PICOIDES

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Bulletin de la Société des Ornithologistes du Canada

Picoides, October 2002
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Golden Eagle

Society of Canadian Ornithologists/Société des Ornithologistes du Canada
WEBSITE: www.nmnh.si.edu/BIRDNET/SocCanOrn

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President: Dr. Jean-Pierre Savard, Serv. can. de la faune, 1141 route de l'Église, 9me étage, c.p. 10100, Ste-Foy, QC. G1V 4H5
Voice: 418-648-3500; Fax: 418-649-6475; Email: jean-pierre.savard@ec.gc.ca

Vice-President/President-elect: Dr. Susan Hannon, Dept. Biol. Sci., University of Alberta, Edmonton, AB. T6G 2E9
Voice: 780-492-7544; Fax: 780-492-9234; Email: sue.hannon@ualberta.ca

Membership Secretary: Dr. Nancy Flood, Dept. Biol. Sci., University College of the Cariboo, 900 McGill Rd., Box 3010, Kamloops, BC. V2C 5N3. Voice: 250-828-5436; Fax: 250-828-5450; Email: nflood@cariboo.bc.ca

Recording Secretary: Dr. Greg Robertson, 6 Bruce St. Mount Pearl, NF. A1N 4T3. Voice: 709-772-2778; Fax: 709-772-5097; Email: greg.robertson@ec.gc.ca

Treasurer: Dr. Tom E. Dickinson, Dept. Biol. Sci., University College of the Cariboo, 900 McGill Rd., Box 3010, Kamloops, BC. V2C 5N3. Voice: 250-828-5447; Fax: 250-828-5450; Email: tdickinson@cariboo.bc.ca

Editor of Picoides: Dorothy McFarlane, 521 Holtville Rd., Holtville, NB. E6A 1Y4. Voice: 506-369-2604; Email: mandd@nbnet.nb.ca. TO ADVERTISE IN PICOIDES PLEASE SEND OR WRITE TO EDITOR.

Members of Council:

Dr. Cheri Gratto-Trevor, CWS, 115 Perimeter Rd., Saskatoon, SK. S7N 0X4. Voice: 306-975-6128; Fax: 306-975-4089; Email: cheri.gratto-trevor@ec.gc.ca

Dr. Kevin Teather, Dept. of Biology, University of PEI, Charlottetown, PE. C1A 4P3. Voice: 902-566-0325; Fax: 902-566-0740; Email: kteather@upei.ca

Dr. Gilles Gauthier, Dep. biologie, Univ. Laval, Ste-Foy, QC. G1K 7P4. Voice: 418-656-5507; Fax: 418-656-2043; Email: gilles.gauthier@bio.ulaval.ca

Dr. Marty Leonard, Dept. of Biology, Dalhousie University, Halifax, NS, B3A 4J1. Voice: 902-494-21558; Fax: 902-494-3736; Email: mleonard@is.dal.ca

*Dr. Karen Wiebe, Dept. of Biology, University of Saskatchewan, Saskatoon, SK. S7N 5E2. Voice: 306-966-4406; Fax: 306-966-4461; Email: wiebek@duke.usask.ca

Dr. Rodger Titman, Dept. of Nat. Res. Sci. and Avian Sci. & Cons. Centre, Macdonald Campus of McGill U., Ste-Anne-de-Bellevue, QC. H9X 3V9. Voice: 514-398-7933; Fax: 514-398-7990; Email: titman@nrs.mcgill.ca

Dr. Robert Butler, CWS Pacific and Yukon Region, Delta, BC. V4K 3N2. Voice: 604-940-4672; Fax: 640-946-7022; Email: rob.butler@ec.gc.ca

Dr. Bob Clark, CWS Prairie and Northern Region, 115 Perimeter Road, Saskatoon, SK. S7N 0X4. Voice: 306-975-4110; Fax: 306-975-4089; Email: bob.clark@ec.gc.ca

Dr. Charles Francis, National Wildlife Research Centre, CWS, Ottawa, ON. K1A 0H3. Voice: 819-997-6086; Fax: 819-953-6612; Email: charles.francis@ec.gc.ca

