby part of the adjacent field. Some fly straight north into the park, while others proceed west along trees on the south side of Circle Drive before turning north (Figure 1). There are small flights of birds from the residential areas across the river, west and north of the park and from down the river valley to the northeast, but these represent less than 10 per cent of the total and are not included in the counts from the parking lot. Part of the northward movement along Preston Avenue begins on the west side of the river, crosses near the CPR Bridge and follows a loose line of shrubs along a diagonal northeast trail across the cultivated field before turning north close to the road.

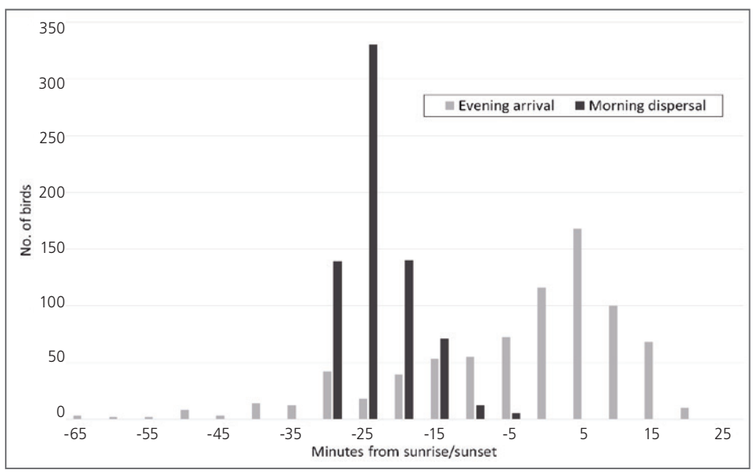

FIGURE 2: Count of magpies in five-minute intervals at Sutherland Beach, arriving near sunset (17:45 h) on 27 January 2022, and leaving near sunrise (06:53 h) on 27 March 2022.

During approach, many birds proceed individually and in small groups, taking short flights along their path. Short-duration gatherings of 10-15 birds in a tree or on the ground are not uncommon before they jump Circle Drive and fly over the park to the roost. Leaving the roost in the morning, some birds first gather in the tallest trees, but once airborne they depart south in flocks, generally reversing the morning approach, but with fewer stopovers.

The authors thank Dan Sawatzky for helping with the search of the eBird database, Anna Leighton and Louise Jones for confirming the tree and shrub species in the roost, and Phil Taylor for advice during preparation of the manuscript.

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POETRY

I'm a hitch hiker
My body teeming with life
I long for a ride

With many sharp hooks I wait
A free ride I need
In order to spread my seed

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TIGER BEETLES OF MANITOBA:
ECOLOGY, LIFE HISTORY AND MICROSCULPTURE

ROBERT E. WRIGLEY, LARRY DE MARCH AND ERWIN HUEBNER. 2022. 106 PP. $20.

(WRIGLEY – AUTHOR; DE MARCH – COLOUR PHOTOGRAPHY; HUEBNER – SCANNING ELECTRON MICROSCOPY)

Paper copies available from robertwrigley@mts.net.

PDF can be downloaded free from http://www.naturenorth.com/Tiger%20Beetle/Tiger_Beetles.html

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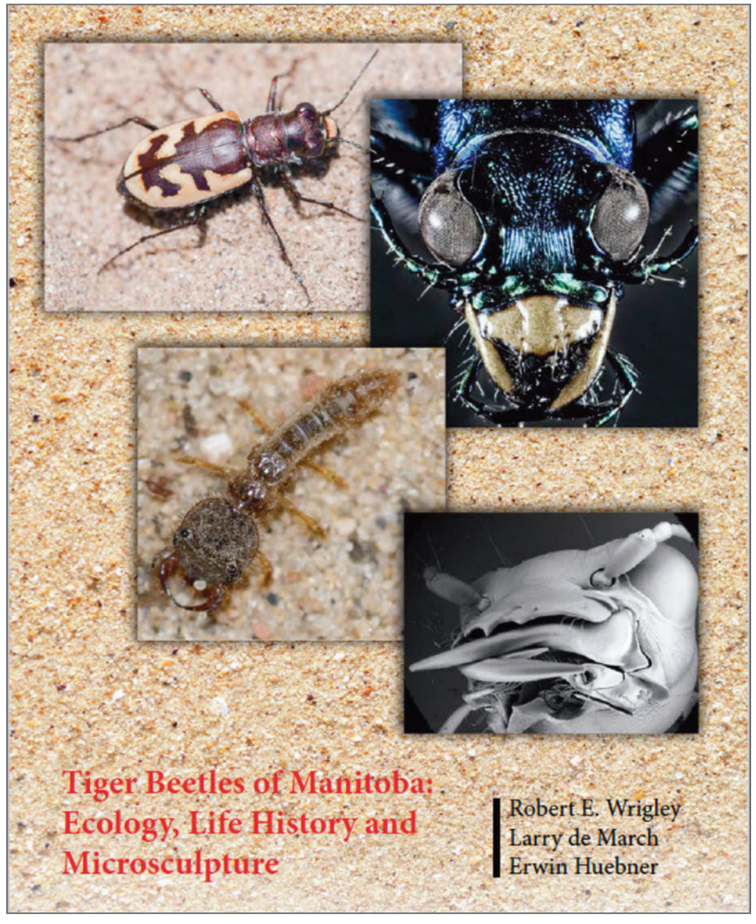
A few groups of insects have special appeal. Butterflies, dragonflies, and larger bees attract attention because of their size, bright colours, energetic behaviour and especially they are out and about in the types of weather we humans most like — warm, sunny, calm days. These are the often-termed charismatic insects, and to this list can be added tiger beetles. They may not be as well known to the general public, but to the initiated they offer the same appeal and with even more drama and elan.

Much has been written about tiger beetles. A global overview of the biology of tiger beetles is given by Pearson & Vogler (2001).[1] Each of the major biogeographic regions (all of which except Antarctica have tiger beetles) has an extensive literature. Within North America there are catalogues to the species (Freitag 1999)[2], popular identification guides to Nearctic species (Pearson et al. 2006)[3], a treatise on Canadian species (Wallis 1961)[4], many state and provincial treatments, publications on single species or species complexes and even studies on single populations. There is an international journal (Cicindela) devoted to the study of tiger beetles, as well as many tiger beetle studies reported in a variety of entomological and ecological journals. With this plethora of literature, one has to ask the question — is there a need for publication of another regional tiger beetle study?



The publication *Tiger Beetles of Manitoba* has the stated objectives of summarizing the natural history of tiger beetles, illustrating aspects of their morphology, and encouraging study of these insects. The book has three principal sections: an introduction that includes the natural history and study of tiger beetles; a species-by-species account of the Manitoba fauna; and a photographic atlas to the external anatomy of adult tiger beetles. Although none of these sections could be considered comprehensive, together they constitute a very good celebration of tiger beetles.

Tiger beetles as a group occur across a range of environments and habitats but generally the prairie species are insects of open spaces, with adults typically found running over the ground in places where there is open, exposed soil with patchy vegetation. Like us, they eschew jungley tangles and dense shade. They like sunshine and warmth and generally if you are in an environment you like, there is likely a tiger beetle species sharing it with you. Open habitats are usually erosional sites such as unstable slopes and banks, margins of streams and lakes, sand dunes, trails and roadsides and even salt flats. These sorts of habitats are not serene Edens, rather they are the result of catastrophes such as flood events, drought, wind scour, and even the grazing of cattle (for a small insect, the step of a cow or even the resulting imprint can be a disaster) or activities of humans. Wrigley amply describes these dystrophic environments and their importance to tiger beetles.

Like the common name suggests, adult tiger beetles are ferocious predators, feeding on almost everything they are capable of catching and handling, but in turn are fed on by almost any predator capable of catching them (not so easily done for tiger beetles are alert, fast and elusive, especially for human collectors). Where there are tiger beetles there are frequently ants. Evidence is given for tiger beetles feeding on ants, but interactions between the two groups probably extend beyond this and may be important in determining where tiger beetles occur. Although this level of ecosystem interaction is not pursued, interspecific competition between tiger beetle species and even between larval and adult stages, both of which are general predators, is considered.

Although it is the adult beetle stage most people are familiar with, the bizarre larvae are noteworthy. Each larva lives in vertical burrow which provides protection and a perch from which it can strike out to capture passing prey. A larva may spend months or even years within its earthen fortress and although protected from some dangers such as ants and weather, some parasitoid insects have ways of attacking and killing the larvae and various events such as flooding or extreme soil disturbance (including cattle hooves and human vehicles) can ruin the tunnels. Tiger beetle larvae are usually very specific as to the conditions under which they live, and it is likely the success of larvae that is the main factor determining the distribution and abundance of species.

Manitoba has 19 species (a few of which are represented by two subspecies or distinct colours morphs). The majority of these species are shared with the other Prairie Provinces with the exception of the Laurentian Tiger Beetle (*Cicindela denikei*) and the Coppery Tiger Beetle (*Ellipsoptera cuprascens* – probably extirpated) occurring only in Manitoba and the Badlands Tiger Beetle (*C. decemnotata*) (AB, SK) and the Western Tiger Beetle (*C. oregona*) (AB) lacking from Manitoba. Several subspecies of the 17 species held in common have more restricted distributions (Bousquet et al. 2013).[5] Thus, this book quite adequately covers the Canadian Prairie tiger beetle fauna. Each of these species occurs in characteristic habitats, and the focus of the second section of the book is on the recognition of the various species and characterization of the habitats in which they occur.

Tiger beetles are gorgeous insects with their bodies bearing varying patches of bright metallic copper, green and/or blue colours and on the backs of the elytra (the hardened front wings which form the covering of the mid- and hind body) are characteristic pale markings. These colour patterns as well as differences in size and body shape are generally sufficient to permit species identification. The book presents an excellent photograph of each species which alone makes this a useful field guide to most species within the fauna. As the species occur in very particular types of habitats, the detailed habitat description provided for each species is also a good identification guide.

