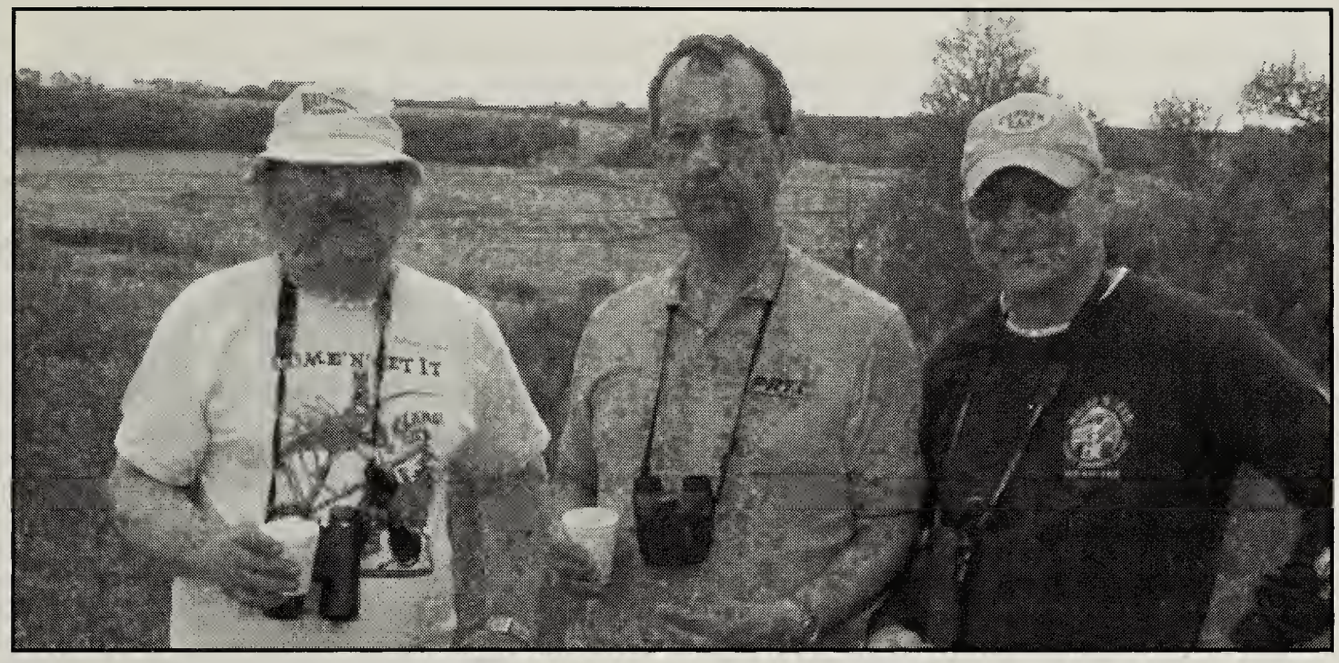
40TH ANNIVERSARY OF THE MANLEY CALLIN EKAPO LAKE BIRD OUTING

Manley Callin at the Katepwa marsh, one of his favourite bird stops near Fort Qu'Appelle, SK. Many of Nature Saskatchewan special publications were made possible through funding from Manley Callin's bequest. *Maurice Lindgren*

On 25 and 26 May 1968, David Chaskavich and I were fortunate to accompany Manley Callin and his twin brother Elmer on the first of what would be many bird outings in the Broadview area. From 1968 to the mid-1980's, Manley, David, and I were joined by a number of birders, including Johnny Nelson, Frank Brazier, and Elmer Callin, to conduct the 2-day Broadview area bird surveys. Day 1 included coverage of the Crooked/Round Lake areas north of Broadview, while Day 2 included the Ekapo Lake area south of Broadview.

Born in Whitewood, Saskatchewan, in 1911, Manley and Elmer started their birding hobby in the summer of 1925 in the Percival area, and in the spring of 1926, at the age of 14 years, they compiled their first migration list. In 1980, Manley's *Birds of the Qu'Appelle, 1857-1979* was published. Upon release of the book, an article in *The Fort Qu'Appelle Times* entitled "Bird Man Brings Fame to Qu'Appelle Valley" summarized Manley's accomplishments and birds contained in the book. Many of the species accounts documented in this book were recorded during the annual 2-day outings in the Broadview area.

David and I were fortunate to have a birding mentor as talented as Manley, who patiently assisted us with identifying birds by sight and sound.



