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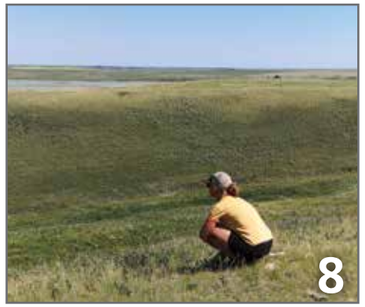
BLUE JAY

C. J. Hinz evaluated whether winter bat activity occurred in older areas of Regina, and if so, whether temperature influenced this activity. In her manuscript, she shares how she found evidence to support a relationship between ambient temperature and winter activity of Big Brown Bats (*Eptesicus fuscus*).



The Treaty Land Sharing Network was formalized on a windy day in late August 2020. It was a year and a half in the making and began out of conversations about the implications that privatizing Crown land would have on treaty rights.

The Yellowhead Flyway Birding Trail Association's Loon Initiatives Committee once again conducted its annual loon survey at Madge Lake over the spring and summer months of 2020. See page 10 for the results.

Spencer G. Sealy shares the story of an early photo of a flock of Whooping Cranes, taken by the late Fred W. Lahrman, foraging in a field approximately 14 km southwest of Sealy's home town of Battleford, SK in 1969.

The Franklin's Ground Squirrel has a global conservation status of "Least Concern", based in large part on the assumption of healthy populations in the Prairie Provinces. After noticing population declines in SE Manitoba in the late 80s, Peter Taylor gradually reviewed distribution records in Canada and today provides a history and status update of the Franklin's Ground Squirrel in Manitoba, as well as elsewhere in Canada.

In this edition of Human Nature, Ken Ludwig — Nature Saskatchewan Board Vice President — shares the magic of the Moose Mountain uplands, and specifically, the Moose Mountain medicine wheel, which is located on the Pheasant Rump Nakota First Nation.

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FROM THE PRESIDENT

Ed Rodger
President, Nature Saskatchewan
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Hello everyone,

Several years ago, I spent a pleasant morning in southern British Columbia, walking the sides of a valley — home to many species unfamiliar to a Saskatchewan birder. The area included a lot of healthy, intact natural habitat, but also a large number of fences. I eventually encountered a sign-board that explained the situation: the area was various parcels of land owned by different conservation organizations. It was comforting to know the area was managed for wildlife protection, but concerning to see it was a patchwork that didn't necessarily have coordinated stewardship practices, and did have lots of barriers.

ON THE FRONT COVER
A Short-tailed Weasel emerging from a Thirteen-lined Ground Squirrel tunnel on Jared Clarke's farm near Edenwold, SK. Photo credit: Jared Clarke.

ON THE BACK COVER
Sherri and Brock Fenton captured this photograph of a flying Big Brown Bat (*Eptesicus fuscus*) in the downstroke (note the tail projecting forward). The bat's mouth is open because it is echolocating, not showing threatening behaviour. Sherri and Brock find that stop action photos give them a new perspective on bats in flight.

This illustrates a familiar challenge for conservation organizations — while we all share general goals, we have to ensure that our activities are coordinated to best succeed. As such, an important part of Nature Saskatchewan's work is to participate in, and foster, partnerships with other conservation organizations. As well as our established relationships with local nature societies and affiliates, we are active in peer group associations for grasslands protection, watershed protection, environmental education and many other types of activities. As examples, we have participated in the 'Nature Day on the Hill' events organized by Nature Canada, and support the Saskatchewan Breeding Bird Atlas project, where we are also discussing possible further areas for collaboration, such as the sharing and linking of online content.

These activities of course make us part of a larger community promoting conservation. But we've also been giving thought to another sense of community, where it is formed by the individuals that support and contribute to our work.

Like many groups, Nature Saskatchewan was originally a 'membership' organization, where interested people would become members through some formal joining process. In the social media age, this concept has broadened into a community of supporters who connect to the organization through other channels, while not necessarily being members. This trend has certainly applied to Nature Saskatchewan; while we continue to maintain a commitment to our

Ed Rodger

members and that participation model, we have also built up a steadily-growing presence on Facebook, Twitter and Instagram, along with maintaining a website and e-newsletter. Nature Saskatchewan's community of supporters and individual partners also includes the many landowners in the Stewards of Saskatchewan program.

As many of you will be aware, we recently conducted surveys about Nature Saskatchewan. This included a direct survey of members, for the first time in several years, but also a more exploratory survey where responses were solicited through social media advertising, web links and the Nature Sask e-newsletter. We got good response rates and a great deal of valuable information through both surveys, and were especially gratified to get a large response to the social media and web survey (this being a new undertaking), and a part of our community that's not as directly known as the membership or Stewards of Saskatchewan participants are.

We will work through all the survey results and apply the information as we make decisions and plan activities. The concept of community, both with other organizations and among our supporters and project participants, will continue to be an essential part of who we are.

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.

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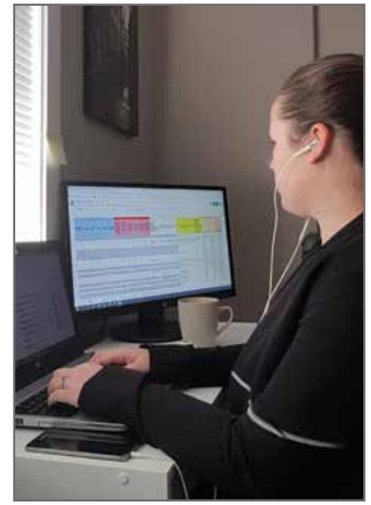
ADAPTING DURING THE PANDEMIC:
STEWARDS OF SASKATCHEWAN PROGRAMMING

Rebecca Magnus
Nature Saskatchewan

Normally, our Stewards of Saskatchewan (SOS) programming would have taken place in person around Saskatchewan. We would have reached out and had face-to-face visits with more than 100 landowners and families. We'd search for, and monitor, rare plants. We also would have held locally-catered Conservation Awareness and Appreciation dinners with like-minded neighbours, chatting and sharing stories about each other's operations, and interesting wildlife seen around the area … and the list goes on.

Through adaptations to field protocols, we were grateful to get out to conduct a modified version of our grid road searches in July 2020 to find new occurrences of species at risk. It was strange not being able to stop and catch up with locals, as we normally would, but we were able to record many species at risk occurrences and we will be following up with those landowners in the months to come. We were also able to get out on a few pastures to conduct range health assessments, and were grateful for the landowner permissions and for the warm weather so late in the season!

It was a challenge to come up with a different way to reach out to landowners and their families. As we have followed up on the census, over the phone and through video chats, we really appreciate the conversations and hearing how everyone is managing through this strange and difficult time. At the time of writing this, we are working toward reaching a minimum of 90 per cent of our program participants.



Operation Burrowing Owl coordinator, Kaytlyn Burrows, working in her home office.

The Plovers on Shore census is currently 44 per cent complete (28 participants reached), with nine Piping Plovers reported (four pairs and one single); the Stewards of Saskatchewan Banner Program census is 47 per cent complete (77 participants reached), with Barn Swallows, Ferruginous Hawks, Short-eared Owls, Sprague's Pipits, Bobolinks, Common Nighthawks, American Badgers, Northern Leopard Frogs, Tiger Salamanders and Monarch Butterflies reported; the Shrubs for Shrikes census is 48 per cent complete (125 participants reached), with 137 Loggerhead Shrikes reported (52 pairs, 26 singles and seven young); and, the Operation Burrowing Owl census is 59 per cent complete (192 participants reached), with 58 Burrowing Owls reported (13 pairs, 14 singles and 18 young).

We still have much work to complete through the winter and into the spring. We are also busy planning our virtual gatherings, and at the time of writing this we have held three

Rebecca Magnus conducting Range Health Assessment on native pasture. Photo credit: Rebecca Magnus.

virtual gatherings. These gatherings bring together partners, participants, and the general public and allow us not only to share updates about the programs, but feature presentations with our partners and talk about species at risk in Saskatchewan. Looking forward, we are optimistic for the 2021 field season and are also busy organizing our process for hiring staff for summer 2021. This gives us hope and energy to push through this challenging time, knowing we will all be together again soon.