The species photographs, mainly by Larry de March, are for the most part oblique dorsal views. They capture the dynamics of an alert, active beetle but are not always the best for identification or comparative purposes. Novices learning tiger beetle identification would probably appreciate a composite page of more pedestrian images of each species (or colour morph) in dorsal aspect so that comparisons could be made. If such

Hairy-necked Tiger Beetle. Photo credit: Larry de March.

a page could be made as a separate, say a card that could fit into the field jacket pocket, one could have a rapid field reference guide. Luckily, this has been done by another Manitoba naturalist, J.B. Wallis (1961) who provides coloured plates of the species and various colour forms of Canadian tiger beetles. This is valuable because of the variation in colour and pattern occurring in particular species, for example, the Cow Path Tiger Beetle (*C. purpurea*, pp. 62 – 64). The colours of the beetles in the photographs of this species do not resemble the dark specimens occurring in the short grass prairies of Alberta and Saskatchewan, but Wrigley explains that the black form of the western prairies occurs only rarely in Manitoba and thus is not illustrated.

A map would have been a useful addition to at least show the distribution of Manitoba ecozones and to which habitat types and distribution could be related.

The term "microsculpture" in the title immediately perked my interest. Having an interest in insect taxonomy it is a term I commonly encounter, with mixed feelings. Microsculpture is usually taken to mean fine detail on the surface of the insect cuticle, and it often provides good characters for species discrimination. It also means cleaning the objective lens of the microscope and adjusting the lighting on the specimen for viewing conditions are critical for clear resolution of such fine details. However, Erwin Huebner's scanning electron microscopy (SEM) images in the last section of the book provide a closeup tour of the external anatomy of an adult tiger beetle's body but is not really a study of microsculpture. The tour is wonderful and the detail and clarity of body parts, such as the male tarsal structures used in mating, are clearer than one will ever be able to see. Many people will find these images amazing, however once I heard microsculpture mentioned my interest was perked in hopes that a discussion of the physical and ecological implications of fine cuticular detail would be unveiled. Alas, maybe a subject for another paper.

Wrigley, being a resident and an ecologist working in prairie environments, is well aware of the difficulties these environments pose to the organisms that inhabit them. This is a theme running through the book whether it be related to extirpated populations or species, the sudden surge of species numbers in a given site, or changing distribution patterns. As with much of the biota, there is concern regarding the status of the various constituent species and under each species a section on its Conservation Status is provided. For most species, not much can be said, partly because of lack of observations but also "it is the nature of some tiger beetle species and populations to fluctuate in abundance over the years." (p. 81).

This book should go a long way to encourage people to notice tiger beetles and keep track of how they are doing and, in this way, contribute to our understanding of the biology and conservation of some varied and dynamic parts of the prairie environment.

To answer the beginning question: yes, there is a need for this publication. If you are a tiger beetle aficionado you will find the observations on the biology of some of the lesser known, regional species to be interesting, as well as the information on how more common species are doing near their range limits. If you are more of a general naturalist, the appreciation gained about these vibrant insects will enrich your outings. If you are of a literary bent, you will enjoy some original poetry and reference to literary works. The SEM images will amaze you with the intricacies of the structure. And all will enjoy the carefully edited and organized manuscript, especially at the price — free for the downloading (see information in title of this review).

P.S. Wrigley frequently mentions collecting and collections of tiger beetles. Some current opinion opposes the collecting of natural history specimens but in various ways Wrigley demonstrates the importance of such collections in assessing the ecology and status of the various species. Collected specimens provide a permanent objective record of the what, where and when of species occurrences. However, collecting must be done properly with specimens prepared to recommended standards (e.g., Martin 1977)[6] and be fully labelled as to locality and date of collection. Such specimens form an invaluable resource for comparison and identification of specimens, study of morphology, and when their need is through, they can be deposited in a public museum where they contribute to the permanent record of the species. Supplies for insect collection can be found at Indigo Instruments, Waterloo, ON (https://www.indigoinstruments.com).

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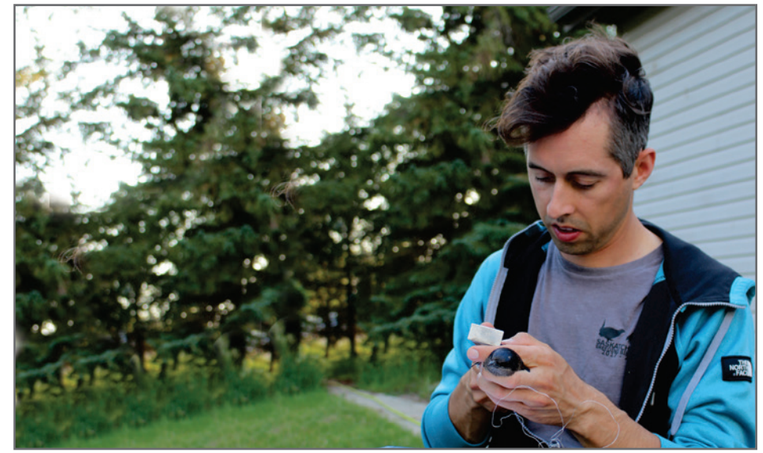
THE NATURE NOTEBOOK:
WHERE ARE THE BEES?

Jared Clarke



I don't know about you, but I love finding the first bumble bee queens on the early blossoms in the spring. When the apple trees are in bloom on our farm, they are usually one intimidating cacophony of hums and buzzes! It is something I've heard over the past decade and I love it.

But this spring was different and I am worried. As I stood surveying my apple trees, rather than hearing the typical overwhelming sound, there was a deafening silence. The weather was warm, the wind was low, and the blossoms stayed on the trees for at least a few days. And yet barely any bumble bees were buzzing about! It was shocking. I tried to reason out the reduction in bees — "maybe it's too late in the evening and they have gone to sleep already." So, the next morning I checked before I went to work and still it was amazingly quiet.

Maybe I was just missing them. So, I waited to see if one of my new apple trees with 100+ blossoms would start to produce apples. Sadly, there is just one apple! Clearly the blossoms didn't get pollinated! The crab apple tree, which had thousands of blossoms, didn't fair a whole lot better but did produce some apples.

I posted about the lack of bumble bees on Twitter and a dozen people responded with similar observations — bumble bee numbers seem down this spring! I guess it wasn't just me.

When looking back at my notes from last year, the apple trees blossomed a full 10 days later this spring than in 2021. Could that be the reason for the lack of bees this spring — there wasn't enough food when they emerged? Or did the incredibly harsh winter freeze and kill the overwintering queens? Did the crushing drought over the last two years, which seems to have been broken this spring around our place, slowly but surely drive down the bee population? Are these severe weather events, likely exacerbated by climate change, altogether just too much for animals like bumble bees? Are the pesticides that are sprayed on the crops all around us killing the bees?

Honestly though, this is bigger than just bumble bees. Where are all the insects in general? I mean, there are an abundance of Wood Ticks and mosquitoes (at least out at our farm!), but I remember driving with my parents as a child and our vehicle's windshield would get plastered with bugs during a night time drive, especially when driving past wetlands. You would have to stop at a gas station just to wash the bugs off the windshield. These days, you barely need to use windshield washer fluid the entire summer, it seems.

To me, though, it makes sense that there are fewer bugs around, because which group of birds has declined the most in North America in the last 50 years? Aerial insectivores. Birds that eat flying insects.

We all know how important pollinators are to our food production, as I have poignantly witnessed this spring. We also know how important bugs are to the entire ecosystem. We can not keep pretending this is all okay. This summer, I challenge you to make your yard more pollinator-friendly. Plant more native plants. Leave leaf litter in your yard for insects to use. Stop using pesticides. Get rid of that monoculture Kentucky blue grass lawn. Push further out into your sphere of influence. As with climate change, every action matters.

Jared Clarke is a grade 6/7 teacher and biologist who lives with his family on a small farm near Edenwold, SK. He has been bird watching since the age of five after a Spotted Towhee visited his yard. Follow him on Twitter @jaredthebirdguy.

NEW RECORDS AND CHANGES IN THE STATUS OF SASKATCHEWAN BIRDS TO 31 DECEMBER 2021

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Birds of Saskatchewan (BofSk) describes the records and status of the 437 species of wild birds reported in the province to 31 December 2016.[1] And, in an addendum "As we go to press" (p. 671), significant changes to the status and names of several species were updated to May 2018.

Without an official bird records committee as a focal point to accumulate and review important new bird information for the province, Saskatchewan is left with a variety of sources where records of various provenance appear. Some are found in formal sites like eBird but others may languish in smaller, less formal, even personal e-sites. Following and sifting through this ever-growing list of scattered records is time consuming. Important ones can be difficult to find or may be missed entirely. Perhaps the best and now default review system is the Cornell Laboratory of Ornithology's Saskatchewan eBird site, ably stewarded by Dan Sawatzky with the assistance of other reviewers.

The information presented here, in chronological order, summarizes important bird records to 31 December 2021. During this period: (1) six *new* species were *confirmed* for Saskatchewan: Tundra Bean-Goose, Crested Caracara, Fieldfare, Phainopepla, Cordilleran Flycatcher (in the "Western Flycatcher" complex), and Henslow's Sparrow; (2) five hypothetical species had their status upgraded to *confirmed* using photographs: Tricolored Heron, Glossy Ibis, Kentucky Warbler, Great-tailed Grackle, and Lesser Goldfinch; (3) one additional "species" was added to the *hypothetical* list: Tropical Kingbird/Couch's Kingbird; (4) new information is presented for another 15 species considered to occur as *accidentals* in the province: Garganey, Ruff, Least Bittern, Yellow-crowned Night-Heron, Black-legged Kittiwake, White-winged Dove, Northern Pygmy-Owl, Anna's Hummingbird, Calliope Hummingbird, Blue-gray Gnatcatcher, Hooded Warbler, Yellow-throated Warbler, Green-tailed Towhee, Blue Grosbeak, and Painted Bunting; plus one of unknown provenance, Eurasian Tree Sparrow; (5) notable observations are mentioned for American Woodcock and Franklin's Gull; (6) common names changed by the American Ornithological Society (AOS formerly the AOU) are given for three species[2]: Short-billed Gull, Canada Jay, and Thick-billed Longspur; and (7) COSEWIC status changes 2019 to 2021 for birds occurring in Saskatchewan are listed.