Dr. Marc-André Villard, Dep. de biologie, Université de Moncton, Moncton, NB. E1A 3E9. Tél: 506-858-4334 (direct: 4292); Fax: 506-858-4541; Courriel: villarm@umoncton.ca

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Cover Photo: D. McFarlane

NEWS ITEMS AND ANNOUNCEMENTS

Next SCO/SOC Meeting

Saskatoon, Sask. 2003

in conjuction with Whooping Crane migration and CWS bird committee meetings

Possible theme "avian conservation"

Contact Cheri Gratto-Trevor with suggestions
cheri.gratto-trevor@ec.gc.ca

NEWS FROM THE ORNITHOLOGICAL COUNCIL

Lesley Evans Ogden: ljevanso@sfu.ca

Radio Telemetry fact sheet: It was brought to the attention of the Ornithological Council that there was no coordination of the radio frequencies between the US and Canada, which is particularly problematic when working near the international border or on migrating species. Thus the OC commissioned a fact sheet on the issue. Research into this has illuminated some complex legal issues which need to be resolved.

West Nile Virus fact sheet: With the West Nile Virus continuing to spread across NA, OC has responded to the concerns of several universities with field ornithology courses by commissioning a fact sheet on West Nile Virus and risks to researchers.

Guidelines for the Use of Wild Birds in Research: This document is being updated from its last edition in 1999, and will be posted when completed.

These documents are in progress and when completed will be posted on the BIRDNET web site, with links from the SCO web site.
See www.nmnh.si.edu/BIRDNET/SocCanOrn/index.html

Findings on the SCO/SOC web site:

www.nmnh.si.edu/BIRDNET/SocCanOrn/index.html

Membership Application form
Notes about Annual Meetings
SCO/SOC Award information
Officers of SCO/SOC
List Server
For Jobs and to post job openings see our link to the Ornithological Newsletter:
www.ornith.cornell.edu/OSNA/ornjobs.htm

Russian Translation into English, reviews and bibliographies:

Dr. Jevgeni (Eugene) Shergalin will provide reviews, bibliographies and translations into English of materials on any bird species of the ex-USSR and published there. This is available for a modest fee to national, international wildlife organizations and private persons.
His address is Dr. Jevgeni Shergalin, Sopruse pst. 175-58, Tallinn, 13413 Estonia. Tel: (3725) 090684; Fax: (3726) 599351; E-mail: zoolit@hotmail.com;
Web site: http://my.tele2.ee/birds/ See results of his work at http://www.briloon.org/Russian/index.html

SCO/SOC 2002 REPORT ON MEMBERSHIP

Nancy J. Flood: nflood@cariboo.bc.ca
Membership Secretary
Sept. 20, 2002

As of 20 September 2002, there are 275 members listed on the rolls of Society of Canadian Ornithologists (SCO), including several libraries, various clubs, societies, private agencies and firms, and a large number of individual members (See below). This is a decrease of 37 members (roughly 12%) from the 312 who were on the membership rolls at the time of reporting last year. As is true every year, this "active" list includes those who have paid dues for 2002 and beyond, as well as those who have not yet renewed for this year (but are paid up through 2001). I hope many of these will still renew, perhaps after receiving a second (and final) reminder with the fall issue of Picoides. The proportion of the membership that have renewed (75%) is significantly higher than at the time of reporting last year. This is probably because, due to the timing of the annual meeting, this report is being prepared approximately 2 months later than last's report.

Affiliation of SCO members: 37 no affiliation, 115 university, 42 CWS, 9 other federal government, 10 museum, 18 non-governmental agencies, 10 provincial government, 10 clubs and societies, 17 private consultants, and 7 libraries.

Renewal Status of members: 135 paid through 2002, 43 paid through 2003, 17 paid through 2004, 11 paid through 2005, and 1 paid through 2006.