Left to right: David Chaskavich, Carman Dodge, and Don Weidl at the Pipestone Creek valley south of Broadview, one of Manley Callin's favourite bird stops.

David Hatch, a well-known birder from Manitoba, wrote the following in the 13 July 1974 *Winnipeg Free Press Chickadee Notes*: "In Manitoba and Saskatchewan, there are many good – and some great – ornithologists, whose ability to identify birds by song alone is amazing but none is superior in this field to E. Manley Callin." Manley contributed countless articles to the *Blue Jay* and was president of the Saskatchewan Natural History Society from 1958 to 1959. Over a period of 74 years, he added several species to the Saskatchewan bird checklist. Manley was also recognized outside the "birding community," as was evident when The 60th Annual Meeting of the Saskatchewan Anti-Tuberculosis League honored their Chief Accountant, Manley Callin, at a dinner at the Bessborough Hotel on 31 May 1974.

A few of the highlights from the annual outings include my first Indigo Bunting at "Spring Fountain Picnic Site" on Highway 9 and the Qu'Appelle valley on 25 May 1968, and a male Scarlet Tanager at the same location on 6 June 1982. David and Manley observed a male Northern Parula Warbler south of Broadview during the Ekapo outing on 26 May 1979, and David saw a Cinnamon Teal at the west end of Ekapo Lake on 24 May 1986. Over a 25+-year period, the bird list for the Broadview area grew to over 250 species, many which were observed during the outings with Manley.

When Manley was laid to rest on 9 November 1985 at the Lakeview Cemetery at Fort Qu'Appelle, the annual bird outings ended*. On 18 May 2008, David, Carman Dodge, and I traveled the Ekapo Lake route that Manley had surveyed for so many years. Although much of the habitat had changed over the years, with several of the aspen groves now supporting stubble fields, many of Manley's favorite stops along this route were still recognizable. A total of 119 bird species were observed during the day, a few which had never been included in the lists when Manley was alive. The new birds for the Ekapo list included Greater White-fronted Goose, Wood Duck (nesting in a nest box that David and I had set up 10 years earlier), one adult Bald Eagle, a male Harris's Sparrow, and several House Finches, which only appeared in the Broadview area in the late 1980s. On the other hand, several species such

as Ring-necked Pheasant, Great Crested Flycatcher, and Baltimore Oriole, appear to be less common compared to the early surveys conducted with Manley.

It was not until the end of the day on 18 May 2008 that I realized that it had been 40 years since the first outing with Manley and Elmer – a good reason to celebrate and write this article. Although David and I no longer reside in the Broadview area, we have continued to keep yearly bird lists on return visits, and the lessons learned from Manley at an early age have paid off many fold.

Acknowledgement

I thank Al Smith for reviewing an earlier version of this article.

- *Don Weidl*, 1711 Broadway Ave., Saskatoon, SK, S7H 2B4

***EDITORS' NOTE:** For more information on the life of Manley Callin, please see the In Memoriam entitled "In Memoriam – Eric Manley Callin (1911-1985)" by Frank Brazier, *Blue Jay* 44(2): 66-69. Note that the photo of Manley Callin in the article by Don Weidl was first published in that Memoriam.

WHERE THE DEER AND ANTELOPE PLAY

Pronghorn observed in a field near Simpson, SK, at the north end of Last Mountain Lake. Despite often being called "Pronghorn Antelope," these ungulates are not antelopes at all. Rather, they are the only extant species in the family Antilocapridae. *Vicky Kjoss*

Rural residents of the Rosthern-Laird area can now sing the old western folk tune "Home on the Range" from personal experience.

White-tailed Deer have always been present, particularly along the two Saskatchewan Rivers nearby, but their numbers appear to have markedly increased over the last years. On one drive over municipal roads close to the South Branch at dusk, I have counted up to 150 deer feeding at the edges of poplar bushes. Mule deer can also sometimes be observed; on one occasion, 1 saw 14 walking in single file.

Four or 5 years ago, Pronghorn ("antelope") came into the district. They once roamed over the entire southern third of what is now Saskatchewan (fur trader Alexander Henry, the Younger, saw their hoofprints as far north as The Forks of the Saskatchewan Rivers in 1808[2]), but according to Banfield, they are now restricted to "the adjacent, southern corners of Alberta and Saskatchewan."[1]

On 2 November 2008, I observed a herd of 16 Pronghorn. The animals seemed to be as curious about me as I was about them, and made no attempt to flee. This sighting was 6 mi west of Rosthern, along provincial Highway Number 312, and 1 mi north. Pronghorn are often seen in twos or in small groups. This past summer, four of them regularly bedded down for the night at the edge of a farmyard 3 mi northeast of Laird. The area was freshly mowed, giving the animals a far range of vision, which is requisite for their safety.

