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BLUE JAY





Responding to Harvey Beck's request for observations and specimens of mammals to augment information published in *A Guide to Saskatchewan Mammals* (1958), Spencer Sealy collected voucher specimens in the Battleford area in the late 1950s and early 1960s, and periodically in the ensuing decades.



The Yellowhead Flyway Birding Trail Association Loon Initiatives Committee conducted its annual survey at Madge Lake over the spring and summer of 2024. See page 15 for the results.



David Larson's 2024 publication, *Arthropods of Canadian Grasslands Vol. 5: Beetle Diversity of a Canadian Prairie Homestead*, not only focuses on beetles, but also provides considerable discussion of the relation of beetles to the general prairie environment.



Robert Wrigley contemplated the significance of Leonardo da Vinci's quote "Water is the driving force of all nature" one summer day as he was attempting to cut his lawn prior to the start of some rain in the forecast.



Joe Schmutz explains, and shows, how a Sharp-tailed Grouse is demonstrating one of at least three ways that wildlife can deal with the cold.



Of the two black widow spider species in Canada, only the Western Black Widow is found in Saskatchewan. Its presence has been known since 1980, but there is a large gap in knowledge about this invertebrate. Doug Adams shares what is currently known about Saskatchewan's black widow spiders.

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FROM THE PRESIDENT

Lorne Scott
President, Nature Saskatchewan

It is an honour to pay tribute to our recently retired Executive Director, Jordan Ignatiuk. Jordan was born at Preeceville, Saskatchewan in 1964 and lived on a small farm, growing up in the great outdoors close to the Assiniboine River. After graduating from high school, he attended the University of Regina and obtained a Bachelor of Science degree. For a couple of summers, he worked with the Canadian Wildlife Service doing waterfowl research. He next attended McGill University and obtained a Master of Science degree. Upon returning to his home province, Jordan worked with Ducks Unlimited Canada, from 1990 to 1992. He was recruited to work with the newly created

Saskatchewan Wetland Conservation Corporation (SWCC) in 1993 and remained there until 1997. During this time, extensive wetland conservation work was accomplished. The Western Hemisphere Shorebird Reserves were identified in Saskatchewan. The construction of the Chaplin Nature Centre was completed, and it remains in operation today through a partnership between the local community of Chaplin and Nature Saskatchewan. Following the wind-up of SWCC, Jordan began working with the newly created Saskatchewan Region of the Nature Conservancy of Canada, in 1997. As Director of Conservation, Jordan oversaw the securement of thousands of acres of natural habitat in southern Saskatchewan. Some parcels were purchased, such as 1,600 acres in the Qu'Appelle Valley — known as Fairy Hill, north of Regina — and the 4,000 acres of native grasslands referred to as Buffalo Valley in the Missouri Coteau in the Beechy and Dinsmore area. Dozens of smaller parcels of habitat were secured throughout southern Saskatchewan through purchase and Conservation Easements. In 2013, Jordan was hired as Executive Director of Nature Saskatchewan. During his time with us, the Stewards of Saskatchewan programs — which engage rural landholders and land managers in conserving habitat in southern Saskatchewan — have seen significant growth through our dedicated staff. With Jordan's experience and knowledge, we were successful in convincing the Government of Saskatchewan to retain ownership of the former PFRA pastures that were returned to the province by the federal government. These pastures (1.6 million acres), along with the 800,000 acres of provincial pastures, are some of the largest and best managed grazing lands in the province. Grazing will continue, but breaking, clearing and drainage of natural landscapes will not be allowed. Most importantly, these pastures will remain in public ownership.



Lorne Scott

Under Jordan's leadership of Nature Saskatchewan, many other accomplishments were achieved. EcoJustice, a national conservation legal group based in British Columbia, contacted Nature Saskatchewan as they needed a Saskatchewan conservation organization to partner with them in an endangered species court challenge when the federal government refused to identify critical habitat for endangered Greater Sage-Grouse. The critical habitat was well defined and EcoJustice said it was a sure win. A couple of friends in the provincial government warned Nature Saskatchewan not to support the court challenge. The Board, under Jordan's leadership, met to discuss the issue. The choice was to either be intimidated and back down from being a voice for nature or stand our ground and do what is right. Your Board chose to do what was right. As EcoJustice predicted, we won the court case and won the appeal. It was interesting, however, that even though federal funding had been approved for our species at risk efforts, a decision to cut the funding was then ordered right from the Prime Minister's Office. Through Jordan's ability to shuffle funds, our summer work continued and our heads were held high.

For decades, Nature Saskatchewan has been concerned about wetland drainage. With higher land prices and large farms, the issue of illegal wetland drainage is high on our agenda. Jordan's

continued on page 13



ON THE FRONT COVER
A female Redpoll (*Acanthis flammea*) photographed at Duck Mountain Provincial Park.

Photo credit: Annie McLeod.



ON THE BACK COVER
A Tree Swallow (*Tachycineta bicolor*) photographed near Pike Lake Provincial Park.

Photo credit: Abbie Reilander.

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CELEBRATING 75 YEARS: A HEARTFELT THANK-YOU

Ellen Bouvier
Communications Manager
Nature Saskatchewan

Nature Saskatchewan recently celebrated its 75th anniversary, a milestone that was marked by two special celebrations in Saskatoon and Regina. At the heart of these successful gatherings was the dedicated planning committee, whose tireless efforts started long before the year began. Nothing would have been possible without them. We would like to say thank you to the 75th planning committee: Ron Jensen, Dale Hjertaas, Branimir Gjetvaj, Sara Bryson, Jordan Ignatiuk, Jennifer Moser-Aikman and Ellen Bouvier.

Among the many individuals who contributed to the success of the celebrations, two stand out for their exceptional contributions: Ron Jensen and Dale Hjertaas. Ron and Dale volunteered to be the presenters at the celebration banquets and with that came significant research into the history of the Saskatchewan Natural History Society. Both Ron and Dale spent countless hours preparing, treating banquet guests to interesting and captivating presentations. The little anecdotal stories added a nice touch! We are very grateful for their hard work and dedication to the 75th anniversary celebrations. Thank you, Ron and Dale. If you missed their presentations, not to worry, both are being developed for YouTube and will be available in early 2025.

While Ron and Dale's contributions were significant, the success of the 75th anniversary celebrations was truly a team effort. Every member of the planning committee played a crucial role in the successful execution of these events. Special mention also needs to go to Nature Saskatchewan staff — in particular, Jennifer Moser-Aikman. Most of you will know Jennifer as the face (and

voice) of the Nature Saskatchewan office when you contact us. Jennifer's attention to detail and her true passion to make the celebrations special for everyone did not go unnoticed! From organizing logistics to coordinating with speakers and managing attendees, Jennifer's effort ensured a seamless and enjoyable experience for all. Unfortunately, Jennifer has moved on from Nature Saskatchewan to a new role with another organization. We are grateful to her for ensuring the 75th celebrations were such a success and wish her all the best in the future.

As celebrations of this remarkable milestone come to a close, we are reminded of the importance of community and collaboration in achieving long-term success. Nature Saskatchewan's 75th anniversary was not just a celebration of the past, but a reaffirmation of our commitment to conservation and appreciation of the natural world for future generations.

Thank you once again to the planning committee! Your hard work and dedication have set the stage for the next 75 years of Nature Saskatchewan's journey. 🦋



Brian Jeffery, Dale Hjertaas and Ron Jensen at the Fall Meet. Photo credit: Reika Ravenhurst.



Nature Saskatchewan staff at the Royal Saskatchewan Museum as part of the Fall Meet.

DISTRIBUTIONAL NOTES ON SOME MAMMALS OF THE BATTLEFORDS REGION, SASKATCHEWAN

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Introduction

Knowledge of the species and distribution of mammals in Saskatchewan was updated in 1958 with the publication of W. Harvey Beck's *A Guide to Saskatchewan Mammals* (Figure 1).¹ In addition to specimens catalogued in the Saskatchewan Museum of Natural History (now Royal Saskatchewan Museum), Royal Ontario Museum, and University

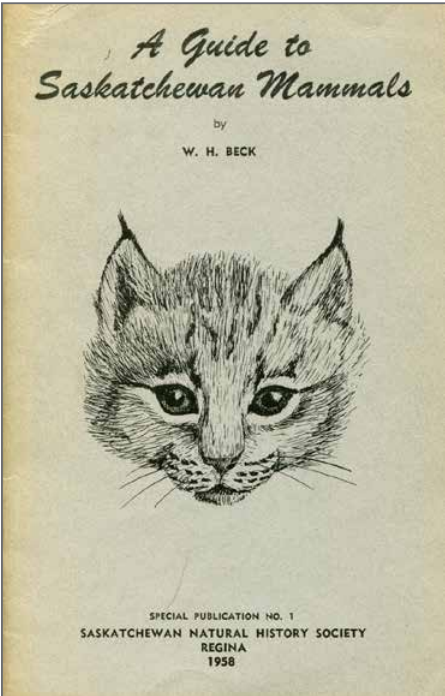


FIGURE 1. W. Harvey Beck's *A Guide to Saskatchewan Mammals* (1958).

of Saskatchewan Biology Museum, Beck relied on J. Dewey Soper's collections² to update and revise William A. Fuller's unpublished list of Saskatchewan mammals.³ More than 100 years had elapsed since Sir John Richardson and Thomas Drummond collected mammals in Saskatchewan, chiefly at Fort Carlton and along the North Saskatchewan River, between 1825 and 1827.⁴ There has not been an update of Beck's *A Guide to Saskatchewan Mammals* since 1958.

As a high school student in Battleford, Saskatchewan, from 1958 through 1961, I studied the accounts of each species of mammal in "Beck's Guide" and noted only one species had been recorded in the Battleford/North Battleford area (the Battlefords), as depicted by dots on the distribution maps that represented the localities given in the text where specimens were collected. Following an earlier plea for specimens of Saskatchewan mammals⁵, Beck encouraged naturalists to record mammals in their respective regions to fill gaps in the species' distributions. Beck provided instructions for preparation of specimens for permanent deposition in museum collections.¹

In response to Beck's plea, I observed mammals and preserved voucher specimens of primarily small mammals in the Battlefords area between 1959 and 1961, May to September 1962, 20-29 September 1975, 13-16 August 1999, and 30 July to 3 August 2005, with observations made opportunistically during annual

visits through 2024. Distributional notes are presented in the species accounts, whereas specimens of those and other species, habitats from which they were taken or individuals observed, and anecdotal notes on natural history, are given in Appendix 1.

Methods

Specimens were trapped with commercial mouse and rat traps from 1959 to 1962, but later with traps specially designed for sampling small mammals, which are slightly larger and generally do not damage the skulls and tooth rows upon which the identities of some species are confirmed. Hundreds of trap-nights were conducted in all habitats, in all seasons, to obtain voucher specimens, including fur bearers. Most bats were salvaged in and around buildings. Labels included measurements (nearest mm) of total length, tail vertebrae and hind foot, and notes were included for some specimens on reproductive condition. Specimens taken in 1999 and 2005 were weighed to the nearest 0.1 g on a triple beam balance. Unless otherwise stated, observations and specimens originated from within a radius of 15 km south and southwest of the centre of Battleford, particularly in the vicinity of Winniford Lake (N52.681939°, W108.42545°), which is known locally as "Johnson's Lake" (Figure 2), and in riparian woodlands that bordered the Battle River and North Saskatchewan River.

I preserved the skin and skull of each

specimen, although a few skins, but not skulls, damaged by insects were discarded. Specimens were deposited in the Beaty Biodiversity Museum, University of British Columbia, Vancouver; Royal Ontario Museum, Toronto; Royal Saskatchewan Museum, Regina; and University of Saskatchewan Biology Museum, Saskatoon. I initially followed nomenclature used in Beck's Guide and later Banfield's *The Mammals of Canada*⁶ but because scientific names of many species have changed in recent years, I followed nomenclature and order of species listed in the *Revised Checklist of North American Mammals North of Mexico*.⁷

Following Bird's *Ecology of the Aspen Parkland of Western Canada*⁸, I identified 10 habitat types from which mammals were observed or collected in the Battlefords region: (1) native grass, between aspen (*Populus tremuloides*) groves (bluffs); (2) vegetated shorelines of wetlands when water levels were low; (3) potholes surrounded by broad-leafed cat-tail (*Typha latifolia*), willow (*Salix* spp.) and usually also aspen; (4) roadside ditches of predominantly brome grass (*Bromus inermis*) that extended into patches of wolf willow (*Eleagnus commutata*) surrounded by native grass; (5) mixed patches of rose (*Rosa* spp.) and snowberry (*Symphoricarpos occidentalis*) surrounded by native grass; (6) choke cherry (*Prunus virginiana*) adjacent to roadside ditches; (7) riparian woodlands, for example, along the south shore of Winniford Lake and the Battle River and North Saskatchewan River; (8) aspen bluffs; (9) native prairie in sand hills; (10) marsh; and (11) in or associated with buildings. Most photographs of habitats were taken between 20 and 29 September 1975 (Figures 3-6).



