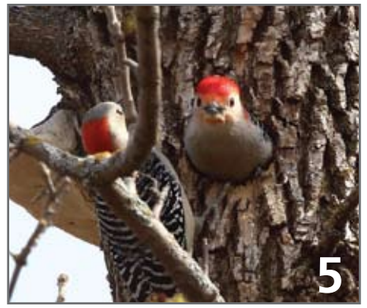
WINTER 2018 VOLUME 76.4

BLUE JAY



Andy Courcelles documents the first confirmed case of breeding Red-bellied Woodpeckers in Manitoba.

Retired Canadian Wildlife Services biologist Kees Vermeer reminisces on his experiences in seeking protection for fish-eating bird colonies in the Canadian Prairie provinces during the late 1960s and early 70s.

The German iris is widely grown as a garden ornamental in Saskatchewan, but has recently become naturalized in two locations within the Prairie Ecozone.

In this issue's edition of The Nature Notebook, Jared Clarke details how he became a serious Purple Martin landlord.

Environmental educator and writer Kimberly Epp discusses how feeding birds can help them survive in the winter and how you can decorate your trees to provide the birds with food.

In this issue's edition of Human Nature, Chelsea Walters shares the many joys that Prince Albert National Park can provide in the winter.

WHAT'S INSIDE

FROM THE PRESIDENT

Ed Rodger
President, Nature Saskatchewan

Hello everyone,

The recent Nature Saskatchewan Fall Meet in Swift Current brought news of the pending publication of *Birds of Saskatchewan*. This special book, a large compendium of Saskatchewan bird life and related information, will mark the culmination of a massive effort by many participants, and should be one of the major books published in Saskatchewan this decade. In my next column I'd like to talk more about the book itself, but I'd like to start the discussion here by talking about someone whose generosity made *Birds of Saskatchewan* possible: Manley Callin.

ON THE FRONT COVER
In November 2017, a male Red-belled Woodpecker was seen at a feeder in downtown Saskatoon. Nick Saunders was able to relocate it a few days later and photographed it at Holiday Park as it scaled a tree opposite the nearby heritage building — the Bowerman House.

Photo credit: Nick Saunders

ON THE BACK COVER
A very white, winter morning in Little Red River Park near Prince Albert, SK. The wind picked up shortly after this photo was captured and the forest quickly shook off its blanket of hoarfrost.

Photo Credit: Joshua Erikson

Many *Blue Jay* readers will be familiar with Manley Callin, but for those who aren't I wanted to briefly tell his story, and how it connects to *Birds of Saskatchewan.* Eric Manley Callin (1911-1985) was an ardent naturalist and conservationist, who was also prominent in the early decades of the Saskatchewan Natural History Society (now Nature Saskatchewan). His special nature interest was birds, and his special Saskatchewan place was the Qu'Appelle Valley. He observed birds in the valley and its vicinity from a young age, and kept meticulous documentation. He had the first record for Saskatchewan of several species, and both shared and accumulated his knowledge through bird clubs, columns, and field trips.

Manley Callin's birding work culminated in a major SNHS book, *Birds of the Qu'Appelle, 1857-1979.* This 1980 publication, focusing on the section of the Qu'Appelle from Pasqua Lake to the Manitoba border, was described once as "possibly the best regional report in North America". The work incorporated not only the meticulous records of Callin and his family and associates, but also drew on the records of many other observers, both residents and visitors to the area, dating back to the mid-1800s. A total of 297 species were covered in the book.

Manley Callin was also very important to the operations of Nature Saskatchewan in its early years. He served the society in various Executive and support roles, and was especially helpful in providing financial acumen through his accounting expertise. As an example of his standing, and the achievements of the society when he was President, he addressed the first general meeting of the American Ornithologists Union to be held in Canada west of Toronto, in Regina in 1959 — surely a major point in the history of the society.

Ed Rodger

Manley Callin also had a large impact on the society after his passing in late 1985. He left a substantial bequest for the society that enabled an enduring fund for Saskatchewan bird publications. The 'Manley Callin Series' of publications featured seven titles related to various areas of the province, and also including an *Atlas of Saskatchewan Birds,* from 1992 to 2008. And now the same fund is also supporting the publication of *Birds of Saskatchewan* as a next level in the series.

Birds of Saskatchewan will be a fitting legacy of such an important figure in Saskatchewan nature studies. So, when you get your copy of the book (see page 38 for pre-order information) and spend many enjoyable hours looking through it, please give a thought to Manley Callin and the contribution he made to Saskatchewan birding, and to this magnificent new volume.

BLUE JAY

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

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Editorial Information

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

Submission deadlines

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

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All photos courtesy of Bob Shettler

FIRST CONFIRMED BREEDING OF RED-BELLIED WOODPECKER IN MANITOBA

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On one of our regular walks along a trail in the St-Norbert community, Winnipeg, Manitoba in April 2017, my wife Sandra (Sam) and I saw a female Red-bellied Woodpecker (*Melanerpes carolinus*) hitching up a tree trunk by the side of the trail and simultaneously heard a male calling from further back in the woods. In spite of hearing or seeing them for a period of some six weeks and making several searches in the woods, we never could find a nest. The breeding range of Red-bellied Woodpeckers is chiefly in the eastern half of the United States and extends to central Minnesota and the southeast corner of North Dakota. Although they are seen annually in Manitoba, there had never been conclusive proof of them nesting in the province. Some young birds were seen in Kildonan Park, Winnipeg in 1942 and a female was seen with two fledged young at Whitemouth, Manitoba in 1952.[1] Neither of these records were accepted by the Manitoba Ornithological Records Committee as being fully substantiated. Therefore, when a similar scenario played itself out again on April 22, 2018, I decided to make a more concerted effort to find the nest this time.

The area in question is a patch of mature riparian forest along the Red River with an area of approximately 12 hectares. It consists mostly of green ash, American elm and some Manitoba maple trees and is bisected by a flood-control dyke of some 20 metres in width.

On April 26, Sam and I set out for another hike and soon heard the male calling. We made our way toward the sound as quietly as possible, trying to avoid stepping on decades worth of fallen branches and tangles of shrubbery. Following the sound of the calling male, we homed in on the general area but could not see the bird. There was a suitable looking tree in front of us so we sat on a log and for some time could hear the calls but still could not see our quarry. I figured the bird was on the far side of the tree and would eventually come around to our side. When that didn't happen, I started to move in a circle toward the other side of the tree when all of a sudden, the male poked its head

out of a hole and ejected a beakful of wood chips. Eureka! It had been calling while it worked at excavating the hole some 20 metres up near the top of an ash tree.

I estimate that by May 3 the pair was at the egg-laying stage as they were entering and leaving the nest frequently but not spending much time inside. I called Bob Shettler and on May 8 we walked back in for him to take some photos, which he was able to do, albeit from about 25 to 30 metres distance and having to work through a maze of branches. At this time we also noted that the parents were taking turns on the nest, changing shifts about every 15 minutes. Over the next few weeks, I visited the nest roughly every four to seven days and saw the adults making feeding trips to the nest at various intervals. Finally, on June 12 I saw a nestling or nestlings coming to the edge of the nest hole and peering out; this happened three times over a period of half an hour while the adults were off foraging.

On June 16, Bob and I went back in an attempt to get some photos of the young, only to discover that they had already fledged. It may have been impossible to get a shot anyway as by this time the foliage was so thick as to make photography extremely difficult.

It has been very satisfying to be able to document the first breeding of this species in the province. As is their wont, these woodpeckers built this year's nest some 20 cm below last year's.[2] I hope to be able to observe the woodpeckers again next year should they be back to set up house in the same tree.

Acknowledgements

My thanks to Bob Shettler for providing the photographs.

References

1. Manitoba Avian Research Committee (2003) The Birds of Manitoba. Manitoba Naturalists Society Winnipeg, Manitoba

2. Shackelford, Clifford E., Raymond E. Brown and Richard N. Conner. 2000. Red-bellied Woodpecker (*Melanerpes carolinus*), version 2.0. In The Birds of North America (P. G. Rodewald, editor). Cornell Lab of Ornithology, Ithaca, New York, USA

POETRY

North West

A day tucked between
The head and tail
Of an Alberta Clipper
So, just above frost
Though swept and buffeted
By a frigid, biting wind.

Tolerable in the yard
Repairing an old gate
Barehanded to untie
The old, frayed rope
The cockeyed rails
And sagging, loose wire.

The horses nose at me
For treats or to get by
To the tangled tussocks
Of ungrazed grasses
I'm done and they race
To the barn's lee side.

The open pasture ridges
The wind dictates my stride
I balance against its strength
And Molly's long coat
Tosses, blows and twists
In a tricolour frenzy.

In the pointed protection
Of buffalo berry thickets
Still, hushed, soothed
The wind rushing by,
As though outdoors
We tucked in our barbed close.

The wind hurries our trek
As we climb the ridge
And ascend Hunters' Hill
Where it roars all sounds
To silence, nonexistence
It roars and rules here.

Turning into its cold force
Standing on the summit
Like standing on the bridge
Of a brave galleon
Tossing, fighting the gale
The grasses pitching like waves.

The gale blows so wild
On the thick cloud banks
It forces a gap to bloom
Under the noonday sun
Homeward into the wind
My face warms to Sol's might.

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‘OWL’ THE NEWS ON OBO

Photo credit: James Villeneuve

Emily Putz
Habitat Stewardship Coordinator (OBO)
Nature Saskatchewan

How quickly the summer passes! With another fall here, our Burrowing Owls have once again flown south to enjoy the warmer weather. Likewise, our long-time Operation Burrowing Owl (OBO) coordinator Kaytlyn Burrows has flown back to university for the winter. But, along with our owls, we look forward to seeing her back again in the spring. Until then, I will be filling the role of OBO coordinator and look forward to meeting many of you in the coming months.

This year was a bit unusual for our Operation Burrowing Owl program, as much of our on-the-ground work will be done in the upcoming fall and winter months, pending fall funding. If you’re wondering why you haven’t heard from us recently, don’t worry — the program coordinators will be out and about catching up with participants soon! This doesn’t mean, of course, that our summer was spent sitting idle. Our Stewards of Saskatchewan crew was very busy over the summer participating and presenting in events such as the Nature Saskatchewan Spring Meet, at Buffalo Pound Provincial Park, the Wildlife Society Conservation Expo, and the Ignite Festival at the Saskatchewan Science Centre. We have also been out helping our partners over the summer — lending a hand for Ferruginous Hawk surveys, planting Sagebrush plugs, and flexing our grass ID skills while helping with grassland range health assessments and habitat monitoring.

We’ve also had a great summer of reporting through the HOOT line! We’ve had five single owls, six pairs, and four young reported to us over the summer along with other at-risk owl species reported, such as Short-eared Owls. Every call helps us track and monitor populations, so a great big thank you to everyone that reported a sighting. Our OBO census is also currently underway, so far we’ve already had seven paired owls, 12 young, and four singles reported, and with our census only 26 per cent complete, this is a good start!

While we mentioned most of our visits have yet to be done, we did get a bit of a jump start. We have visited two potential and two current participants already, one of which we’ve done a beneficial management plan with. We are also very happy to welcome a new participant to the 355 landowners conserving more than 147,000 acres in Operation Burrowing Owl. We look forward to welcoming more this winter!

As always, if you have any questions, comments or wish to report an owl sighting, please do not hesitate to give us a call at (306) 780-9833, toll free on our HOOT line at 1-800-667-4668, or email me at obo@naturesask.ca. I would love to hear from you!

SHAKE N’ BREAK:
A DEEPER UNDERSTANDING OF THE BUTCHERBIRD KILL

Rebecca Magnus
Habitat Stewardship Coordinator
Nature Saskatchewan

Photo credit: Randy McCulloch

The Prairie Loggerhead Shrike *(Lanius ludovicianus excubitorides*) is a songbird well known for impaling its prey. It does this because, while it has a hooked bill, it does not have talons to hold its prey like a raptor so it must secure its prey on something sharp to feed, such as barbed-wire or thorny shrubs. Children and adults such as myself are fascinated by this and recent findings about the capture process before impaling is equally remarkable!

Research by D. Sustaita et al., published September 5, 2018 in *Biology Letters,* looked at the mechanics behind the kill of the Prairie Loggerhead Shrike, A.K.A. the butcherbird. The study’s authors found that the shrike’s bill not only does what we would expect it to do — capture its prey — but they also discovered details about how shrikes can take down prey up to three times their size.