If you are on social media, we encourage you to follow Nature Saskatchewan on Facebook, Instagram and Twitter, and subscribe to our YouTube channel. This is a great way to keep up-to-date on all the wonderful work Nature Saskatchewan is doing.

Happy Spring!

THE INFLUENCE OF TEMPERATURE ON WINTER ACTIVITY OF BIG BROWN BATS (*EPTESICUS FUSCUS*)

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Despite a history of public misconception, bats play vital ecological roles through plant pollination, seed dispersal, and pest management.[1] It is therefore necessary to understand the exogenous factors that affect the lives of these diverse mammals. One variable often positively correlated with activity, especially that of endotherms, is ambient temperature. Temperature is well-established as a predictor of bat activity and poses a challenge particularly for non-migratory bats such as Big Brown Bats (*Eptesicus fuscus*) that overwinter in cold climates, as lower temperatures result in greater thermoregulatory costs and fewer prey resources.[2] Therefore, winter activity would most likely be expected to occur during warmer nights; however, some research has reported flight activity by Big Brown Bats in southern Alberta during temperatures as low as -10.4°C.[3]

While many studies of bat activity have been conducted during warm months in temperate areas, few have taken place in the Canadian prairies during winter. Big Brown Bats remain on the prairies during winter and typically use older buildings in urban areas for hibernation.[4] Therefore, the objective of my study was to evaluate if flight activity occurs in older areas of Regina, and if so, whether temperature affects this activity.

Methods and Materials

I deployed four SM4BAT-FS detectors (Wildlife Acoustics, Maynard, MA, USA) for acoustic monitoring of echolocation calls in the Cathedral subdivision of Regina, Saskatchewan from February 16 to March 8, 2020. Detectors were set up within 350 m of Wascana Creek with a minimum distance of 1 km between them. The detectors were programmed to record each individual bat pass, which I defined as a minimum of three pulses between 16 kHz and 120 kHz (0 dB gain, 16 kHz high filter on, 256 kHz sample rate, 1.5 ms minimum duration, and 50 ms maximum duration). Each recording began 30 minutes before sunset and ended 30 minutes after sunrise. The value for ambient temperature was obtained from The Weather Network Regina International Airport location and recorded during the hour following sunset.

I analyzed the recordings using Kaleidoscope Pro 5.1.9 and identified the recorded passes to the species level by comparing them with the North American reference library. I then assessed the relationship between the mean nightly number of recorded passes and ambient temperature using a Pearson correlation coefficient. Since each of the four sites were sampled multiple times, the potential for pseudoreplication exists within the correlational analysis.

Results

I recorded 525 passes in total, all of which I identified as Big Brown Bats. All four sites had similar levels of activity, and all passes were recorded on nights with temperatures above 0°C, with the exception of -1.9°C (Figure 1). The night with the most recorded passes was also the warmest night of the study period at 11.5°C (Figure 1). I found a significant positive relationship between Big Brown Bat activity and ambient temperature (r = .64, p = .02).

Discussion

The presence of Big Brown Bats in urban areas of the Canadian prairies is well-documented.[5-7] Therefore, my finding of their activity was not unexpected, although the function of winter flight remains unknown.

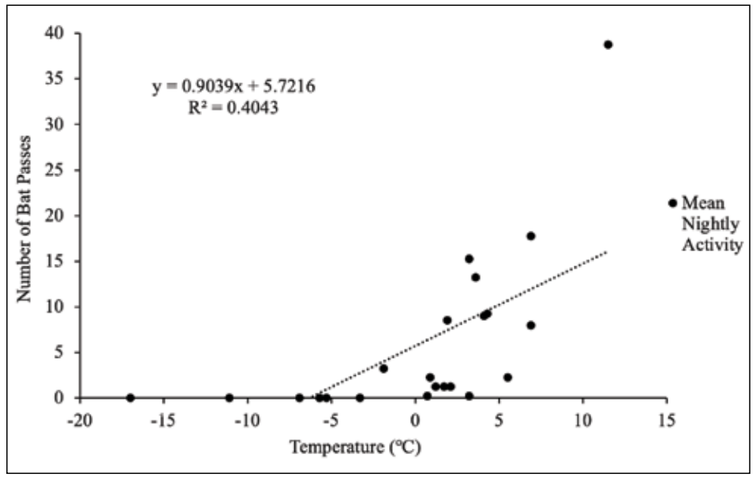

FIGURE 1. Mean number of Big Brown Bat passes per night relative to mean nightly temperature for Regina, February 16 – March 8, 2020. Data points indicate the mean nightly activity of four Wascana Creek sites.

Big Brown Bat (*Eptesicus fuscus*). Photo credit: Sherri and Brock Fenton.

While Big Brown Bats commonly hibernate in caves, abandoned coal mines, and deep rock crevices, this species also resides in buildings near their summer roosts, which suggests that the Regina locations observed during this study may be in close proximity to Big Brown Bat hibernacula.[8,4]

I also expected a correlation between activity levels and temperature based on existing literature, which has documented a positive relationship between these two variables.[9-10] While there are some reports of activity during temperatures as low as -10.4°C, further study is required to determine if bats in Regina fly at temperatures this low. I found that Big Brown Bats were more active during warmer nights, although this activity still occurred at relatively low temperatures with a mean of 0.2°C during the sampling period (Figure 1). However, the measure of temperature was not necessarily the same as inside a given roost, which tend to be several degrees warmer than the ambient temperature.[10]

A number of hypotheses exist for why bats arouse during hibernation, including dehydration, mating, foraging, and changes in temperature.[11-13] Since neither standing water nor insects are available during winter in Regina, this negates the possibility of activity due to dehydration or foraging. Based on my results, increased ambient temperature positively affects winter activity of Big Brown Bats in Regina; however, the cause of this activity remains a mystery.

Acknowledgements

Many thanks to Mark Brigham for supervising this project, Erin Swerdferger for assisting with detector tutorials and calibration, and the members of the University of Regina Bat Lab for their constructive feedback. Kate Johnson, Lorne Pavelick, Ted Warawa, and Vicki Elliott generously allowed me access to their properties.

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TREATY LAND SHARING NETWORK

View of native prairie and Lake of the Rivers at the first Treaty Land Sharing Network gathering. Photo credit: Valerie Zink.

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"There is a quiet, calm peacefulness just from the landscape, from the wide-open spaces, from the grasses ... it's kind of an unassuming beauty."

Joel Mowchenko's description of the native prairie on his organic farm in southern Saskatchewan captures the sentiment and sweep of the wide vista. In his pasture, on a hot day at the end of July, the view catches immediate attention. But with a closer look the subtler beauty of native plants is also revealed — the blooming common yarrow, prairie coneflower, and scarlet mallow. This is the first gathering of the Treaty Land Sharing Network (TLSN). Many have travelled hours to get here, to explore the partnership, and to learn about the land from Elder Murray Ironchild and Knowledge Keeper Barbara Lavallee. Joel is particularly excited to learn from Barbara that the rock formations are drive lines that were used to hunt buffalo.

The gathering was a year and a half in the making. It began in 2018 out of conversations about the implications for treaty rights of privatizing Crown land. A small group of settlers in Saskatchewan, together with Philip Brass, an artist and hunter from Peepeekisis Cree Nation, saw the need for individual landholders to instigate land sharing and offer safe spaces where Indigenous people could access land. In Saskatchewan, the overwhelming majority of land below the treeline is privately owned, and it is estimated that only 15 per cent of the original, uncultivated grassland remains. Reserve land constitutes only 2.8 per cent of Indigenous peoples' traditional territory, which is insufficient to sustain their cultural survival and livelihoods. The group also saw the need for developing relationships of trust and mutual respect when, following the Gerald Stanley trial, there was a heightened climate of fear, racism, and violence in rural areas.

The TLSN recruited rural land title holders and undertook education about treaties and anti-racism training for its members. The goal of the network is to provide safe places for Indigenous people to access land and exercise their rights. TLSN is committed to implementing the Treaty relationship, engaging in ongoing learning together while practicing being Treaty people, and establishing a different way forward for rural Saskatchewan. The education — formerly in person, and online in the COVID-19 era — has made a significant difference to some members. One said "Because I had an extremely minimal introduction to treaties and what they were about before, I've learned quite a lot. The treaties said we were to share the land ... they were not transferring ownership. And that was a total shift in thinking."