Each species is documented using eBird checklist ID numbers when possible. Photographs accompany only those species that are either new additions to Saskatchewan's avifauna or have experienced a change in their status (above points 1, 2, and 3). Accidental species, with no change in status, have selected photo catalogue numbers from Cornell's Macaulay Library (ML) collection of photos, and audio recordings, for reference. In the case of multiple postings for a single record, I have attempted to choose those made by the person who discovered the bird, to acknowledge their contribution.

The Saskatchewan Breeding Bird Atlas will map the distribution and relative abundance of breeding birds in the province over the years 2017 to 2021. Those records are outside the scope of this paper and are not included.

Also beyond the scope of this article are birds that have escaped or been intentionally released from captivity. This includes a myriad of exotic species from small cage birds sporting bright plumage and fine singing voices (budgerigars, canaries, finches) to larger birds with attractive plumages (parrots, waterfowl, doves, pheasants, quail). In my own urban yard, I have seen several, including budgies, cockatiel, canaries, a "Ringed Turtle-Dove" (the domestic form of African Collared-Dove), and astonishingly a Golden Pheasant. The Eurasian Tree Sparrows seen in Saskatchewan may be such escapees but have more likely arrived on their own or been otherwise assisted.

The same definitions used in *BofSk* to describe species status apply: confirmed species have photographic, audio-recording, or specimen documentation; hypothetical species lack such documentation even if seen by more than one observer; accidental species have 10 or fewer records in the province. Once a species has been recorded 11 or more times it is a straggler and is not discussed, with one exception, American Woodcock. Only records supported by sufficient documentation are presented here, which unfortunately possibly omits valid sight records made by careful and competent observers.

The Records

2014

Henslow's Sparrow (*Centronyx henslowii*): on 8 July 2014 Brandon Holden and Marie-Christine Belair encountered a single individual, 55 km east of Estevan (approximately 10 km south of Oxbow), on ungrazed grassland near the Souris River. Holden "heard a short insect like song" of this sparrow at 14:00 hr, then a few minutes later he was "reasonably confident [he heard] a second clear yet short song of the Henslow's Sparrow". Later that day, toward dusk, Holden made recordings of the sparrow singing, when the bird responded vigorously to digital recordings of Henslow's Sparrow's songs that he played (B. Holden, no date: unpublished manuscript submitted to *Blue Jay*). **Status:** the first record for Saskatchewan. Accidental. **Remarks:** the two sonograms provided by Holden are comparable to songs of Henslow's Sparrow, ruling out confusion with the other secretive grassland sparrows — Grasshopper Sparrows being particularly abundant at the site. He describes the habitat: "a multi-year fallow area" of various heights of "mixed-grass prairie [grasses] that appeared to have a seep or spring widely pooling (or draining) below the vegetation". Henslow's Sparrows show a preference for damp, weedy, heavily thatched grassland and idle field habitats for breeding.[3] This is the first confirmed record for this Endangered Species for western Canada; there is a believable sight record of two birds in Manitoba in October 1946.[4] The species is rare across its entire range with declines most evident along the northern periphery: it once bred locally across southern Ontario and occasionally into southern Quebec. In the USA, it occurs in Iowa and to the southeast, with only sporadic reports northwest to J. Clark Salyer National Wildlife Refuge, North Dakota.

2017

Northern Pygmy-Owl (*Glaucidium gnoma*): on 28 January 2017 a single bird was relocated northeast of Cold Lake along highway #919, a short distance south of the Martineau River. It was seen and photographed by many observers (eBird Nick Saunders S34032676, ML46916541; Ryan Dudragne S63771193). This was near the location Stan and Jan Shadick found a pygmy-owl on 27 December 2016.[5] Very likely the same male was seen south of the Martineau River by Dan Zazelenchuk on 14 February, at 17:30 hr, calling constantly from the tallest conifer (eBird S34419833). Daniel Giesbrecht on 17 February found one calling bird at 16:30 hr (eBird S35037075); (S Shadick suggested the reported location, even further south near the Cold River, may have been an artifact of eBird where only very general locations are posted for "hot spots"). On 10 April, Marten Stoffel, S Shadick and Brent Terry watched for more than two hours as one adult roosted quietly in an aspen tree, raising suspicions that a nest might be nearby. This was in hilly, wooded terrain about 2 km north of where the pygmy-owl was found in 2016 (eBird S35889488). This bird could not be relocated on 10 May (fide S Shadick). **Status:** should all or some of the four records in 2017 be considered part of the 2016 record? Breeding is possible, but has yet to be confirmed. Accidental. **Remarks:** this enigmatic species is at the eastern edge of its range, and is most likely to be found near the Alberta border. It possibly varies in abundance and local distribution from year to year as food availability changes. Marten Stoffel and others have searched for pygmy-owls in many parts of Saskatchewan, but only in the region near Cold Lake — as far east as Green Lake and north toward Beauval — have chickadees, jays and other small birds responded with agitation to pygmy-owl playback calls. This indicates their recognition of the pygmy-owl as a threat (fide M Stoffel). All sightings in this area in 2017 are of single birds with their locations clustered south of the Martineau River (fide S Shadick), suggesting they involve one individual. Males call to advertise and may defend a territory all year around, with territories reported to be up to 342 ha in size.[6]

American Woodcock (*Scolopax minor*): on 20 April 2017 a single calling/advertising male was located along Eagle Creek, west of Saskatoon by Guy Wapple and Nick Saunders; audio recordings were made (eBird Wapple S36159211; Saunders ML55203451). This bird was seen and photographed by many observers on 21 April. **Remarks:** a photo of this displaying male taken 21 April appears in *BofSk*, p. 279 (Saunders, eBird S36175824, ML55361071). This 13th provincial record is not otherwise mentioned in *BofSk*, but is of interest because it is much further west than others in the province; most records are nearer the Manitoba border. Saskatchewan records have occurred from spring to fall, 4 April to 3 September.

Eurasian Tree Sparrow (*Passer montanus*): one adult from 1 to 27 May 2017 photographed by Ken Feltin (Figure 1) at a feeder in Emerald Park, east of Regina (eBird S36454424, ML56420171). Seen by Brett Quiring on 22 May. **Status:** the second provincial record, both from the Regina area. Provenance unknown, as with the first record. **Remarks:** Feltin's photos show it was not a hybrid. It was accompanied occasionally by a male House Sparrow. The only self-sustaining population of the introduced Eurasian Tree Sparrow in North America is around St Louis, Missouri where it is an uncommon and local resident in riparian areas along major rivers.[7] The first provincial record was a bird that lingered from 1 May through October 2015.

FIGURE 1: Adult Eurasian Tree Sparrow photographed in May 2017 at a feeder in Emerald Park, east of Regina. Photo credit: Ken Feltin.

Tricolored Heron (*Egretta tricolor*): on 20 May 2017 a single individual was recorded on video at the Quill Lakes while LeeAnn Latremouille was accompanying Pierre Verville, host of an episode for a Quebec nature program on birds, during filming.[8] Despite search efforts, it was not relocated until 17 July at the southeast corner of Little Quill Lake by Vicki and Warren St. Germaine. Then other observers saw it between Big and Little Quill lakes along highway #640, with the last confirmed sighting on 28 July by Dan Sawatzky (eBird S38372442). **Status:** the second record for the province. The film and a photograph by Ryan Dudragne helped move it from hypothetical to confirmed. Accidental. **Remarks:** long staying rare herons and egrets like this bird raise the possibility of them breeding at multispecies colonies at the Quills and elsewhere in the province. A photograph of this bird flying, taken near the SE corner of Little Quill Lake on 23 July by Annie McLeod (Figure 2), appears in *BofSk* (p. 671); (eBird S38292421, ML64145151&5161).

Painted Bunting (*Passerina ciris*): two records. On 20 May 2017 Cheryl Fedirko photographed one brightly coloured male that visited a feeder in Reward, southwest of Unity (eBird S37036950, ML58828401). Then, on 22 May 2017, Justin Smart photographed a single male, perhaps with slightly duller red underparts, at a feeder in Wakaw, 230 km to the east (eBird S37083613, ML59046421). **Status:** the seventh and eighth provincial records. Accidental. **Remarks:** both of these birds fit the pattern of five (of the six) previous sightings; all occurring in the spring, late April and May, and all colourful males. They appear to be examples of spring migrants overshooting their normal breeding range in the central Great Plains of the USA.

Ruff (*Calidris pugnax*): from 4 to 14 August 2017 one female, a reeve, was discovered and photographed by Ilya Povalyaev 5 km east of Elbow, along grid road #749 (eBird S38481247, ML 65407841); seen by many other observers. **Status:** the seventh record. Accidental. **Remarks:** this bird provided excellent viewing opportunities allowing observers to compare the Ruff's field marks and behaviour with nearby shorebirds. It apparently moved freely among several wetlands in the area. Raptors including Northern Harrier, Merlin, and Peregrine Falcon were seen disturbing the shorebirds on these wetlands. In this confusion, the Ruff was easily overlooked and care was needed to find it among the other waders. Previous records are also during spring and fall shorebird migrations.

FIGURE 2: Tricolored Heron photographed near the southeast corner of Little Quill Lake on 23 July 2017. Photo credit: Annie McLeod.