The Loggerhead Shrike’s hooked bill has little teeth along its sides, called tomial teeth. It takes a unique behaviour (shaking) and body part (tomial teeth) for the Loggerhead Shrike to use its hooked bill on prey up to three times its weight. Through high-speed video, Sustaita et al. found that Loggerhead Shrikes actually shake their prey, which would not be possible without their tomial teeth that allow for grip. The study looked at the moment of shaking and what exactly was going on. With the assistance of the tomial teeth, the rate of shaking (11 times per second) caused strong g-forces (6 g) in prey, possibly causing the prey’s vertebrae and spinal cord to break. It is amazing that Loggerhead Shrikes seem to have the ability to use their prey’s own weight against them!

Even with this incredible skill, this songbird is a federally listed threatened species at risk. Many factors have contributed to the shrike’s population decline, but the two main ones are habitat loss and pesticide use. Since 2003, Nature Saskatchewan’s Stewards of Saskatchewan program, Shrubs for Shrikes, has worked to protect the threatened Prairie Loggerhead Shrike’s habitat from destruction and cultivation, and to monitor bird numbers on our participants’ land. As of 2017, there are 227 public and private landowners and land managers who participate in Shrubs for Shrikes, and together they are conserving more than 43,000 acres (17,401 ha) of nesting and foraging habitat. Participants voluntarily agree to conserve prairie habitat, including shrubs, homesteads, shelterbelts, and pastures for Loggerhead Shrikes and other prairie species, while using their land as they always have. Participants annually report the number of shrikes on their land and any changes in land use.

To learn more about the Loggerhead Shrike or for information on how you can participate in Shrubs for Shrikes, please call toll free 1-800-667-4668 or 306-780-7832, or email outreach@naturesask.ca. To read more about Sustaita et al.’s study, “Come on baby, let's do the twist: the kinematics of killing in loggerhead shrikes” visit http://rsbl.royalsocietypublishing.org/content/14/9/20180321.

SHEDDING LIGHT ON RARE PLANT RESCUE: PROGRAM UPDATES

Dwarf Woolly-heads. Photo credit: Ashley Vass

Ashley Vass
Habitat Stewardship Coordinator
Nature Saskatchewan

As I write this article, Regina is getting its first snowfall. Although the date on the calendar does not agree, it means that summer is officially over and it is time to wrap up the 2018 field season. We focused on six of our nine federally-listed (at risk under the Species at Risk Act) target species this last summer: Dwarf Woolly-heads, Hairy Prairie-clover, Slender Mouse-ear-cress, Small White Lady's-slipper, Smooth Goosefoot, and Tiny Cryptantha. Despite not having our usual crew of search staff, we had a very successful field season.

In the spring, I had submitted an article to media outlets asking the public to be on the lookout for one of our target plants that has not been recorded in Saskatchewan since 1895 — the elusive Small White Lady's-slipper. Although no one had reported seeing this particular species (*Cypripedium candidum*), I had received call after call of reports of several other orchid species that are all provincially rare! The buzz around rare plants was exciting and started the field season off on a very positive note.

Alongside the provincial botanist from the Saskatchewan Conservation Data Centre (SKCDC), and her habitat suitability models, we spent time in southeastern Saskatchewan performing field surveys for this rare orchid (*Cypripedium candidum*). Although we didn't find our target, we did find large populations of the very beautiful, and provincially rare, Yellow Lady's-slipper.

Throughout the summer we found new occurrences of some of our other target species, Dwarf Woolly-heads and Smooth Goosefoot, and relocated previous occurrences of Dwarf Woolly-heads, Hairy Prairie-clover, Smooth Goosefoot, and even Tiny Cryptantha, which was found on enrolled sites thanks to help from Sarah Vinge-Mazer at the SKCDC. Notable mentions from the field season include several known patches of Hairy Prairie-clover that grew considerably in size, with a couple numbering around 5,000 or more plants, as well as a new Smooth Goosefoot occurrence of nearly 20,000 individuals. The latter was found by using habitat suitability models developed by Environment and Climate Change Canada, which have proven to be very effective!

Smooth Goosefoot. Photo credit: Ashley Vass

In total, we searched 21 quarter sections for new plant occurrences and monitored previously recorded occurrences at five other sites. We were able to diversify our field work by assisting both Grasslands National Park in Greater Sage-Grouse habitat restoration, and the Native Plant Society of Saskatchewan in property monitoring for the Rare Plants and Ranchers program. We were also able to conduct face-to-face visits with five currently enrolled and five potential participants. We plan to get out to see more of our participants over the fall and winter, pending program funding.

Hairy Prairie Clover. Photo credit: Ashley Vass

Without our landowner volunteers we would not be able to do any of this important work for Saskatchewan's rare plant species. We are extremely grateful for their participation and are very happy to welcome two new landowners to the Rare Plant Rescue program, bringing the total to 84 landowners conserving nearly 110,000 acres of native prairie!

If you have any questions, comments, or are a landowner or land manager interested in joining Rare Plant Rescue, please contact Ashley Vass at rpr@naturesask.ca, or phone 306-780-9417 or 1-800-667-4668 (toll-free).

Yellow Lady's-slipper. Photo credit: Ashley Vass

Photo credit: Branimir Gjetvaj

Photo credit: Branimir Gjetvaj

NATURE SASKATCHEWAN FALL MEET 2018: HISTORY, SCENERY & FRIENDSHIP

Ellen Bouvier
Communications Manager
Nature Saskatchewan

Driving west on the number 1 highway between Moose Jaw and Swift Current, visitors passing through Saskatchewan might assume that this part of the province is flat and boring. However, for those who have had the chance to explore the southwest — including this year's Fall Meet participants — this area is quite the opposite.

The 2018 Nature Saskatchewan Fall Meet began in Swift Current on the evening of Friday, September 14. After chatting and catching up with old friends, the program began. We were delighted to hear from the Executive Director of Nature Canada, Graham Saul, as our first presenter of the evening. Graham shared greetings from Nature Canada and spoke about a desire to increase collaboration between Nature Canada and local groups to focus on many of the issues that we all care so passionately about.

Friday evening concluded with the always wonderful Larry Morgotch Memorial Photo Presentation. We were treated to some wonderful photos and a few laughs — did you know wasps like handcrafted bird houses but not pink construction paper? Everyone left the Friday evening reception wondering what Saturday would bring and if the rain would stay away long enough for our tours to go on as planned.

Saturday arrived cool and cloudy but at least started off dry. After a short drive in our full bus, we headed through Saskatchewan Landing Provincial Park. It wasn't long before we turned on to the Matador road where we got to learn the history of the Matador farm co-op and current operations from someone who had firsthand knowledge. Hearing about the first generations in the co-op, it was easy to picture the way life would have been.

We then continued to the Matador Community Pasture where we learned about present day operations and asked questions about the future of the community pasture and prairie health. It was

Photo credit: Ellen Bouvier

a very engaging and informative presentation and standing in the barn with the smell of horses and leather, one couldn't help but understand that the pasture riders and managers have a very special relationship with the prairie.

By this point in the day the clouds were starting to look a little darker and the wind was picking up; however, we were still dry so off we went to find the sandcastles near Beechy. The view was stunning and quietly impressive and on its own made the trip worthwhile. I am still in awe that something like this has been so close to home for so long and I hadn't discovered it sooner.

Slowly the rain started to settle in and it became apparent that it was time to leave — a narrow dirt road and a large bus don't mix well if you add rain. Luckily, our bus driver for the day was an absolute rockstar! He navigated the Texas gates and tight turns with no problems at all. I know I wasn't the only one holding my breath a few times during the bus ride, but he made it through just fine. In fact, we learned that just a week beforehand, he had been driving a bus tour in Times Square in New York City. Talk about a change of scenery!

Once we got off the dirt road and back to the gravel road, the rain started to really come down so we were happy to arrive at the Matador Hutterite Colony for lunch. They treated us to home grown fruit and were happy to tour groups around the Colony. We were shown amazing hospitality and I for one learned quite a bit. Sadly, the rain continued to pour and time was getting tight so we were not able to do much birding. However, we did see many hawks and other sights from the bus.

Once back at the hotel in Swift Current, everyone had a short time to rest before the business meeting and evening reception. We enjoyed a delicious meal, honoured our 2018 award winners and then capped off the evening — and the meet — with a very informative and entertaining presentation by Branimir Gjetvaj and Trevor Herriot about their book "Islands of Grass".

The 2018 Nature Saskatchewan Fall Meet was filled with history, scenery and friendship and although we didn't escape the rain entirely, nature sure did impress. See everyone at the Spring Meet in Eastend (watch for details in the Spring 2019 issue of *Blue Jay*).

NATURE SASKATCHEWAN 2018 AWARDS RECIPIENTS

Each year at the Fall Meet, Nature Saskatchewan recognizes the outstanding service and contributions that members and/or affiliate and partner organizations have made toward Nature Saskatchewan's objectives and goals. Below are the award recipients for 2018.

Fellows Award: JOAN FEATHER GREG FENTY

Joan Feather's lifelong passion for prairie and Saskatchewan heritage has inspired her work with both the Saskatoon Nature Society and Nature Saskatchewan. Upon retiring from a distinguished career in health promotion research, Joan tipped the balance toward more travel and work on behalf of nature. She joined the board of the Saskatoon Nature Society in 2009 and served as President, as well as taking on responsibility for publications and coordinating display activities. She was the prime instigator for getting a long-overdue update of the society's publication *Nature Viewing Sites in and around Saskatoon* completed, and also fostered greater society involvement in local issues and advocacy.

Joan joined the board of Nature Saskatchewan in 2011. She was an active participant, and took particular interest in the establishment of the Board's Lands Committee, tasked with ensuring the care and monitoring of Nature Saskatchewan Lands. Few could match the vigour and determination with which she organized and led the committee's review of the Canadian Land Trust Standards and Practices that apply to lands donated to a charitable organization such as Nature Saskatchewan. She continued to serve on that committee for an additional two years after completing five years of service on the board.

Joan is also an active member of the Northeast Swale Watchers, an informal group of citizens working to encourage development in the swale that conserves the natural attributes to the greatest extent possible. Her dedication, leadership and commitment to action are truly worthy of recognition and our appreciation.

Greg Fenty has spent a lifetime bringing kids and nature together. He served briefly as Education Director on the Nature Saskatchewan board of directors, but most of his work has been hands-on and at the local level.

Greg recently "semi-retired" after more than 22 years as an Environmental Educator for the Saskatoon Zoo Society, offering opportunities for school groups and families to spend time with the animals and observe their behaviour. The same year he started work at the zoo, Greg took on responsibility for the Saskatoon Nature Society's Young Naturalists Program. It soon became a joint program of the Saskatoon Nature Society and the Saskatoon Zoo Society, and continues under Greg's leadership to this day. His monthly outings for children ages five to 11 and their families are often completely booked months in advance. Activities include various field trips, and maintaining a trail of bluebird nest boxes and a banding program begun by Mary and Stuart Houston in 1968. He's also working on a blog for kids.

Greg has been a board member of the Saskatoon Society for most of the past 20-plus years, and served as a special advisory whenever he reached the maximum number of years as a board member. He served on the society's Conservation Committee in the early 1990s, then turned his attention to the operation of a nature centre the society ran at the Saskatoon Natural Grasslands for a few years. He has been the society's display coordinator for many years, and even served as board secretary. Greg's database skills have made him a valuable member of the planning team for every meet the society has hosted in recent years, including the Canadian Nature Federation gathering in 2001.

Greg's version of "semi-retirement" is simply more of the same — helping people to appreciate and learn about nature, a commitment that we believe is most deserving of recognition as a Fellow of Nature Saskatchewan.

Volunteer Recognition Award: JAMES VILLENEUVE and CHELSEA WALTERS

A couple of years ago, James Villeneuve and Chelsea Walters approached Nature Saskatchewan asking if they could help in any way. Once it became clear this couple had extensive training and experience in communications and film-making, and were offering use of their own equipment, our staff were quick to take them up on their offer!

James put in many miles of travel (sometimes with Chelsea and their son) and countless hours of work, consulting, gathering footage and editing to produce a promotional video for Nature Saskatchewan. He also travelled to both Saskatoon and Avonlea to capture Stuart Houston, Frank Roy and Alan Smith on video, for use in promoting the forth-coming *Birds of Saskatchewan* publication and is now working with staff to produce finished video clips.

Chelsea's main involvement has been in helping with development of a communications plan. She spent hours discussing goals and ideas with our Communications Manager, particularly related to social media, and provided feedback on the communications plan drafted by the society's Communications Committee.

The enthusiasm that James and Chelsea have demonstrated, and their generous sharing of time and talent, make it clear that conservation and nature are extremely important to this family. Now life members of Nature Saskatchewan, their volunteer activities helped us advance our communication and promotion significantly. Their contributions are more than deserving of the 2018 Volunteer Recognition Award.