The Network was formalized on a windy day in late August 2020 at the McCreary-Smillie farm. This second gathering of TLSN members celebrated a partnership with the Office of the Treaty Commissioner with a traditional feast. Later in the day, a group of settlers and Indigenous people gathered around Dr. Kevin Lewis and his mother, Elder Matilda Lewis, in a cluster of trees and bush in the middle of native pasture. Dr. Lewis explained the traditional Cree/nêhiyawak medicinal uses of nettles, plantain, and birch bark. The day brought network members closer together in relationship. One settler member said that previous to her membership, "as far as reconciliation and informing myself, I wanted to do this but I didn't know how to connect in. TLSN has felt like a place where I am helped to take those first steps and I have a status that I can connect through. I've learned a huge amount and my heart is saying that this is what I want, this is important."

TLSN has also been reaching out to sympathetic organizations, including the Nature Conservancy of Canada, the United Church of Canada, and the Buffalo People Arts Institute. Nature Saskatchewan has also recently given TLSN a letter of support, recognizing that TLSN's goal of land-based reconciliation "fits with [its] Strategic Planning to 'expand indigenous partnerships and stewardship opportunities' and 'engaging with indigenous peoples'".

With the support of these groups, TLSN has obtained grant funding for its next steps. These include signs for land title holders to erect, indicating that Indigenous land users are welcome on the land. The Network also will recruit new members. Primarily, it will continue to facilitate relationships. As Joel Mowchenko explains, "It's simple: bring people together, build trust, build relationships, encourage sharing, encourage knowledge of the vision of the treaties and facilitate how we can move towards some sort of realization of the vision that was painted in the treaties." Land title holder Mitzi Gilroy agrees: "It's nice to get to really know the people, just to build that relationship. That is the best way for people to understand each other — to actually be together."

If you'd like to learn more, please contact TLSN via the Facebook group or by phone at (306) 209-9110.

Treaty Land Sharing Network member looks out over native prairie at the first gathering. Photo credit: Naomi Beingessner.

Knowledge Keeper Barbara Lavallee explains rock formations. Photo credit: Valerie Zink.

2020 LOON INITIATIVES REPORT:
MADGE LAKE, DUCK MOUNTAIN PROVINCIAL PARK

Loon and ice, 4 May 2020. All photos courtesy of Doug Welykholowa.

Loon with chick, 20 June 2020.

Loon on nest, 14 June 2020.

Doug Welykholowa
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As with last year, the 2020 season at Madge Lake began with a late spring, as birds arrived a week later than previous years. Loons were flying in while most of the ice was still on the lake and were occupying narrow strips of open water for about a week. As a result, nesting probably didn't start until the second week in May. Our first spotting of young was 20 June.

Bob Wynes, another Madge Lake resident, was kind enough to assist me on the survey this year. He and I went out together twice and he also did two trips accompanied by friends. He is a great help and an excellent sounding board.

Adult Common Loons maintained about the same numbers as in previous years, with 26 pair maintaining their territories throughout the season, and approximately 20 unpaired young adults occupying the lake throughout. A total of 12 chicks/juveniles were spotted over the summer and 10 survived until September. The last count on 17 September had 24 adults and 22 juveniles. We believe 12 of these juveniles came from neighbouring lakes, although there is a good possibility that a couple were raised on Madge.

Two territories, previously abandoned, were re-established, and one territory from 2019 was abandoned this year. Otherwise, most of the territories remained from last year, with some modifications to the size of some. Note that changes to the size and shape of the territories are strictly observational based on our sightings each year (see Figures 1 and 2 for a comparison of the 2019 and 2020 established territories).

As noted in previous reports, we are spotting fewer chicks in the open during the majority of the season. This year, we spotted seven chicks shortly after they hatched, but two of these didn't survive the season, and another wasn't spotted again until September. In mid-September we spotted an additional five juveniles that we are confident were hatched on the lake, but were hidden from us throughout the summer. This is based on observations of nesting and protective behaviour in those territories, as well as spotting juveniles in September in their nascent territory either by themselves or accompanied by one or two adults. We are unsure as to why many adults are keeping their young hidden and away from open water during the majority of the summer. With an apparent increase over the years of larger wakeboats and personal watercraft on the lake, perhaps the loons are getting defensive, but that is only speculation at this point.

One unusual sighting occurred on 20 August, and confirmed on 26 August with photographs, was an adult loon that had completely moulted into its winter colours. In the past, in late August, we have noted a number of partially-moulted adults, but this is the first one that had completed the process. We even found a moulted wing coverlet with the distinctive white markings very close to this adult. I have included a photo of it as well as a typical juvenile. The main differences are size and the lack of the distinctive light beige scallops on the wing coverlets of the juvenile. The adult was distinctively larger than any of the juveniles spotted.

Comparing data over the last 10 years (Figure 3), the adult loon population has been very stable. The

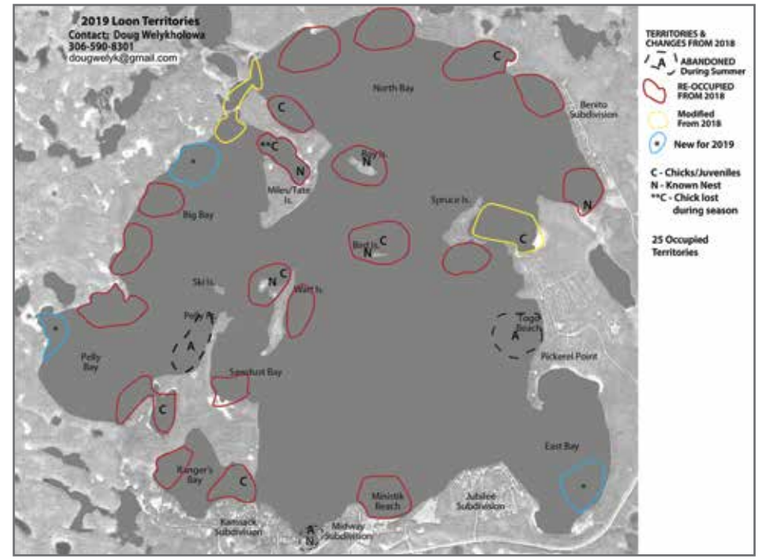

FIGURE 1: 2019 Established Loon Territories.

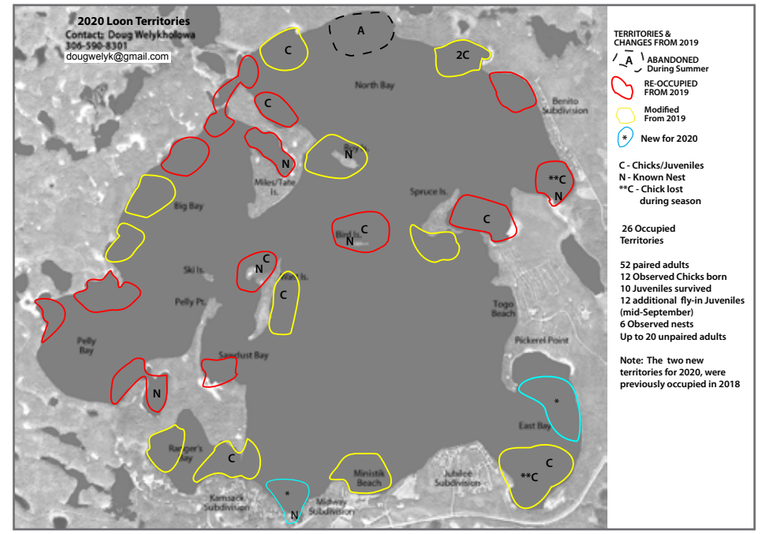

FIGURE 2: 2020 Established Loon Territories.

year-to-year variation is likely due to inaccuracies in counting the unpaired young adults. During the day, the large groups scatter in to individuals and smaller groups, with some of the birds flying to adjacent lakes to feed. They tend to gather in larger groups in the evenings, but group size and location varies each evening. Limited counts over the summer prevent us from getting an accurate number of these four-to-six year-old adults. We will conduct evening counts in the future to get more accurate numbers.

