

PICOIDES

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White-tailed Ptarmigan in perfect camouflage. Photo by Ilya Povalyaev.

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Editor's Message

Rob Warnock and Barbara Bleho

Welcome to the first issue of *Picoides* of 2014. We hope everyone had a great Christmas and start to this year.

This issue features a student research award report (page 5) and six new thesis abstracts in Canadian Ornithology (page 9). There is also an interesting article on bird-inspired art (page 18). In addition, there are reviews of the books, *The Unfeathered Bird* (see page 21) and *World's Rarest Birds* (page 20). *The Unfeathered Bird* offers a fascinating look at the structure and adaptations of birds under the feathers and skin. *World's Rarest Birds* summarizes information about 650 of the most globally endangered bird species, with a particular focus on the threats these birds face and the current conservation actions to save them.

In other ornithological news, there is some hope for the Greater Sage-Grouse and Red Knot. We encourage SCO-SOC members to participate in Nocturnal Owl Surveys and help folks looking for information on Rusty Blackbirds, Black-billed Magpies and, in Saskatchewan, Pacific Wrens and Northern Pygmy-Owls. SCO-SOC members are invited to visit a new avian research station in Belize and participate in the upcoming Inland Bird Banding Association conference in Regina this summer. We also encourage all young ornithologists to apply for the Doug Tarry Natural History Fund – Young Ornithologist Workshop at the Long Point Bird Observatory this August.

Your feedback and suggestions for *Picoides* are always welcome – we receive very little input from our readers, and would love to get more. As always, we encourage submissions from SCO-SOC members, especially from students and ornithology labs. *Picoides* does not exist without your contributions of articles and photos. The next submission deadline is June 15, 2014. Until then, safely enjoy the rest of winter and the coming spring!



Follow SCO on Twitter! Follow us @SCO_SOC for news, exciting research, updates from members, and more!

Suivez SOC sur Twitter! Suivez-nous @SCO_SOC pour les nouvelles, la recherche passionnant, mises à jour des membres, et plus encore!



Ring-billed Gull on the dock at Salmon Arm, B.C. Photo by Marcel Gahbauer.

President's Message

Joe Nocera

It's been an unusual winter. I recently heard CBC Radio (out of Toronto) state this is the coldest winter in 20 years, although I forget what metric they used to substantiate that. Regardless of their accuracy, it HAS been cold and it even spawned a new word for us: "polar vortex." This frigid winter has brought a few surprises such as the sudden and remarkable irruption of Snowy Owls. Snowies seem to be everywhere, and some bird hotlines have even asked that people stop reporting them this winter. Most of these irruptive birds seem to be young-of-the-year that reaped the benefit of an amazingly high lemming population in the Arctic this summer. The abundance of Snowies at more southerly locales has sparked new and interesting research, such as Project SNOWstorm which cleverly sought crowd-funding with a quick turnaround time to fund putting GPS transmitters on irruptive owls in Pennsylvania.

The polar vortex has also unfortunately raised the decibel-level of climate-change deniers. How many of us have heard recently "Where is your global warming now?" Most of us likely answer with a sigh and state that the unusual cold actually IS a sign of global warming and that they should seek information over opinion. A very poignant example of the effects of global warming has recently been described in a study from Carleton University, led by Samuel Iverson and numerous SCO members (e.g., Grant Gilchrist who is our plenary speaker for the 2014 meeting, and Tony Gaston who is a recipient of the SCO's Speirs Award). The paper in *Proceedings of the Royal Society B* (281: 20133128) describes how chronic loss of sea ice has forced polar bears to depredate nests of colonial breeding birds in the Canadian Arctic, as their typical prey of seals and their pups become increasingly inaccessible. Rates of nest predation by polar bears now exceed that of more typical predators such as foxes and gulls.

Close your eyes and forget about polar vortexes, Snowy Owls, and Arctic sea ice. Now, imagine someplace warm. You're likely not imagining a place hot enough to fry birds, as we learned this week is being done by a massive solar-to-steam farm in California. The farm covers 13 km² and reflects sunlight onto water towers, near which the temperature can reach 538°C (not a typo – that is five-hundred and thirty-eight degrees), creating a mortality zone around the towers for any bird that flies through it.

Message du président

Joe Nocera

Nous avons connu un hiver hors-norme. Aux dires d'un animateur d'Ici Radio-Canada (à Toronto) qui soutenait que notre hiver a été le plus froid en 20 ans, bien que j'oublie sur quel paramètre il se fiait pour s'appuyer. Quelle que soit l'exactitude de ses propos, il a effectivement fait froid et nous avons même appris un nouveau terme : vortex polaire. Ce froid glacial s'est accompagné de quelques surprises telles que l'arrivée massive de Harfangs des neiges dans nos latitudes plus méridionales. Les harfangs semblaient surgir de partout, si bien que certaines lignes téléphoniques pour ornithologues ont demandé à leurs utilisateurs de ne plus rapporter les harfangs détectés. La plupart de ces oiseaux seraient des jeunes de l'année ayant profité de la très grande abondance de lemmings dans l'Arctique l'été dernier. Cette abondance élevée de harfangs dans le sud a suscité l'émergence de nouvelles initiatives comme le Projet SNOWstorm, qui a su recueillir des fonds du public pour placer des émetteurs GPS sur des harfangs en Pennsylvanie.

Le vortex polaire a également augmenté le niveau sonore des climato-sceptiques. Combien d'entre nous avons récemment entendu des gens demander « où est passé le réchauffement climatique dont on parle tant? ». La plupart d'entre nous leur répondons avec un soupir et expliquons que ce froid inhabituel est en fait un signe du réchauffement global et qu'ils devraient mieux se renseigner. Un exemple remarquable des effets des changements climatiques a été présenté dans une étude effectuée à Carleton University par Samuel Iverson et des membres de la SOC (dont Grant Gilchrist, notre conférencier du congrès 2014, et Tony Gaston, récipiendaire du Prix Speirs de la SOC). Cet article publié dans *Proceedings of the Royal Society B* (281: 20133128) décrit de quelle façon la perte chronique d'accès à la banquise force des ours polaires à s'attaquer aux nids d'oiseaux coloniaux dans l'Arctique canadien, puisque leurs proies traditionnelles (les phoques et leurs jeunes) deviennent de plus en plus inaccessibles. Les taux de prédation des nids attribuables aux ours polaires dépassent maintenant ceux que l'on attribue aux prédateurs plus traditionnels que sont les renards et les goélands.

Fermez vos yeux et oubliez les vortex polaires, les harfangs des neiges et la banquise de l'Arctique. Maintenant, imaginez un endroit chaud. Vous ne songez sans doute pas à un endroit assez chaud pour faire frire des oiseaux mais c'est ce qui arrive dans une gigantesque ferme solaire en Californie. Cette ferme couvre 13 km² et reflète la lumière solaire sur des réservoirs d'eau près desquels la température atteint 538°C (ceci n'est pas une erreur typographique

As we wrap our heads around these extremes, I am pleased to present you with a series of good news items. 1) Our Doris Huestis Speirs Award Committee received a plethora of nominations this year in response to their enhanced call for nominations. They have chosen a worthy recipient for this year's award and it will be officially presented at our next meeting (September 24-27, 2014 in Estes Park, Colorado), where we will meet jointly with the Cooper Ornithological Society and the American Ornithologists' Union. 2) Your SCO Council recently had an in-depth discussion, with some resultant action items, on the disjoint in possession permit requirements between provinces. 3) We recently conducted a belated election for three Councillor positions, the results of which will be announced soon. And, 4) I am pleased to say that for our 2014 meeting we will be offering Student Travel Awards – acting upon resolutions from last year's AGM that came from our Student Affairs Committee. More on this to come, as we are currently trying to link up with the Travel Awards system offered by the AOU and COS.