FIGURE 3. Vegetated shoreline of Murray Lake, Saskatchewan, during a period of low water level. Photo credit: S.G. Sealy.



FIGURE 4. Roadside habitat and prairie leading to an aspen bluff. Photo credit: S.G. Sealy.



FIGURE 5. Aspen bluffs in juxtaposition with farmland. Photo credit: S.G. Sealy.



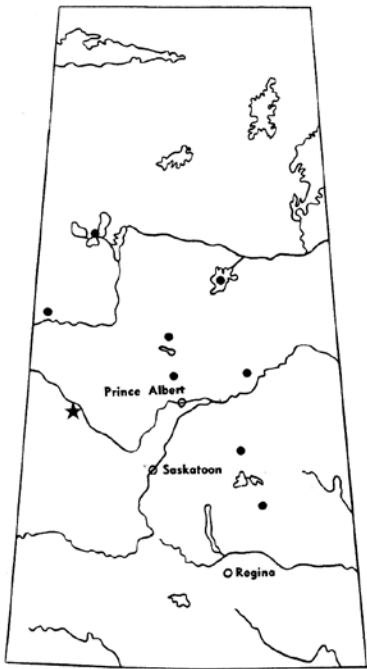
FIGURE 2. Many specimens were collected near Winniford Lake, about 8 km south of Battleford. This photo was taken during a period of high water, in 2014. Photo credit: S.G. Sealy.



FIGURE 6. Farmland abuts a riparian woodland along of the Battle River. Photo credit: S.G. Sealy.

Species accounts

Arctic Shrew (*Sorex arcticus*) – An unsexed, slightly decomposed individual was found in an otherwise empty nest of a Meadow Vole (scientific names in Appendix 1) in wild barley (*Hordeum jubatum*) along the margin of Murray Lake, 3 km east of Cochin, on 24 September 1975. One female and one male were taken in damp cattail at the edge of a moist pothole ringed with willow, which in turn was ringed with aspen, on 26 and 27 September 1975, respectively. The moist habitats from which these specimens were taken were similar to those described for Arctic Shrews elsewhere on the Canadian Prairies⁹⁻¹¹, although collections made later in Manitoba revealed use of dry sites.¹² Prior to these records, the southernmost record of Arctic Shrew in western Saskatchewan was about 290 km to the north, at Buffalo Narrows (Figure 7). Failure to collect this species prior to 1975, or since, possibly reflects its disjunct distribution along the southern edge of its range, difficulty in capturing the species because populations vary in size among years,¹³ or due to a lack of survey/trapping efforts for small mammals in Saskatchewan.



● *Sorex arcticus*

FIGURE 7. All but one species of mammal collected in this study added the Battlefords to the list of confirmed localities of occurrence in Beck's *A Guide to Saskatchewan Mammals*. Locations on the map shown here for Arctic Shrew in Beck's Guide (p. 8) depicted known localities of this species in Saskatchewan through 1958; the star indicates the Battlefords records, based on specimens taken in 1975.

Masked Shrew (*Sorex cinereus*) – At the outset of this project, two subspecies of Masked Shrew, *S. c. cinereus* and *S. c. haydeni*, were recognized in Saskatchewan.¹ In 1980, these subspecies were determined to represent two distinct species — Masked or Cinereus Shrew (*S. cinereus*) and Prairie or Hayden's Shrew (*S. haydeni*).¹⁴ The 13 specimens from the Battlefords were referred to *cinereus* by Randolph L. Peterson and Judith L. Eger of the Royal Ontario Museum.

The southern limit of the range of the broadly distributed Masked Shrew has been shown to occur just south of the Battlefords.^{6,14,15} The few records of Prairie Shrew (recorded as *S. c. haydeni*) mapped in Beck's Guide generally were restricted to grassland regions of southwestern Saskatchewan. Exceptions were Prairie Shrews taken near Saskatoon and Turtleford, the latter 82 km northwest of the Battlefords.^{1,14} Remains of six Prairie Shrews removed from pellets cast by Great Horned Owls (*Bubo virginianus*), however, confirm this species' occurrence in the region.¹⁶

Big Brown Bat (*Eptesicus fuscus*) – Prior to the present study, none of the five species of bats, including the Big Brown Bat (Appendix 1), was recorded from



FIGURE 8. Male Big Brown Bat (RSKM_MAMM_M-407/11978) found dead in a classroom of Battleford Collegiate Institute, Battleford, Saskatchewan, 19 November 1959. The insect damage at the tip of the left wing was a problem encountered during preservation of some of the early specimens. Courtesy of the Royal Saskatchewan Museum.

the Battlefords. With the exception of the Eastern Red Bat, all species were expected to occur on the basis of the extent of their ranges known at the time. In an early assessment of the status of bat species in Saskatchewan, Austin L. Rand, then of the National Museum of Canada (now Canadian Museum of Nature), stated of the Big Brown Bat: “We have no specimens, but it undoubtedly occurs, and we would be interested in seeing some to determine whether the pale prairie or the dark eastern subspecies, or both occur.”¹⁷ The following year, Fuller considered this species to be “probably [Saskatchewan's] most common [bat] species.”³

I initially salvaged eight specimens of Big Brown Bat in and around Battleford Collegiate Institute in 1959–60¹⁸ (Figure 8) that were examined by Robert W. Nero of the Saskatchewan Natural History Museum. Nero wrote (*in litt.*, 29 March 1960), “[the] specimens are good examples of what may be called intermediates between *Eptesicus fuscus fuscus* and *E. f. pallidus*], at least by color. Most Regina specimens are paler, i.e. – *pallidulus* [sic] subspecies, although we have good examples of *fuscus*.” Both subspecies had been reported in Saskatchewan, with specimens of *fuscus* taken in Saskatoon and specimens of *pallidus* taken at Estevan.³

Eastern Red Bat (*Lasiurus borealis*) – I collected a female (USBM-M 2387) roosting about 1 m high in Red-osier Dogwood (*Cornus stolonifera*) at the edge of an extensive stand of Cottonwood (*Populus angustifolia*) on 2 September 1965 (Figure 9). At the time, this was apparently the most northwesterly record of this species in Saskatchewan, but in 2001 one was captured and released farther west and north in Alberta, about 60 km north of Fort McMurray.¹⁹ Additional records have confirmed that this species' known range extends to northeastern British Columbia.²⁰

Meadow Vole (*Microtus pennsylvanicus*) – A large sample of *Microtus* was preserved because of the possibility that the Prairie Vole (*M. ochrogaster*) also occurred in the region. The eight specimens collected in 1959 and 1975 were identified as Meadow Voles, referable to *M. p. drummondii*, the subspecies expected to occur in the region on geographic grounds.^{1,21} Specimens were collected in wet margins of wetlands, including an alkaline slough; patches



FIGURE 9. Female Eastern Red Bat collected at a roost site in Red-osier Dogwood, 2 September 1965. This was the first record of this species for the Battlefords, but records obtained since have extended the species' known range through Alberta to northeastern British Columbia. The specimen (also shown above, prior to preservation) is preserved in the University of Saskatchewan Biology Museum (USBM-M 2387). Courtesy of the University of Saskatchewan Biology Museum.

of *Bromus-Eleagnus* and *Carex* along roadsides, and in native prairie at edges of pastures. Of 197 individuals of *Microtus* dissected from pellets cast by roosting Great Horned Owls in the region in 2014–15, all were Meadow Voles.¹⁶

A recent record of Prairie Vole (RSKM_MAMM_M-3722) has come to light — a skull removed from the stomach of a Great Horned Owl salvaged by a Conservation Officer at North Battleford on 30 July 2012. This confirms the occurrence of this species in the region and reveals another source of data for occurrences of small mammals in a region. The northernmost record of Prairie Vole in Saskatchewan depicted in Beck's Guide was an individual found dead at Dundurn.¹

Northern Grasshopper Mouse (*Onychomys leucogaster*) – A male was captured in an active burrow of the Northern Pocket Gopher in a potato patch, 8 km south of Battleford on 2 September 1959. This record was about 85 km west of the previous western record of this species in Saskatchewan, at Asquith.¹ This species is more common in the Battlefords than this record indicates, as the RSKM holds specimens of 39 individuals extracted from Great Horned Owl pellets.¹⁶ The Northern Grasshopper Mouse's use of burrows constructed by other mammals has been noted previously in Saskatchewan.²⁰

Western Jumping Mouse (*Zapus princeps*) – I became aware that at least one species of jumping mouse occurred in the area when single individuals bounded away on 21 June and 19 July 1960 amid brome grass in roadside ditches and a third jumping mouse bounded away in a patch of wolf willow that bordered a riparian woodland along the south edge of Winniford Lake, 8 July 1969. On 12 August 1999, I trapped a jumping mouse at the edge of a patch of wolf willow on the south side of Winniford Lake, where the two individuals had flushed in 1960, but the specimen was lost when a freezer malfunctioned. Two juvenile Western Jumping Mice (Figure 10) were taken 1 August 2005 in brome along a road allowance; the next day another juvenile was taken at the same site, all near Winniford Lake.

Thirteen-lined Ground Squirrel (*Ictidomys tridecemlineatus*) – Although this and the next species of ground squirrel had not been recorded in the Battlefords at the outset of my observations¹, they were expected to occur on the basis of their distributions mapped later in Canada.⁶



FIGURE 10. Juvenile Western Jumping Mice (ROMM 118450, 118452, 118454), collected at the southern edge of Winniford Lake. Courtesy of the Royal Ontario Museum.

The Thirteen-lined Ground Squirrel was the most widely distributed species of ground squirrel, with individuals and their inconspicuous burrows observed along country roads bordered by grass and patches of rose and wolf willow, prairie at edges of aspen bluffs, and in the dry grasslands of the sand hills, where neither of the two following species was recorded.

Franklin's Ground Squirrel (*Poliocitellus franklinii*) – Despite hundreds of hours roaming the countryside and travelling country roads, I never heard or saw Franklin's Ground Squirrels. In fact, I encountered them only three times, all in 1960: one individual recorded as prey in a Northern Harrier's (*Circus cyaneus*) nest on 28 June (with one Western Meadowlark, *Sturnella neglecta*); one photographed near a haystack at the edge of a pothole surrounded by willows on 3 July; and one collected at its burrow at the edge of an aspen bluff on 30 July. In a comprehensive summary of the historical and current status of Franklin's Ground Squirrel, Taylor plotted the Battlefords specimen and more recent sightings and photographic records in the region.²²

Richardson's Ground Squirrel (*Urocitellus richardsonii*) – This species was patchily distributed in the abundant fragments of native grassland when I arrived in Battleford in July 1958. A large population occupied the open prairie from the southern edge of Battleford to the Battle River, but within 10 years, most of this habitat had been developed into an industrial park. Scattered individuals remained in the ensuing decades along Highway #4 south of Battleford, on the grounds of Fort Battleford Historic Park, and in the adjacent campground. Only a few deserted burrows in these same areas were observed during recent visits, 2022-24. South of Battleford colonies were confined to pastures and along roadsides that bordered cultivated fields. One site that supported a dense colony, about 1 km east of Winniford Lake, was heavily grazed by sheep in the late 1950s and early 1960s, but ground squirrels disappeared within a few years after the sheep were removed. I did not record this species in the sand hills where Thirteen-lined Ground Squirrels were frequently encountered.

Discussion

With the exception of Red Fox, specimens of the other species collected in the Battlefords area added new locations to the distribution maps in Beck's Guide. Additional species are expected to occur, however, as more information becomes available. Examples are provided by the shrews and bats. Specimens of Arctic Shrew and Masked Shrew confirmed their presence in the Battlefords area, although specimens of the subspecies *cinereus* had been taken at three sites within 100 km west of the Battlefords.¹ Up to five additional species, including Prairie Shrew discussed above, may occur in the area.^{1,15} Specimens of Northern Short-tailed Shrew (*Sorex brevicauda*) taken in the 1960s in the parklands of north-central Saskatchewan extended this species' known range north of the North Saskatchewan River and west to Keatley²³, about 50 km east of the Battlefords. That I took no specimens of this species suggests the northwestern extent of this species' range lies just east of the Battlefords, but additional collecting may narrow this gap. American Pygmy Shrew (*S. hoyi*), Dusky Shrew (*S. monticolus*) and American Water Shrew (*S. palustris*) may be recorded in the area, especially if pit-fall traps (containers sunken into the ground) are employed. A more effective alternative to conventional trapping to reveal the diversity of mammalian communities, however, has focused on the analysis of the contents of owl pellets.²⁴ Additional records for the Battlefords obtained by this method were noted for some species above, and the first record of Preble's Shrew (*S. preblei*) for Saskatchewan was based on a mandible dissected from an owl pellet.²⁵

In the early 1940s, Rand listed nine species of bat in Saskatchewan, three confirmed with preserved specimens (Silver-haired Bat, Eastern Red Bat and Hoary Bat [*Lasiurus cinereus*]) and five species considered to “probably occur” in the province, and another species of doubtful occurrence.¹⁷ That Rand's research was thorough is shown by a specimen of Southeastern Myotis (*Myotis austroriparius*) that was originally thought to have been collected in Saskatchewan, and which was held in the British Museum for nearly 200 years. Thomas Drummond had actually collected that specimen within its normal range in the

southeastern United States.²⁶ Information on bat diversity that increased through efforts of biologists at the Royal Saskatchewan Museum in the 1950s, much of it noted in Beck's Guide. Records from recent research fill gaps in the distribution of four bat species. Acoustic surveys and mist-net captures, which have been used to detect bats in other areas of Saskatchewan²⁷ may reveal the presence of other species in the Battlefords area. Hoary Bats probably give birth in the region and/or migrate through the area, as the species' range extends westward through and beyond the region.⁶ Big Brown Bats have since been recorded, based on specimens submitted for rabies testing²⁸, and a hibernaculum was recently discovered in the Battleford Post Office.²⁹

Acknowledgements

I am indebted to many people who helped to make this project possible. Foremost, my parents, Laurie and Viola Sealy, supported my interests in natural history with boundless energy and patience, transported me to places beyond the reach of my bicycle, and tolerated specimens stored in the freezer and skulls that boiled on the kitchen stove. From the outset, the late Robert W. Nero, then of the Saskatchewan Museum of Natural History, encouraged my early studies, faithfully responded to requests for information, and confirmed identifications of several species. Each of Dr. Nero's letters was accompanied by an explanation of some aspect of natural history — truly a mentor.