In addition to the loons, we spotted a number of different species of note on the lake this year. At least three pelicans remained for the summer. Groups of six to 10 cormorants were spotted in various locations, as were Bald Eagles, Ospreys and Great Blue Herons.

Adult in full winter molt, 26 August 2020.

Adult and juvenile, 26 August 2020.

Madge Lake Loon Count Summaries 2010 - 2020

Survey Year	Total Adults	# of Territorial Pair	Surviving Juveniles	# of Chicks Lost
2010/12 average		25	9	
2013	75	26	14	2
2014	86	26	9	2
2015	78	26	6	2
2016	82	26	10	0
2017	78	25	16	1
2018	72	26	12	0
2019	75	25	7	1
2020	72	26	10	2

FIGURE 3: Madge Lake loon count summaries, 2010-2020.

A Bald Eagle nest at Doukhobor Bay, 30 May 2020.

American White Pelican.

One pair of Bald Eagles built a nest within 100 feet of one of the loon nests. The loon nest was initially occupied, but was abandoned before any eggs could hatch, although the adults remained in that territory. We speculate that the close proximity to the eagle nest disturbed the loons; although, if eggs were laid, they could have been predated.

Of special note, a pair of Trumpeter Swans with four cygnets was observed on a beaver pond near the north end of Madge Lake earlier in the summer of 2020. During the September loon survey, a pair of Trumpeter Swans was observed with three cygnets in Big Bay, presumably the pair that nested on the beaver pond. This is the first sighting of Trumpeter Swans successfully nesting in Duck Mountain Provincial Park that we are aware of. In the previous two summers, Bob heard Trumpeter Swans in the vicinity of the same beaver pond, and speculates that this may not be the first summer they have nested there.

Thank you to everyone who accompanied me on my surveys (Nancy Welykholowa, Brian and MaryLou Deck, Sharon Korb and Kevin Streat) as well as the many individuals who called me regarding loons that they spotted over the summer. Again, a big thanks to Bob Wynes, who collaborated with me this year, and to Barb and Doug Elsasser, Shevon Wilson and Rob Wilson, who accompanied Bob on separate counts. Also, a big thank you to the Park and its staff for the support they provide me every year. Note that this year the Park deployed No Wake Zone buoys in front of cottages and the Jubilee Boat Launch. The latter covers one of our nesting sites, while the Kamsack Beach/Midway buoys cover another. These will be monitored in the future to gauge any significant effects on these two sites.

EARLY PHOTOGRAPHIC RECORD OF THE WHOOPING CRANE IN THE BATTLEFORD AREA, SASKATCHEWAN

FIGURE 1: Whooping Cranes feeding near Prongua, Saskatchewan, 25 April 1969. Photo credit: F.W. Lahrman (deceased).

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In her review of Faith McNulty's *The Whooping Crane*[1], published in 1966, Margaret Belcher commented, "People in Saskatchewan are especially interested in Whooping Cranes [*Grus americana*] since these great white birds move through the province on their migration from the Canadian North to the wintering grounds in the Aransas Refuge in Texas."[2] At the time that McNulty's book was published, the number of Whooping Cranes stood at only ~30 individuals[3], and a vigorous international campaign for the species' protection was underway that involved the Saskatchewan Museum of Natural History (now Royal Saskatchewan Museum) and agencies in the United States. Several members of the Museum's staff were involved with Whooping Crane conservation initiatives, among them, the late Fred W. Lahrman, whose efforts spanned more than 50 years.[4] Many of Lahrman's photographs of Whooping Cranes appeared in the pages of *Blue Jay*[5], the journal of the Saskatchewan Natural History Society (now Nature Saskatchewan), and other publications. The design of a 5¢ stamp, issued by Canada Post in 1955, on which the Whooping Crane was featured at a critical time in its come-back, was based on an award-winning photograph taken by Lahrman west of Moose Jaw during the crane's fall migration of 1953.[6]

While conducting research on the history of this stamp and the photograph that was used by the stamp's designer, William Rowan, of the University of Alberta[6], I came upon correspondence in my files and a photograph of a flock of Whooping Cranes taken by Lahrman during spring migration several decades ago. On 22 March 1974, I wrote to Lahrman, seeking recent records of the Whooping Crane in the region of my home town of Battleford, Saskatchewan. In addition to several observations local residents had reported to the Museum, Lahrman included a photograph of six Whooping Cranes foraging in a field ~14 km southwest of Battleford (NE ¼ Sec. 26-42-18 W3), near the CN siding of Prongua, on 25 April 1969 (Figure 1). The birds had been reported to Conservation Officer Ken Smith on the morning of the previous day by our family friend, Robert E. Butler, who farmed nearby. On the day the photograph was taken, the birds were also observed by Gil Watson and Doug Gilroy. Smith reported later that the birds were last seen at dusk in the same area on that day (F.W. Lahrman, *in litt*., 9 April 1974). Featured in the photograph were almost one-fifth of the total population of Whooping Cranes at the time. A few months later, during the fall migration, Lahrman photographed a group of 11 Whooping Cranes, including one juvenile, near Glaslyn, 75 km north of Battleford, on 15 October 1969.[5] The ensuing decades have seen the number of Whooping Cranes in the Aransas-Wood Buffalo population increase to more than 500 individuals, an ongoing success story.[7]

Acknowledgements

I thank the late Robert E. Butler for initially reporting the Whooping Cranes, and the late Fred W. Lahrman for responding to this inquiry and many other requests for information in the files of the Saskatchewan Museum of Natural History.

1. McNulty F (1966) *The Whooping Crane*. Clarke, Irwin and Co., Toronto, ON.

2. Belcher M (1967) Review: *The Whooping Crane*, by Faith McNulty. *Blue Jay* 25:45-47.

3. COSEWIC (2010) Assessment and status report on the Whooping Crane *Grus americana* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, ON.

4. Scott L (2003) Fred W. Lahrman, 1921–2003. *Blue Jay* 61:186-188.

5. Lahrman FW (1972) The Whooping Crane in Saskatchewan. *Blue Jay* 30:146-150.

6. Sealy (2020) William Rowan and Canada's 5¢ Whooping Crane stamp: the proposal and a Saskatchewan photograph. *Blue Jay* 78(3):19-26.

7. Devokalitis M (2019) Whooping Crane population hits historic high in 2018. https://www.allaboutbirds.org/whooping- crane population-hits-historic-high-in-2018/ (accessed February 23, 2019).

CHRISTMAS BIRD COUNT FOR KIDS

Lacey Weekes
Conservation & Education Manager
Nature Saskatchewan

Our 6th annual Christmas Bird Count for Kids occurred on Saturday, January 2, and it looked quite different from past years due to the COVID-19 pandemic. No large gatherings and no sharing a meal after the count. Instead, we had seven groups of 10 people at various locations around Wascana Lake, practicing physical distancing and wearing masks.

After counting birds, the participants were invited to use Tim Hortons gift cards to grab a treat before heading home to join a zoom webinar. During the webinar, each group leader presented their total bird count. The count results included our regular Mallards and Canada Geese on the lake, and our predictable Rock Pigeons were warming themselves under the Willow restaurant. Cheerful chickadees and nutty nuthatches were singing in the shrubs. One group had an intimate gathering with a flock of 13 White-winged Crossbills. The most exciting bird we saw, and a first for our count, was a Prairie Falcon! It put on quite a show for one group as it dive bombed the Mallards and Geese sitting on the ice. Our total count was 15 species and 280 individuals.

Downy Woodpecker. Photo credit: Melissa Ranalli.

We also had the pleasure to welcome Jan Shadick from Living Sky Wildlife Rehabilitation. She highlighted the role of a wildlife rehabilitation centre, what we can do to help wildlife, and introduced us to some of the birds in their care. For more information visit https://livingskywildliferehabilitation.org/.

I believe now, more then ever, people need community and an opportunity to get outside and connect to nature. Many kids who attended this event had never gone bird watching or even held a pair of binoculars before. Other kids had been coming to this event for years and were able to share their knowledge with those new to the count.