It's been a busy (and cold) winter. I suspect it will only get busier, but hopefully not colder!

– il s'agit bien de cinq cent trente-huit degrés), ce qui crée une zone mortelle autour des réservoirs pour tout oiseau qui la traverse.

Pendant que vous tentez de saisir la portée de ces phénomènes extrêmes, je suis fier de vous présenter une série de bonnes nouvelles. 1) le comité du prix Doris Huestis Speirs a reçu un grand nombre de nominations cette année en réponse à son appel de candidatures. Le comité a choisi un récipiendaire très méritant et le prix sera remis officiellement à notre prochain congrès (24-27 septembre 2014 à Estes Park, Colorado), où nous nous réunirons avec la Cooper Ornithological Society et l'American Ornithologists' Union. 2) Votre Conseil de la SCO a récemment discuté, et agi, au sujet des disparités entre les permis de possession d'oiseaux entre provinces. 3) Nous avons récemment procédé à l'élection tardive de trois conseillers. Les résultats seront annoncés bientôt. Enfin, 4) je suis heureux de vous annoncer que des bourses de voyage seront offertes lors de notre congrès 2014 – suite à une résolution de notre assemblée générale de l'an dernier provenant de notre Comité des affaires étudiantes. L'affaire est à suivre car nous tentons actuellement de relier notre système de bourses de voyage à ceux de l'AOU et de la COS.

Ce fut un hiver occupé (et froid). Je soupçonne qu'il va devenir encore plus occupé mais, je l'espère, pas plus froid!

Student contributions wanted for *Picoides*!

SCO-SOC encourages students to submit material for *Picoides*. In particular, we would like each issue to feature abstracts of at least one or two recently published theses. They must be from students at a Canadian university, but need not necessarily focus on Canadian birds. Abstracts should be 250-400 words long, preferably accompanied by one or two relevant photos.

We also welcome articles describing aspects of student research in greater detail; these should focus on a subject relevant to Canadian ornithology, require references, and may be up to 1000 words long, again preferably accompanied by one or two photos. See page 18 for submission details.



Male Sharp-tailed Grouse displaying at a lek in Saskatchewan. Photo by Barbara Bleho.

2012 Baillie Award Report

Stefanie LaZerte, Natural Resources and Environmental Studies, University of Northern British Columbia

Dissertation: Chickadee Vocal Adjustment in Response to Urban Noise

Birds inhabiting urbanized areas experience numerous challenges, from increased predation to pollution. Recently, scientists have been focusing on the challenge of noise pollution. Because song plays such an important role in avian territoriality and reproduction, acoustic signal transmission should be optimized to the acoustic characteristics of the local habitat (acoustic adaptation hypothesis; Boncoraglio and Saino 2007). However, anthropogenic noise pollution can mask aspects of bird vocalizations, which can result in vocalizations that are either hard to hear or are distorted (LaZerte et al. *in review*). Studies show that some bird species compensate by altering their vocalizations so that they transmit more effectively (vocal adjustment or plasticity). This often involves singing at higher frequencies in order to avoid being masked by low-frequency anthropogenic noise. However, there may be costs to adjustment, and not all species may possess the ability to do so (Patricelli and Blickley 2006).

The purpose of my PhD dissertation is to investigate how natural singing behaviour or characteristics may lead to increased vocal plasticity in response to urban noise and may therefore favour urban settlement. I compare two closely related songbird species with different vocal behaviour. Both Mountain Chickadees (*Poecile gambeli*) and Black-capped Chickadees (*P. atricapillus*) have tonal, whistled fee-bee songs, as well as broadband, diffuse “chick-a-dee” calls. However, only Mountain Chickadees use both calls and songs during the dawn chorus (McCallum et al. 1999; Grava et al. 2013). Further, the two species differ in demonstrated song variability. Black-capped Chickadee songs are fairly similar among populations, but are plastic at the individual level because males shift their song frequencies up and down during song matching with other males (i.e., pitch-shifting; Ratcliffe and Weisman 1985; Otter et al. 2002; Christie et al. 2004). In contrast, Mountain Chickadee songs are variable among populations, but less so at the individual level (Grava et al. 2013; S. LaZerte, *pers. obs.*).

Based on these species’ vocal behaviours and characteristics, I hypothesized that Black-capped Chickadees would be able to adjust their song frequencies during the chorus in response to both long-term ambient noise and short-term experimental noise, whereas Mountain Chickadees would only be able to adjust their song frequencies in response to long-term ambient noise. However, because Mountain Chickadees use both calls and songs during the chorus, I hypothesized they would be able to change their chorus composition (i.e., whether singing or calling) in response to short-term experimental noise.

To test these hypotheses, I recorded both species during their dawn choruses in the early spring breeding periods (April through May 2011-2013) throughout southern British Columbia (Vancouver, Kelowna, Kamloops, Williams Lake, Quesnel and Prince George) and analysed their song frequencies and chorus structure. To identify responses to short-term experimental noise, I exposed individuals to 5-minute treatments of loud (~ 67 dB(Z)) traffic-like noise (Figure 1). To identify responses to long-term ambient noise and to control for habitat type, I compared individuals across habitats ranging from noisy to quiet (classified by amplitude measurements made during the dawn chorus) and from urban to rural. Finally, I compared the quality of noise between urban and rural habitats. Although Noisy-Rural



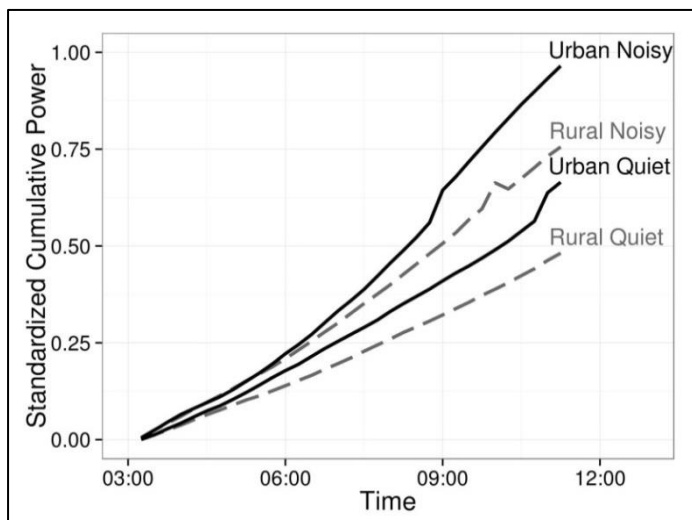
Figure 1. Left: Stefanie LaZerte recording in urban habitats. Right: Black-capped Chickadee and experimental noise speaker.

sites can be just as noisy as Noisy-Urban sites at a given moment, the duration of the noise may differ. To account for this, I monitored long-term noise with ambient noise recorders, purchased with funds from the 2012 James L. Baillie Award. The digital voice recorders were mounted ~ 3 m above ground in a tree in camouflaged plastic boxes with an opening cut out for the microphone. An internal timer was used to record ambient noise over a 9-hour period from 3 a.m. until noon. The audio recordings were then analysed in 5-minute segments at each 15-minute interval.