Cliff Shaw Award: KEN KINGDON

Each year, the editor of *Blue Jay* chooses a recipient of the Cliff Shaw Award, which is presented for an article that appeared in the most recent four issues of *Blue Jay* that merits special recognition for its contribution in any branch of natural history. In 2018, Ken Kingdon was chosen to receive the Cliff Shaw Award for his article "Record Nesting Year for Great Gray and Northern Hawk Owls in Riding Mountain National Park Region During the Spring of 2009", which appeared in the Fall 2017 issue of Blue Jay.

Despite Riding Mountain National Park being a known breeding area for Great Gray Owls for a number of decades, Ken's article details how the spring of 2009 proved to be a record year for the species. Evidence of breeding, including active nests and/or fledged young, were found at five locations within a relatively small area in and around the park. In addition, the spring of 2009 also provided the first breeding record for Northern Hawk Owls inside the park, with another breeding record located east of the park. The records of these owls is of significance to natural history due to the number that were breeding in the area, but also because these records appear to be the most southerly for breeding Northern Hawk Owls in southwestern Manitoba.

Ken's article is concise and well-written. The observations of the owls and the breeding records are clearly presented and the photos and figures add to the validity and presentation of the article. As a final note, Ken was also able to present an additional observation from April 2017, when an active Great Gray Owl nest was recorded within half a kilometre of one of the nests observed in 2009. This demonstrated that the ecological requirements for successful nesting in the area still exist — and will hopefully continue to exist for another eight years and long after that as well.

Conservation Award: ALAN SMITH, STUART HOUSTON and FRANK ROY

This year, the Conservation Award recognizes the huge volume of work done by the team of Alan Smith, Stuart Houston, and Frank Roy over the past 10 years and more, to bring together all of the data, text, maps and images that will be the publication *Birds of Saskatchewan.* In the process, they have gathered the work of more than 170 people, and drawn information from a wide variety of sources, published and not, informed extensively by their own work.

All three of these men have been recognized for their individual contributions in the past, but this project is different. It has required close and prolonged collaboration over many years, bringing together their various strengths and resources to produce one coherent publication. Though aided by others along the way, it simply would not exist if not for the efforts of these three determined men. It has been a monumental task.

The result, an 800-page volume replete with information, stories and fine photographs, is expected to be ready early in 2019. It will be an important benchmark — a record of the bird life that has been in this province and of those who were paying attention. This is the work of a lifetime or three. It is a huge gift to the society and to the province, a rich legacy of citizen science, and a truly outstanding contribution to conservation.

POETRY

Remembering Fall, 2018

The autumn leaves are sallow, sickly so;
the prospect solemn gray and wettish--what might
be a stubborn summer's hanging on,
refusing fall's advance (the glory of it);
just pallid, layered clouds, no sun or warmth.

O, I'm sick too--of uniformity,
while blazing reds and yellows, oranges,
and purples, blues, and russett browns could stay
our souls, could satiate our very selves,
a necessary readiness for winter.

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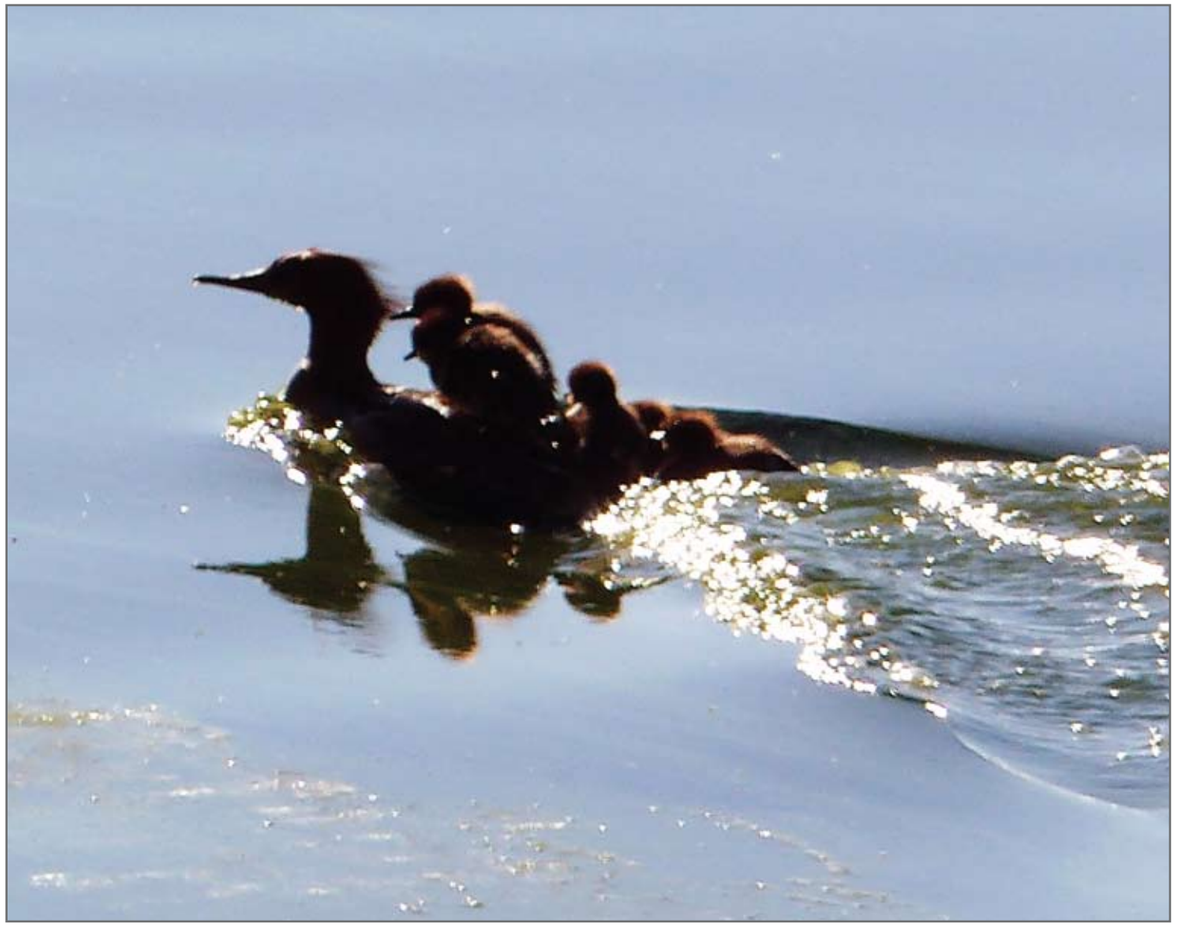

Photo credit: Margaret Anderson

PHOTOGRAPHY

Margaret Anderson shared this photo of a Common Merganser and its chicks, which she took on July 9, 2018 at Pasqua Lake in the Qu'Appelle Valley.

Thank you for sharing, Margaret!

If you have any photos you would like to share, please send them to the editor (contact information on page 4) for inclusion in an upcoming issue of Blue Jay.

PLEAS FOR PROTECTION OF FISH-EATING BIRD COLONIES
REMINISCENCES OF A BIOLOGIST

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American White Pelicans on reef in Lake Winnipegosis, Manitoba. 1969. Inset: Kees Vermeer.
Photo credit: Kees Vermeer

I began my Canadian Wildlife Service (CWS) career on July 1, 1966. My first job was to evaluate federal migratory bird sanctuaries in Alberta. With a CWS panel truck, I visited all sanctuaries and discovered that they were often set up for the wrong reasons, such as to avoid taxes or keep trespassers out. At the end of the evaluation, I concluded that most sanctuaries were not worth keeping. My travel through the province also provided opportunities to collect data on the distribution and size of nesting colonies and diet of California and Ring-billed gulls. That information expanded the database for my PhD thesis on those two species.

In the fall I conducted aerial surveys of Trumpeter Swans in the Peace River. Those surveys helped determine the overall reproductive success of swans each year. It was exciting to see the majestic swans with their broods of cygnets on lakes and ponds from the air. The only setback was that I had to empty my stomach on several occasions due to turbulent weather and tight turns flown by the pilot to determine how many cygnets the swans produced.

In December 1966, I was in charge of a CWS program to control the number of overwintering ducks in the Bow River near the Calgary airport. It was a conflict situation as an association called "Friends of the Ducks" fed the ducks regularly, which led to an increase of the duck population. However, the airport manager wanted to reduce the number of ducks as they constituted a danger to aircraft. To reduce the duck population, I asked the Royal Canadian Mounted Police (RCMP) to assist me. The RCMP agreed and a dozen officers volunteered to shoot the ducks. Besides the RCMP, half a dozen CWS staff participated. Several hundreds of ducks were donated to the Salvation Army to mitigate any political ramifications that one could expect from such a program. My action proved to be prudent, as later on a non-government organization accused CWS staff of taking the ducks home for personal consumption.

In the summer of 1967, I began a survey of nesting colonies of Double-crested Cormorants (*Phalacrocorax auritus*), American White Pelicans (*Pelecanus erythrorhynchos*) and Great Blue Herons (*Ardea herodias*) in Alberta, as little was known then about their ecology and population status in that province. Cormorants and pelicans were surveyed at the same time as they often nest on the same islands. Herons were surveyed separately as they nest mostly in trees near water.

After discovering that colonies disappeared because of ongoing vandalism and destruction by humans, the objectives of my investigation changed. I extended the surveys of colonies into Saskatchewan and Manitoba, until the census was complete in the three Prairie provinces. The reason for the extension was to establish a solid foundation of the population status of cormorants, pelicans and herons in the Prairie provinces, which would serve as a basis for measuring future population changes. Another important goal of the investigation became now to inform the Canadian public on the status of endangered colonies and to urge for their

protection where necessary.

This story is based on reports that are cited in the next sections. They were submitted to journals such as *Blue Jay* and *Canadian Field-Naturalist* soon after the surveys were completed in order that either federal or provincial authorities could use the information to protect endangered colonies if they wished to do so.

Cormorants and Pelicans in Alberta and Saskatchewan

Cormorant and pelican colonies in Alberta were surveyed by car and boat, but also by plane at less accessible places of the province.[1] Only three small cormorant and four pelican colonies were found. Five cormorant and eight pelican colonies had disappeared by the time of my census. Several of the extinct cormorant and pelican colonies disappeared as a result of human disturbance.[2,3] Soper urged sanctuary protection for a pelican colony at Newell reservoir.[3] No such protection was given and the nesting population of pelicans dwindled from 157 to 27 nests in 1966. No nesting pelicans were observed at Newell reservoir during my survey in 1967.

The next survey was conducted in Saskatchewan in 1968.[4] Nine cormorant and eight pelican colonies with 1,078 and 6,558 nests were counted, respectively. A pelican colony with 2,256 nests on Backes Island at Primrose Lake proved to be the largest in Canada at that time. Interestingly, Primrose Lake was also within the Canada Air Weapons Range. Eight cormorant and five pelican colonies at 10 lakes had disappeared by the time of my survey. Carson found an American White Pelican colony at Suggi Lake completely destroyed by fishermen in 1964.[5] He then reported his findings to an official of the Saskatchewan Department of Natural Resources. Carson reported that the official condemned the pelicans as a serious menace to the fishing industry and that no sanction would be given to the birds. Houston described his visits to the American White Pelican colony at Doré Lake as follows: "The conservation officer informed me that local ranchers were in the habit of taking boat loads of eggs from these colonies to feed their mink, rationalizing that the fish-eating birds were harmful to the fishing interests on the lake".[6]

Completion of American White Pelican Census in Canada

In 1969, colonies in Manitoba were surveyed by float plane as many were situated on isolated islands of large lakes.[7] The Manitoba census, together with a pelican colony investigated at Stum Lake in British Columbia in 1968, and at another one at Lake of the Woods in Ontario in 1969, completed my census of nesting American White Pelicans in Canada. On the basis of a count of 14,103 nests, the total breeding population in Canada was estimated at 30,000 birds for the years 1967-69, seven times higher than previous estimates.[7] I felt happy for having documented the nesting population of American White Pelicans in Canada, which future census conductors can use for comparison. It was the first serious effort to count the nesting population of American White Pelicans in Canada. Previous estimates were based on reviews of related literature and correspondence with naturalists and ornithologists.