Photo credit: Lyn McCaslin.

Thank you to everyone who came out for our Christmas Bird Count for Kids. Thank you as well to our volunteers, to Nature Regina for handling the registration, and to Nature Canada for its continued funding and support.

See you next year and Happy Birding!

NATURE SASKATCHEWAN 2021 SPRING MEET AND ANNUAL GENERAL MEETING

Due to the ongoing pandemic, we regretfully will not be able to host our traditional Spring Meet.

The AGM will take place on June 21, 2021 at 7:00 p.m. via Zoom.
Registration details will be available on the Nature Saskatchewan website and in the Summer issue of *Blue Jay*.

Ideas for alternative activities (webinars/small group tours) in lieu of the Spring Meet are being discussed.
Watch our website and the Summer *Blue Jay* for updates.

THE NATURE NOTEBOOK: OUR WINTER VISITOR

Short-tailed Weasel. Photo credit: Jared Clarke.

Jared Clarke

Winter in Saskatchewan has many positives, but one of my favourites out on our farm is the reappearance of our resident Short-tailed Weasel! For many years now, a Short-tailed Weasel has taken up residence in our garage during the winter months. At this time of the year, it is pure white, with a little pink nose and a black tip on the end its tail. It is not very big — maybe the length of a Richardson's Ground Squirrel (or gopher) plus its tail — but man do they have a lot of charm! It is so captivating to watch as it darts in every direction at once.

One of the big benefits of our tenant agreement with the weasel is you cannot find a mouse in our garage during the winter. One year, a small pile of black-oil sunflower seeds spilled on the garage floor and remained untouched by rodents for the entire winter. I appreciate you weasel! We do not have cats on our farm specifically because of the impact they have on wildlife — honestly I don't think the weasel would last if we did.

According to the Montana Trappers Association's website most weasels live about a year, but some can live up to six! Is this the same weasel every year in our garage? I doubt it, but my imagination does wonder.

Weasels on farms get a bad rap as chicken-killers, and because of this they are trapped and killed ruthlessly. It is true, they can decimate a chicken flock overnight — in fact we had a little bantam hen and her entire brood get killed by a weasel a few years ago. Yet, despite their potentially lethal impact on a chicken flock, I love having them around our place! Instead of persecuting the weasel because occasionally they like to eat chickens, I have built our chicken coop like Fort Knox — it ain't getting in (and I'll let you know in a future column if it ever does! Haha!).

During the summer, we don't see the weasel around much as it no longer hangs out in the garage, so I don't know exactly where it spends its time. I have also never seen any baby weasels on our farm. Reading up on this species, I learned that the females on average give birth to six to eight babies in April or May, typically in an underground burrow or hay stack. The young are weaned at five weeks and are able to hunt on their own by seven to eight weeks of age! Apparently, the family stays together until the end of the summer and then they go their own way. Fascinatingly, the breeding season for Short-tailed Weasels is in July, but the female delays implantation for nine to 10 months!

I've had more close interactions with the weasels on our farm over the years than any other mammal, besides perhaps our summer-resident Big Brown Bats. It is such a privilege to get to live in harmony with an animal like this. What animal do you have visiting you in your yard? A squirrel, a robin, a House Wren? Maybe it is time to take a closer look at who is sharing your yard with you!

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

HISTORY AND CURRENT STATUS OF FRANKLIN'S GROUND SQUIRREL
IN MANITOBA AND ELSEWHERE IN CANADA

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Franklin's Ground Squirrel (*Poliocitellus franklinii*; hereafter, FGS) occurs across a large portion of north-central North America. Its global conservation (Red List) status is "Least Concern", based in large part on the assumption of healthy populations in the Prairie Provinces, contrasting with declining numbers farther south and east, especially in Indiana and Illinois.[1] I became aware of local population declines in southeast Manitoba in the late 1980s, which gradually led me to review Canadian distributional records and related natural history to evaluate this "Least Concern" assessment.

Franklin's Ground Squirrel resembles a small Eastern Gray Squirrel (*Sciurus carolinensis*) but with shorter ears and a less bushy tail (Figure 1). Its geographic range extends from central Alberta and southern Saskatchewan to parts of Kansas, Missouri, Illinois, and Indiana, including portions of southern Manitoba and several northern Great Plains states, and a limited area of northwest Ontario.[2-4] It has recently been detected in extreme northeast Montana, and its potential occurrence in northeast Colorado has been discussed.[5,6] An introduced population in New Jersey, arising from the accidental release of one pair in 1867, persisted for at least 40 years but has apparently disappeared.[7,8]

In 2007, Huebschman reviewed comprehensively the distribution, abundance, and habitat associations of FGS throughout its range, compiling a valuable body of museum specimen data and published observations.[4] Though FGS is sometimes described as a tall-grass prairie species, Huebschman pointed out that its habitat preferences include woodland and wetland edges and clearings with dense ground cover, as well as grasslands with scattered trees and shrubs.[4] In Canada, FGS occurs mostly in prairie/farmland-forest transitional regions, often near large lakes and wetlands.[9,10] Ideal habitat includes slightly elevated, well-drained areas where burrows are protected from seasonal flooding. These elevated areas may be either natural, *e.g.*, beach ridges alongside large lakes, or artificial, such as excavated gravel piles or road and railway rights-of-way.[4,11,12] Large, protective objects, including isolated buildings, are also often a feature of burrowing sites.[4,12] Earlier literature refers to FGS occupying the Transition Zone (aspen parkland) but extending some distance into the Canadian Zone (boreal forest).[4,9] Using current ecozone terminology, the Canadian range lies within central and eastern portions of the Boreal Plains and some adjacent parts of the Prairies and Boreal Shield.[13]

FIGURE 1: Franklin's Ground Squirrel (probably a fully grown juvenile) feeding near a picnic site at Grand Beach, Manitoba on 3 September 2008. Photo credit: Peter Taylor.

Pest control, conservation, and research

Long considered foes of farmers, ranchers and gardeners, ground squirrels have often been the targets of control campaigns.[14,15] In the case of FGS, crop damage and occasional chicken depredation may be offset by consumption of weeds (*e.g.*, they are fond of dandelions) and harmful insects.[16,17] Habitat fragmentation has made many North American ground squirrels vulnerable to local extirpation, leading to a gradual change in attitudes. An internet search on ground squirrels thus produces a strange mixture of advice on topics from extermination to conservation. Yensen and Sherman commented that the old adage "where there's one ground squirrel, there's bound to be lots more" must be replaced with "where there's one ground squirrel, there's a place we ought to protect because probably there aren't many more places with squirrels." [14]

While conservation concern for ground squirrels in general remains relatively low in western Canada, population declines of FGS have been reported in some southern and eastern parts of its U.S. range. While rankings and terminology vary among different jurisdictions, FGS is listed as endangered in Indiana and threatened in Illinois, with lower levels of concern elsewhere.[1,18,19]

The possible importance of FGS as a duck-nest predator prompted research on its natural history at Delta Marsh, Manitoba by Hochbaum in 1938 and continued by Sowls through the 1940s, then by Sargeant *et al.* in several prairie states and provinces in the 1980s.[9,20,21] Natural-

FIGURE 2: A rare sighting of a Franklin's Ground Squirrel in wintry conditions. This early-emerging individual was first seen on 2 April 2020 and photographed the following day at a bird feeder in La Vallee Township, Rainy River District, Ontario. Photo credit: Michael Dawber.

history research has also been reported from Pinawa, Manitoba and Miquelon Lakes Provincial Park (PP), Alberta.[11,22] The Pinawa study yielded 40 specimens now preserved at the Manitoba Museum in Winnipeg (R. Mooi and J. Klapecki, pers. comm.). Increasingly detailed biological research has resumed recently at Delta,[10,23,24] which is also the locality for many FGS specimens held by various museums.[25] Conservation concern for FGS, especially in Illinois and Indiana, has inspired extensive research on its habitat requirements, detection, and distribution.[4,12,26-31]