Preliminary results suggest that Black-capped Chickadees do in fact demonstrate long- and short-term plasticity by shifting songs to higher frequencies in response to ambient noise levels, as well as to experimental noise exposure (Figure 2a). In comparison, Mountain Chickadees increased frequencies of their lowest note-type (Figure 2b) and song length in response to long-term ambient noise levels, but not in response to short-term experimental noise. Further, Mountain Chickadees in noisy areas were able to adjust their chorus structure in response to experimental noise by singing more than by calling. However, this was not true of individuals in quiet habitats. Interestingly, Mountain Chickadees in urban habitats also sang songs with extra repeats of the high-frequency notes, regardless of the local ambient noise conditions. This could be due to factors other than noise, but could also be the result of a pervasive influence of urban noise on long-term learning in this species.

The quality of noise differed among habitats (Figure 3). Interestingly, despite dawn amplitude measurements in urban habitats being similar to those recorded in rural habitats within a given noise category, urban areas accumulated noise more quickly overall than did rural areas. This was due to noise both starting to increase earlier in the day and having higher peaks later in the day in urban areas. These results suggest that "quiet" urban areas, defined by sound pressure level measures at dawn, may not actually be all that quiet, and may explain why Mountain Chickadees in urban areas repeated the high-frequency notes in their songs, regardless of the measured amplitude levels present.

In conclusion, both Black-capped and Mountain Chickadees adjusted their vocalizations in response to noise. However, Black-capped Chickadees showed a



frequency shift in response to short-term noise exposure, whereas the short-term response of Mountain chickadees was limited mostly to singing. This suggests Black-capped Chickadees may adapt to urban habitats better than Mountain Chickadees. Further, we found that the quality of noise differs between urban and rural areas, suggesting that factors other than just instantaneous noise volume may be influencing vocal adjustment. The next steps in my study are to evaluate how well these adjusted songs transmit in urbanized habitats and whether they actually improve communication.

Figure 3. Cumulative noise increases more quickly in noisy habitats than in quiet and more quickly in urban habitats than rural.

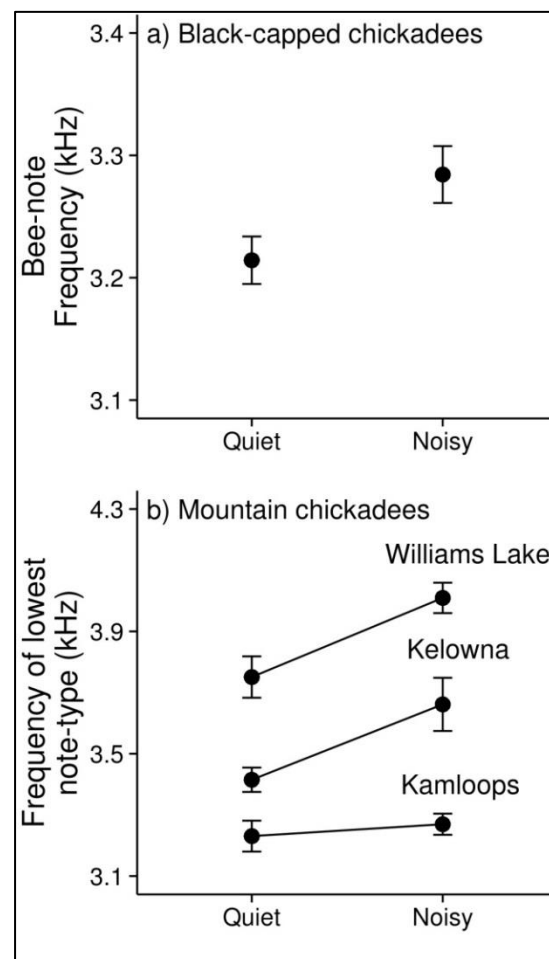


Figure 2. Black-capped Chickadee (a) bee-notes are nearly 70 Hz higher in noisy habitats than in quiet habitats. Mountain Chickadee (b) lowest note-types are higher in noisy habitats than in quiet habitats, especially in Williams Lake and Kamloops. Bars represent standard errors.

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Black-capped Chickadee enjoying a sunflower snack.
Photo by Barbara Bleho.



Mountain Chickadee greeting visitors at Banff National Park.
Photo by Marcel Gahbauer.

Canadian Ornithological News

Emergency Protection Order for the Greater Sage-Grouse in Effect

The Emergency Order for the Protection of the Greater Sage-Grouse under the federal Species at Risk Act (SARA) came into force on February 18, 2014. The Emergency Order protects the Greater Sage-Grouse and its habitat on approximately 1,700 square kilometres of provincial and federal crown lands. Fewer than 150 adult birds remain in the mixed-grass prairie of southeastern Alberta and southwestern Saskatchewan, making the Greater Sage-Grouse Canada's rarest endangered species. The details of the Emergency Order, as well as the Amended Recovery Strategy for Greater Sage-Grouse, can be found on the Species at Risk Public Registry at <http://www.sararegistry.gc.ca>.

Captive Breeding Program Developed for the Greater Sage-Grouse

The Government of Canada, the Government of Alberta, and the Calgary Zoo have entered into a multi-million dollar partnership for a new captive breeding and rearing program for the Greater Sage-Grouse. This will be the first time that Sage-Grouse have been bred and raised in captivity in Canada. The Sage-Grouse captive rearing and breeding program will cost a total of just over \$5 million over 10 years. This program is the next step in the series of actions the federal and provincial governments are taking to protect and bring back the Greater Sage-Grouse in Canada, which began with the release of the Emergency Order and an amendment of the species recovery plan. For more information on the initiative, visit Environment Canada website at <http://www.ec.gc.ca>.

Golden Eagles Confirmed Breeding in Manitoba

Two Golden Eagle nests were found in Wapusk National Park in 2012, representing the province's first confirmed observations of breeding Golden Eagles in recent history. Details of the discoveries can be found in a [short note](#) published in the Canadian Field-Naturalist.

Imperiled Red Knot Proposed for Listing as Threatened by USFWS

The U.S. Fish and Wildlife Service (USFWS) has decided to formally propose that the *rufa* subspecies of the Red Knot be listed as "threatened" under the federal *Endangered Species Act*. The Red Knot is a shorebird noted for its long migrations, during which it flies 15,000 kilometres from its Arctic breeding grounds to southern South America. Surveys of migrating and wintering knots indicate serious population declines in the 2000s. In Canada, the *rufa* subspecies has been listed as "endangered" under the federal *Species at Risk Act* since 2007. It is threatened by a depletion of horseshoe crab eggs, a critical food source used during northern migration.



Golden Eagle at Grasslands National Park.
Photo by Emily Pipher.

Record-breaking Bird Migration Discovered

Scientists have uncovered one of the world's most amazing annual bird migrations. Using geolocator technology, a Red-necked Phalarope was tracked on a 16,000-mile round trip from Scotland to the Pacific Ocean (via Iceland and Greenland, south down the U.S. eastern seaboard, across the Caribbean and Mexico, to a location off the coast of Ecuador and Peru) – and back again. Many experts had previously believed that Scottish-breeding phalaropes joined the Scandinavian population at their wintering grounds, thought to be in the Arabian Sea. According to [BBC News Scotland](#), the phalarope's newly-documented journey to the Pacific Ocean has never before been recorded for a European-breeding bird. To learn more, visit the RSPB website at <http://www.rspb.org.uk/media/releases/360162-tiny-tag-reveals-recordbreaking-bird-migration>.

Recent Canadian Ornithology Theses

Barbara Frei. 2013. Roles of maladaptive behaviour and evolutionary traps in the decline of a threatened woodpecker. Ph.D. Dissertation. McGill University, Montreal, QC.