Anna's Hummingbird (*Calypte anna*): over 36 days, from 1 October to 5 November 2017, a single adult female visited feeders in Don Weidl's and a neighbour's yard in Broadview. He photographed the bird (eBird S39511899, ML70581281, S39577223, ML70964511&4522, S40248153, ML73811981). It was seen by many observers (eBird Annie McLeod, S39592890, ML71078291) (Figure 3). Sheri L. Williamson confirmed the bird's identity (fide Guy Wapple). **Status:** the third provincial record. Accidental. **Remarks:** this bird was remarkable not only for its lengthy stay, but also for its lateness in the season. It survived cold temperatures (down to -9°C on 14 October) and accumulating snow (12 cm fell on 4 November) before it disappeared when the temperature went to -14°C on 6 November. Anna's Hummingbirds have been expanding their range north from southern California since the 1960s and now occur along the Pacific slope and rarely the interior of British Columbia. Remarkably, it is the only hummingbird that overwinters in BC.[9,10] There have been two other vagrant Anna's recorded in SK: the first was seen from 21 June to 8 August 1971 and the second, a female, from 20 September to 6 October 1997 (*BofSk*). Similarly, all three showed a reluctance to move onward, after finding an available food source at hummingbird feeders.

FIGURE 3: Over 36 days, from 1 October to 5 November 2017, a single adult female visited feeders in Don Weidl's and a neighbour's yard in Broadview. Photo credit: Annie McLeod.

Black-legged Kittiwake (*Rissa tridactyla*): on 25 November 2017 a single juvenile plumaged bird was found and photographed by Nick Saunders and Ryan Dudragne at the spillway below the Gardiner Dam, on the South Saskatchewan River (eBird S40731576, ML76284361). **Status:** the sixth record for the province. Accidental, wandering south from the arctic coast nesting grounds. **Remarks:** a photo by N Saunders of this bird appears in *BofSk* (p. 289), but details are not mentioned in the addendum. This record falls within the late fall, early winter pattern of the previous five records: 11 October to 7 December.

2018

White-winged Dove (*Zenaida asiatica*): a single bird was seen on 2 January 2018 and photographed by Marilyn Lamont, in Lafleche, south of Gravelbourg, where it remained for several days (posted on Sask Birders Facebook). Dan Sawatzky, Bob Luterbach, Annie McLeod, and Joel Cherry looked for it on 2 and 6 January without success. **Status:** the fifth record for Saskatchewan. Accidental. **Remarks:** this is the only winter record, with all other previous and subsequent records occurring between 24 May and 7 August.

Fieldfare (*Turdus pilaris*): from 30 March to 7 April 2018 a single bird seen and photographed by Brenda and Harvey Schmidt (Figure 4) in their yard in Creighton (eBird S44310723, ML93198591). Seen by several lucky observers, but missed by many others (names withheld to protect those disappointed birders). **Status:** the first record for the province, mentioned in *BofSk* (p. 671), but with no accompanying photograph. Accidental, vagrant from Eurasia. **Remarks:** this bird was apparently seen several kilometres northeast visiting another yard in Flin Flon, MB on an undetermined number of days, before its appearance in Creighton. It fed on small fruit in the Schmidt's yard. Howell et al. state that "Fieldfares are notably nomadic and mobile thrushes of northern regions", often found in association with American Robins on this continent.[11] Remarkably, the Schmidt's yard hosted another, exceptionally rare, Eurasian vagrant from December 2009 to February 2010: a Rustic Bunting (*BofSk*, p. 605).

FIGURE 4: From 30 March to 7 April 2018 a Fieldfare was seen and photographed by Brenda and Harvey Schmidt in their yard in Creighton. Photo credit: Brenda Schmidt.

White-winged Dove (*Zenaida asiatica*): a single bird was seen on one day, 24 May 2018, by Steve Suik in Wadena. Photographs confirm the record (posted on Sask Birders Facebook). **Status:** the sixth record. Accidental. **Remarks:** Dan Sawatzky's attempt to relocate the bird was unsuccessful.

Least Bittern (*Ixobrychus exilis*): on 17 or 18 June 2018 Trevor Herriot heard an unfamiliar sound coming from the direction of Beaulieau's marsh, "half a mile away" on the edge of Cherry Lake, 14.5 km south of Indian Head. He initially "thought it was something mechanical his neighbour was doing in his shop". Then, Rob Wright heard the same unidentified sound on 22 June as he canoed through the wetland. On 24 June, around 17:00 h, Herriot and Brian Sterenberg heard the unknown notes coming from the marsh while doing bird surveys. Later that day, Herriot recorded videos with the sounds of the unknown bird. From these, Jared Clarke and LeeAnn Latremouille confirmed the mystery caller was a Least Bittern. Last heard 25 June at 19:40 h (eBird S46800704; fide T Herriot). Subsequent efforts to find the bird were unsuccessful. **Status:** fourth record for Saskatchewan; the third was a bird collected some years before 1927 at Moon Lake, south of Saskatoon. Accidental. **Remarks:** this shy marsh dweller is scarcely bigger than a grackle. It frequents tall marsh vegetation showing a preference for stands of Giant Reed Grass (*Phragmites*). Manitoba is at the edge of its known breeding range where it is rare and locally distributed. Least Bitterns are a Threatened Species protected under Canada's Species at Risk legislation.

Blue-gray Gnatcatcher (*Polioptila carulea*): on 13 to 14 September 2018 one bird was found by Jared Clarke at his property near Edenwold, northeast of Regina, where it was photographed (Figure 5) (eBird S48492431, ML114798041). Seen by others. **Status:** the fourth record for the province. Accidental. **Remarks:** a confiding bird that allowed close observation. This record fits a pattern in all three prairie provinces of some individual birds dispersing northward in fall, after the nesting season. The nearest breeding areas are southern Montana and central Colorado.

Eurasian Tree Sparrow (*Passer montanus*): one adult from 14 to 20 September 2018 seen in Avonlea by Al Smith and Randi Edmonds (eBird S48505662). **Status:** the third record for the province. Status undetermined, perhaps Accidental. **Remarks:** questions about provenance for this species still arise for this species in Saskatchewan.

FIGURE 5: On 13 to 14 September 2018 a Blue-gray Gnatcatcher was found by Jared Clarke at his property near Edenwold, northeast of Regina. Photo credit: Jared Clarke.

Blue Grosbeak (*Passerina caerulea*): from 30 September to 2 October 2018 a single bird, first winter or female plumage, was seen by Val Thomas near McTaggart, northwest of Weyburn. Seen and photographed by other observers (eBird Dan Sawatzky S48844421, ML116877321; Neil MacLeod, S48855886 ML116974561). **Status:** the seventh record for the province. Accidental. **Remarks:** The date is unusually late, with five of the other six records occurring from mid-May to early June (*BofSk*, p. 615). Straying north from its nearest breeding range in South and North Dakota.

2019

Ruff (*Calidris pugnax*): on 24 May 2019 one female seen and photographed on a slough southeast of the Last Mountain Lake NWA (51d-21m-27s N; 105d-04m-20s W), 14.5 km southeast of Arlington Beach, by Marla Anderson (eBird S56701029). ID confirmed by Ryan Dudragne and others, using the photos. **Status:** the eighth record for the province. Accidental, straying from Eurasia. **Remarks:** Anderson noted the reeve's "breast had black large spots kind of blotchy looking" and the size was "slightly larger and heavier than nearby stilt sandpiper". The small wetland where this bird was found was one of many dotting the landscape, but was attracting several species of arctic nesting shorebirds. All records have been during peak shorebird migration periods for a total of five in May, and three in August.

White-winged Dove (*Zenaida asiatica*): a single bird was seen on 8 to 10 July 2019 by Val Thomas at her farmyard near McTaggart where it was photographed at a bird bath by Dan Sawatzky, Bob Luterbach (eBird S58186606) and Laurie Koepke (eBird S58154382, ML168078981). **Status:** the seventh record for the province. Accidental. **Remarks:** this species is expanding its range north from the southern Great Plains of the USA. Once again, Val Thomas' careful observations have been rewarded with sightings of another rare species visiting her yard.

Great-tailed Grackle (*Quiscalus mexicanus*): one juvenile or female was photographed on 11 November 2019 by Wayne Busch (Figure 6) at his bird feeder in Nokomis (eBird S61446841, ML187795571). Subsequent search efforts by many observers were unsuccessful. **Status:** second record. Moved from hypothetical to confirmed. Accidental. **Remarks:** the first record of several birds, was 14 May 1979 (*BofSk*, p. 635). This species has been expanding its range rapidly north in recent years and should be looked for in mixed flocks of blackbirds and wetlands where it might nest with other blackbirds.

FIGURE 6: A juvenile or female Great-tailed Grackle was photographed on 11 November 2019 by Wayne Busch in Nokomis. Photo credit: Wayne Busch.

Tundra Bean-Goose (*Anser serrirostris*): from 7 to 9 December 2019 one was discovered and photographed by Annie McLeod and Joel Cherry at Wascana Lake, Regina (Figure 7) (eBird S62127466, ML192050691). ID was determined using salient features evident in the photos to separate it from the closely related and larger Taiga Bean-Goose (*Anser fabalis*): especially the size, shape and colour of the bird's bill and head (fide Bob Luterbach); plus, bill measurements (used by Shadick to generate ratios for comparison) described by Kurechi.[12] Seen by many observers. **Status:** the first record for the province. Accidental, straying rarely from northeastern Asia to North America and only exceptionally outside of Alaska.[11] **Remarks:** on 9 December, late morning, the bean-goose departed with a flock of Canada Geese flying SE and was not seen again in 2019 despite search efforts. These central arctic nesting Lesser Canada Geese (likely subspecies *Branta canadensis parvipes*) were similar in size to the bean-goose.

2020

Tundra Bean-Goose (*Anser serrirostris*): from 25 February to 27 March 2020 one individual — believed to be the same goose that was seen in 2019 — returned to Wascana Park, Regina where it was observed and photographed by many people. Last seen by Dan Sawatzky (eBird S66311630) on 27 March. **Status:** the second appearance after departing 76 days earlier in December 2019; together, they are considered one record. Accidental. **Remarks:** after leaving Regina, this bean-goose may have overwintered in one of the northern states along rivers, like the Missouri River in North Dakota, where large numbers of Canada Geese concentrate on open water. Howell et al state that vagrant waterfowl having arrived in North America "may attach themselves to other, usually closely related species and travel with them on the next migratory movement"; and that many waterfowl "…seem likely to have arrived in North America with congeners…"[11] Coincidentally, a single Tundra Bean-Goose was seen briefly during the previous winter in Lethbridge, Alberta (9 to 12 January 2019). Could this have been the same bird that appeared in Regina, one year later, thus spending two winters in North America? By examining photos of the two bean-geese, it is evident the orange, subterminal ring on the bill of each is a different pattern, indicating they are two separate individuals.