So far in 2002 the SCO has gained 15 new members, compared with a total of 24 who joined in 2001. Since a number of people usually join at the annual meeting, this number will doubtless increase—although perhaps not enough to bring the membership back up above 300. And to offset a possible influx of members at the meeting, there will be further reductions when "non-renewers" are deleted at the end of the year. In general, although I have not analyzed the patterns of member retention as I have in previous years, the trend is similar: new members seem to be harder to hold on to than those who have been around for a while (122 members joined between 1983 and 1989, compared to 105 who joined 1990-1999 and 75 in 2000, 2001 or 2001). Allowing people to renew for multiple years probably increases retention, as well as making the membership secretary's life easier and reducing postage costs. As Table 3 shows, roughly 50% of the membership renews for more than one year at a time. In fact, although total membership numbers are down, the members that we do have are more committed than in previous years; a larger number of people have renewed for 2 or more years than ever before.

The existence of the SCO webpage, and the fact that a membership application form can be downloaded from there, has proved useful; to date, at least 31 individuals have joined using this form, at least some of whom doubtless discovered the existence of the society from the web. Membership might be further increased by interesting additions to the webpage and students are starting to take advantage of the policy on student membership.

Breakdown of SCO membership by category: 207 regular members, 17 sustaining, 32 students, 6 free, and 3 complimentary.

I have again broken down the SCO membership geographicall, so that this year's provincial and territorial representation can be compared to last year's. At last we are a truly national body, represented in every province and territory! "American" (many of these are, of course, actually Canadians living in the U.S.) and European membership seems to be fairly stable.

Geographical breakdown of SCO membership:

Geographical area	No. of members as of 19/7/2001 (N = 312)	No. of members as of 20/9/2002 (N = 275)
Newfoundland	10	11
Nova Scotia	12	9
New Brunswick	20	17
Prince Edward Island	1	1
Quebec	33	30
Ontario	82	68
Manitoba	13	12
Saskatchewan	18	19
Alberta	23	27
British Columbia	66	43
Yukon	3	1
Northwest Territories	2	2
Nunavut	1	1
United States	23	20
UK & Europe	5	5

REMEMBRANCE OF W. EARL GODFREY

A.J. (Tony) Erskine

W. Earl Godfrey (1910-2002) - a personal remembrance

Earl Godfrey, recipient of the first Doris H. Speirs Award of the Society of Canadian Ornithologists, died at Ottawa, 8 June 2002. The citation for his Speirs award (which I wrote; publ. S.C.O. Newsletter Number 12, Autumn 1986) briefly summarized Earl's role in Canadian ornithology, up to his retirement from the National Museum of Natural Sciences at the end of 1976.

For 29 years Earl filled one of the most visible positions in Canada's national museum - a role begun by Macoun and carried on by Taverner; Earl's book 'The birds of Canada' (1966; rev. ed. 1986) has kept his name in the minds of Canadian ornithologists from the time its preparation was first noised abroad.

Most of us who worked on birds in Canada in the 1950's-1970's knew Earl, as a person as well as an ornithologist. I came to Wolfville, NS, as a child, a year after Earl left his home there. Our having grown up in the same town was one reason he 'took me under his wing' and introduced me around at my first A.O.U. conference (Regina 1959). We talked, and birded, together at many later conferences, including when I drove him on his (and my) first visit to Point Pelee. Earl was always approachable for anyone interested in birds, which were his lifelong passion. The last time I met Earl, he - then aged 80 - had been birding in the waterfowl park, and talking with local naturalists, at Sackville (N.B.), where he was grounded for a few days by car damage.

With many others, I look back on my association with Earl Godfrey as one of the real pleasures of bird study in Canada. More detailed tributes to Earl, written by others among his many friends, will appear in 'The Canadian Field-Naturalist' and 'The Auk' in the passage of editorial time.

Michael Spencer

"Mr. Godfrey was renowned for his generosity of spirit and willingness to talk birds with anyone who expressed the slightest interest" Globe and Mail Obituary July 6th., 2002. Not long after I landed in Ottawa in the 1950s with an amateur's knowledge of some of the birds of the UK and had acquired my first Peterson, I saw this strange thrush in my backyard. I called Earl Godfrey immediately he and I had met briefly at an Ottawa Field Naturalists Early Morning Birdwalk to Dow's Swamp and the Arboretum the day before. He came out to the house right away, hung around until the bird appeared and pronounced it the first Northern Mockingbird recorded in the Ottawa area. Not only that, but he helped me to prepare a note for the Ottawa Field Naturalist in which I recorded the sighting even though it was really Earl who was responsible. The OFN certainly would not have published it without his OK. My continuing interest in birds is due to the fact that he took me seriously on a very slight acquaintance and I am by no means a professional.He believed that amateurs could make contributions to the science of Ornithology.