The Red-headed Woodpecker (*Melanerpes erythrocephalus*) is a widespread, once common but increasingly rare North American bird. Consistent long-term population declines have resulted in the species' threatened status in Canada and several states in the United States. Throughout most of its range, the Red-headed Woodpecker occupies habitats that have been heavily influenced by human presence and activities, yet there is little research quantifying the potential drivers of the species' population decline, which constrains conservation or policy action. The overall objective of my research is to determine why the Red-headed Woodpecker, a once common, widespread species with apparently high flexibility in habitat use is undergoing such large population declines. I hypothesize that rapid anthropogenic changes and ecological novelties are causing Red-headed Woodpecker fitness and behavioural choices to become disjointed. Specific objectives include: (1) to determine if Red-headed Woodpecker habitat use is adaptive or maladaptive, (2) to determine the influence of a non-native interference competitor, the European Starling (*Sturnus vulgaris*), on Red-headed Woodpecker breeding success, and (3) to compare the efficacy of global and local models of the relationships between Red-headed Woodpeckers and two possible competitor species over space and time, and explore local variations of these relationships. To test my hypothesis, I investigated Red-headed Woodpecker multi-scale habitat use and associations, and nest survival near the northern edge of the species range in southern Ontario, where populations are rapidly declining. In addition, I modelled interspecies abundance relationships across southern Canada and east-central United States using 45 years of survey data from the Breeding Bird Survey (BBS) for Red-headed Woodpeckers, European Starlings, and Red-bellied Woodpeckers (*M. carolinus*).

Field-based results demonstrated that Red-headed Woodpeckers exhibit maladaptive habitat use at multiple scales, suggesting the potential for an ecological trap for the species. Specifically, habitat characteristics that promoted feeding potential such as canopy



Adult Red-headed Woodpecker perched on hydro line. Photo by Barbara Frei.

openness and greater limb length were consistently associated with Red-headed Woodpecker occupancy from nest tree to woodlot scales, despite correlations with lower reproductive success. Further investigation into Red-headed Woodpecker nest survival by modelling a suite of abiotic, biotic, temporal, and habitat-based drivers showed that European Starling abundance near active woodpecker nest sites was the strongest factors influencing woodpecker nest survival. Logistic-exposure nest success assuming constant survival dropped significantly from 68% to 13% when starling abundance was considered. When interspecies abundance relationships were

investigated at a larger spatial scale, they were found to be spatially structured, and suggested evidence for interspecific competition between Red-headed Woodpeckers and starlings, and niche differentiation between Red-headed and Red-bellied Woodpeckers. This research demonstrates the importance of multi-scale, multi-factor studies when determining threats for species-at-risk and will help in the development of conservation, management, and policy-making decisions for the species.

Kristen M. Diemer. 2013. Evaluation of hayfield management strategies and Bobolink territorial habitat in southern Ontario. M.Sc. Thesis. Trent University, Peterborough, ON.

I implemented three hayfield management regimens in southern Ontario (a typical schedule at the farmer's discretion, a delayed first harvest after July 14, and an early first harvest before June 1 with 65 days before second harvest), and evaluated the costs/benefits to farmers regarding hay quality and feasibility, and to Bobolinks (*Dolichonyx oryzivorus*) regarding reproductive activity and phenology. Typical management resulted in little to no Bobolink reproductive success, and early harvested sites were not (re)colonized. On delayed harvest sites, Bobolinks experienced high reproductive success, but hay quality fell below ideal protein levels for most cattle before harvest. I also examined the habitat features Bobolinks use as the basis for establishing territories, and associations between Bobolink territory size and habitat quality. I compared vegetation structure, patch size, and prey abundance between small and large territories. Small territories typically occurred on smaller fields with more preferred vegetation characteristics and greater prey abundance.



Kirsten holding a male Bobolink. Photo by Kelly Broadway.

Sarah M. Ludlow. 2013. Breeding biology of grassland songbirds and the effects of oil and natural gas development on their density and reproductive success. M.Sc. Thesis. University of Regina, Regina, SK.

Understanding the breeding ecology of grassland birds is vital for identifying the mechanisms underlying their widespread population declines. I describe the breeding biology of and quantify the effects of nest predation and brood parasitism on Savannah Sparrow



Begging Sprague's Pipit nestlings. Photo by Sarah Ludlow.

(*Passerculus sandwichensis*), Baird's Sparrow (*Ammodramus bairdii*), Vesper Sparrow (*Pooecetes gramineus*), Western Meadowlark (*Sternella neglecta*), and Sprague's Pipit (*Anthus spragueii*) in southeastern Alberta. Nest predation was the primary cause of nest failure, accounting for 75% of all nest losses. For the three sparrow species, daily survival rates were higher during the incubation stage than the nestling stage. For all five species, clutch size, hatching success, and fledging success were within the range of values previously reported for these species in other parts of their range. Brown-headed Cowbirds (*Molothrus ater*) parasitized nests of all species except Sprague's Pipit, with 4-11% of nests containing cowbird eggs. Savannah Sparrow experienced the highest frequency of brood parasitism and was the only species to successfully fledge cowbird young. Parasitized Savannah Sparrow nests experienced reduced hatching success, productivity, and clutch size compared to non-parasitized

nests. The overall cost of parasitism to Savannah Sparrow was 1.7 young per successful nest. This information provides a basis for future comparisons regarding the influence of anthropogenic alterations to native grassland habitat on grassland songbird reproductive success and nest survival.

Despite dramatic increases in oil and gas development over the last decade, research on the effects of this activity on grassland songbird reproductive success and density is lacking. I assessed how the density and reproductive success of five species of grassland songbirds in southeastern Alberta varied with distance to oil and gas wells, roads, trails, and patches of introduced crested wheatgrass, along with percent cover of crested wheatgrass. Savannah Sparrow density was 2.5 times higher within 100 m of wells than farther away and was almost twice as high in areas without crested wheatgrass compared to those with 60% cover. Sprague's Pipit nest survival decreased with increased cover of crested wheatgrass. The proportion of Baird's Sparrow eggs that hatched within 50 m of wells and trails was reduced by 33% and 46%, respectively, compared to areas farther from these structures. Hatching success more than doubled for both Sprague's Pipit and Western Meadowlark as percent cover of crested wheatgrass increased from 0-60%. The number of young fledged from successful Baird's Sparrow nests was lower near trails. Savannah Sparrow fledging success was higher near wells and in areas with greater cover of crested wheatgrass. The number of young fledged from successful Western Meadowlark nests doubled as distance from crested wheatgrass increased from 0-800 m. There was no relationship between the frequency of brood parasitism and distance to oil and gas infrastructure. Overall, my results indicate that oil and gas development has mixed effects on the density and reproductive success of grassland songbirds. To mitigate potential negative effects, future development by the energy industry should attempt to minimize the amount of edge habitat created, continue to eliminate exotic vegetation in reclamation protocols, and take precautions to avoid the spread of crested wheatgrass and other invasive plants into native grassland.

Laura McFarlane Tranquilla. 2013. Ecological segregation of murres (*Uria lomvia*, *Uria aalge*) during the nonbreeding season in the Northwest Atlantic Ocean. Ph.D. Thesis. Memorial University of Newfoundland, St. John's, NL.

When resources are limited and similar species co-occur, ecological segregation is likely to occur year-round through spatial, temporal, behavioural and/or dietary segregation. This study investigates year-round ecological segregation between partially sympatric, congeneric Thick-billed Murres (*Uria lomvia*) and Common Murres (*U. aalge*). In the Northwest Atlantic, the species exhibit a latitudinal



Common and Thick-billed Murres on the Gannet Islands, Labrador.