The AOU split the Bean-Goose in 2007 into two species, which had formerly been recognized as two subspecies. A recent genetic study from Europe found evidence that these two taxa diverged some 2.5 million years ago, but also found evidence of a more recent secondary contact about 60,000 years ago, resulting in "a largely undifferentiated genomic landscape" in their chromosomes.[13] These researchers argue that Tundra and Taiga bean-geese should be treated as subspecies. For now, they are treated as two species. Bean-Geese could be confused with the closely related Pink-footed Goose (*Anser brachyrhynchus*) and Greylag Goose (*Anser anser*) of Europe and Asia, both of which are rare vagrants to North America, primarily along the Atlantic coast.

FIGURE 7: A Tundra Bean-Goose was discovered on 7 December 2019 at Wascana Lake, Regina, by Annie McLeod and Joel Cherry. Photo credit: Annie McLeod.

FIGURE 8: A male Lesser Goldfinch was photographed on 30 April 2020 by Robert Holtkamp at his home in Yorkton. Photo credit: Robert Holtkamp.

Lesser Goldfinch (*Spinus psaltria*): on 30 April 2020 a male was photographed by Robert Holtkamp at his home in Yorkton (Figure 8) (eBird S68418802, ML230766001). For a thorough account of this record, and more photographs, see his excellent article in the *Blue Jay*.[14] No other observers. **Status:** this is likely the third record for the province moving it from hypothetical to confirmed. Accidental. **Remarks:** both previous Saskatchewan records were in mid-August. Somewhat surprisingly, this bird was the second provincial record of the "eastern form" that breeds in southern Texas; males are identified by their distinctive black head, nape, and back. The third record was a green backed "western form", which has a range considerably closer to Saskatchewan. The western birds have been extending their range north with records in Alberta and British Columbia (where it bred in 2019). The species seems prone to wander, and should be looked for at feeders or accompanying American Goldfinches.

Green-tailed Towhee (*Pipilo chlorurus*): on the morning of 17 May 2020 Ryan Sparks photographed a single bird at his farmstead near Zealandia, northeast of Rosetown (eBird S96851864, ML383623381). There were no other observers, and it was not seen again. **Status:** the sixth record. Accidental. **Remarks:** Sparks recalls seeing this bird "following a full day of unusually strong south wind (70 km+)" (fide R Sparks). This towhee is uncommon 500 km to the south in central Montana, its closest regular breeding area in the Great Plains. There it frequents shrubby habitats including those dominated by sagebrush. Will this short distance migrant extend its range north into Saskatchewan as our climate continues to change?

Hooded Warbler (*Setophaga citrina*): on 23 and 24 May 2020 one singing male found by Ron Lawson in Glencairn, Glen Elm, Regina (eBird S69539504, ML237976321); photographed by Annie McLeod, Dan Sawatzky and Chris Harris. **Status:** the seventh record. Accidental (note "Accidental" status should replace "Straggler" status given in *BofSk*). **Remarks:** previous records are from spring, summer, and fall. Straying from the breeding range in eastern USA and in southern Ontario where it is rare and local in distribution. It has been slowly expanding north in recent decades.

Painted Bunting (*Passerina ciris*): in late May 2020, one male in breeding plumage was discovered and photographed by Shelley and Ron Taylor, of Moosomin, at a feeder on their acreage (posted on Facebook, 8 June 2020), (fide Don Weidl, and Alvin Nixon). **Status:** the ninth record for the province. Accidental. **Remarks:** comments by S Taylor accompanying her Facebook post with four photos are "this little beauty showed up a couple of weeks ago. He only stayed a couple of days".

Cordilleran Flycatcher (*Empidonax occidentalis*) part of the "Western Flycatcher complex": on 4 and 5 July 2020 a breeding pair was found by James Telford along Battle Creek, Cypress Hills, West Block (eBird S71165524). Last seen on 23 July by Michelle Schreder (eBird S71766203). **Status:** this is the first record and confirmed breeding for this flycatcher in Saskatchewan. It is well supported by observations of territorial behaviour, recordings of vocalizations, and adults feeding young in a nest. The single nest was located near the top of the creek bank, below some overhanging vegetation (Stan Shadick, eBird S71931881). **Remarks:** Telford identified the birds as Cordilleran Flycatchers with caution after careful observations, submitting photographs and a sonogram of one "position call" as supporting evidence for his discovery (eBird S71165524). At the same location on 10 July, Annie McLeod, Joel Cherry, Bob Luterbach, Chris Harris and Dan Sawatzky photographed (Figure 9) and recorded two adults feeding young at the nest; they also identified these birds as Cordilleran Flycatchers. Also on 10 July, Stan Shadick, Robert Johanson, and Melody Nagel-Hisey observed and photographed these birds; and on 11 July recorded dawn songs (given between 04:52 h and 05:11 h) and other vocalizations (eBird S71957000). These included position notes made by two adults (starting 05:24 h) that were seen visiting the nest to feed the young.

A possible third adult (sex unknown) was believed to be present in the same location and seen

FIGURE 9: A breeding pair of Cordilleran Flycatchers was found on 4 and 5 July 2020 by James Telford along Battle Creek, Cypress Hills, West Block. Photo credit: Annie McLeod.

passing food to an adult at the nest; then it was seen removing a fecal sac from the nest site. The sonograms resemble those made by Cordilleran Flycatchers: male songs, and call notes given by males and females (ibid Shadick). McCallum discusses some of the variation in Western Flycatcher vocalizations but has not commented on the recordings from the Cypress Hills.[15]

The identity of these flycatchers in the Cypress Hills remains somewhat open, in large part because the AOS has not clarified its position on the taxonomic status of the "Western Flycatcher complex" by responding to the Canadian research by Rush et al and other more recent studies, which found genetic mixing of the two taxa over a wide area across their northern range, north and south of the Canadian border.[16,9]

The "Western Flycatcher" was split into two separate species in 1989 by the AOU: Cordilleran Flycatcher (*Empidonax occidentalis*) and Pacific-slope Flycatcher (*E. difficilis*). Southern British Columbia is at the northern edge of the ranges of these two taxa and the BC interior and southwestern Alberta is an area of overlap between pure coastal Pacific-slope and pure interior Cordilleran populations. Reports of phenotypically intermediate birds across this region, including the discovery that "many flycatchers in parts of this region have vocal features that are intermediate between Pacific-slope and Cordilleran types", led observers to suspect interbreeding was occurring and to question their taxonomic status.16 In their elegant study, they compared multiple genetic evidence of "Western Flycatchers" from southern BC and SW Alberta with pure Pacific-slope and pure Cordilleran samples from further south in the USA. All Canadian birds sampled had various mixtures of Pacific x Cordilleran genetic markers, indicating they were from a broad zone of contact experiencing hybridization between the two taxa. The results were clinal with higher frequencies of Pacific-slope markers to the west being replaced by higher frequencies of Cordilleran markers to the east. The most easterly Canadian samples were from Kananaskis, Alberta, 350 km west of the Cypress Hills. "A small number of the Canadian samples bordered the Cordilleran [genetic sample] cluster, but none fell within it" (ibid). More recent studies have found genetic mixing of the two flycatcher taxa in northern Colorado and east to South Dakota; they also state "many ornithologists believe further fieldwork may prove [the] 'Western' flycatcher split untenable".[9]

Perhaps the challenge of identifying individuals from this cryptic species complex can be accomplished using a non-invasive technique, such as sampling fecal matter, like that presented by Goldberg and Mason.[17] For the time being, it may be best to refer to the Cypress Hills's birds as part of the "Western Flycatcher complex", knowing that in no way does the choice of name diminish the scientific significance of this record. This is an important record, adding to the growing list of Rocky Mountain avifauna found in the Cypress Hills.

White-winged Dove (*Zenaida asiatica*): a single bird was seen and photographed on 7 August 2020 by Tammy Thomas, of Milestone, along highway #39 (posted on Sask Birders Facebook). **Status:** the eighth record. Accidental. **Remarks:** it remained only one day and was not seen by other observers, but the photos confirm the record.

Calliope Hummingbird (*Stellula calliope*): on 10 August 2020 photos were taken of single juvenile bird by Jordie Braun at his home farmstead north of Swift Current (eBird S72269140, ML255486111). No other observers. **Status:** the second record for province. Accidental. **Remarks:** the diagnostic shape of primaries allowed the identification to be confirmed by Sheri L. Williamson who suggested it might have been a juvenile male due to the heavy "5-o'clock shadow" but noted that "juvenile Calliopes can be hard to sex" (fide Guy Wapple). It was seen feeding at ornamental flowers and perching high up in poplar and willow trees. The previous record was on 22 August 1935 (*BofSk*, p. 375); both records were apparently post breeding strays. The nearest breeding range is some 600 km to the southwest, in the Rocky Mountains of Alberta.