W. Harvey Beck, Fred W. Lahrman and William J. Maher offered encouragement, provided information, or deposited specimens in their respective collections. Maher provided copies of William A. Fuller's and J. Dewey Soper's unpublished manuscripts on mammals of Saskatchewan. Lorne Scott and G.C. Watson catalogued some specimens in the Royal Saskatchewan Museum collected through 1975. Danae Frier provided spreadsheets with current catalogue information on those and more recent specimens, owl pellet data and photographs in the Royal Saskatchewan Museum, and — along with Ryan Fisher — commented on a draft of the manuscript. At the Royal Ontario Museum,

Randolph L. Peterson and Judith L. Eger catalogued and confirmed identifications of additional specimens; Jacqueline Miller photographed the Western Jumping Mice. Ray G. Poulin provided information on the use of data derived from dissected owl pellets in studies of mammalian distribution and commented on an early version of the manuscript. My thanks as always to Noreen Sealy for field assistance on all fronts in the later years of this study.

1. Beck WH (1958) A Guide to Saskatchewan Mammals. Saskatchewan Natural History Society, Special Publication, number 1.

2. Soper JD (1946) Mammals of the northern Great Plains along the international boundary in Canada. *Journal of Mammalogy* 27:127-153.

3. Fuller WA (1944) A list of Saskatchewan mammals. Unpublished manuscript, Department of Biology, University of Saskatchewan, Saskatoon.

4. Houston CS, Street MG (1959) The Birds of the Saskatchewan River, Carlton to Cumberland. Saskatchewan Natural History Society, Special Publication, number 2.

5. Fuller WA (1947) Fur, not feathers. *Blue Jay* 5:18-19.

6. Banfield AWF (1984) The Mammals of Canada. National Museum of Natural Sciences, University of Toronto Press, Toronto, ON.

7. Bradley RD, Ammerman LK, Baker RJ, Bradley LC, Cook JA, Dowler RC, Jones C, Schmidly DJ, Stangl Jr. FB, Van Den Bussche RA, Würsig B (2014) Revised checklist of North American mammals north of Mexico, 2014. *Occasional Papers of the Museum of Texas Tech University*, number 327.

8. Bird RD (1961) Ecology of the aspen parkland of Western Canada. Research Branch, Canada Department of Agriculture Publication, Ottawa, ON.

9. Soper JD (1961) Field data on the mammals of southern Saskatchewan. *Canadian Field-Naturalist* 75:23-40.

10. Wrigley RE (1974) Mammals of the sandhills of southwestern Manitoba. *Canadian Field-Naturalist* 88:21-39.

11. Salt JR (2005) Habitat preferences of Arctic Shrew in central and southern Alberta. *Blue Jay* 63:85-86.

12. Wrigley RE, Dubois JH, Copland HWR (1979) Habitat, abundance, and distribution of six species of shrews in Manitoba. *Journal of Mammalogy* 60:505-520.

13. Clough GC (1963) Biology of the Arctic Shrew. *American Midland Naturalist* 69:69-81.

14. van Zyll De Jong CG (1980) Systematic relationships of prairie and woodland forms of the common shrew, *Sorex cinereus* Kerr, in the northern zone of contact. *Journal of Mammalogy* 61:66-75.

15. Naughton D (2012) The Natural History of Canadian Mammals. Canadian Museum of Nature, Ottawa, and University of Toronto Press, Toronto, ON.

16. Frier D (2020) Royal Saskatchewan Museum - owl pellet collection. V. 2.3. Royal Saskatchewan Museum. <https://doi.org/10.5886/f0xsbu>, accessed 9 April 2024.

17. Rand AL (1943) Bats in Saskatchewan. *Blue Jay* 1:34.

18. Sealy S[G] (1960) More winter bat records. *Blue Jay* 18:139.

19. Patriquin KJ (2004) Red Bat (*Lasiurus borealis*) captured in northeastern Alberta. *Northwestern Naturalist* 85:28-30

20. Lausen CL, Nagorsen DW, Brigham RM, Hobbs J (2022) Bats of British Columbia, second edition. Royal British Columbia Museum Handbook, volume 1.

21. Banfield AWF (1941) Notes on Saskatchewan mammals. *Canadian Field-Naturalist* 55:117-123.

22. Taylor P (2021) History and current status of Franklin's Ground Squirrel in Manitoba and elsewhere in Canada. *Blue Jay* 79(1):16-24.

23. Nero RW (1960) Short-tailed Shrew north of the North Saskatchewan River. *Blue Jay* 18:41-42.

24. Heisler LM, Somers CM, Poulin RG (2016) Owl pellets: A more effective alternative to conventional trapping for broad-scale studies of small mammal communities. *Methods in Ecology and Evolution* 7:96-103.

25. Poulin RG, Schowalter DT (2011) First record of Preble's Shrew in prairie Canada. *Blue Jay* 69:117-119.

26. Jenkins PD, Sealy SG (2022) The problem of resolving historical specimen data, focusing on a specimen of *Myotis austroriparius* (Mammalia; Chiroptera; Vespertilionidae) collected by Thomas Drummond. *Canadian Journal of Zoology* 100:281-295.

27. Brigham RM, Bohn SJ (2021) Distribution of bat species in southeastern Saskatchewan based on acoustic surveys and captures. *Blue Jay* 79(2):32-34.

28. Schowalter DB (1979) Notes on the distribution of bats in Alberta and Saskatchewan. *Blue Jay* 37:179-187.

29. Anonymous (2016) The future of the old Battleford post office building. *SaskToday*, 22 February 2016; <https://www.sasktoday.ca/north/opinion/the-future-of-the-old-battleford-post-office-building> (accessed 10 July 2022).

30. van Zyll de Jong CG (1985). Handbook of Canadian Mammals: Bats. National Museum of Natural Sciences, number 2.

31. Sealy SG (1968) Third upper molar in *Canis latrans*. *Mammalia* 32:712-713.

32. Sealy SG (2024) Northern Flying Squirrels in the Battlefords region, Saskatchewan: Rare or locally distributed? *Blue Jay* 82(4):6-9.

33. Mernitz SA (1961) Flying squirrel nests in fire tower. *Blue Jay* 19:41.

Appendix 1

Specimens of mammals collected in the Battlefords area, Saskatchewan, between 1959 and 2005. Unless noted otherwise, skin and skull of each specimen were deposited in the following museum collections: Beaty Biodiversity Museum, University of British Columbia, Vancouver (UBCBM CTC M); Royal Ontario Museum, Toronto (ROMM); Royal Saskatchewan Museum, Regina (RSKM_MAMM_M); and University of Saskatchewan Biology Museum, Saskatoon (USBM-M). Museum acronyms are given with catalogue numbers for the first specimen when a series of specimens is held in the same museum; dates of collection of specimens are listed chronologically. Accession numbers are included for specimens in RSKM. Habitat(s) from which specimens were collected are indicated by numbers that correspond to the habitat designations described in the methods.

Snowshoe Hare (*Lepus americanus*). **RSKM_MAMM_M-1460**/11958: ♀ (skull), 29 Oct 1959. Habitat: 7, observed in 3, 7, 8.

White-tailed Jackrabbit (*Lepus townsendii*). **RSKM_MAMM_M-1461**/11959: ♀ (skull), 10 Oct 1959. Habitat: 4, observed in 1, 9.

Arctic Shrew (*Sorex arcticus*). **ROMM 75319**: unsexed (skull), 24 Sep 1975; **75647**: ♀ , 26 Sep 1975; **75157**: ♂ , 27 Sep 1975. Habitat: 2, 3.

Masked Shrew (*Sorex cinereus*). **ROMM 75651**: unsexed (skull), 10 Nov 1959; **75652**: ♀ , 11 Aug 1962; **75646**: ♀ , 24 Sep 1975; **75650** ♀ , 3.2 g, 24 Sep 1975; **75648**: ♀ , 3.5 g, 25 Sep 1975; **75653**: unsexed (skull), partially eaten, 27 Sep 1975; **75649**: ♂ , 3.5 g, 28 Sep 1975; **118457**: ♀ , 2.1 g, 1 Aug 2005; **118458**: ♀ , 2.0 g, 1 Aug 2005; **118459**: ♂ , 3.2 g,

1 Aug 2005; **118449**: ♀ , 2.6 g, 2 Aug 2005; **118460**: ♀ , 2.8 g, 2 Aug 2005; **118461**: ♀ , 3.1 g, 2 Aug 2005. All specimens identified as *Sorex cinereus* by R.L. Peterson and J.L. Eger. Habitat: 5, 6, 7, 8.

Big Brown Bat (*Eptesicus fuscus*). **RSKM_MAMM_M-404**/11975: ♂ (skull), 2 Sep 1959; **403**/11974: ♂ (skull), 3 Sep 1959; **402**/11973: ♀ , 16 Nov 1959; **406**/11977: ♀ , 16 Nov 1959; **473**/7273: ♀ , 16 Nov 1959; **407**/11978: ♂ , 19 Nov 1959 (Figure 8); **401**/7272: ♀ , 4 Jan 1960; **411**/11979: ♂ (skin),, 12 Mar 1960; **405**/11976: ♂ , 3 Aug 1962. Among eight specimens submitted to the RSKM in 1960, four (401-02, 406-07) were noted previously¹⁸ and are permanently catalogued. On the basis of these records, van Zyll de Jong (p. 162) included Battleford among the “peripheral” localities of this “widespread” species in Canada.³⁰ Habitat: 11.

Silver-haired Bat (*Lasionycteris noctivagans*). **RSKM-MAMM_M-322**/11971: ♂ , 9 Jun 1960; **321**/11972: ♂ , 4 Sep 1962. Habitat: 7, 11.

Eastern Red Bat (*Lasiurus borealis*). **USBM-M 2387**: ♀ , 16.1 g, 2 Sep 1965 (Figure 9). Habitat: 7.

Little Brown Bat (*Myotis lucifugus*). **RSKM-MAMM_M-275**/11969: ♀ , 28 Aug 1962; **276**/11971: ♂ , 28 Aug 1962. Rand’s comment regarding this species ... “we have no [Saskatchewan] specimens, but it is probably common”¹⁷, was applicable to many species in the province when Beck’s book was published. Habitat: 11.

Coyote (*Canis latrans*). **UBCBBM CTC M009295**: ♂ (skull), taken by a commercial trapper; the skinned carcass was examined 19 Feb 1960. One extra molar (M3) is present on the upper right tooth row.³¹ On 23 February 1960, I observed a Golden Eagle (*Aquila chrysaetos*) and three Coyotes competing for the remains of a White-tailed Jackrabbit on the snow-covered ice of Winniford Lake; the eagle was soon driven away. Habitat: observed in 1, 2, 3, 4, 7, 8.

Red Fox (*Vulpes vulpes*). **RSKM-MAMM_M-1458**/11956: unsexed (skull), 31 Aug 1962. A decomposed specimen was found in an aspen bluff. Previous record, Jackfish Lake, ♀ (skull), 1 Dec 1954 (ROMM 26251). Habitat: 8, observed in 4, 7.

Canada Lynx (*Felis canadensis*). **RSKM_MAMM_M-1457**/11955: ♂ (skull), 26 Dec 1963. Commercial trapper’s carcass, shoreline of Cochin Creek.

Striped Skunk (*Mephitis mephitis*): **RSKM_MAMM_M-1477**/11992: ♂ (skin, juvenile), 9 Jul 1960. Habitat: 7, observed in 2, 8.

Ermine (*Mustela erminea*). **RSKM_MAMM_M-1473**/11987: ♀ , 18 Nov 1959. Habitat: 7, 8.