In subsequent years I kept in touch with him and always found him ready to help in the same way but I never again ran across a rarity like a Mockingbird in Ottawa. The last time I saw him was at the funeral of Henri Ouellet. He still looked the same and his voice was the same, too, that deep musical tenor which I shall always remember.

W. Earl Godfrey was curator of ornithology at the National Museum of Natural Sciences in Ottawa, beginning in 1947. Dr. Godfrey published more than 200 works on birds since his first in 1938, 75 of which were new research contributions on geographic variation, diet, behaviour, plumages and moults. He was also an associate editor of the Canadian Field-Naturalist for 30 years. His revised 1986 edition of the The Birds of Canada continues to be a key book in the bird section of every Canadian library.

YOUNG BALD EAGLE

SECOND ONTARIO ATLAS IN FULL FLIGHT

Michael Bradstreet

After two years of field-work, the second Ontario Breeding Bird Atlas looks to be on schedule for completion in 2005. The second Atlas is repeating coverage obtained in the first Atlas project, which ran from 1981 through 1985, but is adding several new wrinkles. The newer project will map the relative abundance of as many species as possible. It's also documenting breeding sites of rare and colonial species, and attempting to expand coverage of the northern part of the province.

The Atlas is a project of the Federation of Ontario Naturalists, Bird Studies Canada, Canadian Wildlife Service, Ontario Ministry of Natural Resources, and Ontario Field Ornithologists; each of these organizations has a representative on the project's Management Board. Committees have been established to advise on Technical, Volunteer, Data Management and Northern coverage aspects of the project.

The basic methodology is the same as the first atlas. The province is divided into the 10-km squares of the Universal Transverse Mercator (UTM) grid system. Volunteer participants take on one or more squares, trying to find breeding evidence for as many species as possible. Other volunteers send in data without taking on responsibility for a square. Observations are classed as "Possible", "Probable" or "Confirmed", based on 17 categories of breeding evidence - from birds observed in suitable habitat during their breeding season (Possible breeding) to a nest with young (Confirmed breeding).

Relative abundance will be mapped using about 30,000 point counts spread across the province. Point counts are performed by a subset of participants able to identify birds well by song as well as visually. The majority of point counts in 10-km squares with roads are randomly located on roadsides to facilitate ease of access. Additional points are located in specified habitats in each square, based on how well the roadside areas in the 10-km square represent the habitats in the square (based on analysis of classified LANDSAT imagery). The minimum target is 25 point counts per square, with a goal of covering all squares in the Golden Horseshoe area, half of all squares in the remaining area south of the Canadian Shield, and 25% of squares on the southern shield. In northern Ontario, the target is 25 point counts in each of five 10-km squares per 100-km block on the northern shield and two 10-km squares per 100-km block on the Hudson Bay Lowlands.

A bird song identification training CD-ROM was produced and distributed free of charge to project participants. A listserv was established for atlassers, and has 400 participants. It allows the atlas office to distribute atlassing information quickly, and helps atlassers learn from each other's experiences.

Computerized maps of each of the 1800 10-km squares in southern Ontario, and 700 selected squares in the north, were produced and distributed to participants. Atlassers can print their own square and regional maps from the atlas web page (www.birdsontario.org).

Computer scanning procedures were developed for entry of hard-copy data. Web-based data entry, data review and mapping capabilities were implemented at the end of the first field season (August 2001).

The Atlas produces two newsletters each year (spring and fall) that are distributed to volunteers and partner agencies. The book and other final products will be produced in spring 2008.

Results

Recruitment has been successful, with over 1500 volunteer birdwatchers (both amateur and professional) registered with the project, including regional coordinators in all of the project's 47 regions.