Farmers appear pleased to have these amicable creatures around, commenting only on each antelope's beautiful markings. As the diet of Pronghorn consists mostly of weedy plants and woody browse, cereal crops are not at risk.

Since there is also a bison farm on the outskirts of Rosthern, we truly live "where the buffalo roam, and the deer and the antelope play."

1. BANFIELD, A.W.F. 1974. The Mammals of Canada. National Museum of Canada, Ottawa.

2. COUES, E., ed. 1965. The Manuscript Journals of Alexander Henry, Fur Trader of the Northwest Company, and of David Thompson, Official Geographer and Explorer of the Same Company, 1799-1814, 3 vols. Ross and Haines, Minneapolis, MN.

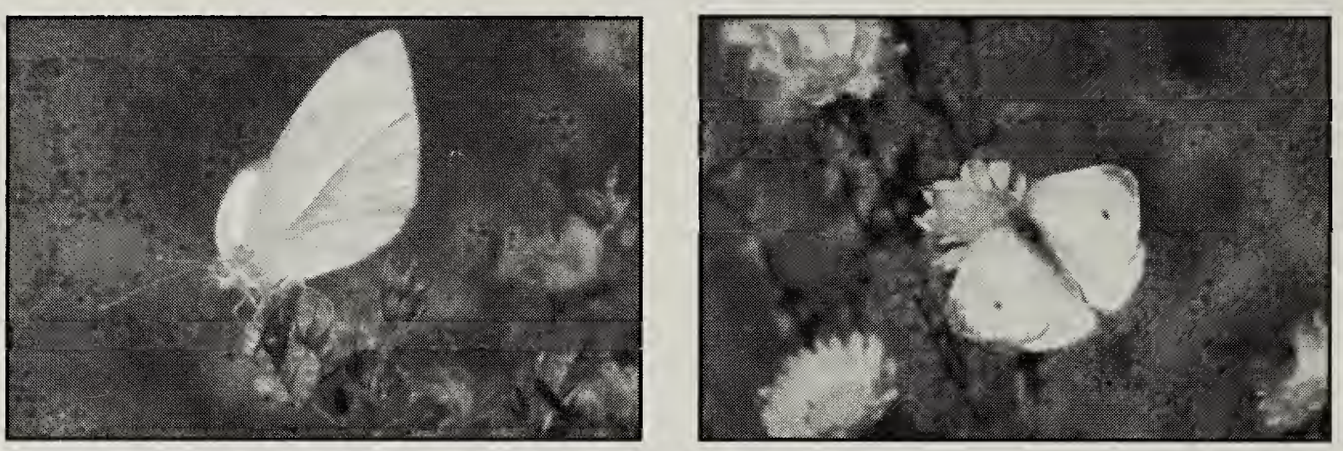
- *Victor C. Friesen*, P.O. Box 65, Rosthern, SK, S0K 3R0

ERRATUM

Jensen et al., "OCCURRENCE OF THE ENDANGERED GOLD-EDGED GEM (*SCHINIA AVEMENSIS*) AT CFB SUFFIELD NATIONAL WILDLIFE AREA, ALBERTA," *Blue Jay* 67(1) (March 2009): 50-53

The editors regrettably omitted the scientific names of several plant species mentioned in this article. Following is a list of these species: Prairie Sunflower (*Helianthus petiolaris*), Skeleton Weed (*Lygodesmia juncea*), Crested Wheatgrass (*Agropyron cristatum*), and Baby's-breath (*Gypsophila paniculata*). We apologize for any confusion this may have caused.

OBSERVATIONS OF BUTTERFLY BEHAVIOUR AND THOUGHTS ABOUT THERMOREGULATION



Wings folded during feeding (left); wings spread out (right). *Vicky Kjoss*

All insects obtain their body heat from the environment, and butterflies are no exception. On 3 May 2009, I saw my first Western White butterfly of the year, despite the fact that it seemed too cold for butterflies to fly. The Western White obligingly settled on the gravel by my truck, making identification easy. It was facing sideways to the sun with one set of wings parallel to the ground and the other at a ninety degree angle to its body. I had previously taken note of this behaviour in Western Whites in 2005, which I describe in more detail below. I was interested in when and how the various butterfly species that frequented a patch of vacant land on the southeast border of Weyburn came out of their overnight torpor, which is a state of inactivity caused by reduced body temperature.