Summary of natural history

In Canada, FGS is active above ground from the second half of April until early October, albeit rarely before May or after early September. An exceptionally early individual emerged at a residential garden in La Vallee Township, Ontario on 2 April 2020 (Figure 2). The latest record I have found was near Pinawa on 11 October (year not given, but during 1969-73).[11] Males emerge from hibernation up to two weeks before females; they may recommence hibernation as early as late July, followed by females in late August.[9-11] Growing juveniles first emerge from nesting burrows in early July, gradually becoming independent (Figure 3), and are normally the last to hibernate.[9-11]

Franklin's Ground Squirrel is subject to "boom or bust" population fluctuations with peaks at intervals of 4-10 or even more years, making long-term trends difficult to define.[4,9,10,32-33] A 1933 parasitological study referred to peak abundance in Manitoba in 1912, 1917, 1923, 1927, and 1932, with sharp declines between these peaks.[32] Sowls noted 1938 as a peak year at Delta, with a considerable decline in 1939 and incomplete recovery even by 1946.[9] Also near Delta, an agricultural incident in a breeding area, followed by overland flooding, caused a sharp decline in FGS numbers between 2000 and 2001, followed by an "ultimate crash" in 2004, but the population had rebounded by 2014.[10] Roger Smith (Brandon University) studied a thriving population near Oak Island Resort in the 1980s, but Hare found none when he surveyed Smith's site in the early 1990s (J. Hare, pers. comm.), though occasional sightings continue in the general area of Oak Lake. Erlien and Tester found an 11-year interval between peak populations (1961-1962 and 1972-1973) in northwest Minnesota.[33]

Soper (as cited by Huebschman) found FGS distribution in Prince Albert National Park (NP), Saskatchewan "notably inconsistent … in many favourable localities it appeared to be absent" and later, in southern Saskatchewan, "Local dispersal and numbers are noticeably irregular — sometimes common, scarce or apparently wanting".[4,34,35] These observations are perhaps related to local population fluctuations. Determination of FGS abundance is further complicated by its inconspicuous nature when in tall, dense vegetation.[4,5] Its whistles are therefore useful for detection and identification.

Further to the general habitat preferences described on p. 17, a fine-scale habitat mosaic, combined with supplementary food, at large campsites and picnic areas seems especially favourable. This observation may be biased by the bold behaviour of squirrels that are habituated to humans, and the resulting diet may not be beneficial (they, squirrels and humans alike, hang around fast-food concessions and are partial to french fries!). Well-known locations of this sort include sites in Birds Hill PP, Riding Mountain NP, and various lakeside parks in Manitoba; Moose Mountain, Buffalo Pound, and Good Spirit Lake PPs in Saskatchewan; and Dillberry Lake PP in Alberta.[36] The affinity of FGS for campsites (and the easy food they represent) was noted in Minnesota in the 19th century,[37] and likely has much earlier origins.

FIGURE 3: Juvenile Franklin's Ground Squirrel at Norris Lake, Manitoba on 24 July 2018. Photo credit: Peter Taylor.

Personal observations and data sources

After moving to Pinawa in 1975, I frequently encountered FGS, especially in partly cleared areas near forest edges, often seeing up to five per day in the Pinawa – Lac du Bonnet region without special search effort (*i.e.*, chance encounters while birding). By the late 1980s, my sightings were becoming less frequent, and I started to keep more detailed notes in the late 1990s. In addition to my own observations, records were compiled from the following sources: (a) specimens at The Manitoba Museum (Winnipeg) and the Sam Waller Museum (The Pas); (b) specimens and publications cited by Huebschman,[4] (c) specimen records in the Global Biodiversity Information Facility (GBIF) and VertNet online databases;[25] (d) papers and unpublished reports;[38-49] (e) photographic records at the iNaturalist website (up to 2019);[36] (f) correspondence arising from an information request in *Nature Manitoba News*;[50] (g) other personal contacts cited in the acknowledgements. Because most of my own and my correspondents' observations were in Manitoba, the following discussion is unavoidably biased towards this province.

Canadian distribution summary

Manitoba – The map in Figure 4 depicts localities for 171 FGS specimens and 97 other reports for Manitoba, including multiple records at some localities. Some clusters of records are counted as single localities. Forty-five of the resulting 86 localities had records during the period 2000-2019. These give a reasonable indication of current distribution, but not population trends. Anecdotal evidence of local declines and more definite evidence of northward range extensions is presented in the following section.

Northwest Ontario – Starting with a report at Rainy River in 1925, FGS has occupied a limited portion of northwest Ontario in and near the

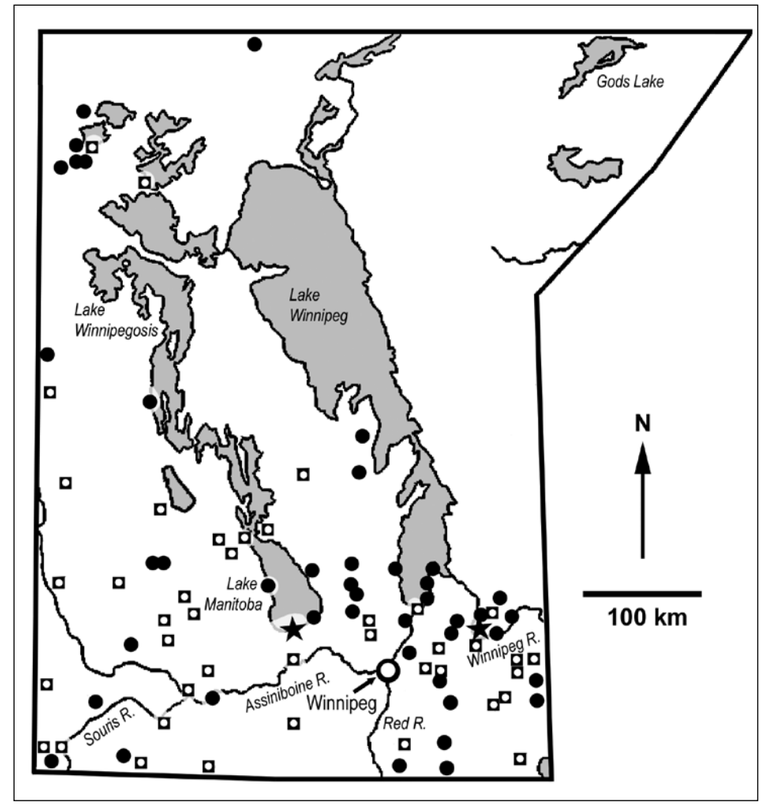

FIGURE 4: Distribution of Manitoba specimen, photographic, and sight records for Franklin's Ground Squirrel. ★natural history studies near Delta and Pinawa;[9-11] ● 2000-2019; ◘ pre-2000. The northern boundary of the map is at about 54.9°N. Some closely spaced localities, such as St. Ambroise PP and Lake Francis WMA (ENE of Delta), are represented by a single symbol. Some 2000-2019 records overlie pre-2000 records.

communities of Kenora, Fort Frances, and Rainy River.[4,36,51-53] This area is contiguous with the Manitoba range, extending north to 49.8°N near the Manitoba boundary and east to 93.3°W near the Minnesota border.

Saskatchewan and Alberta – Huebschman compiled localities for FGS specimens from Saskatchewan and Alberta at several museums, along with observations by various naturalists and researchers.[4] Engley and Norton mapped additional Alberta records including specimens at the University of Alberta (Edmonton) Museum of Zoology, details of which are in the GBIF database.[25,54] They questioned a pre-1900 specimen record from Pincher Creek (about 180 km south of Calgary, well beyond the current known range.[54] Six additional locations in the Drumheller region of Alberta were compiled by Schowalter.[55] The Royal Saskatchewan Museum (Regina) has FGS specimens from 11 localities, nine for the 20th and two for the 21st century (R. Poulin, pers. comm.), which were not included in Huebschman's compilation. A rapidly growing number of photographic records for FGS in both Alberta and Saskatchewan are available at iNaturalist.[36] Records from these sources are compiled in Figure 5, using a 2019 cutoff for iNaturalist.