A total of 775 people contributed data to the atlas in 2001 compared to 433 in the first year of the first atlas. They contributed 24,028 hours of field-work to the project, compared to 13, 436 hours of field-work during the first year of the first atlas. The increase in participation likely reflects an overall increase in the number of birders, and the fact that the second atlas was more of a known entity when it began.

At the time of writing (September 25, 2002), only part of the data from the second year has been processed. Breeding evidence data has been submitted for 2158 10-km squares in the province. Over 35,000 hours of fieldwork have been put in to date, resulting in 150,000

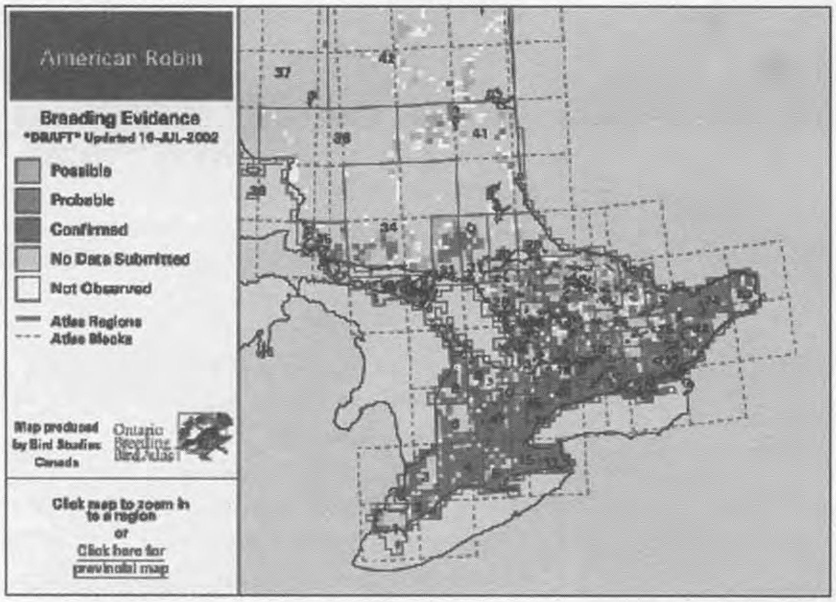


Figure 1 : Data provided to date for the American Robin – the most frequently reported species.

records submitted and 241 confirmed breeding species for the province. Atlassers have also submitted 8018 point counts in 343 10-km squares.

About 800 breeding sites of rare species and 500 colonies of colonial species have been documented on standardized forms and are being entered into the database. Finalized data will be provided to the Ministry of Natural Resources' Natural Heritage Information Centre.

Maps of data provided to date for the second atlas are available on the atlas web page (e.g. Figure 1). These maps allow a comparison of distributions between atlases (e.g. Figures 2 and 3), and already indicate substantial changes in distribution since the first atlas for a number of species.

At this stage of the project, it is easier to identify expansions in range than contractions (because the comparison is between 5 years of data from the first project with 1 year from the current atlas). Marked expansions are evident for a number of species. Several raptors, including Merlin, Osprey, Cooper's Hawk, Bald Eagle and Peregrine Falcon, are considerably more widespread and/or abundant than during the first atlas. The cause of these changes seems most likely to be the reduction of DDT and its derivatives in the environment. A number of other species, such as the Northern Mockingbird, Tufted Titmouse, Turkey Vulture and Mourning Dove, are expanding to the north – potentially linked to climate change and warming conditions. Some other species, such as the Common Raven and the Sandhill Crane are expanding southward into southern Ontario. Range expansion of area-sensitive woodland species, such as the Hermit Thrush and the Black-throated Blue Warbler, correlates with increased forest cover south of the Canadian Shield.

Decreases in range or numbers are difficult to detect after only one year, but it is apparent that three Endangered species, the Northern Bobwhite, Loggerhead Shrike and Henslow's Sparrow, have continued to lose ground since the first atlas. A general decline in grassland birds is apparently underway, with these three being among the more obviously in decline.

Additional comparisons using maps and analyses will be undertaken as the project continues and particularly upon conclusion when data are finalized.