Photo by Laura McFarlane Tranquilla.

divergence in breeding distributions; however, both species winter in Low Arctic regions, where the potential for spatial overlap is greater than during the breeding period. Given the inaccessibility of murres at sea, the inter- and intra-specific interactions of murres wintering in the Northwest Atlantic have not been previously studied.

Using tracking devices and isotopic analyses, this study integrates spatial and temporal movements during the nonbreeding period, relative overlap of winter habitat, and trophic positions during the nonbreeding period. Thick-billed and Common Murres remained partially segregated throughout the year, with some overlap among particular colony groups. Thick-billed Murres moved over a broad range of latitudes throughout the year, had varied core wintering locations, encountered variable

environmental conditions, made variable seasonal movements, and had broad trophic positioning. In comparison, Common Murres concentrated and converged on more narrow wintering areas, where colonies had high spatial overlap, encountered similar environmental conditions with consistent temporal patterns, and occupied similar trophic positions. Habitat segregation occurred mostly spatially, but where spatial overlap was greater, inter-specific dietary segregation increased. Most individual murres (both species) exhibited consistent wintering strategies across 2-3 years, with a few individuals shifting habitats between years. Variation in

winter movement patterns stemmed more from between-individual variation (particularly among Thick-billed Murres) than from annual changes within individuals.

Ecological segregation is expressed through more varied movement, habitat use, and diets of Thick-billed Murres, resulting in a wider ecological niche that is related both to the range of available habitat and prey, and to inter-specific competitive interactions with Common Murres. Relative connectivity among species and colonies at wintering sites also has implications for overall population vulnerability to spatially-discrete risks or wintering conditions, which will be greater for the relatively concentrated Common Murres than for more dispersed Thick-billed Murres.

Hazel E. Wheeler. 2013. Foraging patterns of breeding Chimney Swifts (*Chaetura pelagica*) in relation to urban landscape features. M.Sc. Thesis. Trent University, Peterborough, ON.



Declines in abundance and quality of food resources (i.e., flying insects) are strongly linked to population declines in Chimney Swifts (*Chaetura pelagica*). Recovery of this aerially-foraging insectivore requires a greater understanding of how swifts use their habitat while foraging during times of high metabolic demand, such as during nesting. I used radio telemetry to track the daily movements of breeding Chimney Swifts to identify foraging preferences for different areas in an urban environment. Water had a negative or neutral influence on habitat use in all cases. Those areas that are traditionally considered important to urban wildlife, namely forests and semi-natural greenspace, occasionally had a modest positive effect on habitat use. Though only observed in four birds, industrial areas had the strongest positive relationship with foraging behaviours. As industrial areas are unlikely to be substantial sources of aerial insects, the prey concentrated in these areas likely arrived as “aerial plankton”: by thermal convection over developed areas. Thus, chimney swift foraging habitat is multi-scaled; their foraging patterns depend on local landscape features that host or coalesce prey produced in other areas.

Hazel setting her trap to catch Chimney Swifts at a breeding chimney in 2011.
Photo by Ontario Ministry of Natural Resources.

Sarah McGuire. 2013. Habitat use and community structure of grassland birds in southern Ontario agroecosystems. M.Sc. Thesis. Trent University, Peterborough, ON.

Most grassland bird populations are in decline, so it is becoming increasingly important to understand how they use agricultural field types and form their communities. I performed point counts in cultural meadow, intensive agriculture, and non-intensive agriculture areas in 2011 and 2012 and used generalized linear models to determine the habitat relationships of six focal species. I found that non-intensive agriculture was used most often and intensive agriculture was often avoided, but exceptions to these habitat associations indicate habitat use can be species-specific. Using Eco-Sim software, I determined in which habitats competition was likely occurring and which species pairs were competing in 2011. In 2012, I experimentally tested these relationships by introducing artificial competitors onto sites. By comparing presence-absence data from 2011 to 2012, I found evidence of habitat-mediated interspecific and conspecific attraction. This research contributes to the current understanding of grassland bird community ecology and conservation.



Sarah surveying grassland birds.
Photo by Sarah McGuire.

Announcements

Wanted: Birders and Banders for Migration Monitoring

Canadian Migration Monitoring Network (CMMN) stations across the country are looking for keen birders and banders to participate in migratory bird migration monitoring this spring. It's a great opportunity to gain hands-on training in bird banding and censusing techniques. Visit the Bird Studies Canada website at <http://www.birdscanada.org/volunteer/cmmn/index.jsp?targetpg=directory> to explore the CMMN Member Station Directory and follow the links to the individual observatory and research station webpages to learn about opportunities to get involved.



**2014 Conference
August 8-10, 2014
Regina, Saskatchewan**

Call for Papers

We are pleased to announce the Inland Bird Banding Association's (IBBA) Annual Conference and General Meeting will be held August 8th to 10th, 2014 in Regina, Saskatchewan. This will be the first time the IBBA has come to Saskatchewan!

Tentatively, the conference will include:

- an evening presentation on Friday August 8th,
- Saturday morning field trips, including banding at the Wascana MAPS site,
- a Saturday afternoon paper session,
- a Saturday evening banquet, featuring Dr. Stuart Houston speaking about 10 years of tagging nesting Turkey Vultures in Saskatchewan,
- a Sunday field trip, including a demonstration on applying patagial tags to nestling Turkey Vultures at a nest site close to Regina.

Papers on any aspect of bird banding are invited. All presenters are encouraged to submit an abstract for the meeting program and for publication in North American Bird Bander. Presentations are to be 20 minutes in length, including questions. Abstract submission deadline is June 1, 2014. Please submit abstracts electronically as a MS Word document to Jared Clarke at clarkejared@hotmail.com or a paper copy may be submitted to:

Jared Clarke
Regina IBBA Conference Co-chair
Box 216, Edenwold, SK S0G 1K0

More information will be mailed in March to IBBA members and posted on the IBBA website. After this date non-members can contact Jared Clarke for a registration form and further information at clarkejared@hotmail.com or 306-771-4933.

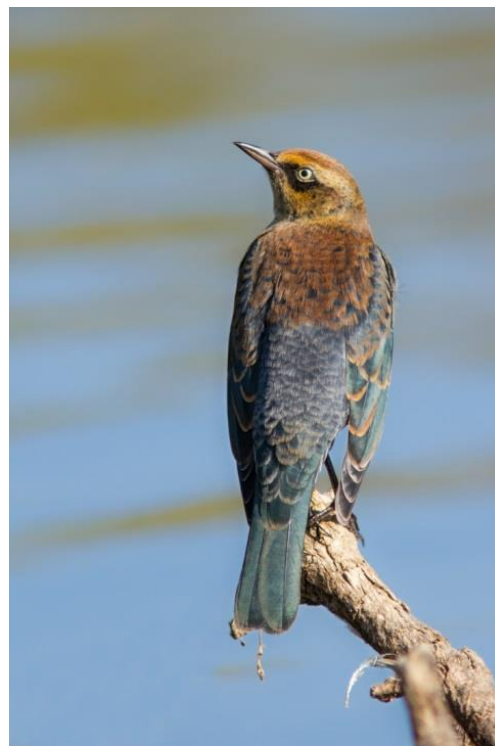
Please note we are also trying to organize a North American Banding Council Certification Session. More information will be available closer to the conference.