After completing the census, I gained insight on some aspects of the ecology of American White Pelicans, *i.e.* the interaction between those birds and their environment. It appeared that the breeding range boundaries of American White Pelicans in Canada are chiefly determined by the general availability of fish as controlled by climatic and geological conditions.[7] Factors affecting nesting pelicans within their breeding range are human disturbance, fluctuating lake levels and mammalian predation. Houston reported that several pelican colonies disappeared as a result of falling lake levels in Saskatchewan.[6] Blokpoel reported that a family of foxes caused the failure of pelicans to raise any young in 1970 on Backes Island.[8] Backes Island in Primrose Lake contained the largest colony of American White Pelicans in Canada in 1968.[4]

Cormorants in Manitoba - Status at Lake Winnipegosis after Destruction

A total of 4,772 nests in 37 active colonies of Double-crested Cormorants were counted in Manitoba in 1969.[9] The largest nesting concentration of cormorants was found at Lake Winnipegosis, with 1,403 nests in 12 colonies. The Lake Winnipegosis census was important as McLeod and Bondar launched a massive control program of cormorants there during the 1940s and early 1950s.[10] Thousands of eggs and nestlings were destroyed even though the cormorant diet was composed of only 7.2 per cent commercial fish. Independent of that program, fishermen and loggers also contributed to the destruction of cormorants.

There were 36,000 cormorants on just four of 17 nesting reefs at Lake Winnipegosis at the start of the control program, but only 4,656 nests were counted immediately after its termination in 1951.[10] Eighteen years later I observed that the cormorant population had dwindled to 1,403 nests, perhaps as a result of further destruction.

Protection for Cormorant and Pelican Colonies

Fortunately, there is an upside to the story. In articles and notes, I persisted with my calls for protection of cormorant and pelican colonies in the Prairie provinces.[1,4,11,12,13] It was not until my 1971 publication in the *Canadian Audubon* "The Pelican - protection or extinction" that five colonies were given protection. I concluded that article as follows: "Many islands on which White Pelicans have located their colonies belong to the provincial government and special protection for these would require little money. If the pelican colonies are not protected immediately, so that fishermen and boaters are compelled to leave the birds undisturbed during their nesting period, man will soon be unable to enjoy the sight of White Pelicans soaring majestically against blue prairie skies." Between 1976 and 1983, both cormorants and pelicans had dramatically increased in numbers.[14]

Great Blue Herons in the Prairie Provinces

Nesting colonies of Great Blue Herons in Alberta were surveyed in 1967 as part of a CWS program to protect threatened birds.[15] Most heronries were located by asking biologists, wardens and naturalists if they knew of colonies in their areas. Others were found by searching apparently suitable habitats along rivers and around lakes. A heronry with 11 active nests, in low willow bushes on an island in Dowling Lake, was studied in detail in 1968 because of its accessibility.

Most heronries were located in the southern half of the province. A total of 27 colonies were found ranging in size from a few to 55 nests. Eight colonies had been reported to be extinct at the time of my survey, mostly because of vandalism or trees being cut down in heronries. Vandalism continued unabated at some active colonies. One naturalist informed me that 12 herons were shot at one colony resulting in a decline from 10 active nests in 1965 to only one nest in 1967. Another naturalist reported that 15 herons were shot in another heronry. The Dowling Lake heronry disappeared in 1969 because of human disturbance. The herons at that lake may have moved three miles from there to trees along an adjacent pond where they were not observed before. One heronry relocated perhaps because of a pair of Bald Eagles began nesting there.

Heronries in Saskatchewan were surveyed in 1970 and in Manitoba in 1969 and 1971.[16,17,18] A total of 123 active heronries with 3,764 nests were found in the three Prairie provinces during the 1969-1971 survey.[19] Based on that figure, it was estimated that the total breeding population of Great Blue Herons in those provinces consisted of at least 4,000 breeding pairs. All heronries were located near water and almost half were on lake islands. All but two of the 123 colonies were observed in trees. Two small colonies were located on treeless islands where herons nested directly on the ground in association with American White Pelicans, Double-crested Cormorants, Herring and Ring-billed gulls, and Caspian and Common terns. The largest heronries were found in the Lake Manitoba-Lake Winnipegosis region. The size of 16 colonies in that area averaged 70 nests.

Ground nest of Great Blue Herons at Talbot Lake, Manitoba. 1969. Photo credit: Kees Vermeer

Aquatic Park Proposal for Lake Winnipegosis

Besides herons, the largest concentration of cormorant and pelican colonies were found in the Lake Manitoba-Lake Winnipegosis region. The concentration of fish-

eating birds there was thought to relate to an abundant supply of fish in those lakes.[19] The existence of a rich aquatic bird fauna was the main reason I recommended that Lake Winnipegosis and at least part of Kawinaw Lake and Pelican Lake should be set aside as a federal or provincial park for the birds' protection in an article in *Blue Jay*.[12]

One reason that the recommendation did not go anywhere is that I failed to go through the proper channels. Perhaps Nature Saskatchewan can *"take up the torch from my failing hands"* and nominate Lake Winnepegosis as a World Heritage Site because Manitoba does not have a single established or listed site in Canada's Tentative List of World Heritage sites. Parks Canada is the lead agency for implementing the World Heritage Convention and manages the process for Canada. If Lake Winnipegosis becomes a World Heritage site, Canada would be the proud owner of the largest wild freshwater park in central North America.

Meeting Stuart Houston

My CWS supervisor took me on one occasion to hunt Canada Geese in southern Alberta. After I had shot my first goose and felt sorry for the dead bird, I knew I was not a hunter. Most CWS managers and biologists were then both bird and big game hunters. I wanted more contact with naturalists for whom hunting was not their main hobby. One naturalist I met was Stuart Houston, a Saskatoon physician. Stuart invited me for a weekend of birding in the Saskatoon area. Banding of birds was Stuart's passionate hobby. In an article in *Blue Jay* entitled "R.F. Oldaker, the man who reads gull bands with a telescope", he estimated that he had banded "20-thousand-odd birds".[20] I knew Frank Oldaker, the subject of Stuart's article, very well from my study of Glaucous-winged Gulls on Mandarte Island in British Columbia. Frank contributed significantly to that study by reading band numbers of gulls I had banded and colour-coded at Mandarte in 1961 and 1962. Frank also produced valuable results for Stuart's large scale project of banding California Gulls in Saskatchewan. A substantial number of Stuart's banded gulls were seen later on by Frank with his telescope in Vancouver.[20]

Stuart, his wife and I had a great time birding, particularly at Redberry Lake where the highlight was a visit to the American White Pelican colony. I also assisted with the banding of a number of nestling pelicans at that lake. It felt like some kind of resource partitioning between two kindred spirits. I documented the status of colonial fish-eating birds and Stuart banded them. Stuart and I kept contact after our first meeting.

As with many stories, one thing leads to another. When the head of a newly established CWS Pesticides Section in Ottawa asked me to join his group because of my involvement with fish-eating birds, which were suspected to have high DDE residue levels as they occupy a high trophic level in the food chain, I was delighted. Shortly after I was transferred to the Pesticides Section where new adventures awaited me.

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GERMAN IRIS – A NEW NATURALIZED PLANT SPECIES FOR SASKATCHEWAN

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Introduction

The genus Iris L. in the Iridaceae family includes about 260–300 species, many hybrids and cultivars.[1] The genus name is derived from the Latin and Greek word "iris" which is usually interpreted as "rainbow" but also as "a sweet smelling plant." Iris species are naturally distributed in temperate regions of Northern Hemisphere. Their habitats mainly include open grasslands, woodlands, mountainsides, deserts and sandy coastal areas.[2] There are 34 species in the flora of North America[3] and 17 in Canada,[4] including both native and introduced.

German iris, bearded iris or flag (*Iris xgermanica* L.) probably originated in central southern Europe and the Balkan Peninsula.[5] This species is considered to be a natural and fertile hybrid between sweet iris (*I. pallida* Lam.) and Hungarian iris (*I. variegate* L.). It is believed that German iris is the ancestor of many, if not most, of the modern bearded irises that are so popular with gardeners throughout the world.[6]

German iris has become established all over the temperate biome and can be found growing on road shoulders, fields, old home sites and waste areas throughout much of Europe and North America. According to the PLANTS database,[7] German iris naturalized in most parts of the U.S., except the Great Plains, and from Eastern Canada to Manitoba (Figure 1). NatureServe[8] delineates the species distribution range in North America that includes 20 states of the U.S. and three provinces of Canada (NB, ON, and MB).

German iris is a rhizomatous, perennial herb, growing to about 100 cm high, forming a large clump to 30 cm wide (Figure 2). Rhizomes are homogeneous, creeping on soil surface or to 10 cm depth, usually many-branched, light brown,

FIGURE 1. Distrubution of German iris in North America (USDA, 2018).

FIGURE 2. German iris in full bloom. Photo credit: Vladimir Kricsfalusy

1.2-2 cm in diameter and smooth, with nodal rings; branches may arise in the fan or as many as 15-20 nodes are produced prior to active leaves. Stems are green, 2-3-branched, solid, 60-120 cm × 1–1.5 cm and glaucous. Leaves are purplish at base and folded midrib to base, glaucous, ensiform, to 45 cm × 3.5 cm. Inflorescences with terminal unit 2-3-flowered, branch units 1-2-flowered. Flowers are blue-violet, yellow, brown, or white with various patterns of pigment distribution. Seeds in two rows per locule, red-brown, oval, 3-4 mm, wrinkled.

The iris (no particular species) has been valued by humans since ancient times. In Greece, iris was the Greek goddess of the rainbow and a messenger of the gods. The iris was the symbol of royalty and priests in medieval Europe. The three-parted flower has been interpreted as reflecting the three virtues of faith, wisdom and courage.[2]

German iris has traditionally been used for making a blend of herbs and spices across the Middle East and North Africa, primarily associated with Moroccan cuisine.[9] Peeled rhizomes of the plant (orris-roots) are used as flavouring in ice cream, confectionery and baked goods. Orris is also an ingredient in many brands of gin, including Bombay Sapphire and Magellan Gin.[10] The aged rhizomes are steam-distilled, which produces a thick oily compound known in the perfume industry as "iris butter" or orris oil.[11]

German iris was used in folk medicine and also as a magical plant (see comprehensive review by Lim[9]). The root is diuretic, emetic, expectorant and mildly purgative. Juice from the root is a powerful cathartic and used for the treatment of dropsy. Orris-root is also employed for complaints of the lungs, coughs and hoarseness, bronchitis and chronic diarrhea. German iris contains notable amounts of terpenes, and organic acids[9]. Because of that, rhizomes can be toxic and may cause nausea, vomiting, diarrhea, and/or skin irritation.[12]

German iris includes hundreds of cultivars and is extensively grown as ornamental plant in home and botanical gardens all over the world. It is excellent for planting in borders, beds and foundation plantings. This species can easily escape from cultivation. For this reason, it is often very difficult to distinguish between native populations and those naturalized from garden escapes.

As mentioned earlier, German iris is not indicated for Saskatchewan in major databases.[7,8] However, the first naturalized location of German iris in the province has recently been reported in literature.[13,14] Nonetheless, existing data about habitat requirements of German iris are very scarce, and information about species ecology and population features is missing. The purpose of this study is to document a new location of German iris in Saskatchewan and assess its habitat and population ecology, verify existing information about the species distribution in the province, as well as evaluate species status based on exact data.

Methods

Studies on population biology of German iris and its habitat affinities were conducted in 2017 during the field surveys in Redberry Lake Biosphere Reserve. The site was revisited in 2018 to monitor the species flowering success. As the source of species' records we used our field studies and published information on flora of Saskatchewan.[14] Herbarium specimens of German iris deposited at the SASK (W.P. Fraser Herbarium at the University of Saskatchewan) were studied as well.

To develop a distribution map of German iris we followed the approach suggested for mapping species of Saskatchewan flora.[15] The grid template was divided into quadrats of 50 km x 50 km. The information about habitat, vegetation cover, and site disturbances was collected during our field studies. Vegetation plot (10 m x 10 m) was placed in the woodland patch where the German iris occurs. We recorded total per cent cover for all vegetation layers, each plant species, and bare ground according to Daubenmire classes: 1 = 0 – 5%, 2 = 5 – 25%, 3 = 25 – 50%, 4 = 50 – 75%, 5 = 75 – 95%, 6 = 95 – 100%. Disturbances (litter, trampling, exotics, grazing, and burrowing) were estimated as follows: 0 – absent, 1– light, 2 – moderate, 3 – severe. Taxonomy and nomenclature of vascular plants follow the VASCAN database.[4] The average annual rate of species spread was calculated using distance-based method. It was assessed by measuring the distance between the first and most recent observation of the species in the specific location.