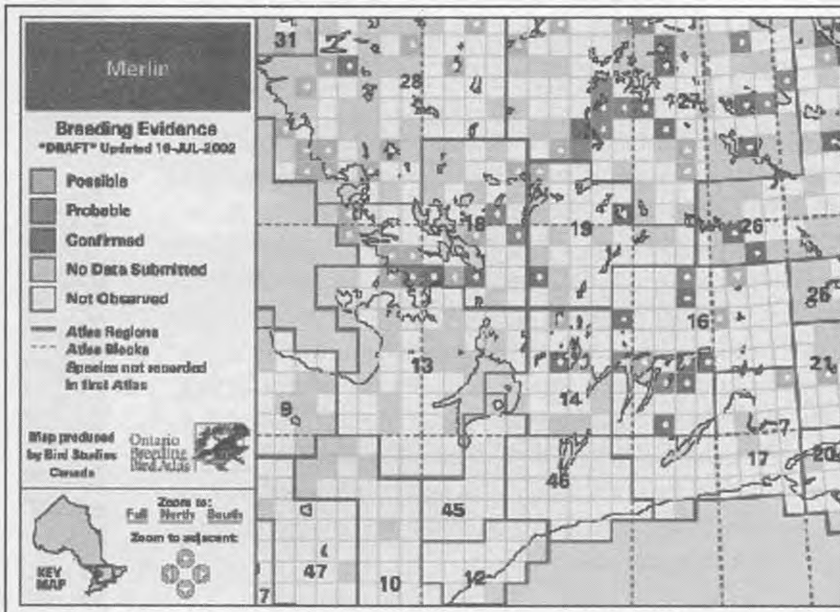


Fig. 2 : Map of Merlin records submitted to date. Yellow dots indicate that the Merlin was not recorded in that square during the first Atlas (1981-1985), highlighting the species' range extension since the first Atlas.

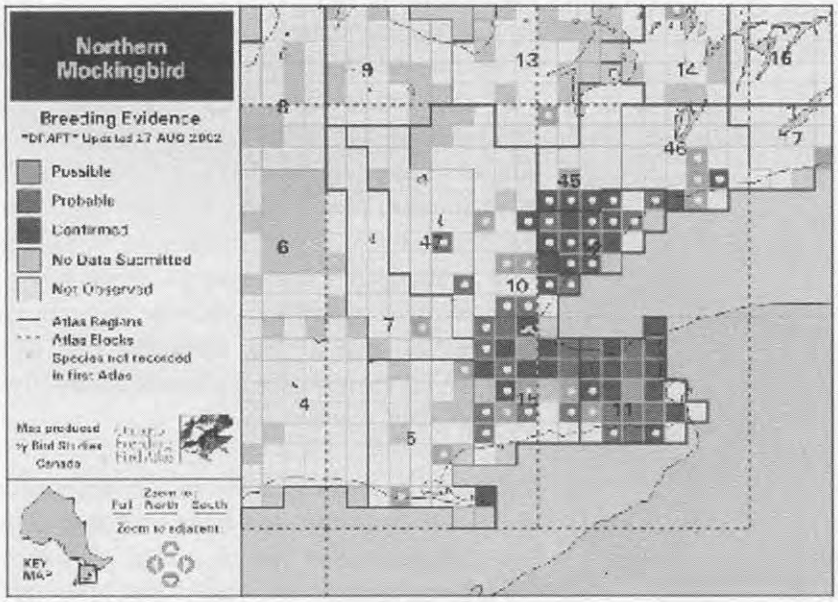


Figure 3: Northern Mockingbird. Note how the species has expanded from its 1981-1985 range primarily on the Niagara Peninsula, throughout Toronto and further east.

Data summaries are available for researchers and participants direct from the atlas web page. These data can be used without permission of project organizers. For additional data or larger requests, a standard application form and process has been developed. To date, 15 different outside users have applied to use atlas data for research or conservation purposes. These have primarily involved either the status of Species at Risk or environmental assessment.

Everyone can participate. If you are going to be in the field in Ontario during the breeding season between 2003 and 2005, we would encourage you to participate in the Atlas project. Although most data comes from dedicated volunteers, a lot of data are provided by researchers working on other projects. These people might maintain atlas data forms for the 10-km squares they are working in — some undertaking specific atlas work, others listing birds they have come upon while doing their own research. Others provide data files of compatible point counts. All of these data are much appreciated, and add to the capacity of the database, and to our knowledge of bird distribution and status in Ontario.