Long-tailed Weasel (*Mustela frenata*). **RSKM_MAMM_M-1474**/11986: ♂ (skull), 17 Nov 1959; **1475**/11989: ♂ (skull), 7 Dec 1959; **14781**/11993: ♀ (skin), 4 Sep 1960; **1479**/11994: ♀ (skin), 2 Apr 1960; **1480**/11995: ♀ (skin), 8 Nov 1960. I watched a Long-tailed Weasel take a Thirteen-lined Ground Squirrel at the edge of an aspen bluff on 24 September 1975. Habitat: 7, 8.

American Mink (*Neovison vison*). **RSKM_MAMM_M-1472**/11986: ♂ (skull), commercial trapper’s carcass provided on 10 Jul 1963.

American Badger (*Taxidea taxus*). **RSKM_MAMM_M-1471**/**11985**: ♂ (skull), 24 Oct 1959. Nine badgers were observed between 1958 and 1962, but none during subsequent visits to the region, although fresh and old burrows were observed. One badger was observed in a ditch adjacent to a fallow field about 1 km from Winniford Lake on 21 May 1960. Another badger began to dig a burrow at the edge of a stubble field 19 km southwest of Battleford on 5 July 1960; it disappeared underground within a few minutes. On 25 August 1962, I encountered an adult badger with five large juveniles on the road along the south edge of Winniford Lake. As the car approached to within about 30 m of the group, one by one, the juveniles entered the same burrow at the edge of the ditch, but the adult stood its ground in the middle of the road and bared its teeth. It remained there until the car was about 10 m away, before it followed the young into the same burrow. Habitat: 7, observed in 1, 4, 8, 9.

American Beaver (*Castor canadensis*). **RSKM_MAMM_M-49**/11953: ♂ (skull), 4 Oct 1960 (roadkill); **52**/11954: unsexed (skull), 1 Nov. 1959. Common along Battle River and North Saskatchewan River, but this species disperses widely with beaver sign detected at widely dispersed sites in the parkland that required considerable overland travel to be reached. Habitat: 7, observed in 3.

Meadow Vole (*Microtus pennsylvanicus*). **ROMM 75659**: ♀ (skull), 7 Nov 1959; **75660**: ♂ (skull), 7 Nov 1959; **75654**: ♂ , 17.7 g, 25 Sep 1975; **75655**: ♀ (lactating, 4 placental scars), 17.5 g, 27 Sep 1975; **75656**: ♂ , 25.7 g, 25 Sep 1975; **75657**: ♀ , 16.2 g, 26 Sep 1975; **75658**: ♀ , 15.5 g, 25 Sep 1975; **75661**: ♀ (skull), 27 Sep 1975; **118451**: ♂ , 24.4 g, 2 Aug. 2005; **118453**: ♂ , 25.3 g, 1 Aug 2005; **118456**: ♀ (four fetuses), 26.1 g, 2 Aug 2005. Of 197 individuals of *Microtus* dissected from pellets cast by roosting Great Horned Owls in the region¹⁶, all were Meadow Voles. Three Meadow Voles were recorded as prey in a Northern Harrier’s nest, in addition to two Brewer’s Blackbirds (*Euphagus cyanocephalus*), June 1960. Habitat: 2, 3, 5.

Southern Red-backed Vole (*Myodes gapperi*). **RSKM_MAMM_M-1469**/11982: ♂ , 19 Sep 1959. **ROMM 118455**: ♀ (four placental scars), 30 Jul 2005; **118462**: ♀ , 1 Aug 2005. Habitat: 7, 8.

Common Muskrat (*Ondatra zibethicus*). Accession number 11998: ♂ , 5 Nov 1959. Specimen submitted to RSKM in 1976; on permanent loan to Canadian Wildlife Service. In the falls of 1958 and 1959, this species’ burrows and push-ups were abundant at wetlands throughout the area. Light snowfall and little rain saw most wetlands, including Winniford Lake dry by 1962. In conversation with Richard Johnson, who farmed near Winniford Lake, I learned that this lake had not been dry since the mid-1930s. Muskrat habitat returned by 1965 as wetlands in the area again filled with water, and reached their highest levels in the 2000s. Habitat: 10.

Northern Grasshopper Mouse (*Onychomys leucogaster*). **RSKM_MAMM_M-1463**/11964: skull, ♂ , 2 Sep 1959. Potato patch, captured in active burrow of the Northern Pocket Gopher.

North American Deermouse (*Peromyscus maniculatus*). **RSKM_MAMM_M-1470**/11983: ♂ , 4 Sep 1959. A total of 550 individuals was dissected from Great Horned Owl pellets obtained in the region.¹⁶ Habitat: 3-8.

Western Jumping Mouse (*Zapus princeps*): **ROMM 118450**: ♂ (juvenile), 15.9 g, 1 Aug 2005; **118452**, ♀ (juvenile),15.8 g, 1 Aug 2005; **118454**, ♂ (juvenile), 14.1 g, 2 Aug 2005 (Figure 10). Habitat: 4.

North American Porcupine (*Erethizon dorsatum*). **RSKM_MAMM_M-1459**/11957: ♀ , 5 Mar 1960. A young porcupine was observed in a patch of *Symphoricarpos* on 12 May 1959. Seven porcupines were observed along a 1-km section of trail on an island in the North Saskatchewan River on 19 December 1960. Habitat: 7, observed in 4, 5, 8.

Northern Pocket Gopher (*Thomomys talpoides*). **RSKM_MAMM_M-1481**/11996: ♂ , 1 Sep 1959; **1482**/11997: ♀ , 1 Sep 1959. **ROMM 118443**: ♀ , 120.0 g, 14 Aug. 1999; **118445**: ♀ (placental scars), 123.8 g, 13 Aug 1999; **118446**: ♂ (enlarged testes), 14 Aug 1999. Habitat: 1, 4, 5, 9.

House Mouse (*Mus musculus*). **RSKM_MAMM_M-11961** (accession number, specimen lost): ♀ (skull), 11 Nov 1959. Habitat: 11.

Norway Rat (*Rattus norvegicus*). **RSKM_MAMM_M-11962** (accession number, specimen lost): 5 September 1959. Habitat: 11.

Northern Flying Squirrel (*Glaucomys sabrinus*). **RSKM_MAMM_M-1464**/11965: ♂ , 18 Aug 1961. This cat-killed specimen, which was salvaged at a farm along the north shore of Winniford Lake, remained the only record for this area until flying squirrels were observed in 2010, and annually thereafter, foraging at feeders near Denholm, about 27 km southeast of Battleford.³² North of the study area, a litter of flying squirrels was recorded in a fire tower in the Glaslyn district, about 72 km north of Battleford, in 1960.³³ Habitat: 8.

Thirteen-lined Ground Squirrel (*Ictidomys tridecemlineatus*). **RSKM_MAMM_M-1487**/12002: ♀ , 29 Apr 1960. **ROMM 118448**, ♂ (juvenile), 129.9 g, 1 Aug 2005. One Thirteen-lined Ground Squirrel was taken as prey to a Northern Harrier’s nest in June 1960, and I observed one taken by a Long-tailed Weasel in 1975. Habitat: 4, 5, 9.

Franklin’s Ground Squirrel (*Poliocitellus franklinii*). **RSKM_MAMM-M-1476**/11990: ♀ (skull), 30 Jul 1960. Habitat: 8, observed in 5.

Least Chipmunk (*Tamias minimus*). **RSKM_MAMM_M-1465**/11966: ♂ , 5 Sep 1959; **1466**/11967: ♂ (juvenile), 24 Sep 1975; **1467**/11968: ♀ (skull), 25 Sep 1975; **2459**/20510: ♀ , 51.6 g, 14 Aug 1999; **2560**/20510: ♀ , 46.5 g, 14 Aug 1999; **2461**/20510: ♂ , 15 Aug 1999. **ROMM 118444**: ♂ , 49.0 g, 14 Aug 1999; **118463**: ♀ (juvenile), 35.3 g, 31 Jul 2005; **118447**: ♀ , 40.0 g, 1 Aug 2005. Habitat: 6, 7.

Red Squirrel (*Tamiasciurus hudsonicus*). **RSKM_MAMM_M-1483**/11999: ♂ , 24 Sep 1959; **1484**/12000: ♂ , 9 Dec 1959. This species was observed throughout the treed portion of the region; most often encountered in riparian woodlands along the Battle River and North Saskatchewan River and in aspen bluffs. Its presence was often evident by fungi stored in predominantly willows near its tree nests or underground burrows. Habitat: 3, 7, 8.

Richardson’s Ground Squirrel (*Urocitellus richardsonii*). **RSKM_MAMM_M-1462**/11963: ♂ , 3 Sep 1959. Habitat: 1, 4. 🐿



FROM THE PRESIDENT

continued from page 3

knowledge in this area is very valuable.

Nature Saskatchewan has also seen other activities, such as combining the former newsletter (Nature Views) with the *Blue Jay*, the revamping of the journal into a new format, and older issues of the *Blue Jay* have been digitized and housed through a website with the University of Alberta. Several Special Publications have been produced, including *Trees Against the Wind*, and the comprehensive *Birds of Saskatchewan*, which was completed in 2019. This masterpiece is undoubtedly one of the most complete regional bird lists in North America.

Another important contribution Jordan has made during his term with Nature Saskatchewan is financial management. As a non-profit and charitable organization, a lack of funding often restricts the good work needed to make a difference. Through Jordan's good management, we have not had to cut programs or staff, and he always seemed to find funds for anything unexpected that arose.

The above observations are just some of Jordan's many contributions to Nature Saskatchewan during his 12-year tenure and, on behalf of the Board, I'd like to say thank you to Jordan for everything he has done for Nature Saskatchewan, and for nature in Saskatchewan. As he ends his working career with us, Jordan looks forward to spending more time with his wife Tanja and daughters Shae, Kiara and Teagan. We wish him well and know that he will continue to contribute to the wellbeing of nature and conservation in our great province.

While we are saying goodbye to Jordan, we are also extending a warm welcome to our new Executive Director, Peter Brown. We look forward to working with Peter and will take some time to introduce him to members in the Summer 2025 *Blue Jay*, once he's had a chance to settle into his new role. 🐿

2024 LOON INITIATIVES REPORT: MADGE LAKE, DUCK MOUNTAIN PROVINCIAL PARK

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In 2024, loons began to arrive during the first week of May, and our first spotting of chicks was on 17 June, which was about the same time as last year.

I was unable to access the lake this summer due to an aggravated back injury, so all the counts were completed by Bob Wynes, with the exception of one count in August that was done by Derek and Mieka Tomilin. Weather and other issues resulted in fewer counts being carried out, which reduced the amount of data available to us this year. We collected enough data to reach reasonable conclusions on numbers, etc., but the confidence level isn't as high as in previous years.

Total numbers of Common Loons in 2024 were similar to previous years, with an approximate count of 70 adults (Table 1). The total number of chicks found on the lake this summer was seven, which is below average. All survived into August. Boating traffic appeared to be up from previous years, but that is based on anecdotal evidence. As such, we aren't sure if chick production is being adversely affected by increased boating activity. Hopefully this was just an off year, although weather may have played a role during May and June.

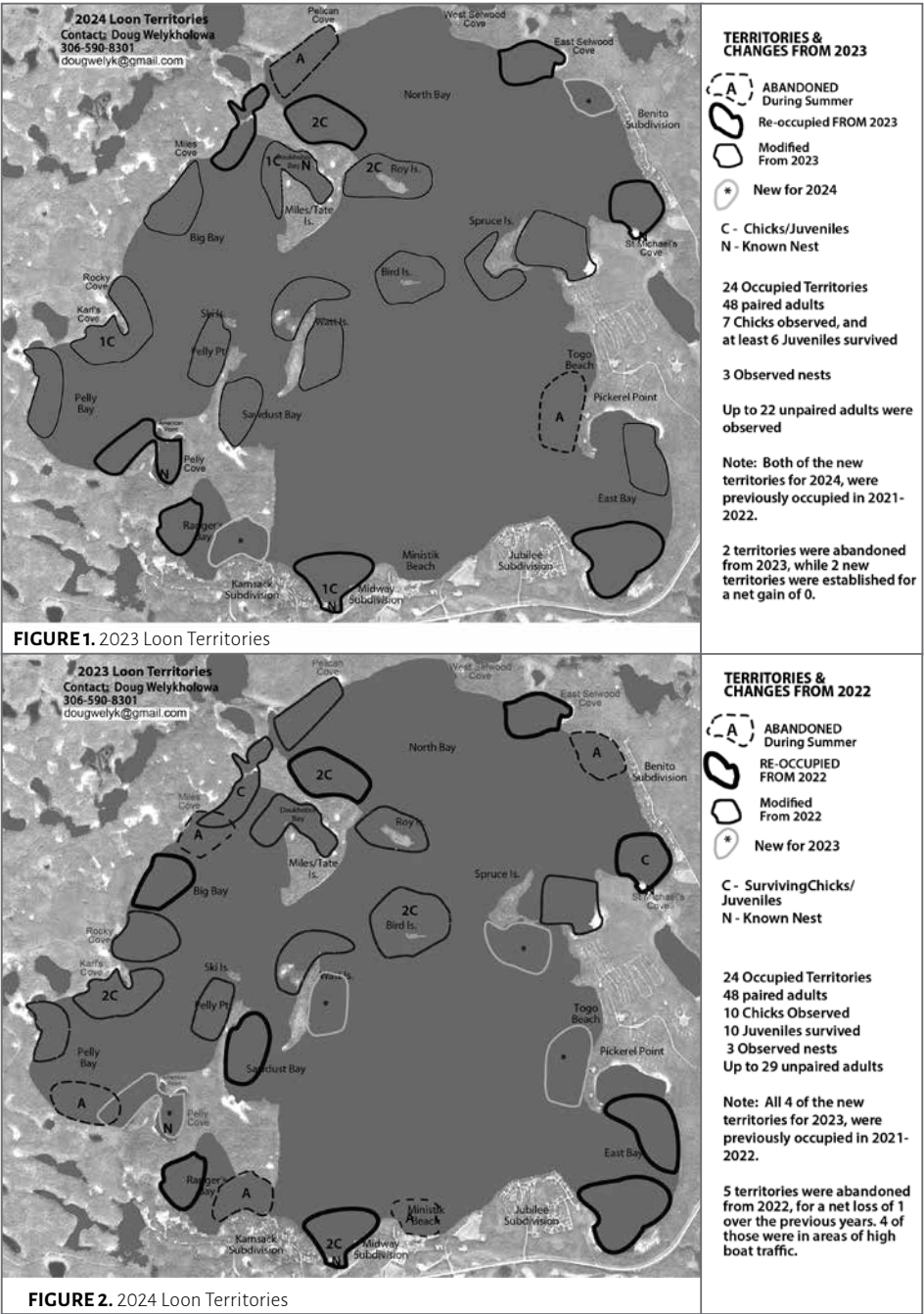
Like in 2023, we again observed 24 nesting territories in 2024 (Figures 1 and 2). Two of last year's territories appeared to have been abandoned, two territories that were occupied in previous years were re-occupied in 2024, and some other territories were modified from 2023. While some birds were initially spotted in additional areas, they didn't establish a presence there over the summer.