Changes over 200 years

The original "discovery" of FGS by members of Franklin's First (Coppermine) Expedition at Carlton House, Saskatchewan in May 1820 attests that the species is not a newcomer to the Prairie Provinces (see Figure 6).[56,57] Early Manitoba records include two undated Smithsonian Institution (Washington, D.C.) specimens. One was collected by Robert Kennicott (1835-1866) at "Red River Settlement" (present-day Winnipeg), presumably during his 1859-62 expedition to northern Canada and Alaska.[25] A "Red River" specimen was collected by D. Gunn — no doubt Donald Gunn (1797-1878), who had a long-standing connection with the Smithsonian.[25,58] Though undated, the Kennicott and Gunn records clearly precede the arrival of Ernest Thompson [Seton] in Manitoba in 1882. Thompson described FGS as not abundant anywhere, though generally distributed in wooded or scrubby parts of western Manitoba.[59] Some of his specimens, dated from 1884 to 1891, are at the Smithsonian, the Canadian Museum of Nature in Ottawa, and the Royal Ontario Museum (ROM) in Toronto.[25]

Distributional changes of FGS, linked to European settlement, date back at least to the 19th century. In his 1909 book, Seton mentioned finding no trace of FGS in the thick forests of Riding and Duck Mountains, whereas it was locally established in Riding Mountain NP by 1932.[40,46] Seton also found an overall increase between 1882 and 1909, especially near the major population centres of Winnipeg, Portage la Prairie, Brandon, Minnedosa, and Dauphin.[46] At about the same time, Herrick noted that FGS "was at one time fairly abundant throughout the southern part of Minnesota, but is being rapidly exterminated by civilization".[37] Nevertheless, based on iNaturalist records, the northern third of Minnesota remains one of the main U.S. strongholds for FGS.[36]

Sowls summarized the arrival of FGS near The Pas in central-western Manitoba (northwest corner of Figure 4) during the early 1940s, citing a 1941 specimen collected by Sam Waller at Big Eddy and a 1942 sighting by Harry Sanderson near Moose Lake, well east of The Pas.[9] Writing to Sowls in 1946, Waller stated that FGS had spread into the Carrot River farming area (southwest of The Pas) in the past five years.[9] Specimens collected by Waller and others are held in the Sam Waller Museum at The Pas (K. Patterson, pers. comm.), the Manitoba Museum (R. Mooi and J. Klapecki, pers. comm.), and several other collections.[25] Based on my correspondence with David Raitt, FGS still occurs in and near The Pas. His most northerly sighting was about 7 km northeast of Wanless at 54.233°N, 101.295°W. Owen Ridgen documented a remarkable outlying record of an adult (presumably female) carrying a juvenile about 170 km farther east-northeast, between Ponton and Wabowden (54.79°N, 98.81°W).[36]

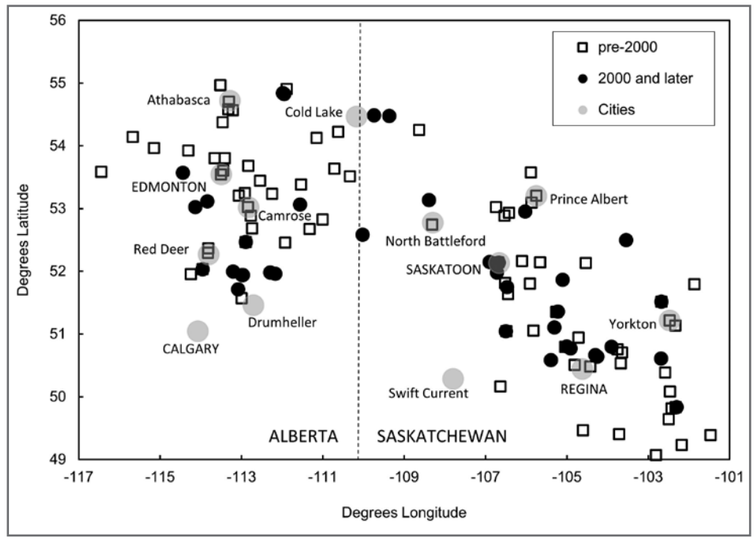

FIGURE 5: Records of Franklin's Ground Squirrel in Saskatchewan and Alberta: ☐ pre-2000 (mostly specimens); ● 2000-2019 (mostly sightings and photographic records). Some towns and cities are shown for reference as grey circles; they do not represent records unless overlain by other symbols. The top and sides of the figure are not provincial boundaries.

A similar range expansion into northwest Ontario during the 20th century has also been sustained into the 21st century. A report of FGS at Rainy River in June 1925 was substantiated by ROM fieldwork in 1929.[51] The range extended to Emo by 1936 and to the Kenora area by 1960.[51,52] This has been linked to forest clearing and localized agricultural development.[51,53] Records remain limited to the Kenora – Fort Frances – Rainy River region.[36,53] As of 30 August 2020, they comprise at least: (a) 19 ROM specimens from 12 distinct localities; and (b) 21 recent photographic records including 17 submitted by Michael Dawber, a Rainy River District resident.[4,36] Dobbyn *et al.* predicted in 1994 that further range expansion in Ontario would be constrained by limited soil depth for burrowing on the Canadian Shield,[53] and this holds true for more-recent records. Association of FGS with buildings is common in northwest Ontario (M. Dawber, pers. comm.), perhaps reflecting a lack of burrowing opportunities in natural settings. Nevertheless, the 2019 record near Wabowden, Manitoba (noted in the preceding paragraph) attests to the species' ability to travel considerable distances (likely by following transportation rights-of-way) to local areas of suitable breeding habitat. North of the current known range in Ontario, there appears to be suitable habitat in the Oxdrift-Minnitaki area west of Dryden (M. Dawber, pers. comm.).

Numerous records in the southern part of the Interlake region between lakes Winnipeg and Manitoba also reveal extension of known range (Figure 4). Much of this region is characterized by aspen parkland interspersed with small wetlands and low-intensity agricultural development (more pasture and hay than cropland). The northernmost Interlake record was at Lake St. George Caves Ecological Reserve (51.602°N, 97.408°W) in 2016 (J. Burns, pers. comm.). Records from a little farther west, near Mantagao Lake, date back to 1979.[38]

Contrasting with this expansion in lightly farmed parts, several of my correspondents indicated a long-term decline of FGS in intensively farmed areas near the southern edge of the Interlake region. A former Balmoral-area resident, Catherine Thexton reported FGS on her small farm property in 1981, increasing in 1982, then absent in 1983, but reappearing by 1986. Her collection of high-quality bird-song recordings includes some of the melodious calls of these squirrels.[60] The current property owners, Jim and Patsy Duncan, have not seen FGS since moving there in 1995. Writing to me in 2012, Ken Gardner mentioned "a few good colonies years ago in the Stonewall area", a locality also mentioned by Soper.[48] Similarly, Liis Veelma and Rudolf Koes considered FGS to be increasingly scarce in southern Manitoba, except for hot spots already mentioned.

In southeast Manitoba (east of the Red River and Lake Winnipeg), recent records extend slightly north of most published range limits; FGS occurs commonly along the east shore of Lake Winnipeg to Victoria Beach and sparingly up the Winnipeg River to Pointe du Bois (Figure 4). Farther south, it seems scarcer than formerly in and near Whiteshell PP, though still apparently thriving near the Ontario boundary at Falcon Lake resort and persisting at West Hawk Lake. Elsewhere across much of southern Manitoba, FGS seems best described as locally persistent, though thriving at a few localities such as Birds Hill PP. Records are sparse in agricultural regions west of the Red River and south of the Assiniboine River. Retired ornithologist Paul Goossen wrote to me: "I don't think I have ever seen one [FGS] in the Morden-Winkler area; I also don't recall seeing them in the Pembina Valley, nor on our farm near Manitou when I was younger."

Ken De Smet (pers. comm.) provided the following assessment of the fortunes of Richardson's (*Urocitellus richardsonii*) and Franklin's ground squirrels, incidental to his many years of fieldwork with grassland birds in the Melita – Lyleton – Pierson region of extreme southwest Manitoba. Richardson's went from abundant during dry conditions in the late 1980s and early 1990s to almost nonexistent when the region entered a prolonged climatic "wet cycle" in 1993. The species has remained in small numbers with a localized distribution since then – perhaps one hundredth of the numbers during the dry period. Conversely, Franklin's benefited from the lush vegetation arising from the wetter-than-normal conditions, and De Smet often heard (but rarely saw) them in lush pastureland with minimal shrubbery. During his long-term monitoring of Ferruginous Hawk (*Buteo regalis*) nests, De Smet never found FGS remains, the principal prey species being Richardson's and Thirteen-lined Ground Squirrels (*Ictidomys tridecemlineatus*) and Northern

Pocket Gophers (*Thomomys talpoides*).