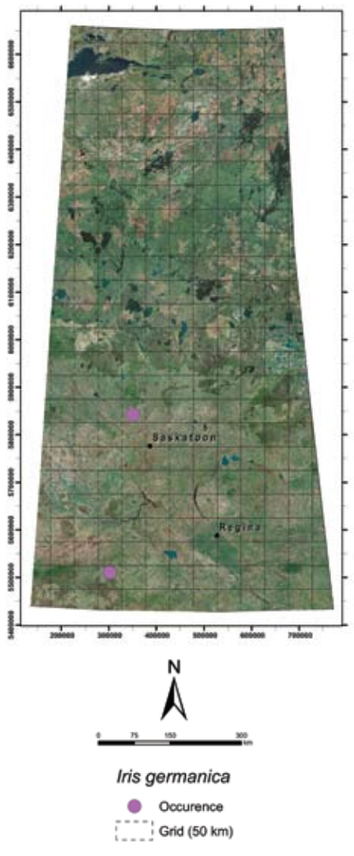

FIGURE 3. A distribution map of German iris in Saskatchewan. Species localities are shown in dots.

Results and Discussion

Until recently, German iris has been recorded in Saskatchewan only from one site, south of Cadillac.[14] It is situated in the Mixed Grassland ecoregion of the Prairie Ecozone. According to Dan L. Johnson, the author of this collection dating back to June 6, 2003, the population of German iris is located at Auvergne-Wise Creek PFRA Pasture and consists of about 25 individuals. It is established in well drained, rocky, dry, native mixed grassland hilltop near a rock circle possibly indicating an early homestead site. We visited this site to verify its current status on June 11, 2018, however despite intense search efforts no plants of German iris were found there.

During our field surveys in Redberry Lake Biosphere Reserve (RLBR) in 2017, we discovered the second site with German iris in Saskatchewan, southeast of Hafford. It is situated in the Aspen Parkland ecoregion of the Prairie Ecozone. This distribution area was found just across the road from the Education Center of RLBR. According to the information provided by the Education Center, two small groups of German iris were planted there in 2000. Initially they were maintained, but later have escaped and continue to grow and spread in the adjacent woodland quite vigorously (Figure 4).

We assessed this distribution area of German iris during the field surveys (Table 1). Plants were found in open and semi-shaded microsites scattered across the aspen woodland, on fertile, dry to moist, and neutral sandy soil. The community canopy is composed by a pure balsam poplar dominated upper and middle canopy (*Populus balsamifera* L.). The shrub layer tends to be dense and diverse. The herbaceous layer is low and leaf litter covers much of the floor. Complete vegetation community notes are reported in Table 1.

The distribution area of German iris consists of two patches located about 15 m apart from each other. The extent of occurrence of the population is approximately 56 m^2. The size of the first, larger patch, is 12 m^2 and the second, smaller patch, is around 8 m^2. We calculated the demographic structure of German iris for the entire population and each patch separately (Table 2). The age spectrum of this population can be identified as of normal type (i.e. includes individuals of all life stages, following the classification suggested by Rabotnov[16]). Based on the population age structure, dominance of medium sized vegetative plants and low intensity of vegetative spread (<1 m per year), German iris can be classified as a naturalized species.

We want to clarify that the term 'naturalized' is not a synonym for 'invasive'. Unfortunately, some scientific publications describing aspects of plant invasions have used the terminology loosely and their lack of rigour has led to confusion.[17] To become invasive, introduced plants must overcome barriers to dispersal within the new region, i.e. sexual or asexual spread and the distance. There is a general agreement[17] that for introduced plants spreading exclusively vegetatively, *'6 m per 3 years'* could be used as a criterion to classify it as an invasive species. Thus, German iris with self-sustaining populations but low intensity of vegetative spread should not be considered as an invasive species.

The obtained data show that the proportion of flowering plants in the study population of German iris substantially increased (from 15% to 26%) with a larger patch size (93 and 135 plants, respectively). A

FIGURE 4. A snapshot of German iris habitat (vicinity of Hafford, Saskatchewan). Photo credit: John Kindrachuk

TABLE 1. Vegetation community with German iris (Poplar Woodland ecosite).

Phytosociological relevé
Date & Observer: June 28, 2017; V. Kricsfalusy & S. Beever; Location: 11 km SE of Hafford, RM of Redberry No. 435; Ecoregion: Aspen Parkland (Hafford Plane ecodistrict); Soil: sand; Landform: recessional moraine; Elevation: cca 513 m; Area: 120 m2; Microtopography: S aspect, very gentle slope <3o; LSD: 8-14-37-5 W3; Coordinates: 52.71233 N 107.21527 W.
Vegetation cover: total – 4 (50-75%), upper canopy – 2 (5-25%), middle canopy – 2 (5-25%), understory – 4 (50-75%), ground – 3 (25-50%), bare ground – 2 (5-25%); Disturbances: litter – 2 (moderate), trampling – 1 (light), exotics – 1 (light), grazing – 0 (absent), burrowing – 0 (absent).
Balsam Poplar – Wolf-willow vegetation community

LAYER	SCIENTIFIC NAME	COMMON NAME	(% COVER)
Upper Canopy	Trees		
	Populus balsamifera	balsam poplar	20
Middle Canopy	Small Trees		
	Populus balsamifera	balsam poplar	10
Understory	Shrubs		
	Amelanchier alnifolia	Saskatoon	2
	Cornus sericea	red-osier dogwood	5
	Elaeagnus commutata	Wolf-willow	15
	Cotoneaster laxiflorus	black-fruit cotoneaster	10
	Rosa woodsii	Woods' rose	5
	Salix bebbiana	Bebb's willow	5
	Shepherdia canadensis	soapberry	10
Ground	Forbs		
	Achillea millefolium	common yarrow	3
	Astragalus flexuosus	flexible milk vetch	10
	Galium boreale	northern bedstraw	7
	Iris xgermanica	German iris	2
	Maianthemum stellatum	starry false Solomon's seal	2
	Medicago sativa	alfalfa	1
	Solidago missouriensis	Missouri goldenrod	1
	Symphyotrichum laeve	smooth blue aster	1
	Tanacetum vulgare	common tansy	1
	Taraxacum officinale	common dandelion	1
	Thermopsis rhombifolia	golden bean	10
	Vicia americana	American vetch	1
	Graminoids		
	Elymus canadensis	Canada wildrye	1
	Poa pratensis subsp. pratensis	Kentucky bluegrass	2

TABLE 2. Population demography of German iris.

POPULATION PARAMETERS	SIZE (M2)	NUMBER OF PLANTS	GENERATIVE PLANTS (G)	VIRGINILE PLANTS (V)	AGE RATIO (G : V)	SPREAD (M/YEAR)
Extent of occurrence	46	228	40	188	1 : 5	< 0.2
Patch 1	12	135	28	107	1 : 4	< 0.9
	(6 x 2)					
Patch 2	8	93	12	81	1 : 7	< 0.7
	(5 x 1.5)					
Between	26					
patch area	(15 x 1.7)					

Note: generative (g) – flowering plant; virginile (v) – vegetative plant.

large patch size may indicate more favourable conditions for German iris. The larger patch was found where vegetation is less dense and with a higher proportion of bare ground. A small patch size may have been negatively influenced by taller vegetation and much denser understory cover. This shows the importance of habitat conditions for establishment and survival of German iris. It may thrive in open (grassland) or semi-shade (light woodland) habitat but be unable to tolerate shady and humid habitat (dense woodland and forest).

To monitor the flowering success of German iris we revisited the study site in 2018. It turns out that the proportion of flowering plants in the population compared with the previous year substantially decreased: from 28 to nine plants (larger patch size) and from 12 to zero plants (smaller patch size). It's likely that this variation reflects environmental factors such as resource limitation. Many studies have demonstrated that flower number is subject to pollinator-mediated selection.[18]

Our research provides useful information about the habitat requirements of German iris in the Prairie Ecozone, particularly in the light of vegetation dynamics in response to climate change. According to the climate change scenario for Saskatchewan,[19] the most significant impacts can be expected to occur at the interface of grassland with parkland and/or forest. In these ecotone areas, the drier open grassland ecosystem will expand at the expense of the more humid closed forest ecosystem. These processes will likely create opportunities for expansion of German iris due to more favourable light regime in open communities, as well as the prolonged warm season, increasing accumulation of heat and milder winters. At this point, there is no concern with German iris becoming an invasive species in Saskatchewan. However, in some parts of the world it is listed under asset-based management category, which is a low priority for action, except in the protection of high value biodiversity or agricultural assets.[20]

Thus, ecological monitoring of range extension in German iris can help to follow trends and developments in the numbers, spread and naturalization of this plant across the Saskatchewan. The current findings allow us to recognise the status of German iris as a naturalized species in the province. Thus far, no immediate negative impacts caused by this species to native flora and vegetation are known.

Given that the newly discovered population of German iris is located next to the Education Center at Redberry Lake Biosphere Reserve, it creates an excellent opportunity for establishing long-term ecological monitoring, particularly the species' flowering success and its speed of spread within the area. This may engage volunteer participants, e.g. students from the local school, in scientific research and increase efficiency of data collection. This in turn will contribute to further development of citizen science in the biosphere region. According to the recent studies,[21] participatory approaches combined with professional support and coordination comprise a highly effective way for monitoring biodiversity and conservation interventions.

Conclusions

German iris is widely grown as a garden ornamental in Saskatchewan. This species has recently become naturalized in two locations within the Prairie Ecozone. Thus far, no immediate negative impacts caused by German iris to native flora and vegetation are known. Monitoring known populations would help to determine whether this species is spreading or declining.

Acknowledgements

We appreciate assistance provided by Dan L. Johnson, Professor at the University of Lethbridge, in locating German iris site in the vicinity of Cadillac. We thank Scott Beever, MSEM student in the School of Environment and Sustainability at the University of Saskatchewan, for help with the field work. The authors are grateful to anonymous reviewers for their valuable feedback.

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31ST ANNUAL WINTER BIRDING CONTEST

The 31st annual Winter Birding Contest will begin on December 1, 2018. For anyone wishing to participate, please keep a list of all bird species spotted in Saskatchewan between December 1, 2018 and February 28, 2019.

Enjoy the birds and then submit your winter bird list to:

Boyd Metzler
Box 126
Whitewood, SK S0G 5C0

or email your list to boyd.metzler@sasktel.net

Submit your lists by March 15, 2019 and please share any unusual or interesting findings.
All entries are appreciated, no matter how many species are observed.

American Tree Sparrow. Photo credit: Nick Saunders

THE NATURE NOTEBOOK: FIRST YEAR AS A SERIOUS PURPLE MARTIN LANDLORD

Jared Clarke

It has only been within the last year that I really thought about this fact regarding Purple Martins: except for a small population in California, Purple Martins in North America rely entirely on humans for nesting sites, in the form of man-made houses or gourds. Once I actually thought about that, it blew my mind!

When we moved on to the farm in the fall of 2009, we were lucky to inherit two purple martin condos. They are the white and green metal box variety with 12 compartments in each house, allowing for up to 24 pairs of martins to take up residence. Every summer while being here, we have had a few pairs of martins live in the houses, but they never seemed to fill up; our highest number of pairs was six in 2017.

It was in the summer of 2017 that I got to visit Colette and Richard Stushnoff's farm north of Qu'Appelle. The Stushnoffs have houses and gourds for up to 32 pairs of martins and to my surprise, each available hole is filled by martins every year! I left the Stushnoffs' that day inspired to get serious about Purple Martins in my own yard. Colette had said her six gourds seemed to be claimed first, so I found a plan for a cedar rack that would hold 16 plastic gourds. After hours of work, and quite a bit of money spent, the new gourd rack was set up in the yard in April of 2018. At Colette's suggestion, I also modified the existing metal boxes so that each pair got two compartments, giving the birds more room and, hopefully, added protection from predators. Then I anxiously waited.

On May 1, the first martin arrived. Others quickly followed. But to my dismay not a single bird showed interest in the gourd rack! I emailed Colette to see what was going on. She said not to worry, that it will be the one-year-old birds who will be interested in the gourds, and they return around a month after the older birds. Soon after, while I was at work, my wife Kristen texted me to say there were two martins sitting on the gourds: an adult male (all purple) and an adult female. To say I was excited might be an understatement! Soon, the one-year-old birds arrived, and three pairs claimed a gourd each. Another five unpaired one-year-old males each claimed a gourd of their own as well! In total, between the boxes and the gourds, we had 11 pairs of martins lay eggs, and at least five unpaired males hang out for the summer, for a total of at least 27 adults! From those birds, I was ecstatic to have 49 chicks fledge from our yard.

The first nest in the gourds, these six Purple Martin chicks are approximately 13-14 days old.
Photo credit: Jared Clarke

The Purple Martin Conservation Association (PMCA) encourages Purple Martin landlords to lower their boxes or gourds to check on the martins every three to five days, recording egg laying dates, clutch size, hatch days, survival rates, and parasite infestations, among other things. This data is then submitted to the PMCA from landlords around the continent.