Three nests were directly observed on the lake this year. The only one to produce a surviving chick was the one in the boat lagoon (Figure 3). This nest also produced two surviving chicks last year.

The number of young unpaired adults

SURVEY YEAR	TOTAL ADULTS	# OF TERRITORIAL PAIR	SURVIVING JUVENILES	# OF CHICKS OR JUVENILES 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
2021	80	23	14	1
2022	82	25	10	2
2023	79	24	10	0
2024	70	24	7	0

TABLE 1. Madge Lake Loon Count Summaries 2010-2024.



spotted this year varied, but that was likely a result of the lower number of surveys along with poor viewing conditions due to weather. At one point, a group of 14 was spotted in the middle of the lake.

The average number of chicks produced since 2010 remains at 0.41 per nesting pair, while the number of nesting pairs has remained constant at an average of 25 over that time. As per Birds Canada, long-term loon population survival requires 0.47 chicks per nesting pair, which indicates that while the number of adult birds has remained relatively constant, surviving chicks are slightly fewer than the number required to maintain the loon population over the long term. As discussed in last year's report, there could be many factors affecting this lower reproductive success; however, we can't pinpoint a cause for this at Madge Lake. Pollution and predators

aren't a factor. Increased boating activity may have an impact, as could the weather, but we can't establish a direct cause and effect at this time.

The Yellowhead Flyway Birding Trail Association (YFBTA) Loon Initiatives Committee successfully applied for a grant from the Saskatchewan Fish and Wildlife Development Fund in 2024, and used the grant money to replace aging Loon Alert signs at the marinas (Figure 4), produce a new brochure, and provide the Park Interpreters with new teaching boards and handout materials, together with a life-size photo, on aluminum, of an adult loon. One of the Loon Alert signs was also provided to Gloria Stang from Hudson Bay, SK, who monitors loons on a small lake in the Hudson Bay region and who had asked for our assistance with signage to alert boaters on that lake. That



FIGURE 3. A nest in the boat lagoon produced a surviving chick.



lake had two nesting pairs, one of which produced a surviving chick.

My wife and I have moved back to Regina permanently, as I require surgery on my back and the travel from Madge Lake for medical appointments, etc. is too much. As such, I will no longer be able to do loon surveys. However, Bob Wynes has agreed to continue the counts and I will remain involved, for the time being, in the reports.

Bob and I are hoping that other residents of the lake will join him in completing regular counts with their own boats so that we can produce significant data on the loon population going forward. If anyone is interested in taking the program over from me, including the reporting, Bob will continue to help out. The job would involve coordinating the counts, producing reports, and assisting the Park Interpreters in presentations on the loons of Madge Lake to visitors a couple of times throughout the summer. Please contact me if you are interested in enabling this important program to continue into the future.

Thank you to Bob Wynes, Derek and Mieka Tomilin, Shianne Harrison and Ken Cottenie for carrying out and assisting with the counts this year. Thanks also go to Shianne for the assistance that she and her staff provided for the overall program.

LOON ALERT

Help keep this lake safe for loons by staying **60** meters from:

- loons on the water, and
- shoreline areas used by loons.

Slow down near shore.

Loon nests are easily flooded by waves created by water craft. Boat wakes are also dangerous to young chicks. Nests & chicks are most vulnerable from mid May to mid July.

Move away from a nearby loon that is vocalizing.

Use lead-free tackle, and properly dispose of old tackle and fishing line.

Loons are federally protected by the Migratory Birds Convention Act.

FIGURE 4. New Loon Alert signs at the marinas.

**ARTHROPODS OF CANADIAN GRASSLANDS VOL. 5:
BEETLE DIVERSITY OF A CANADIAN PRAIRIE HOMESTEAD**
DAVID J. LARSON. JANUARY 2024. BIOLOGICAL SURVEY OF CANADA. 122 PP. ISBN: 9780968932124

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In late 2022, my partner Annie and I had the opportunity to visit the home of entomologist David Larson and his wife Margaret in the Cypress Hills south of Maple Creek. In addition to a belly full of pancakes, I left the property with a deep respect for Larson’s seemingly boundless knowledge of the wildlife, history and hydrology of his quarter section of land. Specifically, I remember my amazement that he had identified more than a thousand species of beetles on his property since he and Margaret retired there in the late 1990s.

As of the publication of Larson’s *Arthropods of Canadian Grasslands Vol. 5: Beetle Diversity of a Canadian Prairie Homestead*, that number is in fact 1,178 species in 65 families, representing 42 per

cent of all known Saskatchewan beetle species and 79 per cent of families. This staggering array of species is found on an area that Larson calculated as 0.000001 per cent of the total area of the province.

Beetles are Larson’s area of expertise, and they take centre stage in this e-book, published by the Biological Survey of Canada. However, they are couched within a sweeping natural history of the property that also includes a unique recommendation for conservation policy. I have no expertise whatsoever when it comes to entomology, so my review of this book should be taken in terms of interest for the casual reader.

Beetles, like all creatures, will require certain habitat and nutrient conditions to survive and reproduce, and the family/species descriptions in the book describe the ways in which the Larson Ranch provides the “stuff” needed to support them. Given the property’s

location, some types of beetles (such as forest species) are underrepresented, whereas others such as grassland species are overrepresented compared to the province as a whole.

Many species of beetles are rarely seen, even when sought out. Thankfully, Larson has catalogued the beetle diversity of his property with many images that illustrate the various shapes, sizes and colours of different species and families. These range from Carabidae — largely, but not exclusively, the well-known “black and living under a rock” family — to the typically more brightly coloured blister beetles, which can be found on flowers. Some beetles are so rare or hard to find that they have been found on Larson Ranch and nowhere else in Saskatchewan — one, *Oligota inflata* has not been found anywhere else in North America.

Though the book primarily focuses on beetles, the other flora and fauna that inhabit Larson Ranch are also described. This ranges from flowers such as prairie crocuses, to other insects such as ants, to mammals such as coyotes, white-tailed deer and beavers, whose lodges are required for certain beetle species to exist. In one memorable description, the near-mythical cougar’s presence is known mostly from tracks and the occasional porcupine hide dragged back to the yard by the Larsons’ dogs.

Despite this variety of wildlife, Larson contends that his land may not be a true biodiversity hotspot, as no other similar property has been so extensively studied. The Cypress Uplands is marked by significant elevation changes, meaning a relatively small area can be hospitable to a variety of creatures who prefer different elevations. Biodiversity on the Larson Ranch site has also increased because of human activity.

On that note — one may be tempted to say that Larson has left no stone unturned in his more than two decades surveying his property, but that is not



Brightly coloured leaf beetles (Chrysomelidae) occur on a variety of plants.

quite true. Teepee rings on the property remain intact and offer a lasting reminder of the long history of human activity on the site. The property has been occupied by European settlers for roughly 150 years, and while the majority has remained native grass used as pasture, the homestead has resulted in some changes to the area that have affected local biodiversity.

The introduction of industrial agriculture dramatically changed the great plains, and the vast majority of native prairie has been lost. Southwest Saskatchewan has experienced an unprecedented 12 consecutive years of drought, which is taking a toll as well. Invasive species, including insects such as the rose stem girdler, which has stunted the wild rose bushes, and the emerald ash-borer which threatens to destroy the ash population are also a pressing concern.

Larson challenges the popular notion that the rancher is the best steward of the land, which has been a consistent justification of the Government of Saskatchewan’s policy of privatizing native prairie and grazing lands. Ultimately, the primary relationship between the rancher and the land is economic, and the land is being preserved for the benefit of the livestock without specific regard for biodiversity. This may chafe some, but Larson is not speaking as an outside observer — he manages a herd of Galloway cattle and understands the potential negative impacts that livestock can have on the land. For example, soil disturbance and pollution by manure from cattle reduce

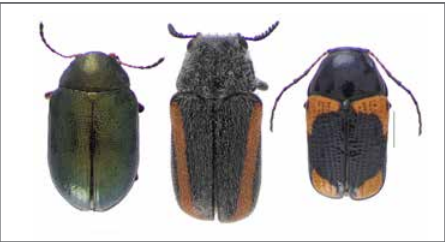
biodiversity along the banks of ponds and springs, and Larson points to Switzerland, where these natural waterbodies are often fenced off, with clean water piped to livestock for drinking.

In spite of daunting and mounting challenges, Larson believes that the diversity of flora on his land is mostly unchanged from the time of the buffalo, and that the area as a whole continues to support biodiversity well in spite of human impacts. It turns out that surprisingly little is required to allow nature to flourish.

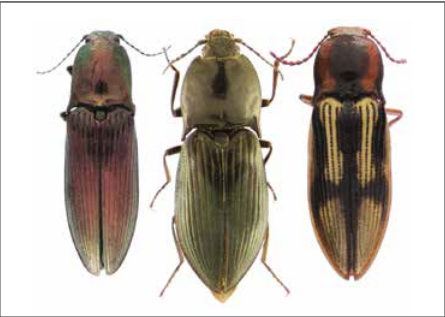
The Government of Canada has set a target of preserving 25 per cent of wild spaces in the country, but Larson points out that it will do little to preserve biodiversity if the protected lands are in vast arctic national parks rather than in the more populated and biodiverse south. Instead, he presents an argument for what he calls an Environmental Reconciliation Levy, which would require landowners to dedicate 5 to 10 per cent of their land to nature, effectively creating a distributed network of nature preserves that would increase the resilience of biodiversity to local catastrophes.

Nearly all observations and images in *Beetle Diversity of a Canadian Prairie Homestead* were taken at Larson Ranch, and the limited nature of the book is also its strength. His documentation of the persistence of so many species, beetle and otherwise, on his land is a strong example of the resilience of nature, and the fact biodiversity can even benefit from well-managed human activity.

This book will no doubt be of interest to biologists and other specialists, but as



Some of the leaf beetle (Chrysomelidae) species that occur on roses.



Adult click beetles (Elateridae). The larvae of a few species are pests on the roots of some crops.



Individual variation in colour patterns of the two-spot lady beetle.

a non-specialist myself I can recommend it as a strong if not comprehensive guide to beetle species in Saskatchewan and a fine example of natural history and conservation advocacy for the general audience.

The e-book can be viewed in PDF form through the monographs page of the Biological Survey of Canada website, or at https://www.researchgate.net/publication/382705561_Arthropods_of_Canadian_Grasslands_vol_5_Beetle_Diversity_of_a_Canadian_Prairie_Homestead. 🐦

Joel Cherry is a birder, communications professional, and former journalist. He is a regular contributor to the Blue Jay.



On the open prairie you can see everything. So where are the beetles? All photos courtesy of David Larson.



The prairie has experienced many changes. What is the next threat on the horizon?

LIFE OF A RAIN DROP

Robert E. Wrigley
Winnipeg, MB

“Water is the driving force of all nature.”
— Leonardo da Vinci

I was contemplating the significance of Leonardo’s perceptive quote one summer day as I was attempting to cut my lawn before the start of forecasted rain. Putting the mower away in the shed, I felt a sizeable rain drop land on my head. I laid down on my back to rest for a moment, and gazing up into the impressively darkening clouds (*cumulonimbus*, “piled-up clouds or storm” in Latin), I wondered about the recent origin (the Pacific Ocean?) and travels of the water molecules tucked inside this single drop, swept along as misty vapour across mountains, forests and prairies to my exact spot.