My inspiration to observe the various poses that butterflies display just after the sun comes up was a book by Bernd Heinrich entitled *The Thermal Warriors*, in which he outlines the strategies that insects use to reach and maintain the temperatures that they need to survive day by day.[1] My journey into insect thermal regulation began as I walked on a trail etched out by all-terrain vehicles through city-owned land waiting for redevelopment. I came upon one Painted Lady after another on the ground with their backs to the sun and wings spread. As I walked towards the Painted Ladies basking on the ground, they all rose up and flew away. This was not the case with the Western White that clung to a gumweed (*Grindelia* sp.) stalk bordering the path, nor did my passage stir a Clouded Sulphur on the stalk of a plant.

It was 0830h on 20 August 2005, and the Western White and Clouded Sulphur were still in their overnight torpor, as was a Cabbage White clinging to the underside of a Prairie Sunflower (*Helianthus petiolaris*) leaf. I decided that I would return the next morning to see if I could record the coming to the dirt and gravel of the Painted Ladies to warm up prior to another day of nectar feeding. I assumed that the butterflies would not overnight in the open where they would be easy prey for nocturnal predators. Every day they must either get from where it is cooler to where it is warmer or wait for the day to heat up their hiding places.

At 0730h the next morning (21 August 2005) the air temperature was a cool 13°C and the ground temperature on the path was just one

degree higher. Despite the cool temperatures, I flushed 17 Painted Ladies off the path. While not fully active, the Painted Ladies were no longer in a state of torpor. I therefore needed to arrive much earlier to find the butterflies before they warmed enough to fly. To get a sense of how many and what kinds of butterflies I could expect to see in this patch of land at the beginning of daylight, I carried out of a number of censuses staggered over the day resulting in an estimate that for every ten butterflies seen, three would be Cabbage Whites, two Clouded Sulphurs, two Painted Ladies, one an Orange Sulphur, and the remainder could be either a Western White, Purple Copper, Variegated Fritillary, Milbert's Tortoiseshell, or a Common Checkered Skipper.

On 22 August 2005, I arrived on site at 0535h to survey a small section (20 m) of the path for butterfly activity. The air and ground temperature were the same: 13°C. I did not observe any butterfly activity in this section of the path. Nearly 1 hour later, I saw a Western White with closed wings broadside to the sun on top of a gumweed flower. Five minutes later, at 0645h, I saw another Western White clinging half-way up on a plant stalk. Neither one left its position as I placed a thermometer close to them. It was 14°C, and the sun has risen to 15 degrees above the horizon.

Five minutes later, I saw my first Painted Lady. It was closed-winged on gumweed, and the temperature had risen to 15°C. The Painted Lady stayed in the same place until 6 minutes later, when my shadow fell across it, causing it to move away. At 0700h with the sun at 20 degrees above the horizon in a moderate wind out of the southeast, two Painted Ladies flew southwest over a patch of Foxtail Barley (*Hordeum jubatum*). Shortly thereafter, two more Painted Ladies flew over the foxtail, and the temperature had now risen to 16°C. The flight pattern of all the Painted Ladies seemed to be composed of slower, deeper wing beats than normal.

At 0710h, I noted a Purplish Copper, perched on top of a gumweed flower with its wings spread facing the sun. It flew away as I approached to within 1 m of it. To the north and west of me were more Painted Ladies flying, and I observed others on the pathway. It was now 0727h, and the air temperature was still 16°C and the ground temperature on the pathway was 17°C. The first two butterflies that I noted an hour earlier up on plant stalks - Western Whites - still did not stir at my approach.

By 0800h, the air temperature had risen to 18°C, and the ground temperature was 20°C. A Cabbage White with its wings spread in a V facing the sun flew away at my approach, as did two others who flew up and then back down into foliage away from me. As well, a Common Checkered Skipper, with outspread wings on a flower top facing the sun, flew away at my approach. Five Painted Ladies rested on a 30-cm square of dirt sloping towards the sun. It appeared that by this time, all of the butterflies were fully active following the night-time period of dormancy.

On 23 August 2005, the weather was unsettled, with gusts of wind and clouds covering and uncovering the rising sun. At 0600h, the air temperature was 15°C, and the ground was 14°C. I saw the first Painted Lady with closed wings on a clover top. It did not move at my approach, nor did the next Painted Lady, which was clinging to the head of a brome grass (*Bromus* sp.) shoot.

Milbert's tortoiseshell.