Sightings of Rusty Blackbirds Needed

Prior to 1920, the Rusty Blackbird was a common to abundant species in North America. By 1950, a decline in its population was apparent. And since the 1960s, the species has been in a free fall with its numbers dropping by up to 95 per cent! While the greatest Rusty Blackbird declines have been seen in the breeding populations of eastern North America, the current and planned industrialization of the boreal forest here in western Canada could deal a major blow to our breeding populations. Reasons for the decline are being studied, but we still know very little about its ecology, distribution, and habitat use during migration. Are there hotspots where Rusties congregate? Are there stopover areas that they use predictably each year?

These are questions that the Rusty Blackbird Spring Migration Blitz is hoping to answer. The blitz, which kicks off this spring, is a three-year citizen science project organized by the International Rusty Blackbird Working Group, eBird, and the Vermont Center for Ecostudies. Birders from across the southeastern and Midwestern U.S., Alaska, and Canada (all areas through which Rusties migrate) are being encouraged to participate.

Participating is easy: Simply go birding this spring and submit your bird sightings to eBird (ebird.org/content/ebird/). Even if you don't find any Rusties on your outings, this information will contribute to the blitz by showing when and where Rusties were not found. You can visit the website of the International Rusty Blackbird Working Group (rustyblackbird.org/outreach/migration-blitz/) for information on Rusty Blackbird identification, vocalizations, and habitat as well as types of data to collect to support the blitz.



Male Rusty Blackbird.
Photo by Ilya Povalyaev.

New research station in Belize available for tropical avian research

A new research station in Belize is available for tropical avian research and offers an avian technician internship.

Ecorana Environmental Ltd. is a Canadian eco-travel and environmental education company operating out of the T.R.E.E.S Hosting Center, a new research and education center in the Maya Mountains of Belize. The center is operated by the Toucan Ridge Ecology and Education Society (T.R.E.E.S), a small grassroots not-for-profit organization whose mandate is to conserve Belize's natural and cultural heritage through education, conservation, and research.



Ecorana co-founder Mathieu Charette posing with a puffbird.

One of our goals is to establish long-term bird monitoring projects (observational surveys and mark-recapture) that are part of a bigger project looking into seasonality off breeding, moult, and movement (resident as well as neotropical migrants) and how it correlates to insect abundance and plant flowering and seed production. We welcome researchers from abroad to use our facilities and equipment to conduct their own projects, or to collaborate with us.

We also welcome applications for our internship program. By training international and local Belizean students in environmental and wildlife management field research techniques and data collection protocols, knowledge on the biodiversity of Belizean fauna and flora will be gained. Our internship program is designed so that students will gain invaluable skills and hands-on experiences in their field which will help them find future employment. Through working on long-term monitoring projects that will be designed to be published in peer-reviewed journals and stressing the importance

of good note taking, standardized data collection, and scientific writing, students will also be prepared for a future career in academia. We currently have availabilities for our tropical avian technician internship. See <http://treesociety.org/tropical-avian-technician-internship/> for details.

In addition to research projects, Ecorana also offers ecotours. Our team consists of travel and outreach specialists as well as research biologists and teachers who specialize in environmental education and conservation. We are well-versed in providing comfortable, safe, and exciting learning and travel opportunities to a range of clientele interested in environmentally and culturally conscious travel.

If you are interested in conducting research at our facilities, going on an ecotour, or if you would like to apply for our internship program, please see our website <http://treesociety.org/> for more details, or contact us at info@treesociety.org.

Nocturnal Owl Survey Season Coming Soon

The national Nocturnal Owl Survey (<http://www.birdscanada.org/volunteer/natowls>) network recruits more than 1000 volunteers across Canada annually to spend an evening counting owls along isolated roads. Their observations help document population trends of nesting owls, and the limits of their breeding ranges. As with all long-term monitoring programs, additional volunteers are needed annually to fill in gaps and replace retiring participants. If you can spare an evening this spring and live near Canada's great forests, consider contacting your regional Owl Survey program to volunteer.



Top: Great Gray Owl. Photo by Marcel Gahbauer. Right: Northern saw-whet Owl. Photo by Yousif Attia.



Seeking Observations of Black-billed Magpies

I am gathering observations on magpie behaviour and wonder if any readers might have any interesting observations they wish to share with me. As an observer of natural events, I have a question for you on black-billed magpies. Have you ever seen or heard about magpies killing full grown passerines? That is, acting as predators on small birds? I would also be interested in hearing of magpies chasing other small prey, like mammals (e.g., mice, squirrels, bats). I would be very interested in hearing any details of your observations (predation by magpies on small birds or small mammals) that you can remember: date or even general time of year (winter, spring); location; species involved; and observers.

Please send information to: margot_phil@shaw.ca. Many thanks in advance, Phil Taylor.

Can You Add the Pacific Wren to Our Confirmed Saskatchewan Bird List?

Stuart Houston, Al Smith and Frank Roy

Before the Pacific Wren was split off as a new species from the Winter Wren, several birders heard and possibly taped presumed Winter Wrens singing in the Cypress Hills. While such a bird might have been a Winter Wren singing before it reached its breeding area in northern Saskatchewan, the wren heard on 9 April 1988 was three weeks early for a Winter Wren. Robert Kreba's recording of a singing male Winter Wren in the Valley of the Beavers Trail in Cypress Hills Provincial Park in July 1996 (Luterbach) apparently followed Kreba's first Cypress Hills sighting of 15 to 17 Jun 1995 (SBDB). Might one of these have in retrospect been a Pacific Wren instead?

The Winter Wren is "best known for its remarkable song, which the male delivers with remarkable vehemence as if it were trying to burst his lungs; per unit weight it has ten times the sound power of a crowing rooster." (Hejl, Holmes and Kroodsma, *Birds of North America* No. 623, 2002).

The song of the Pacific Wren is even more remarkable. It shares with the Winter Wren the designation "the pinnacle of song complexity" given both by bird song expert, Donald E. Kroodsma. The two wren species may have separated two million years ago, based on mtDNA sequence changes. Pacific Wren has an even larger repertoire of notes in varying arrangements (Toews and Irwin, *Birds of North America Online*, No. 720).

Before the two-volume, beautifully illustrated *BIRDS OF SASKATCHEWAN* goes to the printers about a year from now, we desire help from anyone who has heard either one of these wrens singing on the Saskatchewan side of the Cypress Hills in the past, or can tape them this coming spring or summer. If a recording can be obtained, Donald Kroodsma will be asked to listen and adjudicate as to which species is involved.

Anyone listening and looking in the Lodgepole Pine or Spruce Forest of the Cypress Hills in 2014 has two other opportunities for satisfying our pre-publication desiderata. First, sighting or hearing a Northern Pygmy-Owl, a potential Saskatchewan first. Second, photograph the first nest of the Western Screech Owl, and thereby take it off the hypothetical list.

Anyone with such information should contact Stuart Houston by phone at 306-244-0742 (before 9 p.m. only), by email at Stuart.Houston@usask.ca or by post at 863 University Drive, Saskatoon, SK S7N 0J8.



Red-necked Phalarope.
Photo by Ilya Povalyaev.

LONG POINT BIRD OBSERVATORY'S DOUG TARRY NATURAL HISTORY FUND YOUNG ORNITHOLOGISTS' WORKSHOP August 2-10, 2014



Deadline: Applications are due 30 April 2014

Attention Parents and Keen Teen Birders!