Tropical Kingbird (*Tyrannus melancholicus*) or Couch's Kingbird (*Tyrannus couchii*): on 16 August 2020 an unidentified Tyrant kingbird was photographed by Deborah MacEwan (eBird S72580104, ML256537431, ML256537371) along grid road #764 east of Hanley (Figure 10). S Shadick and J Patterson searched the area unsuccessfully on 18 August. **Status:** the "first record", but evidence is insufficient for a conclusive identification of either species. Hypothetical. **Remarks:** the photos reveal it was not a Western Kingbird. The greenish back, longer heavier bill, notched tail, lack of white outer tail feathers are features shared by Tropical and Couch's kingbirds. These two closely related species were split in 1983 by the AOU. The pattern of freshly moulted feather indicates this is an immature bird.[18]

Pyle (ibid) offered an index (derived from culmen length from nares to bill tip, divided by wing length) that helps separate adults of the two species, but cautioned more study was needed to see how well it applies to immature birds. His measurements were gathered from hand-held birds. From some of the photographs, the Hanley kingbird had an index of "0.13", comfortably within the range of the Couch's Kingbird index (between 0.122 - 0.158) and well below the Tropical Kingbird index (between 0.145 - 0.169). While the measurements used for calculating this index are taken from photos of the Hanley kingbird, and are therefore subject to possible error, the results are intriguing. It is possible either species could stray north to Saskatchewan.[19] Tropical Kingbirds are prone to disperse post breeding, regularly heading north and NW of their summer breeding range in Mexico. Small numbers are recorded annually along the Pacific coast each fall and winter, including British Columbia. Couch's Kingbirds seem less likely to wander away from their nearest summer range in southern Texas. They occur accidentally east along the Gulf and Atlantic coasts in fall and winter, with a very few records inland, to the north. Unfortunately, with our current knowledge, the two species can only be reliably separated in the field using their distinctive vocalizations, or in-the-hand using a combination of measurements, and even then with caution.[18,20,21]

Franklin's Gull (*Leucophaeus pipixcan*): on 23 September 2020 a melanistic individual was photographed by Don Weidl near Valeport provincial recreation site (Figure 11), at the south end of Last Mountain Lake (eBird S73976429, ML265206011 & 6101).**Remarks:** the bird displayed an unusually high amount of melanin in its body feathers, making it conspicuous among the surrounding Franklin's Gulls that had normal breeding plumage. While aberrant plumage in birds is generally rare, some species — including gulls — seem more prone to genetic mutations like albinism or leucism. However, abnormally high melanism is comparatively rare in gulls. Partial melanism has been reported for the North American Laughing Gull and Short-billed Gull, and the European Black-headed Gull. This is one of the few examples, or possibly the first, of a melanistic Franklin's Gull.[22,23]

2021

Garganey (*Anas querquedula*): from 8 to 15 May 2021 a single male was found by Laura Messett on Breadroot Slough – Stenen, southeast of Preeceville (Figure 12) (eBird S87580253, ML335772261). Seen and photographed by many observers, despite the bird's increasing shyness (eBird, Guy Wapple S87884190); last sighting by Myles Sahulka (eBird S88339385). **Status:** the third record for the province. Accidental, Eurasian vagrant. **Remarks:** the first two records were also males that both appeared in May (1990, 2002). Garganey are often seen in the company of Blue-winged Teal as was the case in 2002 and in 2021. This drake seemed to be accompanying a female Blue-winged closely. Howell

FIGURE 10: On 16 August 2020 an unidentified Tyrant kingbird was photographed along grid road #764 east of Hanley. Evidence is insufficient for a conclusive identification of whether it was a Tropical Kingbird or Couch's Kingbird. Photo credit: Deborah MacEwen.

FIGURE 11: On 23 September 2020 a melanistic individual was photographed near Valeport provincial recreation site, at the south end of Last Mountain Lake. Photo credit: Don Weidl.

FIGURE 12: A male Garganey (right) was found by Laura Messett on 8 May 2021 on Breadroot Slough – Stenen, southeast of Preeceville. Photo credit: Laura Messett.

et al state that there are about 175 records of Garganey widely spread across North America of which 20 per cent are from the interior, away from Alaska and the West Coast, and west of the Mississippi River. Of these interior sightings "virtually all records are of males during March – June".[11] One can only wonder where these birds spend the winter where pairing would usually occur.

Glossy Ibis (*Plegadis falcinellus*): on 12 May 2021 Jess Cosentino "photographed a group of 13 White-faced Ibis on Rt.15 (3.4 km) west of Kenaston" (Figure 13). Only much later did Cosentino discover one bird in the group appeared "quite different than the other WFIB" (eBird S87960745; posted on Facebook; fide J Cosentino). The birds were in breeding condition. **Status:** sixth record, moving it from hypothetical to confirmed. Accidental. **Remarks:** photographs of this bird show all the characteristic field marks of an adult Glossy Ibis: dark eyes; dark blue-grey facial skin with sharply defined, thin white borders, of proper size, shape, and position; and, grey legs with only slight reddening at the intertarsal joint. Equally important is the absence of any hybrid characteristics displayed by intermediate birds, such as: redness in the eye; hints of pink or red mottling of the facial skin; or, white feathers (however few) surrounding the facial area. Glossy and White-faced ibises are closely related, requiring care for proper identification especially when intermediates are suspected. Arterburn and Grzybowski[24] and Grzybowski[25] describe several hybrid birds from Oklahoma where their breeding ranges overlap, in the central Great Plains; this follows range expansions of both species beginning 1980. The authors suggest the frequency of hybridization is low and may occur when the small number of vagrant Glossy Ibis encounter colonies of more abundant White-faced Ibis where they cannot find and pair with their own species. Fortunately, adults are most easily separated during the breeding season from March to August. A fifth record of a Glossy Ibis was not included in *BofSK*: one bird with dark legs, bill and face (with no white) was found by Wayne Harris and Susan McAdam in July 1986 and then relocated by Don Weidl and Terry Toews on 18 July, at the southeast end of Crane Lake (eBird S27996105). Glossy Ibis have been reported in Manitoba and Alberta.

FIGURE 13: A Glossy Ibis photographed on 12 May 2021, among a group of 12 White-faced Ibis, on Rt.15, 3.4 km west of Kenaston. Photo credit: Jess Cosentino.

Yellow-throated Warbler (*Setophaga dominica*): on 2 June 2021 Jared Clarke found and photographed one in Lakeview North, Regina (eBird S89497879). Seen by others: Annie McLeod (eBird S89494217, ML344653281), Joel Cherry and Bob Luterbach. **Status:** the sixth record. Accidental. **Remarks:** the faint yellow lores suggest it was probably a subspecies normally found in eastern USA. Four of the previous records have been in late summer or fall (19 August to 12 November) and one in spring (16 May 1970).

Cordilleran Flycatcher (*Empidonax occidentalis*) part of the "Western Flycatcher complex": from 5 June to 25 July 2021 Western Flycatchers were again found at two locations along Battle Creek, Cypress Hills. On 5 June, Dominic Cormier (eBird S89664771, ML346672671) saw one bird visit the 2020 nest site; on 21 June a pair was seen in the same area by Joshua Brown (eBird S90576962, ML354787431). Another vocal male was found at a second location, 2 km distant. No direct evidence of breeding was reported in 2021. Seen by several observers. **Status:** the confirmed second record of Western Flycatcher in the province. Photos and recordings provide strong documentation. **Remarks:** whether these flycatchers have occurred undetected in the Cypress Hills in the past is unknown. Birders are now alerted to their possible presence elsewhere in the Interprovincial Park.

White-winged Dove (*Zenaida asiatica*): on 6 July 2021 a single bird was photographed at a back yard feeder in Denare Beach, southwest of Creighton, by Zarine Grindle (eBird S91368527, ML352719561). **Status:** the ninth record for the province. Accidental. **Remarks:** amazingly, it seems this species might turn up almost anywhere in the southern half of the province. To date there has been only one winter record (January 2018), plus four early summer records (late May to June), and four mid-summer records (July to early August).

Yellow-crowned Night-Heron (*Nyctanassa violacea*): on 1 and 2 August 2021 a single adult was discovered and photographed by Kosala Rajapaksha at the main wetland in Hyde Park in Saskatoon (eBird S92607513, ML358616061). It continued in the area until at least 7 August. Seen by many observers. **Status:** eighth record for province. Accidental. **Remarks:** the bird moved around the wetland during the day, often being frustratingly difficult to find as it hid in the tall vegetation along the wetland edge. This species has been seen previously in Saskatchewan from May to September. It breeds along the Mississippi River valley, and seems to be expanding its breeding range north. Al Smith found a record of an immature bird seen on 17 October 1982, at Buffalo Pound Lake, which was not included in *BofSk;* that was the seventh record for the province (eBird S76124117).

Kentucky Warbler (*Geothlypis Formosa*): on 5 to 9 October 2021 a single bright plumaged male was found and photographed by Bob Godwin along the bank of the South Saskatchewan River in Chief Whitecap Park, south of Saskatoon (Figure 14) (eBird S95731099, ML375803861). Observed at close range by many (John Lundgren eBird S95894737, ML376511301). **Status:** the third record for the province. Moved from hypothetical to confirmed. Accidental. **Remarks:** it remained in the area for several days, actively foraging and moving about the leaf litter on the ground and among the low branch tangles and shrubbery often near several water seeps and springs. The two previous records were 25 September 1971 and 14 July 1989. It is a declining but still fairly common species requiring large tracts of hardwood forest within its breeding range in southeastern USA. It has shown signs of expanding northward.

FIGURE 14: On 5 October 2021 a bright plumaged male Kentucky Warbler was found by Bob Godwin along the bank of the South Saskatchewan River in Chief Whitecap Park, south of Saskatoon. Photo credit: Bob Godwin.

Crested Caracara (*Caracara plancus*): on 5 October 2021 (and a few days prior) a single bird of undetermined age, was discovered by local farmer, Randy Torrie, near Saltcoats, southeast of Yorkton. Several observers found the bird and it was photographed by Donna Bradford (*in* Gerri Knudsen, Sask Birders Facebook, 5 October 2021 post). It could not be relocated on 7 October (Dan Sawatzky, and others). However, earlier that year, Randy Slater found and photographed a caracara on 20 July near Pierceland (Figure 15) (posted by Kevin Kardynal on 7 October 2021 on Sask Birders Facebook).