It was now 0630h and the air temperature was 17°C. The weather became progressively more unsettled as rain clouds moved in. By 0730h, I was forced to leave as a smattering of rain droplets fell. For the next few days, clouds, gusts of wind, and rain showers keep me and the butterflies under cover.

I returned to the site on the evening of 28 August 2005. Six species of butterflies were still flying about, with one glaring exception – there were no Painted Ladies. I don't know why they were not observed. Perhaps they had left Weyburn on one of their enigmatic migrations southward. I meandered about the next few days as summer changed into fall. The days were still warm but nights were becoming colder, and the grasses were losing their heads. Florets of the gumweed and the Prairie Sunflowers had dried up. All that would remain flowering by the second week of September was Yellow Sweet Clover (*Melilotus officinalis*). While the numbers and species of butterflies decreased as the flowers disappeared, I continued to marvel at butterfly strategies to gather up sunlight to give themselves the strength to fly about.

On 3 September 2005 at 0900h with the air temperature at 20°C and the ground at 22°C, a Western White was on the dirt at right angles to the sun. One wing was flat against the ground, the other was upright at 90 degrees to the ground. It flew up at my approach and settled down a bit farther away, taking up its hinge-like position oriented to the sun once again. Nearby, another Western White was closed-winged, parallel to the sun, clinging to a plant stalk. Later in the morning, the air temperature rose to 22°C and the ground temperature was 24°C. A Variegated Fritillary was flat on the ground with its wings spread out, head first and oriented to the sun. This was different from the behaviour of Painted Ladies, which would turn so that their bodies would be on an incline to catch even more sunlight. Clouded Sulphurs started lining up at right angles to the sun with folded wings on the gravel of the pathway. These basking spots, previously occupied by Painted Ladies, were generally two degrees warmer than the surrounding air.

By 21 September 2005, I wanted to end my observations for the season by examining Clouded Sulphurs on plant stalks before they went to the warmer ground - a difficult search since it was now not much above freezing at sunrise. As well, the sun seemed to rise quicker and daytime temperature highs were reached more rapidly. My window of opportunity to see changing butterfly behaviour would therefore be shorter. At 0920h with the air temperature at 15°C and the ground temperature at 14°C, I observed a Clouded Sulphur clinging to a stalk with its wings closed, parallel to the sun. Soon another Clouded Sulphur fluttered up from the mat of underlying plants and tried to grasp a nearby plant stalk. It missed and fell back down to the mat where it righted itself and folded its wings. Neither of these two butterflies moved as I came right up to them.

I am not certain that butterflies spend the entire night on plant stalks as they were often observed in the mornings

of my studies. However, I believe that they go from these perches to more open spots to warm themselves up when the sun rises. The butterfly species I observed appeared to use different behavioural approaches to warming. Clouded Sulphurs never spread their wings to warm up, whereas Bronze Coppers, Painted Ladies, and Variegated Fritillaries all spread their wings during warming. The reason for this is unclear, but likely has to do with the location of darker, heat-absorbing colouration on the bodies of each species. Western Whites, while starting their day with closed wings (displaying the darker dorsal side), open their wings and display their lighter face as the day continues to warm up.

Generally speaking, the species of butterflies that I observed gravitated to the ground from plant perches to bask as ground temperatures rose above the surrounding air temperature. Painted Ladies, because they were the first to follow this pattern every morning, were the first to be able to fly about each day. The cues that Painted Ladies and other species use to select overnight perches and basking sites remain undetermined. Further research is required in this area.

1. HEINRICH, B. 1996. The Thermal Warriors. Harvard University Press, Cambridge, MA, USA.

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*These two Greater Short-horned Lizards (*Phrynosoma hernandesi*) were photographed on 16 May 2009, just after mating in Grasslands National Park in southwest Saskatchewan. These reptiles exhibit strong sexual dimorphism, with the males being much smaller than the females (as seen here). Mating occurs in early spring, and females give birth to live young in late July or early August. The Greater Short-horned Lizard is listed as an endangered species by COSEWIC.* Jessica Martino, *Department of Biology, University of Regina, Regina, SK; E-mail: <martinoj@uregina.ca>*

AMERICAN DIPPER AND SLATY-BACKED GULL IN SASKATOON

Figure 1. Presumed Slaty-backed Gull (larger bird on right) observed in Saskatoon, SK. This species commonly breeds along the coasts of northeastern Asia. Although it frequently travels to western Alaska, it is seldom observed elsewhere in North America. *Nick Saunders*

On 19 April 2009, a friend and I discovered an American Dipper (see inside front cover) along the west shore of the South Saskatchewan River in Saskatoon, SK. The bird was observed hopping along the rocks and was seen on numerous occasions by other observers for a couple of weeks afterwards. Spending a lot of time near the pump house of the water plant, the dipper seemed to enjoy the fast-running water that spewed out of the pipes and into the river. Fairly common in the Alberta Rockies and sometimes showing up in the Cypress Hills, this is Saskatoon's second ever American Dipper record.