Water first arrived on our early protoplanet as icy coatings on dust particles during its accretion stage, drawn in by the powerful force of gravity. With the eventual cooling of molten Earth, vast water stores had already been captured in rock strata by 800 million years after the major formation of the Earth (4.6 billion years ago). During what is called the Late Heavy Bombardment Period (4.1 to 3.8 billion years ago), icy asteroids and comets struck the earth, leaving behind their massive deposits of water. Much of this water accumulated on the surface as rain in ocean basins after ground and air temperatures dropped below 100° C, and from subsequent outgassing of water vapour from countless volcanoes. Interestingly, the ‘transition zone’ (depths of 410-750 km) of the Earth’s mantle may still contain more water (not as liquid, but bound in hydrated minerals) than is found in today’s oceans!

I thought it magical that the countless water molecules in my rain drop have been falling and rising as precipitation and water vapour for at least 3.8 billion years. Now that’s recycling — hydrologic



Robert Wrigley looks up at an incoming storm.

recycling. We are so fortunate that Earth’s orbit lies in an ideal distance from the Sun (the habitable zone), close and sufficiently warm to keep liquid water on the surface, and not so far away as to cause it to completely freeze over. The enormous weight of the Earth’s atmosphere (held in place by gravity and the magnetic field) keep most of the water from being stripped away by fierce episodes of solar winds, which is believed to have happened to the atmosphere and then water on Mars. Water molecules floating to the extremely cold (-60°C) outer edge of the atmosphere form into solid crystals, which are then pulled back to Earth by gravity.

As water vapour rises into the atmosphere from evaporation from waterbodies, and evaporation and transpiration from the ground, plants, fungi and animal life, it cools and condenses into clouds of various named formations. For precipitation to commence requires fine particles suspended in the air to act as nuclei in order to seed the process, and

remarkably, even here in our province, this can be dust blown in on air currents such as the jet stream from the Sahara and Gobi deserts, topsoil dusts blown aloft from exposed agricultural fields, carbon soot emitted from aircraft, cars and forest fires, sulphur and mercury particles from coal-burning plants, and even vast numbers of bacteria which are swept aloft by wind updrafts. These bacteria, many of which live in the soil and on plants, are in this way transported around the globe — a remarkable adaptation for dispersal. These ‘cloud-condensation nuclei’ attract water molecules in liquid form or as ice crystals, depending on the temperature.

Imagine if oxygen, carbon dioxide, nutrients and countless other substances could not dissolve in water. Life on Earth would never have originated. In fact, water is called the universal solvent because it is capable of dissolving more substances than any other liquid. Due to its polarity, with two positively charged hydrogen atoms on one side and a negatively charged oxygen atom

on the other, a water molecule is capable of attracting a wide variety of other molecules.

Our ancestral line evolved in water, and of course our own bodies consist mostly of water — almost 100 per cent as an embryo, 75 per cent as a newborn, 55 per cent (women) to 60 per cent (men) as a middle-aged adult, and dropping to about 50 per cent in old age. Apparently we start drying out as soon as we are born! We need to take in 2-3 litres of water (as liquid, in moist food, and from metabolized food) a day for good health. When I quench my thirst with a glass of cool water, I cannot help but wonder about the countless past life forms — bacteria, plants, algae, fungi, microorganisms, crustaceans, whales, worms, insects, and even other people — that these identical water molecules have been recycled through over the ages. How fortunate I felt to be living on a watery planet. We would not be here without this miraculous molecule, and yet few people have any concept or appreciation of its critical importance.

We take the presence of water for granted (at least in our country), and so it is strange to think that water will not be present on Earth forever. Astrophysicists suspect that increasing solar winds from our ageing Sun will sweep away all Earth’s water back into space by four billion years in the future, leaving Earth a lifeless rocky planet once again. Just as our precious water resource was initially synthesized in interstellar space by chemical reactions among hydrogen atoms and oxygen-bearing molecules such as carbon monoxide, in time, some of our planet’s former water may find other suitable cosmic bodies as their home (as liquid or ice). Fascinating to think about, but time to get out of the rain. As I glanced up from my gazebo to the flash of lightning, and to a powerful rumble of thunder, I could see in the distance a breathtakingly beautiful rainbow, appearing as the usual arc across the sky; actually, a circle if I could have enjoyed it from outer space. 🐦

Adapted from Robert’s book, *Chasing Nature: An Ecologist’s Lifetime of Adventures and Observation*.

WILD IN THE COLD



Photo credit: Joe Schmutz.

Joe Schmutz
Saskatoon, SK

This Sharp-tailed Grouse (*Tympanuchus phasianellus*) is showing one of at least three ways wildlife can deal with the cold. One is staying out of the wind. For that, they need sheltered and low-disturbance habitat. Another is curling up staying put, moving little to save energy and to keep the body’s heat windows covered. Ungulates do that big time. Like cows, they have bacteria in their rumen busily creating warmth, boosting the animal’s own metabolic heat. Third, the pictured grouse is fluffing its feathers on a sunny afternoon at -22°C, after visiting our bird

feeder. Its body looks like a small soccer ball, nearly twice as wide as the bird’s bony frame. Feathers are tipped outward by tiny muscles, similar to those giving us goosebumps. Feather curvature and elasticity allows overlap with the next feather, keeping insulating air spaces sealed up. At the tip of the feather is a half-circle of pigment. This adds strength to the feathers, as black or brown pigment does in a horse’s hoof. On the grouse, there is not a single feather out of place — that adds survival value. Nature’s feather design combined with grouse behaviour maintain body temperature, which in birds is higher than our own, at 41°C. 🐦

SASKATCHEWAN’S BLACK WIDOW SPIDER POPULATION

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Introduction

Of the two black widow spider species in Canada only the Western Black Widow (*Latrodectus hesperus*) is found in Saskatchewan. The presence of the Western Black Widow spider in the province has been known since 1980.¹ However, there exists a large gap in knowledge about this invertebrate member of Saskatchewan’s grassland ecosystems. For example, as far as its distribution in the province is concerned, there exist only three publications, each reporting on a single location.^{1,2,3} The purpose of this report is to start building a database on the Western Black Widow in Saskatchewan. To do this, all of what is

currently known about Saskatchewan’s black widow spiders has been summarized under five main categories: physical features; range; seasonal activity; maturation and emergence of spiderlings; and spider behaviour. The focus of this article is on the female Western Black Widow since there have been no sightings reported of the much smaller and far less conspicuous males. Note that references are made to a black widow spider found in the Webb National Wildlife Area, which is located 28 km west of Swift Current, on 15 June 1980. The Prairie Wildlife Centre, which once stood on this site, was cited as the location for this black widow spider in a 1986 *Blue Jay* article.¹ However, with the building now removed from the site, the Webb National Wildlife Area is now the reference location for this spider.

Physical features

The Western Black Widow spider is the only spider in the province with a red hourglass marking. However, immature black widow spiders may be seen with a pattern different from the red hourglass with the markings appearing on the ventral surface (Figure 1). A sexually mature spider has the hourglass shape on its dorsal surface. If the spider is in its initial stages of molting, it may be a tawny brown colour (Figure 2). Immature spiders will get blacker as they molt toward sexual maturity. The telltale red hourglass marking on its abdomen makes the identification of this particular specimen easy. I measured the body length, not including the legs, of two spiders by holding a ruler next to them while they clung to their webs. The larger spider, measuring 13 mm, was

the one discovered in 1980.¹ The second spider, with a body length of 4 mm, was found 40 paces away from the larger spider, one year later. The close proximity of the second spider to where the first spider had its egg cases would lead one to believe that the second spider was a survivor from the previous year’s clutter of spiderlings. The second spider, with its 4 mm body, measured 12 mm when the legs were included. No leg measurements were made for the first spider. If anyone is interested in knowing the Western Black Widow spider’s size, shape and markings, the Royal Saskatchewan Museum (RSM) in Regina has a Frenchman Valley display in which the spider is clearly shown with all of its distinguishing features (Figure 3). The specimen on display is just one of 13 in the museum’s invertebrate collection. Ryan Oram, Curatorial Assistant of Invertebrate Zoology at the RSM, reported that nine of these black widow spiders were found in shipments of grapes from California.

Range

The Western Black Widow’s range in Canada includes Vancouver Island at the western edge and extends as far east as Saskatchewan. Google Earth was used to create a range map for the Black Widow

Spider in Saskatchewan (Figure 4) based on a list of individual spider sightings in the province, along with data from iNaturalist (sightings verified by 29 September 2024), existing publications, and personal accounts.^{1,2,3} The icons on the range maps do not show exact locations, but give close proximities. The actual coordinates for each of the locations, their matching dates, and the observer’s user name are included in Table 1. When looking at the range map created for Saskatchewan, the greatest

concentration of black widow spider sightings is in Grasslands National Park. This is not surprising considering the high volume of pedestrian traffic in this area. It remains to be seen if, in fact, black widow spider density is highest in this part of the province compared to other parts of the province. The presence of black widow spiders in a more westerly location was confirmed on 23 June 2020 when Michael Burak, along with a colleague, found seven spiders on Nature Conservancy’s Zen-Ridge property.³ There are no

TABLE 1. Dates and co-ordinates for all known black widow spider sightings in Saskatchewan. Note that a day of “00” indicates that no date was provided by the observer.

DATE	LAT/LONG	OBSERVER	LOCATIONS REFERRED TO IN ARTICLE
29-Sep-24	49.1726965426, -107.513595548	tjames	Grasslands Nat. Park
2-Jul-24	49.1817382337, -109.5231630653	julmarsh	
2-Jul-24	49.1631388333, -109.6945583333	ericaalex	
00-July-24	49.0090580085, -109.7398677879	andy-nguyen	Willow Creek
16-Jun-24	50.9211633167, -109.9874683333	cosmophasis	Empress Cemetary
7-Jun-24	49.1417719, -107.6329414	nick_ypelaar	Grasslands Nat. Park
25-May-24	49.1222583333, -109.429275	sarahgrace27	
22-May-24	50.5798052, -109.9714720997	alex_fisher	
21-May-24	49.2057133333, -107.561805	micahguenther	Grasslands Nat. Park
11-Dec-23	49.9034826886, -109.4777778013	falcosparverius07	Maple Creek
25-Sep-23	49.2010016667, -107.6622766667	nacairns	Grasslands Nat. Park
8-Sep-23	49.10318, -107.18656	emhal	Grasslands Nat. Park
12-Jul-23	49.1047138889, -107.3929944444	juliaeput	Grasslands Nat. Park
5-Jul-23	49.5767366667, -108.896605	reedlewko	
23-Jun-23	50.391527, -109.398862	G. Pidborchynski & A. Vass	Fox Valley
20-Jun-23	49.1465861111, -107.6304222222	samueld	Grasslands Nat. Park
10-Jun-23	49.1179361667, -107.305795	gardilau	Grasslands Nat. Park
10-Jun-23	49.1392574288, -107.6303838193	ctomlinson12	Grasslands Nat. Park
8-Jun-23	49.2391199569, -107.7300875634	emhal	Grasslands Nat. Park
29-May-23	49.15213, -107.634552	ellyne	Grasslands Nat. Park
00-May-23	49.1440231893, -107.687281756	ctomlinson12	Grasslands Nat. Park
7-Jul-22	49.1324066667, -107.3880916667	nacairns	Grasslands Nat. Park
27-Jun-22	49.28812, -109.27108	jesse_patts	
21-Jun-22	49.150848, -107.555866	sarasims	Grasslands Nat. Park
16-Jun-22	50.2947938389, -109.1733141616	crowladyjay	
11-Jun-22	49.1447843972, -107.4905524694	dolanbohnert	Grasslands Nat. Park
11-May-22	49.187755, -107.5953316667	nacairns	Grasslands Nat. Park
7-Sep-21	49.142505, -107.4924983333	nacairns	Grasslands Nat. Park
8-Jul-21	49.4059370952, -109.2021046321	ash-mills	
00-May-21	49.1270038319, -107.2568714817	nacairns	Grasslands Nat. Park
4-Oct-20	50.0198100364, -105.9588326208	mendomama	Old Wives Lake
23-Jun-20	49.250988, -109.761090	Michael Burak & Colleague	Zen-Ridge Property
1-May-09	49.1726965426, -107.513595548	nacairns	Grasslands Nat. Park
1-May-09	49.1354438866, -107.4918059259	nacairns	Grasslands Nat. Park
16-Jun-16	50.0198100364, -105.9588326208	mc1991	Grasslands Nat. Park
30-Jul-11	49.170032, -107.620697	kmcrae	Grasslands Nat. Park
23-Jun-83	49.291146, -109.7452236	Wayne Lynch	
18-Jul-80	50.2053241971, -108.1372027668	Doug Adams	Webb National Wildlife Area



One of the resident Black Widow Spiders of Saskatchewan. The spider is using its hind legs to strategically place silk that came from its spinnerets. Photo credit: Ashley Mills, 2021© Ashley Mills (some rights reserved CC BY-NC 4.0 DEED).