Aaron McKague took a clear photo of a caracara on 25 October, north of Paradise Hill northeast of Lloydminster (posted on 26 October 2021, also on Sask Birders Facebook). **Status:** the first record for Saskatchewan; very possibly two records. Accidental. **Remarks:** the question remains, were more than one Crested Caracara present in Saskatchewan in 2021? The summer

FIGURE 15: Randy Slater found a Crested Caracara on 20 July 2021 near Pierceland. This was one of three caracara sightings that year, representing the first record for Saskatchewan, but very possibly two records. Photo credit: Randy Slater.

record at Pierceland and fall record at Paradise Hill are less than 100 km apart, suggesting they were the same bird; but these are 600 km or more distant from the fall Saltcoats record raising the rather amazing possibility of a second bird's involvement. In recent years, a few individual Crested Caracaras have been recorded straying into Canada (British Columbia 1998, 2008, 2011, 2018; New Brunswick 2002, 2017; Nova Scotia 2013; Jasper NP, Alberta 2015; Ontario 2016) far north of their nearest breeding range, in the USA. The Texas population has been expanding north in the central plains and "as the population increases in Texas, more records well to the north seem likely".[21]

Phainopepla (*Phainopepla nitens*): from 21 October to 17 November 2021 a single bird (feather moult pattern indicates a hatch year individual, but its sex cannot be determined with certainty) discovered in his farm shelterbelts by Ryan Sparks (Figure 16), 7.5 km west of Zealandia (eBird S96551312, ML383611751; fide R Sparks). Seen, photographed and vocal recordings made by many observers. **Status:** the first record for province. Accidental. **Remarks:** Sparks writes "The Phainopepla arrived on Oct 21, and was seen daily up to the morning of 17 Nov, other than one day [of absence]. She showed up again the next day, late in the afternoon. We had a couple of nights down to -15 C that she seemed to do alright with. As it got colder, she started coming down to the ground to catch bugs in the grass. There was a blizzard here on Nov 16, and she was still here eating berries in the snow. I saw her one more time the next morning, and that was the last." It was seen catching flying insects and foraging among small ornamental

FIGURE 16: Ryan Sparks discovered a Phainopepla in the shelterbelts of his farm, 7.5 km west of Zealandia, on 21 October 2021. The bird's feather moult pattern indicates a hatch year individual, but its sex cannot be determined with certainty. Photo credit: Ryan Sparks.

fruit trees in the farmyard shelterbelt: buffaloberry and Siberian crab-apple. Photos taken by Alan Knowles (eBird S96793057, ML384585451, ML383260971) show the moult pattern of the flight feathers and wing coverts clearly, allowing the bird's age to be determined.[18]

This is apparently only the second record for western Canada with one previous sight record from Manitoba in June, 1962.[4] There are another two records from southern Ontario 1975, 2010 (eBird map). Some Phainopepla populations in the SW USA undertake interesting post-breeding migrations, travelling from the dry deserts of interior Arizona west in mid to late summer to wetter coastal California where some may breed a second time. Then they return east in late winter and very early spring to the interior to breed again. Current research is attempting to unravel this behavioural phenomenon, which may involve the birds seeking ripening mistletoe berries, an important food source.[26] A keen observer, Ryan Sparks has found other rare avian visitors to the same yard including a Green-tailed Towhee in 2020 (see page 25).

Other Updates

Changes to the common names of birds by the American Ornithological Society (AOS): **Canada Jay** (*Perisoreus canadensis*) - name was changed back from "Gray Jay" after persuasive lobbying efforts by Canadian ornithologists (AOS, May 2018). **Thick-billed Longspur** (*Rhynchophanes mccownii*) replaces "McCown's Longspur" (AOS, August 2020). Unfortunately, this decision seems to be based on an *ad hominem* argument that attacks him personally rather than recognizing his contributions to ornithology, which included collecting three species new to science: Ash-throated Flycatcher, Olive Sparrow and the longspur. Still, a more descriptive name might have been "High Plains Longspur", rather than shifting from the scientific species name to the genus name for a reference. **Short-billed Gull** (*Larus brachyrhynchus*) with its range in the Americas, is split from the **Common Gull** (*Larus canus*) found across Eurasia; together they were previously known as "Mew Gull" (AOS, 2021).

Species at Risk assessments by COSEWIC (2019 to 8 December 2021)[27]: status reviews of birds which have occurred in Saskatchewan, resulted in upgrades from Threatened to **Endangered** status for **Ross' Gull** (2021), and **Chestnut-collared Longspur** (2019); an upgrade from Special Concern to **Threatened** status for **Short-eared Owl** (2021); and down-grades from Threatened to **Special Concern** for **Ferruginous Hawk** (2021), **Barn Swallow** (2021), and **Canada Warbler** (2020). **Henslow's Sparrow** retains its Endangered status (2011).[3]

COSEWIC revisions from April 2017 and April 2018 are given in *BofSk* (p. 671).

Discussion

The origins of these 27 species seen rarely in Saskatchewan show some interesting patterns.[2,28,29,30] The four species from northeast Asia are true vagrants to North America: Tundra Bean-Goose, Garganey, Ruff, and Fieldfare. All of these displaced birds have spent at least one winter on the "wrong" continent separated from their traditional breeding and wintering areas. One species wandered south from its Nearctic coastal breeding grounds as a naïve juvenile: Black-legged Kittiwake. Three species of warblers and a sparrow are spring overshoots or fall wanderers, normally found in eastern North America: Yellow-throated Warbler, Kentucky Warbler, Hooded Warbler, and Henslow's Sparrow. Not surprisingly, the largest number of species (14) straying to Saskatchewan have their breeding ranges to the south of our province, in the central Great Plains. Some regularly breed fairly near the Saskatchewan border. Five of these depend on wetland habitats for breeding, some perhaps following the Mississippi River drainage north: Tricolored Heron, Least Bittern, Yellow-crowned Night-Heron, Glossy Ibis, and Great-tailed Grackle. Another four of these use shrubby habitats for nesting: Blue-gray Gnatcatcher, Green-tailed Towhee, Blue Grosbeak, and Painted Bunting. And five of these accidental species have breeding ranges in the arid south-central plains of our continent including Mexico: Crested Caracara, White-winged Dove, the *Tyrannus* kingbird (Tropical or Couch's), Phainopepla, and Lesser Goldfinch. Three species recorded in Saskatchewan have come from the west where they breed in the Rocky Mountains over to the Pacific coast: Anna's Hummingbird, Calliope Hummingbird, and Western Flycatcher. The Northern Pygmy-Owl also has its core breeding range in the Rockies and westward to the Pacific coast, but small numbers do occur east into the western Boreal Forest of Alberta.

The White-winged Dove is the clear winner for the most records of any vagrant, with five sightings in the past five years. If this trend continues the dove could attempt to breed in the province. In second place is the Painted Bunting, recorded three times in the same period. The Ruff and the Eurasian Tree Sparrow were each recorded twice.

The origin of Eurasian Tree Sparrows in our province remains unresolved. Unlike its close relative the House Sparrow, another introduced species that has spread widely since its release in New York in 1850, the Eurasian Tree Sparrow has expanded its range very little after being introduced around St Louis, Missouri in 1870. Historically, Eurasian Tree Sparrows were kept as cage birds and escapees were thought to account for some of the early records away from Missouri. And perhaps today? More recently the occasional long-distance wanderers are usually seen in winter, north of the present breeding areas.[7] The two records for Manitoba include one male mating with female House Sparrows (in two different years) and producing hybrid young. The first Saskatchewan record showed characteristics of both Eurasian Tree and House sparrows. Assisted travel in railway freight cars has been suggested to account for some of the records away from Missouri.[4] Perhaps the simplest explanation may be that these birds wandered to Saskatchewan on their own.

There are many reasons why birds show up in areas where they are not normally expected. Navigation errors during migration including a wrong compass heading, weather systems pushing birds off course, overshooting the target, tagging along with the wrong companions, the inexperience of young birds, and post breeding dispersal, account for many. Vagrants from other continents to North America are much rarer occurrences and are

examined in detail by Howell et al.[11] In Saskatchewan, northern finches vary in number between years as their food supplies fluctuate across the boreal forest. Some species, like redpolls move south from their northern breeding grounds becoming abundant in so called "irruption or flight years".[31] Could these influxes carry rare Eurasian vagrants like the Brambling and Rustic Bunting with them? Climate change may be allowing several bird species to try to expand their ranges into Saskatchewan, which offers birders an exciting opportunity to look for "rare birds" and carefully document any breeding attempts.

We are fortunate that with experience, most birds can be identified with the help of current field guides, and modern optical equipment, when well seen. However, there are some closely related species that are very difficult to identify in the field: our bean-goose, kingbird, and Western Flycatchers being perfect examples. Recent genetic studies are illuminating these relationships, revealing remarkable stories of their evolutionary history. Taxonomists and birders are struggling to adjust to these new findings as species continue to be lumped, then split, only to be lumped again. We can take comfort in knowing we are learning that the slow process of evolution is continuing all around us. Today's subspecies may be tomorrow's species.

It is very possible that some important recent bird records or sightings made within Saskatchewan have been missed. Anyone who does not contribute to eBird, with knowledge of new information on birds of our province is encouraged to send the details, plus any supporting material such as photographs and recordings, to Nature Saskatchewan at info@naturesask.ca. From there, records can be added to other data banks for long-term safekeeping.

Acknowledgements

I would like to thank all the people who so carefully observed and reported their bird sightings. Many are named, but because of space limitations, even more are not. Each of you has made an important contribution without which this article would be impossible. Al Smith and Dan Sawatzky have provided the indispensable role of "keepers of Saskatchewan's bird records" for many years and both provided sage advice and essential record details. Dan reviewed all the eBird checklist and Macaulay Library numbers to ensure their accuracy, adding others where needed. Don Weidl and Annie McLeod did some wonderful sleuthing to uncover obscure sightings that would have otherwise been missed or forgotten. Stan Shadick's efforts to sufficiently document new and rare birds in the province are exemplary, and have added much to our knowledge of Saskatchewan's birds. Guy Wapple traced old communications threads on his computer, to answer my questions, and caught several errors. Experienced birders like Bob Luterbach have mentored many new and veteran enthusiasts encouraging them to refine their skills thus enabling them to report rare birds with confidence. Spencer Sealy kindly reviewed the manuscript, making suggestions for its improvement. Worthy of special mention are Harvey and Brenda Schmidt, Val Thomas, and Ryan Sparks who remarkably have seen two rare vagrants reported here, in their respective yards. And finally, without the *Blue Jay* editor's kind and careful attention to detail, this manuscript would not have been published. My grateful thanks to each and every one of you.