Other Saskatchewan records for this species include Buffalo Pound Lake and Skull Creek.

On the same day, we also found what is now believed to have been a Slaty-backed Gull (Fig. 1) on the gull roost observed at the same location on the west bank of the river close to the Queen Elizabeth Power Plant. Saskatchewan's third record of a Slaty-backed Gull, this was quite an exciting find, and other local birders were also able to add this to their life-lists.

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LETTER TO THE EDITORS

Dear Editors,

The current rate of extinction of mammals worldwide is a matter of grave concern. A large number of factors are contributing to the unfortunate trend of vanishing wildlife. Some of the most important factors identified include habitat loss and fragmentation, harvesting, infectious diseases, climate change, and environmental pollution. The recent publication of a seminal study by Schipper *et al.* (2008) in the internationally reputed journal *Science* found that 25% of global mammalian species are now threatened with extinction.[1] The authors indicated that human activities contribute the most to factors that increase risk of extinction. In particular, pollution of the environment and high rates of habitat loss caused by humans have been attributed as the two major factors that have impacted global mammal populations.[1] This research report carries a significant message for all of us inhabiting different parts of the globe by highlighting the astonishing rate at which we are losing wildlife species.

If we examine our immediate surroundings in the Prairie and Northern Region of central Canada, it is disheartening to learn that a total of 37 species (24 animals, 13 plants) are at high risk of extinction in this region.[2] The animal species include four insects, one mollusc (snail), one reptile, two fishes, twelve birds, and four mammals (Appendix 1). The plant species include one lichen, one moss, and eleven angiosperms. Of the angiosperms, five are dicots and six are monocots (Appendix 1). Forty-six percent of the listed animal species are considered endangered, and 54% are threatened. For plants, 31% are endangered, while 69% are considered threatened.

It is important that we all act together in preventing the loss of wildlife species. One of the most important steps is to be aware of the situation and to do our best to promote conservation. Sustainable and environment-friendly farming practices are important for reducing pollution and should be encouraged at the provincial level. Protection and conservation of wild habitats must take precedence over short-term economic gains. Human activities at vulnerable sites (such as national parks) need to be monitored more closely to detect any abrupt threats or changes to ecosystems as early as possible. It is important that we train younger generations to respect and appreciate nature from an early age. Such practices are critical first steps towards helping species at high risk thrive in their natural surroundings.

1. SCHIPPER, J. *and 129 others* (2008) The status of the world's land and marine mammals: Diversity, threat, and knowledge. *Science* 322: 225-230.

2. ENVIRONMENT CANADA (2009) Species at risk in the Prairie and Northern region. Available online at http://www.mb.ec.gc.ca/nature/endspecies/sar/index.en.html (Accessed 14 April 2009).

Appendix I. Animal and plant life at risk in Environment Canada's Prairie and Northern region that are listed under the Species at Risk Act (Schedule 1). T= Threatened, E = Endangered.

I. ANIMALS

A. INVERTEBRATES

[A1] Insects

1. Mormon Metalmark (Prairie population) (*Apodemia mormo)* [T]
2. Yucca Moth (*Tegeticula yuccasella*) [E]
3. Dakota Skipper (*Hesperia dacotae*) [T]
4. Poweshiek Skipperling (*Oarisma poweshiek*) [T]

[A2] Molluscs

1. Banff Springs Snail (*Physella johnsoni)*[E]

[B] VERTEBRATES

[B1Fishes

1. Carmine Shiner (*Notropis percobromus)* [T]

2. Western Silvery Minnow (*Hybognathus argyritis)* [T]

[B2] Reptiles
1. Prairie Skink (*Eumeces septentrionalis*) [E]
[B3] Birds
1. Burrowing owl (*Athene cunicularia*) [E]
2. Eskimo Curlew (*Numenius borealis*) [E]
3. Greater Sage-grouse (*Centrocercus urophasianus urophasianus*) [E]
4. Least Bittern (*Ixobrychus exilis*) [T]
5. Loggerhead Shrike - Eastern population (*Lanius ludovicianus migrans/ excubitorides*) [T]
6 Mountain Plover (*Charadrius montanus*) [E]
7. Peregrine Falcon (*Falco peregrinus anatum*) [T]
8. Piping Plover (*Charadrius melodus circumcinctus*) [E]
9. Ross's Gull (*Rhodostethia rosea*) [T]
10. Sage Thrasher (*Oreoscoptes montanus*) [E]
11. Sprague's Pipit (*Anthus spragueii*) [T]
12. Whooping crane (*Grus americana*) [E]