Getting a close-up view of the entire nesting season for these birds was an awesome experience. I am certainly hooked for life! In fact, I already have an additional six natural gourds ready to be hung for 2019, bringing the total number of nest sites to 34 at our farm! Only about four more months and they will be back! Fingers crossed that our colony continues to grow.

Jared Clarke is a Grade 6/7 teacher and biologist who lives on a small farm near Edenwold, SK with his family. He hosts a nature radio program called The Prairie Naturalist, on Thursdays at 6:00 pm, on 91.3 FM CJTR in Regina. Follow him on Twitter @jaredclarke5 or on Facebook @ThePrairieNaturalist.

LMBO RECOLLECTIONS FROM AN OUT-OF-PROVINCE BANDER

Photos courtesy of Lacey Weekes

Laura Tabbakh

It all started with a message from a friend: "Last Mountain Bird Observatory is looking for a bander." Ten days later, I got the phone call I had been waiting for all summer — I had landed my first banding contract. I had a couple of days to leave Montreal for the three-day drive to Regina. The journey to Last Mountain Regional Park was a blur. Only as I set up the first mist net did it really sink in — I was LMBO's Assistant Bander for the fall.

My name is Laura Tabbakh and, as I keep hearing, I am the first out-of-province bander hired at LMBO. For as long as I can remember, I have had one ambition in life, and that is to play outside. A few years ago, I realized it was actually possible to spend my life playing outside in a country with expansive wildlife such as Canada. I left my corporate job and enrolled in McGill's Wildlife Biology bachelor's program. It is during my time there that I met my group of Bird Nerds. Before I knew it, I had crossed over to the dark side and birds had become an inherent part of my life.

Two years of volunteering at McGill's Bird Observatory and a banding internship at the Koffler Scientific Reserve (Ontario) later, here I was setting up a banding station in a location entirely new to me. Same type of work, different place. Wondering what the catch the next day would be like. What the migration patterns were like up here, a few degrees north of Montreal and Toronto, and how they would differ from the ones in the East.

I had my answer the very next morning — the first bird in the nets was a Ruby-throated Hummingbird! Definitely an unusual first-of-the-season for me. Even more surprising was the next bird, an Eastern Kingbird. While common in the East, they do not usually get trapped in mist nets. Suffice it to say it was a very exciting first bird to band here for me. It was the first of many banding ticks for me, including Barn and Bank Swallows, Olive-sided and Yellow-bellied Flycatchers, Clay-colored and Harris's Sparrows, a Western Kingbird, and the most exciting so far, an unforgettable gorgeous Broad-winged Hawk.

The new species were not the main difference between LMBO and the two stations I come from. Probably the biggest adjustment for me was the fact that LMBO is a public station. Although this situation comes with its share of challenges, it mainly brings rewards. August was the busiest month with visitors, most of them children camping in

the park who loved to see the birds up close, walk the net lanes with us and of course, release the birds after the banding. There is nothing like a kid's giggling smile when a bird takes off from their hand. Another visitor that made my day was a lady from Wyoming celebrating her 75th birthday who came to the station because, she told us, it was a life dream for her to watch a banding demonstration. Her timing was perfect: we had our first Harris's Sparrow of the season to show her.

Another completely different kind of visitor LMBO gets is the volunteers who generously give of their time and energy to help us run the station. There are no words to describe how much their help is appreciated, especially on those crazy days where it seems like half the birds in the country decide to end up in our nets. The dynamics with volunteers is very different, as it is mostly one of teaching and passing it on, rather than demonstrating and educating. It was an immense pleasure to watch one of our long-term volunteers finally band her first bird — a Canada Warbler, no less! Just the same, I am very grateful for what the more experienced volunteers have taught me during their short stays at LMBO.

Having visitors is demanding and tiring, but it is absolutely worth it. The outreach of our work is multiplied by as many people who walk through our door. A lot of research work ends up in the ivory tower of published papers, unknown to anyone who has not participated in the work or anyone who will not need it. Opening banding stations to the public is one way to breach that ivory tower, showing people the wildlife around them and the threats they are facing. It is a powerful awareness tool that translates to a powerful conservation tool.

Coming to Saskatchewan, I was looking forward to discovering the infamous prairie ecosystems and its wildlife. I was not disappointed. Coming from mountains and forests, the smooth immensity is entirely new to me. Never have I experienced flattening winds like the ones that forced us to shut down the station several times. And I certainly never experienced a proper snow storm on September 21. While thousands of migrating geese is a common sight in Montreal, cranes by the hundreds is not. On that note, I am still hoping to see my first Whooping Crane. I still feel excited and impressed by the sheer number of hawks around, much to the amusement of the other banders up here, for whom hawks are no more than, and I quote, "backyard birds." I checked off a bunch of ground squirrels and mule deer from my list, but not badgers — well, aside from that one roadkill badger a Turkey Vulture was feasting on. Let's just say, it is not quite the sighting I was hoping for.

Thanksgiving is quickly approaching, and so is the day I pack and move on with my field season. Although the weather up here does not allow it, banding season usually goes until the end of October. I will spend the rest of the month at the Thunder Cape Bird Observatory (TCBO) in Ontario. Bird banding, as with pretty much anything else, is an ongoing learning experience. I have learned a humongous amount at McGill, at Koffler, at LMBO, and I am looking forward to learning something new at TCBO. I leave with too many memories to count and new friends I was lucky to make. And perhaps one day I will be back at LMBO, for more people to meet, new knowledge to pass on and more techniques to learn still.

Until that day!

DECLINE OF NATIVE PRAIRIE IN CORE GRASSLAND CONSERVATION AREAS IN SOUTHWESTERN MANITOBA 2010-2015

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Introduction

Within the Southwestern Manitoba Mixed-Grass Prairie Important Bird Area (IBA), three perennial grassland blocks represent over 26,300 ha (65,000 acres) of habitat within a matrix that is otherwise dominated by annual cropland (Fig. 1). The grassland blocks provide habitat for 12 species assessed as Endangered, Threatened or Special Concern by the Committee on the Status of Endangered Wildlife in Canada or under Manitoba's *Endangered Species & Ecosystems Act*.[1] Ten additional nationally rare or uncommon species also occur in the IBA. Native mixed-grass prairie comprises 40-50 per cent of these blocks, representing some of the last non-fragmented mixed-grass prairie in Manitoba. Non-native perennial grasslands composed primarily of forage mixes for pasture or hay production are also common and are dominated by non-native graminoids and forbs (typically alfalfa). These expansive native-tame grassland complexes represent a significant conservation opportunity for grassland-dependent birds, many of which are area-sensitive.[2] Some species, such as Sprague's Pipit (*Anthus spragueii*) and Chestnut-collared Longspur (*Calcarius ornatus*), exhibit preferences for native prairie[3] and rarely occur in,[4] or near cropland.[5]

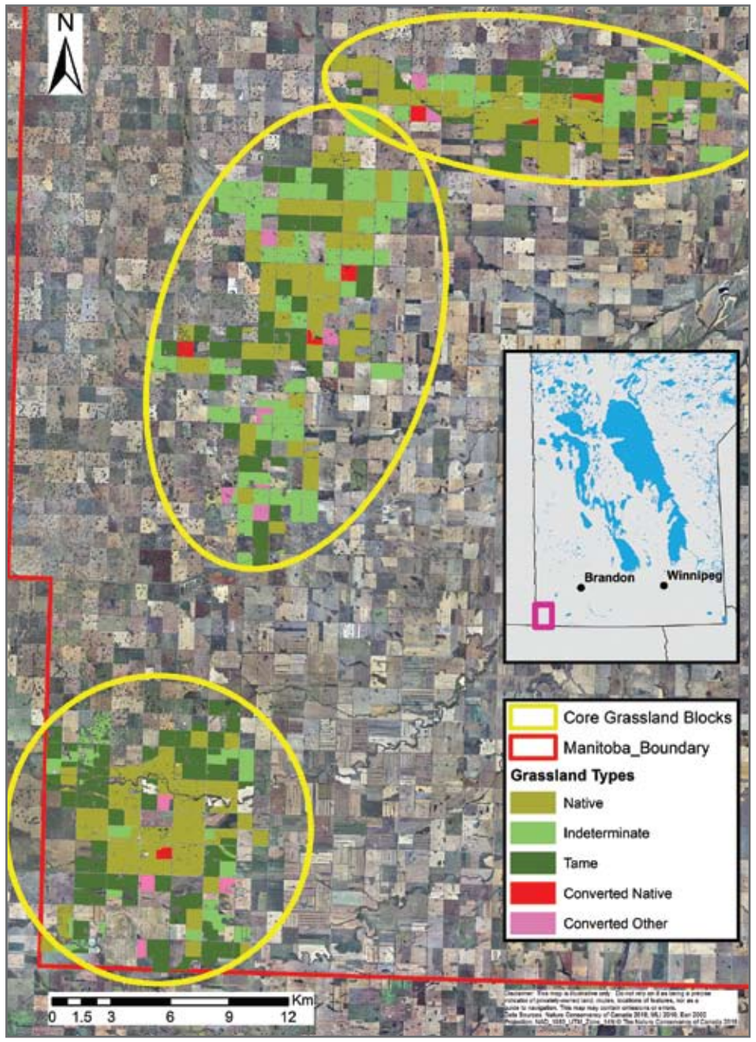

FIGURE 1. Distribution of grassland types and 2010-2015 habitat conversion within core grassland blocks in the Southwestern Manitoba Mixed-grass Prairie Important Bird Area.

The IBA has been a focus of conservation efforts by non-governmental organizations, Crown conservation agencies, and local stewardship groups for more than 15 years, with programming related to land securement, land management, Species At Risk stewardship, and ecotourism.[6,7]

Approximately 12 per cent of perennial grasslands in the three blocks are conserved as provincial Crown Wildlife Management Areas, provincial Crown conservation agency-owned lands, environmental non-governmental organization-owned lands, or as private lands secured through perpetual conservation easement agreements.[7] Within the IBA, no areas are considered permanently protected via legal means from oil, petroleum, aggregate extraction and other development.[8]

The goal of this study was to determine the status and rate of loss of native prairie in three of the largest perennial grassland blocks within the Southwestern Manitoba Mixed-Grass Prairie IBA and to summarize land use changes.

Methods

Relative to small remnants, large blocks of intact habitat are prioritized by biodiversity conservation organizations as opportunities to conserve disturbance-driven landscape-scale ecological functions and successional heterogeneity.[9] Fitzgerald et al.[10] recommend that grassland bird conservation areas be a minimum of 809 ha (2,000 acres) "of high quality protected grassland (in a polygon in which edge is minimized) in order to support source breeding populations of high priority bird species." Three blocks within the IBA met these criteria and were the focus of this study (Fig. 1). The grasslands of the nearby Blind River and Souris River valleys, though greater than 809 ha, were not included due to extensive and long-duration flooding which prevented access to much of the area. Grassland blocks smaller than 809 ha in size were excluded.

Systematic surveys were conducted in 2010 and 2015 to document vegetation cover and land management. In 2010, vegetation cover types were mapped as polygons in a shapefile database using ArcMap geographic information system (GIS) software. Polygons were delineated using interpretation of orthophotographs, to a minimum of 3 ha for grassland habitats. Other cover types such as trees, oil and gas development, gravel pits and yard-sites were mapped at a smaller scale (<1 ha) because we could reliably discern these cover types on the orthophotographs and in the field. Polygon boundaries were also delineated by land ownership units, defined by a cadastral layer. Vegetation cover was not classified in ditches and on road allowances. Grassland complexes typically supported interior shallow and ephemeral wetlands. These wetlands were not distinguished from the broader grassland complexes because they were difficult to detect and their extents often vary year to year.

All vehicle-accessible grid-roads and road allowances within the survey area were driven, and classification of land cover and land use was conducted by visual interpretation from the vehicle (using binoculars). In the few instances where a portion of a land parcel could not be seen from the road allowance, land cover was interpolated using orthophotography and observed changes, or lack of changes, on adjacent lands. A GPS-enabled Juno Trimble was used to edit the GIS database in the field, and each polygon was assigned a category of land cover and land use. Surveys were repeated in 2015 using the same methods. Observers were the same in both 2010 and 2015, with the exception of the southern portion of the southernmost block.