FIGURE 1. Immature Black Widow Spider with markings that are different than those found on the adult. Photo credit: mendomamas © mendomama (some rights reserved CC BY-NC 4.0 DEED).



FIGURE 2. An immature Black Widow Spider with its hourglass marking. Photo credit: Nick Cairns© Nick Cairns, some rights reserved (CC-BY-NC).



FIGURE 3. The Western Black Widow spider in the Frenchman River Valley display at the Royal Saskatchewan Museum. Photo Credit: Doug Adams.

individual GPS coordinates for the seven spiders but their general location is indicated on the map, along with the observation date (Figure 4).

Three years later to the day, on 23 June 2023, Grace Pidborchynski and Ashley Vass came upon two spiders while visiting a site southeast of Fox Valley as part of Nature Saskatchewan's summer field crew work. Due to privacy concerns for the property owners, the icon on the map shows only an approximate location of these two spiders, indicated again by observation date (Figure 4). As of the end of 2023, the Fox Valley sightings marked the most northern limit of black widows in the province.

After tabulating the 2024 iNaturalist sightings, the area of the spider's range has become much larger. The southern boundary now extends directly west of Grasslands National Park to Willow Creek on the 49th parallel. The western boundary is formed by drawing a line from Willow Creek north to the Empress cemetery (Figure 4), with the cemetery being the most northern location for the

spider in the province (15 km north of Fox Valley). The eastern boundary is marked by drawing a line from the Empress cemetery to Old Wives Lake and then south to Grasslands National Park.

One of the 2024 iNaturalist sightings also marked the first report of a black widow spider found in a building in Saskatchewan. On 11 December, a dead spider was found in the heated garage of a home in Maple Creek. A web had been constructed but no egg cases were found (pers. comm. with Maple Creek resident).

Seasonal activity

Adult female Western Black Widow spiders have been found in Saskatchewan in spring, summer and fall, with sightings beginning 1 May and ending 4 October. The month of June has had the greatest number of spiders observed.

The earliest egg sacs were seen on 27 May. Size measurements for two egg sacs found in the province have been recorded. Both were removed from the same web at the same time.¹ The smallest was 1 cm and was protecting an

unknown number of eggs. The larger sac, measuring 1.5 cm, held more than 100 white spiderlings.

The earliest sighting of multiple egg cases occurred on 18 July when a total of four egg cases were reported.¹ During the same month, but not the same year, three egg cases were photographed in a different web (Figure 5).



FIGURE 5. Female Black Widow Spider protecting three egg cases. Notice the irregular arrangement of the silk threads that make up the spider's cobweb. Photo credit: Kevin McRae. All rights reserved. <https://www.inaturalist.org/photos/14168277?size=large>

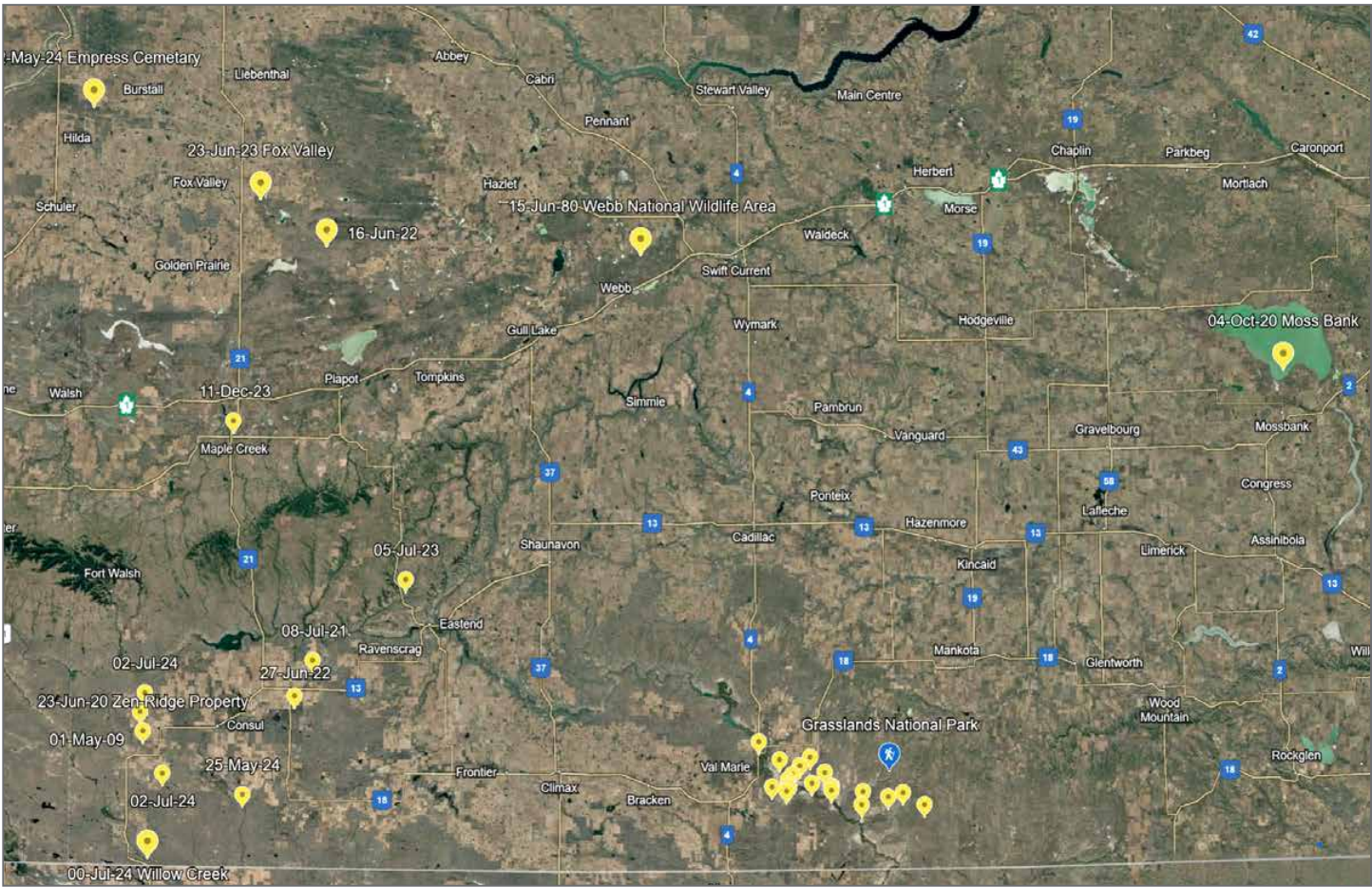


FIGURE 4. Range of Western Black Widow spiders in Saskatchewan. Google Earth.

Maturation and emergence of spiderlings

A female Western Black Widow, which was collected by Wayne Lynch on 23 June 1983 and kept in a jar, had constructed an egg case on 1 July.² On 17 August, 47 days after the egg case construction began, 49 spiderlings emerged from the egg case.

An egg case was removed from the Webb National Wildlife Area spider's web on 14 July 1980.¹ The egg sac, which was pulled apart by human hands four days later, contained small, white spiderlings.

Ryan Oram from the RSM provided information about an unknown observer who witnessed the emergence of spiderlings on 12 August 1990. The circumstances surrounding this observation were not provided by the observer, but the spiderlings were donated to the RSM's collection.

Black widow spider behaviour

Two mature black widow spiders were photographed in the same web, at the same time, by Nick Cairns and submitted to iNaturalist. The spiders were not close together on the web at the time the photograph was taken, so it is not known if any sort of interaction had taken place between them. This information has been included since it is known that females don't usually tolerate the presence of other females. Some intimidating behaviour has been observed between two females, such as leg fencing, locking chelicerae, biting, silk wrapping or silk bolas swinging, but such encounters do not result in fatalities.⁴

The female spider found at the Webb National Wildlife Area recognized that the two egg cases returned to her web, after being taken away for identification, were the ones that had gone missing four days prior. Within a minute of the cases being dropped back onto her web, she retrieved

them and returned them to the spot where her two other egg cases were located.¹

Forty paces from the location of the black widow spider mentioned in the previous paragraph, and 395 days later, a smaller black widow was observed, by the author, securing a squirming grasshopper with its silk. Even though the grasshopper's hind legs were safely secured, the spider continued to wrap more silk around the insect's hind legs.

Finding and reporting black widow spider sightings

When in southern Saskatchewan, check holes abandoned by ground squirrels, badgers or foxes — the only natural places female black widow spiders in Saskatchewan have selected to construct their webs. These black spiders, in their dark burrows, are easy to miss but the suspended whitish egg sacs, if present, will be easy to spot. The female is often found clinging to the underside



FIGURE 6. The author (middle) kneeling to show visitors to the Webb National Wildlife Area the black widow spider located in a abandoned ground squirrel hole. Note the surrounding habitat where black widow spiders are most likely to be found in Saskatchewan. Photo credit: Pat Adams.

of an egg sac. Any hole with single silk strands that appear to be haphazardly strung across the entrance deserves a closer look (Figure 6). The black widow belongs to a group of spiders known as the cobweb spiders and, as the name would suggest, the web is seemingly simple compared to the intricate spiral structure of the orb weavers.

There is only the one spider in the province that might be mistaken for a black widow. False widow spiders (Genus *Steatoda*) are also dark spiders with a bulbous abdomen, but they don't have the red hourglass marking. The best way to distinguish between the two is to watch Travis McEnery's YouTube video entitled *The Spiders in Your House - The False Widows* (<https://www.youtube.com/watch?v=FLTYLYwijtI>). Looking at Saskatchewan pictures of false widow spiders on iNaturalist will provide additional information to help in distinguishing the two genera.

Anyone who finds a Western Black Widow spider in Saskatchewan is encouraged to take a photograph of it and record the date, the GPS coordinates, the number of egg cases, the presence of a mature male, or the number of spiderlings. In addition, note any behaviour demonstrated by the spider. This can include, but is not limited to, web construction, egg case construction, capturing prey, and feeding on prey. The data and image(s) can then be uploaded to iNaturalist. Once the photograph has been verified as *Latrodectus hesperus*, the information then becomes part of the "Black Widow Spiders of Saskatchewan" project.

Acknowledgements

I would like to thank Dr. Catherine Scott for her contagious enthusiasm for anything related to spiders, especially Black Widow Spiders. I was amazed at the depth of her spider knowledge and her willingness to share that knowledge with me.

I would also like to take this opportunity to thank a former colleague of mine, Ragni Askevold, who worked at the Prairie Wildlife Centre at the same time I did. Had she not brought back two spider egg cases to the Centre that day in July of 1980, my fascination with

black widow spiders would not have continued to this day. Ragni did not know the whereabouts of the female BWS's location on the property. She had taken two mysterious spherical white cases from a web so that the contents could be studied at the Centre.

1. Adams D (1986) Black widow spiders at the Prairie Wildlife Interpretation Centre. *Blue Jay* 44(2):97-98. <https://doi.org/10.29173/bluejay4815>

2. Lynch W (1984) The black widow spider in Saskatchewan. *Blue Jay* 42(2):73-74. <https://doi.org/10.29173/bluejay4487>

3. Burak M (2021) A Spider Surprise. *Nature Conservancy of Canada Magazine*, Fall 2021. <https://www.natureconservancy.ca/en/who-we-are/publications/magazine/fall-2021/a-spider-surprise.html>

4. Singh N (2023) Understanding the Preliminary Stages of Social Evolution in Western Black Widow Spiders. Department of Ecology and Evolutionary Biology. University of Toronto.

Another story of interest

There is a little-known story that started in Alabama and ended in Saskatchewan. The story involves a black widow spider and its bite victim. The victim wrote about his experience in two scientific articles that later became the source of information used by Mr. Gordon Grice in his book, *The Red Hourglass*. The details of the incident, included in this article, come from Mr. Grice's book. It was Mr. Grice who put me on the trail of the victim in Saskatchewan.

In 1933, a professor of pathology at the University of Alabama's medical school designed an experiment to determine the degree of pain a person would experience from the bite of a black widow spider. The experiment was also to include testing the body's immune response when a person is exposed to a second black widow spider bite. The thinking was that the body develops an immunity to the venom after a person is bitten once, so the symptoms of the second bite would be far less severe than the symptoms experienced after the first bite.

The professor decided that he would be the human guinea pig. The professor, who was 32 years of age, was "athletically built" and in excellent health. To begin the experiment, a black widow spider

was denied food long enough that it was starving. It was then coaxed to bite the professor on the tip of his little finger. Some of his students were responsible for monitoring his condition over the course of the experiment. Two hours after the bite, they reported that the professor was experiencing such excruciating pain that he had dropped to the floor in fetal position. His condition continued to deteriorate over the next 48 hours. At one point, the student observers were concerned that he might not survive the ordeal.

Fortunately, for those of us living in Saskatchewan — and particularly in Regina — he did survive. Years later, this person was given the nickname "The Great Healer" by Regina residents. The honour was bestowed on him in recognition for the care he provided cancer patients in this province starting from 1939, as director of Radiation Therapy in Saskatchewan, until his death in 1948. For the last four years of his life, he was the director of Saskatchewan Cancer Services and the director of the Regina Cancer Clinic. His name was Dr. Allan Blair and Regina's cancer treatment centre bears his name. (Figure 1)

The second part of the 1933 experiment, to test the immunity theory, was thrown out because the good doctor could not convince himself that any findings, no matter how important they were, were worth the pain of a second bite.