[B4] Mammals
1. Swift Fox (*Vulpes velox*) [E]
2. Wood Bison (*Bison bison athabascae)* [T]
3. Woodland Caribou - Boreal population (*Rangifer tarandus caribou)* [T]
4. Grey Fox (*Urocyon cinereoargenteus)* [T]

II. PLANTS
[A1] Lichens (symbiotic association of algae and fungi)
1. Flooded Jellyskin (*Leptogium rivulare*) [T]
[A2] Lower plants (Mosses)
1. Haller's Apple Moss (*Bartramia halleriana*) [T]
[A3] Higher plants (Angiosperms/closed-seeded plants)
[A3-1] Monocotyledonous plants (bearing single cotyledon in their seed)
1. Buffalo grass (*Buchloë dactyloides)* [T]
2. Soapweed (*Yucca glauca*) [T]
3. Western Blue-flag (*Iris missouriensis*) [T]
4. Western Prairie Fringed-orchid (*Platanthera praeclara*) [E]
5. Western Spiderwort (*Tradescantia occidentalis*) [T]

[A3-2] Dicotyledonous plants (with two cotyledons in their seeds)
1. Hairy Prairie-clover (*Dalea villosa* var. *villosa*) [T]
2. Small-flowered Sand-verbena (*Tripterocalyx micranthus*) [E]
3. Western Silvery Aster (*Symphyotrichum sericeum*) [T]
4. Tiny Cryptanthe (*Cryptantha minima*) [E]
5. Small White Lady's-slipper (*Cypripedium candidum)* [E]
6. Slender Mouse-ear-cress (*Halimolobos virgata*) [T]

Saikat Kumar Basu, Department of Biological Sciences, University of Lethbridge, Lethbridge, AB, T1K 3M4; Email: <saikat.basu@uleth.ca>

Cape May Warbler female drinking sugar water from a glass in a backyard north of Pike Lake, SK. *Nick Saunders*

RIVALRY IN AMERICAN WHITE PELICAN CHICKS: SIBLICIDE IN ACTION

Figure 1. American White Pelican chicks during an aggressive interaction, likely leading to eventual siblicide. The chick on the left is 2-3 days older and can use its size advantage to dominate its sibling. *Vicky Kjoss and Chris Somers*

Spring is the time of year when many bird species are nesting and raising young. Many of us have developed a romanticized view of this process, perhaps because the family unit consisting of the male and female struggling to raise a brood of helpless chicks reminds us of ourselves. However, we should all take a moment to reflect on Lord Tennyson's famous words from the poem *In Memoriam A.H.H.*: "Nature, red in tooth and claw", and realize that things are not always as they seem. The world of relationships among birds and their young has a seedy underbelly.

Figure 1 shows two American White Pelican chicks photographed in their nest during research in the breeding colony on Reed Lake, Saskatchewan (50°23'48.22"N, 107°04'48.28"W), in the spring of 2005. The larger chick is approximately 1 week to 10 days old, and the smaller one is 2-3 days younger. This photograph captures an aggressive interaction between the two chicks that happens frequently, but is rarely observed. Ultimately the larger chick, through aggressive domination and injury to the younger one, will monopolize the food delivered by its parents, resulting in the death of its younger sibling - a phenomenon called siblicide. Surprisingly, this behaviour is seen in many bird species (although there are patterns in the types of species) and determining why it happens has been the fuel for a wide range of behavioural and evolutionary research.[1]

American White Pelicans generally lay two eggs, but rarely raise more than one chick to fledging because of siblicide. In fact, more than 90% of

nests that have been surveyed in North America started with two hatched chicks, but experienced brood reduction resulting in the fledging of only one chick. The younger chick usually dies of starvation with the first 2 weeks of incubation. Siblicide is aided in pelicans by asynchronous hatching caused by an average of 2 days between laying the first and second egg. The size advantage this confers to the first chick, which has a 2-day head start, allows it to dominate the second one. At first glance this seems like a tragic waste of young pelicans and parental investment. However, it has been proposed that the second egg serves as an "insurance policy": if the first egg is not viable or the chick dies early on, a second one is readily available. This is perhaps especially critical for pelicans, which may have difficulty raising two chicks, and do not usually re-lay when eggs are lost or fail.[2]

1. MOCK, D.W. 2004. More than Kin and Less than Kind: the Evolution of Family Conflict. Harvard University Press, Boston, MA, USA.