Vegetation communities were divided into six categories:

- *native prairie* - grasslands which appeared to be dominated by native prairie vegetation or supported species indicative of intact prairie throughout the patch when the dominant cover could not be determined. The latter were still categorized as prairie, despite potential co-dominance of non-native species, as they may support an in-situ seed source, which could allow for reclamation of prairie species without restoration through planting.
- *tame grassland* - dominated by non-native grasses and forages, not expected to return to a native prairie without active restoration.
- *indeterminate grassland* - perennial grassland in which the species composition could not be determined using the survey methods. These parcels were typically intensively grazed, or too distant from the observer to make a clear determination.
- *annual cropland* - areas cultivated and seeded to annual crops and considered non-permanent cover.
- *woody vegetation* - tree-dominated areas that were detectable on orthophotographs.
- other - yard sites, dugouts, infrastructure and areas without vegetative cover.

Land Use was divided into three categories:

- *grazing* - used as pasture for livestock for any period of time.
- *haying* - harvested for forage.
- *idle* or undetected - no visible management or could not be determined.

Area was calculated using GIS for each category of cover for the two years of surveys. The difference in area between 2010 and 2015 was calculated as a per cent change over the five years.

Results

Across the survey area the overall extent of perennial grasslands was reduced by 2% (Table 1). Patterns differed amongst the three blocks, with a 0.4% increase in one block and a decrease of 2% and 4% in the other two blocks.

Between 2010 and 2015, there was a 3% decline in the extent of mapped mixed-grass prairie in core grassland blocks (Table 1). Two-thirds was converted into annual cropland and one-third into tame grasslands. Though the area of native prairie within core blocks was roughly equal, the rate of loss was not evenly distributed (Fig. 1). Approximately 4% was lost in each of two of the blocks and 1% in the third.

An overall increase in perennial tame grasslands (3%) was observed as annually cultivated lands were converted to perennial alfalfa hay mixes.

While the conversion of annual cropland into tame grasslands offset tame grassland loss elsewhere, the ratio of management types did show a small change. Across the three blocks there was a 2% decrease in area under grazing management and a 4% increase in area under haying management. Of all converted native prairies, over 60% were in grazing systems post-conversion. All converted annual cropland was put into haying management.

TABLE 1. Hectares of perennial grassland within core grassland blocks in the Southwestern Manitoba Mixed-grass Prairie Important Bird Area, by grassland type.

GRASSLAND TYPE	2010	2015	CHANGE
Native	***9990***	***9661***	***-329***
Tame	7585	7790	205
Indeterminate	5662	5391	-271
Total	***23237***	***22842***	***-395***

Discussion

Exceptionally high water levels occurred in 2011 and 2014, resulting in significant flooding that impacted much of the arable land in the study area. It is unclear if observed changes in land cover and land use would be different under drier conditions.

The 0.7% average annual native prairie loss observed in the IBA is similar to the average annual native grassland loss rates for the broader Canadian prairies (0. 6% loss/year 1985-2001.[11, in 12] The rate of loss exceeds that of the Missouri Coteau region of North Dakota (0.3% loss/year 1992-2002[13]) and the Manitoba tall-grass prairie where overall prairie area exhibited an increase, despite 23% of studied grassland sites having been lost between 1987/1988 and 2006.[14] World Wildlife Fund[15] reports that the annual rate of overall grassland loss from 2011-2015 in the Canadian prairies ranged from 7% to 3%, which was higher than the average annual loss of 2% observed in this study. However, the report did not distinguish between tame and native grasslands.

Despite some visual limitations of using roadside surveys, this approach produced relatively cost-effective mapping and a more accurate classification of grasslands than other remote-sensing approaches. Approximately 75% of grasslands could be classified as native or tame using this approach. In contrast, the classification accuracy for non-crop cover in Manitoba based on the 2016 AAFC land cover database was 68%, and does not differentiate between native and non-native pasture.[16]

Prairie loss continues to occur within the three remaining large grassland blocks despite the efforts of conservation organizations in the IBA. This loss of habitat as well as the shift from native to tame grasslands could have implications on both availability and suitability of habitat for birds and other prairie species in the IBA. The results of this study suggest that conservation efforts in the IBA may need to be accelerated, and/or alternative methods considered. To ensure prairie and the species that depend on it persist and flourish in Manitoba, we believe it is important that a variety of approaches to conserving them be used. Focused conservation efforts should be tailored to the unique socio-economic considerations of different regions, and could include:

- Supporting local grassland conservation champions (funding, research, in-kind).
- Perpetual securement of mixed-grass prairie, prioritizing large, intact blocks, including permanent protection from development.
- Supporting and contributing to the maintenance or expansion of compatible grassland-dependent economic development, such as a sustainable livestock industry.
- Develop and support programs to provide incentives and certification for livestock production practice that follow habitat-friendly practices.
- Building the knowledge base and capacity to conduct and scale up effective prairie restoration.
- Increasing the connectivity of mixed-grass prairie to: increase block size, buffer impacts from intensive agriculture and other land uses that are incompatible with grassland bird breeding and provide between-block movement corridors for prairie insects and other animals.

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POETRY

The Expositional Snow

What is it about snow
attracts all of us so--
its sparkle and shimmer
that slowly grows dimmer
its one solid blueness
declaring a newness
to cold winter's façade?

Then all creatures abroad
ghostly owls yet astir
hidden hares in white fur
wait on what's opportune
till a yellowy moon
climbs up the dark sky and
lightens the snow-blue land.

Victor C. Friesen
P.O. Box 65
Rosthern, SK S0K 3R0
victorcfriesen@yahoo.com

Black-capped Chickadee. Photos courtesy of Kimberly Epp

BEYOND YOUR BACKYARD:
DECORATE A TREE FOR WILDLIFE

Kimberly J. Epp

One of the adaptations that helps all winter birds survive is that their beaks and feet are kept at much lower temperatures than their inner core. You have probably wondered why they don't freeze their frail-looking little feet when they are perched on those deep-freeze cold days? Their feet are heated with a counter-current heat exchange system in which the arteries run alongside the veins in the bird's feet and legs. The arterial blood warms the cold returning venous blood. This reduces heat loss and keeps the bird's feet kept at low temperatures, with heating focused on the important internal organs.

I am always fascinated to see the high number of birds flocking to my feeders on the coldest winter days. But the coldest days are the ones most crucial for the birds to consume more calories to help them survive both the long days and the even longer nights.

Common 'feeder' birds include chickadees, White-breasted Nuthatches, Red-breasted Nuthatches and Downy Woodpeckers. Common Redpolls may be found sometimes as well, although they are not always 'common.' Interestingly, they migrate here from areas from the far north and arctic regions. When you hear the high chirping and see large flocks of redpolls in the fall, you have a sure sign of the winter to come. An interesting fact on redpolls is that they will actually dig burrows in the snow to huddle together with — and so winters with less snow can be hard on these birds, forcing them to adapt to other ways places to over-night. Redpolls are about the same size as the chickadee and all have a little red cap. The males have rose-coloured chests. Watch for them this winter as they may also visit your feeders if you offer protein-rich foods.

High protein and fatty foods include suet and peanut butter. Many butcher shops will sell suet, and will ground it up if asked as well. Suet is beef fat, and will render down. You can make your own seed cake mixtures with additives such as seeds, older fruit, peanut butter and more. I don't usually follow a recipe and mix in what I have on hand that I know the birds will like.

You can even decorate one of your outside spruce trees for both Christmas and for the birds! All it takes is a little creativity. Have a decorating party! You can cut a grapefruit in half and hollow it out. Put three small holes in and run twine through to hold it. Pour the melted suet treat into it and place it in the freezer until it is frozen. I have also used hollowed out smaller melon halves. Chickadees and woodpeckers will especially love these treats! I was constantly kept busy making suet cakes, cookies and more for the birds at Beaver Creek near Saskatoon. Once they have found your tasty treats they will keep coming for more! However it is an urban myth that if you remove your feeder the birds that had been feeding off of it will die — they will simply look for and find another food source. Once one bird comes to check out your treats, others will follow. Chickadees especially learn fast and they are the ones that will hang off of and consume the seed cookie treats, with recipe following.

Red-breasted Nuthatch

For approximately 2-3 dozen cookies, sift 2 cups flour, ½ tsp. baking soda, and ½ cup sugar. Cut in 2/3 cup rendered suet with a pastry blender until crumbly. Add 2 eggs until well blended. Add 2/3 cup of seed blend (i.e. oilseed, sunflower seed, peanuts, raisins). Knead until smooth. Wrap in wax paper and plastic bag and chill until stiff. Roll out and slightly flour as do so to about a ¼ inch thickness. Cut into bird shapes, but mold out a little hole at the top which will be for hanging.

Brush the cookies with 2 slightly beaten egg whites (note: I also keep and dry the shells to mix into the dough prior as an additive for calcium for the birds). Place the dough on to ungreased cookie sheets. Bake at 325 for 12-15 minutes, or until the cookies harden. Cool and hang with ribbons, twine or yarn outside on your "Christmas" tree(s)! Use your imagination to make other edible ornaments — not only will the neighbours appreciate the look of the trees — so will the birds! And you can feel better knowing you have helped them through what looks to be what may be a very long, cold winter!

Come join the Moose Jaw Nature Society on Wednesday, November 21 at 6:30 p.m. at the MJ Public Library (upstairs), where we will be 'decorating a tree for wildlife'. Participants will be making bird feeders and hanging them up on a tree next to the library. The program is free, but donations to materials are appreciated or you can bring your own materials. There will also be an introduction to common and uncommon feeder birds.

Epp is an environmental educator and writer and is the President of the Moose Jaw Nature Society. She can be reached at kepp@shaw.ca

THE OPTIMISTIC ENVIRONMENTALIST:
PROGRESSING TOWARDS A GREENER FUTURE

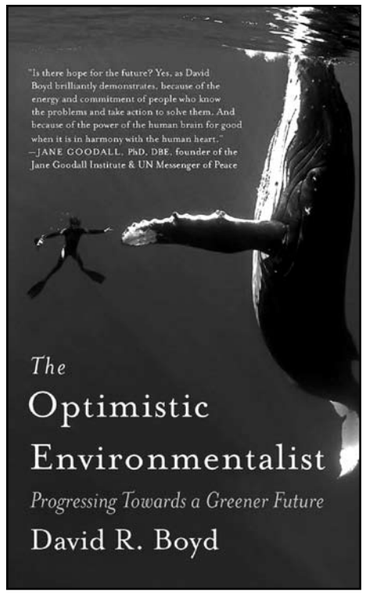
BOYD, DAVID R. ECW PRESS. 2015. 219 PP.

Diether Peschken
217 Lockwood St.
Winnipeg, MB R3N 1S1
peschken@outlook.com

Dr. David Boyd is the author of seven books on the health of the environment, environmental laws, and the rights of the environment. He works as a lawyer for Ecojustice Canada. The introduction of *The Optimistic Environmentalist* is entitled, 'The Importance of Being Optimistic'. David Boyd wrote this well researched and uplifting book to restore optimism that we can successfully combat climate change and create ecological health. He reports in detail on many astonishingly successful projects, international treaties and laws designed to protect the environment. But he also warns that much work has to be done to prevent disastrous climate change. This book will appeal to anybody that is interested in the preservation of our environment. There are 11 pages of a Selected Biography. Below are summarized highlights of each of the 10 chapters and the conclusion.

Part I. The Big Picture.
Chapter 1: Nature's Comeback Stories

While the media regularly report the decline of biodiversity of species, there are numerous examples of the comeback of species such as many whale species and the sea otter. The author describes vividly a "meet-and-greet" session with gray whales near Puerto López Mateos where he stroked the head of a calf of the now numerous gray whales. Roughly 90 per cent of species listed under the U.S. Endangered Species Act are on track of their recovery. There has been exponential growth of protected land and Marine Protected Areas. But Canada is lagging behind many other nations.



Chapter 2: The Renewable Energy Revolution

The change to renewable energy is happening faster then predicted. For example, China alone is adding more sun-powered electricity every six months than the International Energy Agency's (IEA) predicted 2020 total for the whole world. Wind power is increasing exponentially. The usefulness of solar photovoltaic (PV) systems has improved so that lights stay on after the sun goes down. The price of wind and solar power is now the same or lower than that produced by fossil fuels. This growth is occurring despite subsidies of $550 billion given to the fossil fuel industry and only $120 billion for all renewables combined.

Chapter 3: The Circular Economy

In today's linear economy we extract resources, make products and throw them away. In contrast, a circular economy recycles materials indefinitely and eradicates pollution and waste.

A cradle-to-cradle design and certification was developed. Companies using a cradle-to-cradle design enjoy reduced costs, improved product value, increased profits and healthier work places.

Moving to a circular economy is possible and profitable.