The substantial, though fluctuating population of FGS at Delta, on the southern shore of Lake Manitoba, has already been mentioned for its research importance (see pp. 17-18), and there are numerous records elsewhere along this shore. Indeed, the shores of Lake Manitoba and the south basin of Lake Winnipeg, albeit subject to the hazard of fluctuating lake levels, may represent the "heartland" for FGS in Manitoba, along with protected "islands" such as Birds Hill PP, Riding Mountain NP and nearby pothole country, and probably Spruce Woods PP. The scarcity of recent records west of lakes Manitoba and Winnipegosis, apart from some developed areas of Riding Mountain NP, may reflect low observer effort.

My evidence of historical change in Alberta and Saskatchewan is more limited than for Manitoba and Ontario. Overall, records extend a little farther into Alberta than depicted by Banfield (Figure 6). One outlying Saskatchewan record and the recent Montana observations lie south of the published range limits (Figure 6). The post-2000 (mostly photographic) records in Figure 5 are distributed over much of the range of earlier records (mostly museum specimens), though lacking so far (hinting at possible range contraction) in the western extremities in Alberta and the southern extremities in Saskatchewan. I have found no records of FGS for portions of central-eastern Saskatchewan adjoining the range extension near The Pas, Manitoba, and recommend searching for it in this region (flagged by a question mark in Figure 6).

All of the range extensions discussed above are summarized in Figure 6, based on the distribution map in Banfield's *The Mammals of Canada* (1974).[2] Other published range maps vary slightly in details; for example, Reid shows FGS occurring farther north near the Manitoba-Saskatchewan border (to about The Pas) and farther west in central Alberta, but not in the Manitoba Interlake.[3] Local range expansion has also been reported in some northern parts of the U.S. range, whereas there is anecdotal evidence of local declines in parts of southern Manitoba, and definite declines in the midwestern U.S.[29,52,61]

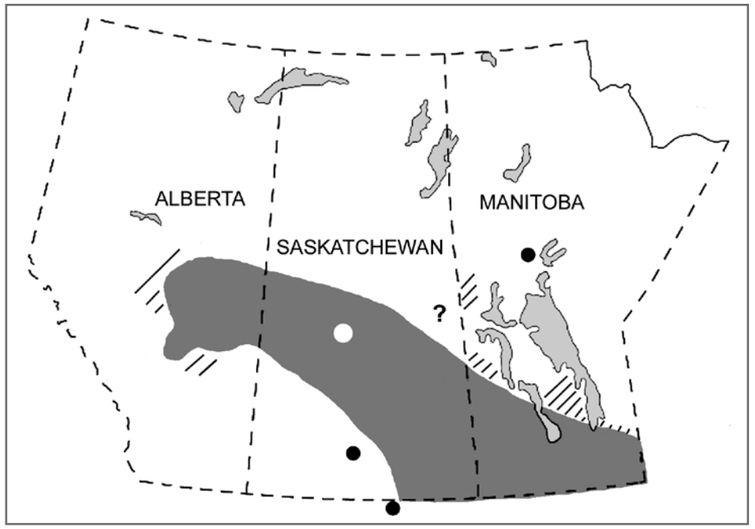

FIGURE 6: Estimated current distribution of Franklin's Ground Squirrel in the Prairie Provinces. The uniformly dark area is the distribution given by Banfield in 1974.[2] Hatched areas represent range extensions. Black circles show extralimital occurrences in south-central Saskatchewan, extreme northeast Montana,[5] and central Manitoba. The white circle shows the type locality at Carlton House, Saskatchewan.[56,57] A question mark indicates potential occurrence in east-central Saskatchewan, based on Manitoba records. The range in northwest Ontario is contiguous with that in Manitoba.

Conclusions

In combination, these records and anecdotes suggest that FGS is maintaining its Canadian range, at least at a broad regional level, thus supporting the "Least Concern" conservation status.[1] There is evidence of local declines in southern Manitoba, partly offset by some northward range expansion. The overall range boundary appears to fluctuate with time, possibly linked to changing moisture regimes. The prevalence of FGS in a number of national and provincial parks seems to favour the species' long-term prospects, though local populations may become increasingly isolated as agriculture continues to expand and intensify. While a certain degree of development in originally forested areas appears to favour range expansion, increasingly intensive agricultural practices tend to fragment and isolate wildlife populations. This may hinder local recovery of FGS after population crashes, as implicated in population declines in parts of the U.S. range.[4,28]

Given the generally inconspicuous nature of FGS, and especially its local population fluctuations and occasional catastrophes, present data are insufficient to estimate any overall population trend. As the iNaturalist database and similar online resources grow, a more detailed picture of this animal's distribution should emerge, providing a valuable tool for conservation efforts.

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HUMAN NATURE

Ken Ludwig
Regina, SK

It is a lazy summer afternoon when I park at the side of the gravel road, check in at the nearby house to ask permission for my visit, and walk west into the rolling country of grass and scattered aspen bluffs, passing the skeleton of a sweat lodge on a small rise along the way. Hawks circle here and there in the air watching for movements on the ground. Wild bergamots, black-eyed susans and prairie clover add colour among the grasses, and prairie sage lightly scents the warm air.

After a short walk, I reach a circle of poles from a ceremonial arbour standing in a hollow at the foot of a slope. A coyote pauses not far away, surveys me for a moment, and then continues on its way. The slope invites me to climb.

On the level top of the windswept hill, the highest in the area, I come upon the Moose Mountain medicine wheel. This arrangement of stones includes a central cairn, a middle ring, and five spokes leading to outlying cairns.

When the site was first documented by land surveyors in 1895, the central cairn was described as over four metres high. It now rises less than a metre above the grass, with many stones having been carried away over the years.

The cairns are astronomically aligned. The largest outlying cairn and the central cairn together point to the sunrise at summer solstice (the alignment is now approximate, but would have been exact when the arrangement was built some 1,700 years ago). Other combinations of the cairns point to the heliacal risings of the bright stars Sirius, Rigel, Aldebaran and Fomalhaut, also at summer solstice. These mirror the alignments at the more well-known medicine wheel in the Bighorn mountains in Wyoming.

The stones add to the magic I can already feel here on the hill, in the wild grass with an incredibly overarching sky and panoramic views over the farmland plain to the south and the wooded hills to the east. It quietens me, and makes for a reflective walk back.

Photos courtesy of Ken Ludwig.

The Moose Mountain medicine wheel is located at the western end of the Moose Mountain uplands, on the Pheasant Rump Nakota First Nation (about 12 km north of the town of Kisbey). It is recognized as a sacred site, and still hosts ceremonial activity. As well as obtaining permission, anyone who wishes to visit should do so with respect and reverence, for the place itself and for what it has meant for so long to the people who have lived here.

MYSTERY PHOTO

Winter 2020 (top left)
ANSWER: The unique marking shown in the Winter 2020 issue of *Blue Jay* appears on the wing of a luna moth (*Actias luna*). In Canada, the luna moth is found in the Maritime provinces west to Saskatchewan and makes its home in deciduous trees. Like other members of the giant silkworm family, luna moths — as adults — have reduced mouthparts and don't eat at all. They survive on stored fat and, as such, only live for about a week.

Photo credit: Harvey Schmidt.

Spring 2021 (bottom left)
QUESTION: What bird's body is being shown in this photo? Hint: This species, which can be found throughout the prairies, is usually seen foraging on the ground in groups of up to 15.

Please send your answers to the *Blue Jay* editor, Annie McLeod, by email at bluejay@naturesask.ca or by letter mail (address on page 4). Those with correct answers will be entered into a draw for a prize from Nature Saskatchewan.

Have you taken a picture that may make for a good mystery photo? Send it to the editor for possible inclusion in an upcoming issue.

Photo credit: Annie McLeod.

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