2. KNOPF, F.L., and R. M. EVANS. 2004. American White Pelican (*Pelecanus erythrorhynchos*), The Birds of North America Online (A. Poole, Ed.). Cornell Lab of Ornithology, Ithaca, NY, USA. Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/057

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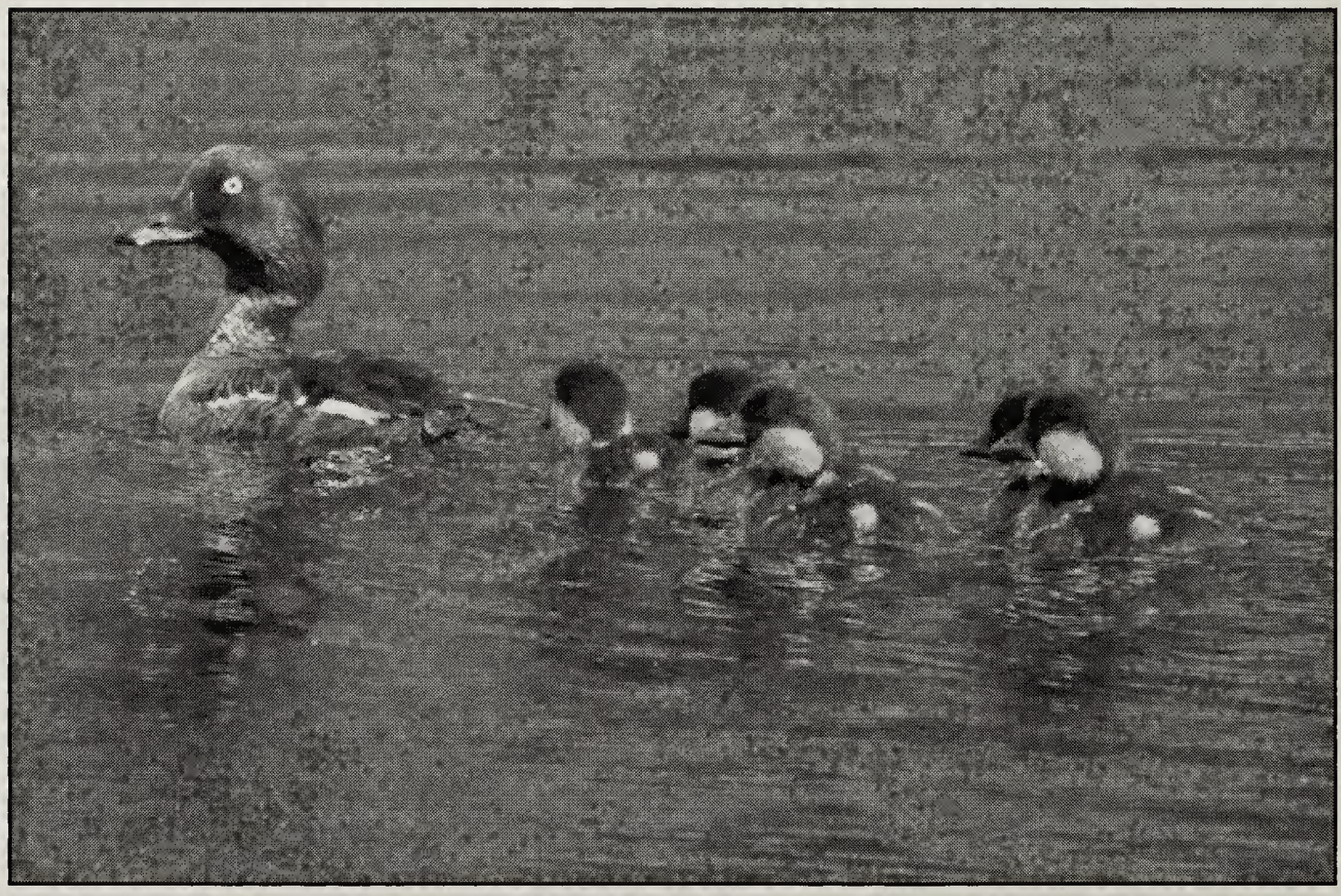

Common Goldeneye female and chicks at Waskesiu River. *Nick Saunders*