Part II.
Healthy Environment, Healthy People.
Chapter 4: Cleaner Air

In the 50s, air pollution in Los Angeles caused by big cars and coal-fired electricity plants made it impossible to see across the street, and in England visibility dropped to less than a metre in parts of London. Clean air laws were remarkably successful. But pollution still causes an estimated 20,000 premature deaths in Canada and 200,000 in the U.S. The worst polluted area in Canada is the Chemical Valley in Sarnia. The World Health Organization estimates that in less wealthy countries, 7 million premature deaths occur annually due to air pollution.

Chapter 5: Saving the Ozone Layer

The stratospheric ozone acts like a sun screen. Chlorofluorochemicals (CFC) were widely used as coolants in refrigerators, air conditioners, propellants and other applications. In June 1974, two scientists called for a complete ban of the use of CFCs. The chemical industry predicted 20 to 40 million deaths annually because of a collapse in refrigeration. International negotiations resulted in the Montreal Protocol in 1987 to phase out the use of CFCs and other ozone depleting chemicals. This Protocol is widely hailed as the most successful international environmental treaty ever negotiated. By 2014, ozone "holes" had shrunk to their smallest size in more than a decade.

Chapter 6: Taps, Toilets and Farms

Remarkable progress is being made in regards to environmentally sustainable provision of water, sanitation and food. More people than ever before are enjoying access to clean water, sanitation and adequate nutrition. To be sure, renewed efforts are required to fulfill the needs of those who sill lack access to safe drinking water, indoor toilets, and adequate nutrition. The Canadian federal government estimates that 5,000 homes with about 20,000 people in First Nation communities lack safe running water and indoor toilets.

Chapter 7: Global Detox

Our bodies contain a multitude of pesticides, stain repellants, flame retardants, and other industrial chemicals. When it was shown that some chemicals, such as DDT, CFC and lead were detrimental to our health and the environment, governments instituted laws to regulate the use of chemicals. In 2001, 12 of the most toxic substances were banned. Authorities lowered the threshold of lead from 60 micrograms to 5. More than 50 countries have banned all uses of asbestos. But thousands of people, primarily in developing countries are still exposed to this deadly substance. The flame retardants Polybrominated diphenyl ethers (PBDE) were found in women's breast milk. Sweden's government banned the use of PBDE, and in the U.S. a dozen States banned the use of two main PBDEs. The European Union leads the world in taking a precautionary approach to chemicals. There is tangible proof that international treaties and national laws protect the health of humans and ecosystems.

Part III. The Built Environment.
Chapter 8: The Greenest City Decathlon

More than half of the people in the world live in cities, and produce 80 per cent of greenhouse gas emissions. In Europe, the top-rated cities in the world were Copenhagen, Stockholm and Oslo, in North America San Francisco, Vancouver and New York, and in Asia and Latin America Singapore and Curitiba. No African city earned a high rating. Vancouver residents generate the fewest per capita greenhouse gases in Canada at 5 tons per person annually. Oslo emits 2.2 tonnes. A garbage shortage led Sweden to import trash from Norway. Waste is not a problem but a valuable resource. In Stockholm, waterways in the city are so clean that the fish in them can be eaten. In the greenest European cities, nine out of 10 trips taken are on foot, by bicycle or on public transit. The creation of green cities results in healthier people, more resilient economies and a flourishing environment.

Chapter 9: The Future of Buildings

A home in Victoria, built to standards created in Germany, cut energy use for heating and cooling by 90 per cent. The house was less expensive to build than a comparable custom built home. The addition of a photovoltaic system may even allow the owner to sell surplus energy. Building a net-zero home has reached commercial viability in just 10 years. The Living Building Certification process requires the use of local materials, non-toxic construction products, etc. Renovation of existing buildings can cut energy use by one-half to two-thirds.

Chapter 10: Electrifying Transport

The use of cars is becoming less. In some major U.S. cities more than 30 per cent of households are carless. The hybrid gas-electric Toyota Prius uses only five litres of gas per 100 km, and racks up to 1 million km with only routine tune-ups. The sale of fully electric vehicles (EVs) is increasing. In 2013 and 2014, the Tesla Model S and Nissan Leaf were the top-selling cars in Norway where 97 per cent of the electricity is produced by hydro electricity. The levy on new cars based on gasoline consumption is economically and environmentally sound. In the Netherlands, the EV market share increased 1,900% from 2012 to 2013. Electric trains are even greener than EVs and are increasing.

Conclusion: From Optimism to Action

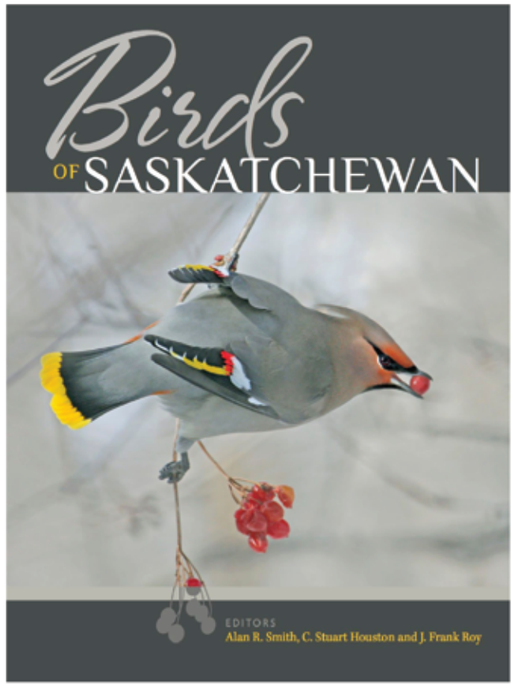
Signs of hope are all around us: Chum salmon are again spawning in Vancouver's Still Creek.

In London, Stockholm and New York, fish have returned to water bodies. There is compelling evidence that protecting the environment dwarfs the costs. Sweden, Norway and Costa Rica are in the forefront of countries achieving a green future. However, Sweden solved some of its problems by exporting them to other countries. Costa Rica is the top-ranked country in the world on the Happy Planet Index. Progress toward a greener future in Europe is ahead of that in North America. If we ever get past the special interests and ideology that have blocked action to save the planet, we'll find that it's cheaper and easier than almost anyone imagines. Progress has been made on a host of fundamental issues such as democracy, literacy, poverty, health and population increase. Profligate consumption must be curbed. From Vancouver to Stockholm, this vison is becoming a reality.

NEW

FROM NATURE SASKATCHEWAN

A full-colour, comprehensive look at all of the birds that call Saskatchewan home.



437 species of birds are documented in this 800 page compendium, a result of over ten years of work and several lifetimes of observation, research, and writing.

This work celebrates Saskatchewan's rich natural heritage, and acknowledges the efforts made to study and sustain each bird's presence in the province. It is a record of change - of the birds who have come, those who remain, and those whose habitats are affected by changes in the environment.

Birds of Saskatchewan is indebted to the long-time editors of the project. Lead author/co-editor Alan R. Smith is the scientist, the keeper of data, and provincial documenter. Here he joins his mentors C. Stuart Houston, bird bander, history lover, and prolific author, and Houston's long-time friend, collaborator, and editor J. Frank Roy, whose passion for birds, words, and images has helped to make this a publication that we hope readers will appreciate.

FOR A LIMITED TIME

Receive a discount on the purchase of *Birds of Saskatchewan* before it's published. Pay only $64.95 from October 15 until December 15.

Purchase price of book will go up to $79.95 after December 15.

FOR PURCHASE INFORMATION SEE ORDER FORM or visit www.naturesask.ca/store/en/publications.

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Nature SASKATCHEWAN

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CALL FOR APPLICATIONS FOR THE MARGARET SKEEL GRADUATE STUDENT SCHOLARSHIP

The Nature Saskatchewan Margaret Skeel Graduate Student Scholarship, in the amount of $2,000, will be awarded in 2019 to assist a graduate student attending a post-secondary institution in Saskatchewan. It will be awarded to a student in the field of biology, ecology, wildlife management, environmental education and environmental studies including social sciences applied to advancement of conservation and sustainable use of natural resources.

The scholarship is awarded to a student pursuing studies in a field that complements the goals of Nature Saskatchewan: to promote appreciation and understanding of our natural environment, and support research to protect and conserve natural ecosystems and their biodiversity. Nature Saskatchewan works for sustainable use of Saskatchewan's natural heritage, ensuring survival of all native species and representative natural areas, as well as maintenance of healthy and diverse wildlife populations throughout the province. We aim to educate and to stimulate research to increase knowledge of all aspects of the natural world. Research that will contribute to resolving current conservation problems have a special priority.

The Margaret Skeel Graduate Student Scholarship must be applied to tuition and associated costs at the named institution. For more information, contact our office by email at info@naturesask.ca or by phone 306-780-9273 (in Regina) or 1-800-667-4668 (Saskatchewan only).

Application Guidelines

Please include the following documents:

- An updated resume with a cover letter
- A full description of your present and/or proposed research
- A transcript of the undergraduate and graduate courses completed so far and those currently enrolled in
- An indication of what other source(s) of funding you hope to rely on to complete your studies
- Letters of Reference are optional

Application Deadline:
December 31, 2018

Winner Announced:
January 31, 2019

Please submit your completed application to the Scholarship Committee: info@naturesask.ca
or
Nature Saskatchewan
206-1860 Lorne Street
Regina, SK S4P 2L7

POETRY

AUTUMN FLIGHT

Seen from the gate
On the rise
Into the big pasture
Red Tail, no more than a flying
Shadow
Above the sun and red fall
Grasses.

Then one graceful obverse skyward
bank
Lifts him onto the canvas
Of ponderous grey-white clouds
And washed blue sky.

There, with a flash of golden yellow
beak
And his spread, canted tail
He reveals himself
He tells his story.

George Grassick
Box 205
Lumsden, SK
S0G 3C0
ggrassick@sasktel.net

HUMAN NATURE

WINTER IN PRINCE ALBERT NATIONAL PARK

Photos courtesy of Chelsea Walters

Chelsea Walters
Regina, SK

Hot chocolate, fuzzy sweaters, the festive feeling of the season — I love winter! But like many of us living north of the 49th parallel, I've been drawn to stay indoors for most of the season. However, as a naturalist living in Canada, I've slowly come to grips with the fact that I should try to embrace winter.

So last year, I decided to try and become a "winter person" and chose to ease into my new identity with a trip to Prince Albert National Park (PANP), while staying at the Elk Ridge Resort, here in Saskatchewan.

During the day, my husband James and I headed out snowshoeing on a couple of trails, as the area is known for several owl species (a family favourite) including Barred, Great Gray, and Boreal amongst others. As a mother of a young boy, I found the trails at PANP greatly accessible for those with young children. Lots of trails are easily reached, with several options to loop back if you're in need of a quick turnaround. What's more is that it's easy to go from forested area to lake (where the ice shifts are UNREAL)

to open field, allowing us to explore a lot of different terrain in a short period of time.

Though the sun sets early in winter, the magic doesn't end when the sun goes down. Because atmospheric haze is generally low, the stars are absolutely breathtaking, and as an avid aurora hunter, the northern lights are another huge attractor for me. On our last trip there, we spent an evening sneaking out onto the lake in the night to stand on the ice and catch a glimpse of the aurora in its full glory, away from the city lights.

Finally, it was around Prince Albert National Park (though not directly in it) that I took part in my first dog sledding excursion. Meeting and caring for the dogs, learning the commands, and just going along for the ride — it was one of the coolest experiences in my life, and something I'm hoping to do again soon.

I still love sweaters, lights, and hot chocolate, but since spending time in PANP, I can add crisp air, stillness, and the sense of adventure you get from heading out into the cold to my list of things I love about winter. I found that with the right gear*, there is a freshness and a magic in heading outdoors in the winter that most people don't get to experience. The fact that it takes a little extra effort makes it all the more memorable, and with Elk Ridge Resort nearby, it's the perfect place for anyone who would like to begin immersing themselves in all that nature has to offer in the winter season.

*Side note: The key is to have good gear. If there's someone in your life who hates the cold, splurge on some good gear to get them out there. Merino wool layers, a good shell, and a good pair of snow shoes or skis — gear often makes the difference between a good time and a bad time.

Photo credit: Fran Kerbs

Photo credit: May Haga

Mystery Photo

Winter 2018 (left)

THE QUESTION IS: What mammal is being partially shown in this picture?

Please send your answers to Blue Jay editor Annie McLeod at bluejay@naturesask.ca or by letter mail: 3017 Hill Ave. Regina, SK S4S 0W2.

Those with correct answers will be entered into a draw for a prize from Nature Saskatchewan.

Mystery Photo

Fall 2018 (above)

ANSWER: The fly larva shown in the Fall 2018 mystery photo was that of an Elm Sawfly, which is North America's largest sawfly. While feeding, the larvae will usually coil its posterior around a leaf or twig, while at rest it will roll into a tight coil.

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

Nature SASKATCHEWAN

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