The Long Point Bird Observatory is looking for keen teen birders to apply for the 2014 Doug Tarry Natural History Fund - Young Ornithologist Workshop to be held from Saturday August 2 to Sunday August 10. Participants will receive hands-on training in field ornithology including bird banding, monitoring, field identification, birding trips, preparing museum specimens, guest lectures, and more! Six of Canada's most promising ornithologists between the ages of 13-17 will be selected to attend, and will receive the Doug Tarry Bird Study Award to cover all on-site expenses. For those traveling long distances, special grants may also be available to help offset air travel costs. Applications are due April 30, 2014. For more information and an application form, contact us at lpbo@birdscanada.org, or visit www.birdscanada.org/lpbo.

Les adolescents amateurs d'observation d'oiseaux sont invités à présenter une demande pour participer à l'Atelier des jeunes ornithologues

L'atelier des jeunes ornithologues Doug Tarry de 2014 sera tenu du 2 au 10 août à l'Observatoire d'oiseaux de Long Point, situé dans le Sud de l'Ontario. Les participants provenant de l'ensemble du Canada bénéficieront d'une formation pratique en ornithologie de terrain. Les activités du programme comprennent une introduction à la surveillance et au baguage des oiseaux, l'identification des espèces, des sorties d'observation, la préparation de spécimens pour les musées, des présentations de conférenciers invités et plus encore! Six candidats parmi les jeunes ornithologues amateurs les plus prometteurs du Canada âgés de 13 à 17 ans seront choisis pour assister à l'atelier. Chacun d'eux recevra la bourse d'études ornithologiques Doug Tarry qui couvrira tous les coûts sur place. Les demandes doivent être remises au plus tard le 30 avril 2014. Pour obtenir plus de renseignements et un formulaire de demande, veuillez envoyer un courriel à lpbo@bsc-eoc.org ou consulter le site www.bsc-eoc.org/longpoint. Veuillez prendre note que l'atelier et la page Web sont offerts en anglais seulement.



LPBO's 2013 Young Ornithologists.
Photo by Stuart Mackenzie.



Bird Artwork

The Art of Bird Art

Jason Kamin



White-breasted Nuthatch – 6" x 12" – Oil on Canvas – 2014



It didn't *need* to be painted. When Yousif showed me his photograph of a white-breasted nuthatch, I knew it was a great photo. As an artist, I don't require my own photos to be perfect, because I can always improve the subject on the canvas. I wanted to try it out simply because I knew the textures would be fun to work with. I was also attracted to the theme of the nuthatch peering out into the abyss. It could be looking at the next tree just out of frame, or pondering on whether or not to cross a vast open distance.

The painting differs from the original photograph with respect to certain key elements I wanted to express.

The canvas I chose – 6 inches by 12 inches - was more elongated than the photo. This creates more of a story as to where the nuthatch descended from, as they often feed going up or down a tree trunk foraging for insects. What you cannot see in the photograph of the painting is the very thick application of paint for the tree bark. This consisted of three thick layers of paint applied with a palette knife at different stages throughout the painting. The knot hole at the top actually appears sunken in with respect to the surrounding bark in the original piece.

I liked the positioning of the nuthatch, as you can see, but needed to bring the bird lower in the painting so as not to bisect the middle. When composing a painting, it is crucial for an artist not to cut off sections of a painting with the intersection of objects. Although it may seem that the nuthatch does not necessarily split the painting horizontally, the flow of the viewer's eye will lead down the tree trunk, slope right across the nuthatch and sweep off the bill. However the triangular shape of the bird also "re-invites" the observer's eye back to the portion of the tree below it.

The negative space was important for me to keep in the painting, as it is what made the original photograph of the nuthatch stand out so well. I did not want to subtract from the simple elements by applying a busy background. It did require a little bit of sprucing up however, so I created a colder feeling with a light dusting of snow and blue tinted background. I chose to capture what must be an instantaneous second where the bird's bill actually met with a snowflake. Anyone who knows this busy bird will attest to the fact that they almost never stop fidgeting!

And finally, there's the bird itself. I find birds are always fun to paint, but a little awkward. Feathers are layered such that they need to be painted from bottom to top, tail to bill. This feels unnatural, as it's our instinct to start from the face and paint backwards... unless you're the type of person who pets a cat from back to front. But maybe that's the cat that just ate the nuthatch?



About the Author

Jason Kamin is a self-taught artist who's been painting wildlife and nature for nearly twenty years. Residing in Calgary Alberta, he is a Signature member of the Artists for Conservation Foundation and has displayed in numerous galleries and exhibitions in western Canada. To see more of Jason's work, check out his online gallery at <http://www.jasonkaminart.com>.

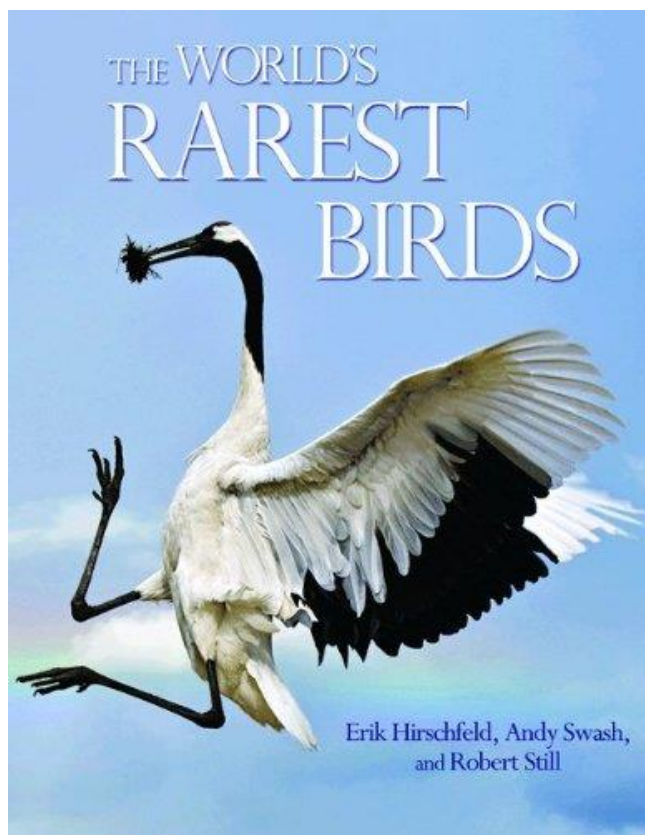
Book Review

The World's Rarest Birds

By Erik Hirschfeld, Andy Swash, and Robert Still

Published in 2013 by Princeton University Press, Princeton, NJ. 352 pages.

The World's Rarest Birds is a coffee book sized volume discussing the world's 650 most endangered bird species, the many threats they face and the numerous challenges to their effective conservation. This book arose from the annual Rare Birds Yearbooks in the 2000s. The book begins with a short review of the Rarest Birds Initiative and an introduction to the world's birds. Introduction to the world's birds briefly reviews global bird distribution and diversity, endemic bird areas, Important bird Areas and man's complex relationship



with birds throughout history. The next section is the rarest birds. In this section, the readers will learn how the 650 birds were chosen, the IUCN/BirdLife species assessment process and rankings. It includes 60 'data deficient' species, distribution of endangered species (total number and percentage of total species) and briefly reviews each of the 14 major threats birds face ranging from agriculture to climate change.