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FALL MEET
DUCK MOUNTAIN PROVINCIAL PARK, SK
SEPTEMBER 23-24, 2022

Friday, September 23

Coffee/tea and refreshments available

6:30 p.m.
Registration at Duck Mountain Provincial Park Recreation Hall

7:30 p.m.
Presentation: Doug Welykholowa, Madge Lake Loon Survey

Saturday, September 24

Events include (self-drive):
8:30 a.m.
Departure to Veregrin, SK to tour of the National Doukhobor Heritage Village
http://ndhv.ca/

11:30 a.m.
Return to Madge Lake for bagged lunch provided by Iron Grill in Kamsack, SK

1:00 p.m.
OPTION A
Boat Tour around Madge Lake with Loon Committee

OPTION B
Calcareous Fen and Little Bluestem Prairie hike
https://www.alltrails.com/trail/canada/saskatchewan/fen-trail--2

4:30 p.m.
Fall Business Meeting – Duck Mountain Recreation Hall

5:30 p.m.
Cocktails at Duck Mountain Recreation Hall

6:00 p.m.
Banquet – catered by Iron Grill in Kamsack, SK

7:00 p.m.
Presentation – Michael Leblanc, Weyerhaeuser
"Vegetation Management in Duck Mountain Provincial Park – Unnaturally Restoring the Natural Forest Pattern"

SUGGESTED ACCOMMODATIONS
Madge Lake Developments has a number of cottages and condos held for us. **Please contact Jen at the Nature Saskatchewan office for further information before booking**.
*Note that a $25 booking fee was required for each unit in order to hold them for our Fall Meet, so Nature Saskatchewan will need to be reimbursed if you book one of the units.
phone: 306-542-3922
e-mail: customerservice@madgelake.info

Camping Available Through Sask Parks:
http://parks.saskatchewan.ca

Duck Mountain Motel in Kamsack, SK, a 20-minute drive from Duck Mountain Provincial Park.
Phone: (306) 542-2656 or
e-mail: duckmtnmotel@gmail.com
http://duckmountainmotel.com

COVID-19 POLICY
As per COVID-19 recommendations, please refrain from attending if you or someone in your household is feeling unwell.

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Please contact us if you need to cancel for circumstances beyond your control and we can discuss options.

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FALL MEET
DUCK MOUNTAIN PROVINCIAL PARK, SK
SEPTEMBER 23-24, 2022

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Fall Meet Fees * Includes snacks Friday night and lunch and supper on Saturday

Early Registration (prior to Sept. 9)
Members: **$84.00**
Non-Member: **$99.75**

Late Registration (after Sept. 9)
Member: **$99.75**
Non-Member: **$115.50**

Saturday ☐ Option A - Boat Tour of Madge Lake ☐ Option B - Fen Trail Hike
*please indicate your preferred activity

Any food allergies or dietary needs? ☐ YES ☐ NO
If yes, please describe: _____
_____

***All prices include GST**

Pay by cheque (payable to Nature Saskatchewan)

VISA or M/C

Member Registration: **$84.00** (early)/ **$99.75** (late) x ___ = $ _____
Non-Member Reg: **$99.75** (early)/ **$115.50** (late) x ___ = $ _____
Total Due: = $ _____

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Mail, e-mail, call our office, or visit our website to register today!

PLEASE NOTE: Due to the ever-changing situation with the COVID-19 pandemic, this event may be restructured or cancelled at any time.
We thank you in advance for your patience and understanding.

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2022 MARGARET SKEEL GRADUATE
SCHOLARSHIP WINNER: VICTORIA HARTLEY-COX

Victoria Hartley-Cox

Much of my childhood was spent exploring my grandparent's backyard — a little patch of Carolinian forest in Ontario, where I grew up. I was always the child catching frogs, watching ant hills or saving snails from the sidewalk. So, it was no surprise to my friends and family that my life has revolved around my passion for all things nature.

In 2016, I obtained a dual diploma as a Fish and Wildlife and Ecosystem Management Technician at Sir Sandford Fleming College. I took a year off to gain experience working field jobs, including bird banding in the Yukon, monitoring an island population of endangered Roseate Terns and surveying for Bicknell's Thrush in the Cape Breton Highlands.

In 2018, I started my undergraduate degree in Wildlife Conservation at the University of Prince Edward Island. For the two years I was at university, I continued to work summers as a field technician. During this time, while working in Alberta on a research project with Chestnut-collard Longspurs, I first fell in love with grasslands.

After graduating, I worked mainly in avian research and endangered species conservation in PEI, Australia, and Florida. While working on a contract with Burrowing Owls, my friend shared an Instagram post advertising an available position for a research project in Saskatchewan. I never thought I'd be starting my MSc by answering an Instagram post, but I am excited to be here, having done just that.

I am pursuing my Master of Science in Biology at the University of Regina under Dr. Ryan Fisher (Royal Museum of Saskatchewan) and Dr. Chris Somers (U of R). For my research, I use high-resolution satellite telemetry, citizen science, and nest cameras to quantify human features, vegetation, and habitat attributes related to nest selection, territory use and higher hunting efficiency of Great Horned Owls in southwestern Saskatchewan.

Historically, the Great Horned Owl rarely occurred in the Canadian prairies; however, it has increased in abundance since European settlement because of its ability to take advantage of anthropogenic structures and tree encroachment. I have primarily worked with threatened and endangered species in my career, so I am excited about the change in perspective that I will gain from researching a species that has benefited from alterations to the landscape that humans have caused.

I have captured 10 adult Great Horned Owls in the 2022 field season. Each owl has been fitted with a satellite transmitter to record locations during the chick-rearing and fledging season. A subsample of location sites based on the transmitter data will be visited, and local vegetation characteristics and perches characterized. I am thankful for all the participants in my citizen science survey and the help I have received in the field. I look forward to continuing my research.

NATURE SASKATCHEWAN WELCOMES
ANGELA TREMKA
NEW BANDING ASSISTANT FOR SPRING AND FALL MIGRATION AT THE LAST MOUNTAIN BIRD OBSERVATORY

Angela Tremka has an immense passion for keeping wildlife safe and sharing ethical ways we can protect, live in harmony with, and enjoy wildlife. With a lifelong love of nature, she is thrilled to see her career find its way to something she's so passionate about. Along with her new role as the Community Engagement Manager at Salthaven West Wildlife Rehabilitation Clinic, she is excited to be a part of the bird banding team with Nature Saskatchewan at the Last Mountain Bird Observatory this summer.

Birds have a unique way of inspiring and connecting people with nature, and they also play an essential role in our ecosystem. Through controlling pests, acting as nature's clean-up crew, spreading seeds, pollinating, and transforming landscapes, birds have a direct impact on human health, economy, food production, and affect millions of other species. Angela finds great joy in learning about and working with birds and is honoured to be working with such a devoted organization that does valuable conservation work throughout Saskatchewan. She is dedicated to working toward a future where more communities value and respect their wild neighbours and looks forward to sharing her enthusiasm for the natural world with others through these roles.

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HUMAN NATURE

Angela Tremka

Saskatchewan is a wonderous province to explore. And this year, I am intimately exploring the Last Mountain Regional Park as a Banding Assistant with the Last Mountain Bird Observatory (LMBO) — a dream job.

Each day is greeted by the dawn chorus. There is no better alarm clock, if you ask me. The birds sing exuberantly to defend territory and call for mates. Many love to hang out in the caragana above my tent, singing their tiny hearts out starting at 4:00 a.m.

Our days at the banding station are jam packed. This station operates 13 mist nets to catch the birds. We open the nets at 7 a.m. and complete a run every 30 minutes to extract birds from the nets and bring them to the station for banding. Each bird gets a band with a unique nine-digit number. We collect other data such as their weight, wing length, fat content, breeding characteristics, and look for characteristics to help us age and sex each bird. Once we gather the data, we set them free with their new, tiny bracelet.

Bird banding provides vital data for scientific knowledge about birds and the environment in which they live. Banding helps monitor the number and species of migrating songbirds, which contributes to our knowledge and understanding of bird trends and the intricacies of bird migration through the prairies. Migratory songbird populations are monitored because many species are in serious decline due to loss of breeding and wintering habitat. Other information gathered provides us with insights into ecosystem health and the longevity and movements of birds.

Interacting with visitors and school groups is an important part of what we do. Visitors learn about species identification, bird migration, threats to bird populations, and how we are working to conserve birds. Through experiencing the LMBO, we hope to create a deeper connection to nature and a richer understanding of the important role of birds and conservation efforts.

Birds have a unique way of inspiring and connecting people with nature, and they also play an essential role in our ecosystem. Through controlling pests, acting as nature's clean-up crew, spreading seeds, pollinating, and transforming landscapes, birds have a direct impact on human health, the economy and food production, and they affect millions of other species.

This May, we recaptured a Yellow Warbler that was first banded at the station in 2014. The idea of this tiny Yellow Warbler migrating to and from Central America each year to end up back at the LMBO station on at least the eighth year of its life is unfathomable and inspiring. Birds inspire me to protect them. How many challenges do they face along their journeys? What can we do in our own lives to help birds survive so many obstacles such as window strikes, outdoor cats, habitat and breeding ground loss, climate change, and more?

I've met so many incredible and dedicated banders, birders, and naturalists with a drive for learning, protecting, teaching and sharing. Thank you to everyone who has taken me under their wing!

Angela banding a Tree Swallow at the LMBO.

MYSTERY PHOTO

FALL 2022

QUESTION: What wildflower is shown in this picture? Hint: Its scientific name reflects that it was discovered in Canada.

Photo credit: Annie McLeod.

Photo credit: Annie McLeod.

SUMMER 2022

ANSWER: The bird shown in the Summer 2022 Mystery Photo is an immature Prairie Falcon (*Falco mexicanus*). Juveniles can be distinguished from adults by their streaky underparts; in adults, the underparts are barred or spotted. The cere (the fleshy area at the base of the upper mandible) and legs are also bluish gray in juveniles, turning yellow after about one year.

Nature
SASKATCHEWAN

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SASK LOTTERIES