Dr. Allan Blair. Photograph courtesy of Pat Krause, University of Regina, and the Canadian Plains Research Centre. Saskatchewan Archives Board R-B11015 2007. 🐦

A WILD SIGN OF HOPE

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It's an increasingly busy world, with more development, acres of pavement and more noise. Looking at our human footprint and the crush of people, all wanting more space, more resources, more of everything except wild country, wildlife and peace and quiet, it's easy to fall into despair.

The northeast quarter of section 36 is our refuge, but it's tiny in comparison to the developed world and what is required to maintain biodiversity and the other essential ecological services. It is a pretty quiet place, though, and so the rattling bugle call of a sandhill crane was unmistakable. One floated into the wetland on set wings, with a clear destination in mind.

We don't know how old the wetland is. It probably began as a beaver dam and spread into a basin that collected and held water. Around the edges willows sprouted and in the interior cattails proliferated. All of this took time, maybe time beyond our imagining.

Every spring though, the chorus frogs wake up the wetland, and us. There probably was a time when the wetland was also awakened with the rattle of crane music. But in the previous three decades of our ownership no cranes graced the wetland, except maybe for a temporary look.

The historical breeding range of cranes was the Prairie Pothole Region, but up to 40 per cent of the wetlands there have been drained. Worse yet, wetland loss exceeds 90 per cent in parts of the region.

Early hunting and later habitat loss caused large declines in the population, but crane numbers in Alberta seem to be steadily increasing with "excellent survival rates for adult and young birds," according to biologists with the province. In the southwestern foothills this seems evident and might reflect some population migration north from similar habitats in the western US.

Nonetheless the birds are still considered *Sensitive* in Alberta, a reflection of habitat vulnerability that still defines population persistence. In spite of the designation, Alberta opened up a hunt for sandhill cranes in 2020. My late colleague and friend Hugh Wollis raged against the hunt and asked penetrating, impertinent questions of federal and provincial bureaucrats over the dubious biological rationale and lack of supporting evidence.

Unkind thoughts of a mercenary government minister lobbying for a hunt with suspect motives were pushed to the side as I picked out not one but two birds through my binoculars. The standing bird was tall, towering over the wetland grasses, a gray body with brownish tones and a deep red "cap." From the stance of the bird I could see why Aldo Leopold would write of cranes, "nobility, won in the march of aeons."

Almost hidden by grass and cattails was the other bird, clearly sitting on a nest. To suggest this was a thrilling sight is the mildest of understatement! Seeing nesting cranes on the wetland created a feeling beyond the reach of words.

These cranes make the wetland and the NE of 36 more complex, more compelling and more complete. There is hope that eggs will hatch and the colts survive. In doing so, adult cranes might sense a place to return to, time and time again. In their annual return (fingers crossed) will be the endless ticking of an

ecological clock. A spring return will confer a particular distinction on the wetland, of a secure and safe place to nest. A crane wetland holds a patent of nobility, rising above the commonplace, providing a sense of timelessness. Wetlands provide wildness and as Leopold pointed out, "the crane is wildness incarnate."

Maybe we might yet see the elaborate mating dance, the stretching of wings, pumping of heads, bowing and leaping into the air in a graceful and energetic pageant. And, to hear that iconic call, a signal of the wild and all the wild implies.

Leopold's prophetic words on cranes registered: "When we hear his call we hear no mere bird. He is the symbol of our untameable past, of that incredible sweep of millennia which underlies and conditions the daily affairs of birds and men."

The landscape of the NE of 36 seems timeless but of course it isn't. It lies in and is influenced by a changing world, one of more cultivation, more land clearing, more wetland drainage as well as drought exacerbated by climate change. But for the moment we will cheer on the ray (and call) of hope brought by a pair of nesting sandhill cranes. 🐦

Lorne Fitch is a Professional Biologist, a retired Fish and Wildlife Biologist and a former Adjunct Professor with the University of Calgary. He is the author of *Streams of Consequence — Dispatches from the Conservation World*.

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HUMAN NATURE: DIXIE’S ORIOLE

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Mimi, the naturalist at Cypress Hills Interprovincial Park, SK, phoned on an early spring day in 2016. She had received a phone call from Dan who lived on Vancouver Island, BC. His mother, Dixie, was terminally ill. Dixie was a keen birder, and one of the last things she wished to do was to take a birding road trip with the special objective of looking for a Baltimore Oriole. Dixie knew orioles but had not seen one since she had moved to BC, and now she especially wanted to see one again. Dan and Dixie planned the trip and concluded that the closest spot they were likely to find a Baltimore Oriole was in the Cypress Hills of Saskatchewan, and thus the phone call to Mimi.

On learning of the circumstances, Mimi wanted to do her best to arrange an oriole sighting for Dixie, but while she knew orioles and knew they were in the park, she didn't know their behaviour and movements well enough to be able to guide Dixie to a viewing. There is a lot of suitable habitat for orioles in the park, so where would one go?

My wife Margaret and I live on a creek close to the park and Mimi knew of our interest in birds, so she phoned us to see if we had any suggestions for oriole viewing. Our yard is well treed and our shelterbelts merge into the riparian trees growing along the adjacent creek, providing enough tall trees for good oriole habitat. Yes, there were orioles on our place that spring. They arrived as the cottonwood leaves started to flush and had been feeding on sap at the sapsucker holes in the upper branches where they were conspicuous. However, as the trees leafed out the birds become harder to see, and they spent less time sap-feeding as more food sources become available. The birds were there, but as spring progressed our sightings became more infrequent, and we were in the same position as Mimi — we knew there were orioles but were not confident about finding them on request. We didn't even know where they nested, although



A male Baltimore Oriole. Photo credit: Randy McCulloch.

we suspected it was in a patch of riverine aspen/maple woods we call The North Woods, about 100 metres away from the yard. Mimi thought that this might be a better spot to search for orioles than the Cypress Hills Park as the search area was small and better defined than in the park, and we had seen birds recently. Mimi phoned Dan about the situation, and he decided this would be the eastern-most point on their birding trip and the spot they would look for an oriole.

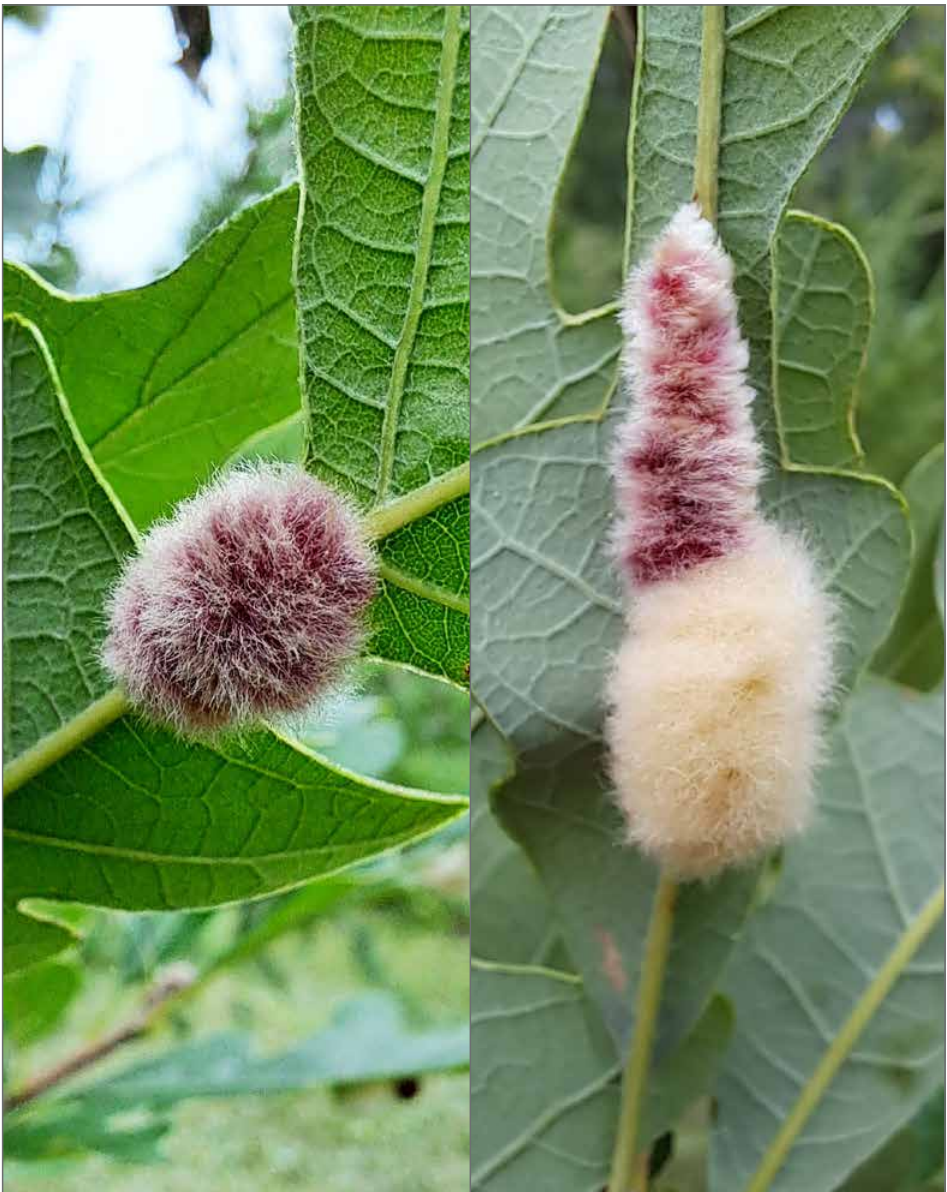
On June 3, Dixie and Dan arrived in Maple Creek where they spent the night. The next morning at 5:30, Mimi met them at their motel and guided them to our place, just before the sun shone into the valley. We had planned to take them to the North Woods site, but when Dixie got out of the car, we were shocked at how frail she was. She could walk only a few steps at a time then needed a rest, so Dan carried a chair along for her. The North Woods were impossible. Plan B, formed on the spot, was to take the shortest route to the creek where there was lawn and creek-side trees, and we could walk slowly and sit at spots along the bank.

The morning was perfect. It was calm and clear, with early spring coolness and dew on the grass. We walked and sat along the stream bank as the sun rose and its rays swept across the yard. There were birds — a thrasher, cat birds calling from the dense stream-side thickets, wrens, tree swallows, red-winged blackbirds and others — but no

orioles. By the time the sun was fully up and warming the air, we had reached a grove of cottonwood trees growing by a riffle at the outlet of a small dugout. On the east side of the trees, we found a spot in the sun where we could sit under the cottonwoods and monitor the pond and stream-side willows and the five of us sat down to watch and enjoy the warming sun. Suddenly, a male Baltimore Oriole appeared on an open branch two-to-three metres above Dixie's head. It sat there catching the bright morning sun, its breast fiery in the orange light of dawn and contrasting with the black head and wings. And then it began to sing, a series of repeated notes and broken phrases, perhaps unmelodic but delivered in a ragtime way by a flamboyant performer. We had no cell phones or cameras to distract attention from the wondrous display, which continued for several minutes before the bird disappeared into the foliage as quickly as it had appeared. Five delighted and bedazzled naturalists were left to mull over the good fortune, or the providence, which brought us and the bird together. We gathered on the patio for coffee and breakfast and to dry out our dew-wet pant cuffs, then said our goodbyes as we dispersed to our respective day's activities. Dixie and Dan started their return trip.

Dixie died shortly after returning home. Her wish was realized, and all involved were grateful and appreciative of the few moments Dixie's Oriole spent with us. 🐦

MYSTERY PHOTO



SPRING 2025

QUESTION:
Examine the tail of the bird in the photo and notice the various shades.
What species of bird is shown here?
Hint: during the early part of the nesting cycle, males are often seen and heard calling from fence posts.

Photo credit: Paul Goossen.

WINTER 2024

ANSWER:
The fuzzy growths found by Morley Maier on the underside of a Bur Oak tree are woolly oak galls.

As per the University of Saskatchewan's Gardening at USask website:

“These weird woolly galls are caused by a tiny, stingless Cynipid wasp. The adult wasp lays its egg into the leaf tissue and injects a plant hormone which stimulates the surrounding cells of the leaf to produce this strange looking tissue. The egg hatches into a larva which then is protected and nurtured inside the leaf tissue which is high in protein and carbohydrates to provide the developing larva with a readily available food source.

These galls eventually become darker and fall off the leaves later in the season. Once pupated, the larvae burrow in the soil below the tree, where they pupate and emerge as adults the following spring.”

<https://gardening.usask.ca/articles-and-lists/articles-insects/oak-gall.php>

Photo credit: Morley Maier.

Do you have a photo that would make for a good mystery photo challenge? Send it to the *Blue Jay* editor at bluejay@naturesask.ca!



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