Readers should carefully read the introduction to the regional directories where the authors review the structures of the seven regional directories and the species profiles. This section also contains a handy one-page glossary. The seven regions are North and Central America and Caribbean; South America; Oceanic Islands; Africa and Madagascar; Asia; Europe and Middle East; and Australasia. At the beginning of each regional directory, there is a listing of national Birdlife partner organizations, number of endemic and secondary bird areas, total number Red List species and number of Red List species by family, a summary of key threats and conservation challenges. Most regional directories contain one or more interesting essays titled 'threatened birding hotspots' and 'conservation challenges'. In 'threatened birding hotspots' the authors discuss threats and challenges to areas with high bird diversity and/or endemism and in 'conservation challenges' the authors review the key threats and challenges for that region. Each species account includes IUCN Red List category, species and scientific names, population trends, population size,

threat summary, list of key threats, text summary of distribution, threats and conservation actions, photograph of the species, a small range map. More information is available online as a QR code is provided in each species account that links to the species account at www.birdlife.org/datazone/species. The very compact information for each species is squeezed into quarter of a page (sixth of a page for data deficient species). The species accounts although very dense do work very well overall.

The text is well written, easy to read and contains current and accurate information about threats and challenges to globally threatened and endangered species. Gaps in our knowledge are explicitly stated in the text and the accounts for data deficient species.

The book concludes with the following chapters: acknowledgements to the many photographers and the appendices of extinct species, and all bird families with globally threatened species and a detailed and easy to use index. Unfortunately there is bibliography or further reading section included for readers looking for more information on the numerous topics discussed in the book.

A key strength of the book is the spectacular photographs and excellent illustrations which strongly complement the text. It is neat to see how these 'exotic' endangered birds look. Text, photos and illustrations are attractively placed on the page to create a very attractive and colourful look throughout the volume. The hard cover binding seems sturdy and should last long time.

I learned a lot about endangered and threatened birds especially those outside North America. I highly recommend this book to anyone interested in bird conservation at either the regional or global scales.

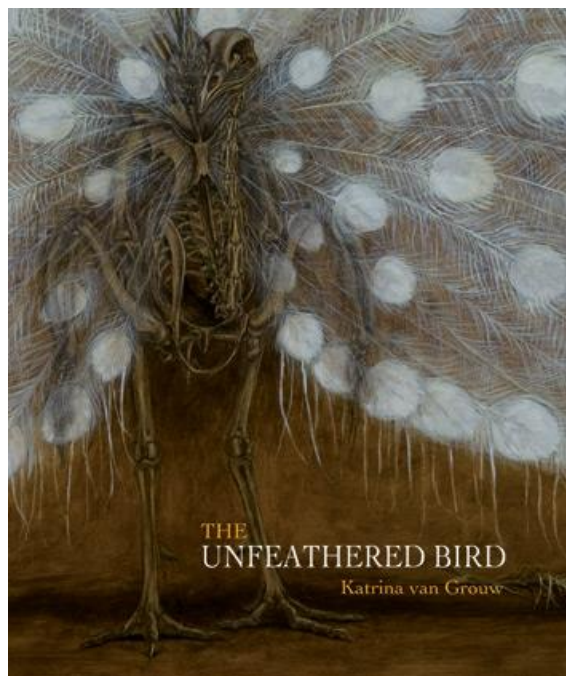
Reviewed by Rob Warnock, e-mail: warnockr@accesscomm.ca

The Unfeathered Bird

By Katrina Van Grouw

Published in 2013 by Princeton University Press, Princeton, NJ. 304 pages.

The *Unfeathered Bird* is an unusual coffee table sized book. It is unusual because it looks at the bird underneath the feathers and skin with the focus on the evolutionary adaptations in the musculature and the skeleton. It is recommended that first-time readers read the introduction. In this short chapter, the author explains the purpose and organization of the volume.



After the introduction, there is a 'generic' section highlighting the key skeletomuscular features and adaptations that make flight possible in most extant birds. This 'generic' section is subdivided into the following body regions: the trunk, head and neck, hind limbs, and wings and tail. In the 'specific' section, the author uses species examples for all bird families from around the world to illustrate the special adaptations of each bird family or group. It is in this 'specific' section where readers will find information specific to their bird group of interest. It is full of fascinating facts about adaptations. For example, the highly flexible neck in owls is an adaptation consequence of nearly immovable eyes. The author does not strictly follow the typical order of bird classification to order the book chapters in the 'specific' section. However, there are both a detailed index and a detailed table of contents to help readers find information in the book quickly.

The narrative style text is well-written and accessible as it is not an anatomy textbook. Accessibility of the text is enhanced by the minimal use of highly technical anatomy jargon. However, some basic familiarity with bird anatomy is still needed for readers to get the most out of this book.

The large illustrations by the author are anatomically accurate but do contain a beautiful artistic flair which greatly complements the corresponding text. Since the book is not a textbook, illustrations are not cluttered by labels for bones, connective tissues or muscles.

I recommend the *Unfeathered Bird* to anyone interested in anatomy and evolutionary adaptations of birds.

Reviewed by Rob Warnock, e-mail: warnockr@accesscomm.ca

Do You Have a Book Review You Would Like to Share?

If so, we would love to hear from you! Some recent and upcoming releases in ornithological literature include *Ten Thousand Birds: Ornithology since Darwin* by Tim Birkhead, Jo Wimpenny and Bob Montgomerie; *Facing Extinction: The World's Rarest Birds and the Race to Save Them* by Paul Donald, Nigel Collar and Stuart Marsden; *Birds & People* by Mark Cocker; and *The Double-Crested Cormorant: Plight of a Feathered Pariah* by Linda Wires.

SCO – SOC Information

Name	Title	Phone	E-mail
Officers for 2012/2013:			
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Dr. Greg Robertson	Vice-President/President-elect	709-772-2778	greg.robertson@ec.gc.ca
Dr. Erica Nol	Past President	705-748-1011 (ext. 7640)	enol@trentu.ca
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Voting Members of Council: (*second term)			
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Dr. Erin Bayne	Member of Council	780-492-4165	bayne@ualberta.ca
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Dr. Ian Warkentin	Member of Council	709-637-6200 (ext. 6246)	iwarkent@swgc.mun.ca
Dr. Darroch Whitaker	Member of Council	709-458-3464	darroch.whitaker@pc.gc.ca
Dr. Marcel Gahbauer	Member of Council	403-475-8093	marcel@migrationresearch.org

(Non-voting) Past Presidents:

Ross Lein	1983-1986	Henri Ouellet	1994-1996	Charles Francis	2004-2006
Spencer Sealy	1986-1988	David Nettleship	1996-1998	Susan Hannon	2006-2008
Erica Dunn	1988-1990	Tony Diamond	1998-2000	David Bird	2008-2010
Jon Barlow	1990-1992	Kathy Martin	2000-2002	Erica Nol	2010-2012
Bruce Falls	1992-1994	Jean-Pierre Savard	2002-2004		

Membership Information

www.sco-soc.ca/membership.html

SCO-SOC membership forms can be found at the link above.
Current membership rates are as follows:

Student	\$10.00/year
Regular	\$25.00/year (\$35.00/year international)
Sustaining	\$50.00/year
Life	\$500.00

SCO-SOC Website

www.sco-soc.ca/index.html

The SCO-SOC website includes sections on membership, meetings, news, publications, awards, information for students, an overview of SCO-SOC, and links of interest to members and other visitors.

To suggest any additions or edits for the website, contact Hazel Wheeler at hazel.wheeler@gmail.com.

Submissions to *Picoides*:

Articles and photos relevant to Canadian ornithology are welcomed by the editors. If submitting photos, please save them in tiff or jpeg format with descriptive file names, and supply captions including common names of species, location, date, photographer, and any other notes of interest. Deadlines for submission are February 15, May 15, and October 15; issues are typically published 3-4 weeks later. Please send all submissions to Rob Warnock at warnockr@accesscomm.ca.

Disclaimer:

Picoides is not a peer-reviewed journal; the publication of an article in *Picoides* does not imply endorsement by SCO-SOC.