Help is particularly needed in the far north. The atlas is facilitating and subsidizing northern trips for experienced birders with wilderness survival skills. We hope to run trips down most of the remote northern rivers on the Hudson Bay Lowland and around most remote northern communities, both inland on the James and Hudson Bay coasts.

More information about the Atlas project, including maps and data summaries of results to date, and information on northern atlassing, can be found on the project webpage (http://www.birdsontario.org/atlas/atlasmain.html). Or contact the office at:

Ontario Breeding Bird Atlas
Blackwood Hall, Room 211
University of Guelph
Guelph, Ontario, N1G 2W1
Phone: 519-826-2092, Fax: 519-826-2113.
Toll-free: 1-866-900-7100
e-mail: atlas@uoguelph.ca.

Thanks to all those participants who are making the atlas project a success, and to those organizations providing funding support for the project: Environment Canada, Ontario Ministry of Natural Resources, The Ontario Trillium Foundation, Volunteer @ction.on-line, Human Resources Development Canada, Living Legacy Trust, James L. Baillie Memorial Fund.

MOURNING DOVE

REVIEWING THE 'RESEARCHER'S TRIPLET' – HYPOTHESES, MODELS AND DATA – IN ECOLOGICAL ANALYSIS. SECOND PART OF ARTICLE.

Applying the 'Researcher's Triplet'

Stephanie J. Melles[1] *and Glenn D. Sutherland*[2]

Centre for Applied Conservation Biology and
Department of Forest Sciences
Faculty of Forestry
University of British Columbia
Vancouver, B.C., CANADA

In the previous article, we reviewed the concept of the "researcher's triplet" – the inextricably linked set of tools that every ecologist uses when conducting a research study. These tools are: the ecological hypotheses in question, the representation of those hypotheses as a probability model and its statistical hypotheses, and the data used to assess support for the ecological hypotheses. Together these tools provide the essential means for researchers to draw conclusions about the validity of their ecological hypotheses through statistical analysis and proper interpretation of results. To illustrate how researchers apply this triplet of tools when actually conducting a research study, we look at an example derived from a recent research project (Melles 2000).

Resident bird communities in highly modified urban areas are often less diverse than in similar non-urban settings. Why might this be so? Observations of a decreasing diversity of bird communities associated with increasing fragmentation of the original habitat lead to the central ecological hypothesis: habitat loss and reduced habitat diversity due to increasing urbanization reduces the resources available for resident bird species. But, the relationship is complicated because the original habitat (we mean here species of plants, other features of the environment, and the way these are laid out over an area) does not necessarily decline in obvious ways as a result of increaing urbanization. To examine support for this hypothesis, a series of point-count and habitat plots were laid out across a large urban area, sampling a diverse array of habitat types, fragment sizes and fragments at different distances from large relatively unmodified fragments (e.g., parks). The basic data collected were abundance of resident bird species, landscape variables (at <100ha scale - deciduous/coniferous tree cover, grass and impervious surface cover, and park-cover) and local habitat structure variables (at <1ha scale - #trees, #shrubs, grass coverage, water, downed wood, housing density).

Our first task in the analysis process is to find the best general mathematical picture that represents the underlying ecological processes that relate vegetation diversity to bird diversity. Selecting a correct probability model forces us to transform whatever hypothesis we began with into explicit measurable quantities. In addition, models reflect predominant ecological theory. For example, regression or gradient analysis reflects the idea that species having different resource needs are found only along part of a gradient of available resources. On a large landscape scale, we often cannot estimate the abundance of bird species with any confidence. So at this scale, species' abundances are frequently converted to simpler presence absence data. Indicators of habitat loss (e.g., size distribution of patches, distance between patches, habitat composition) involve various measures of area, and therefore some type of logarithmic model can predict the distribution of these indicators. If these measures can be ordered in space along a gradient that may be related to changes in the bird community, then logistic regression is an appropriate choice of analysis method.

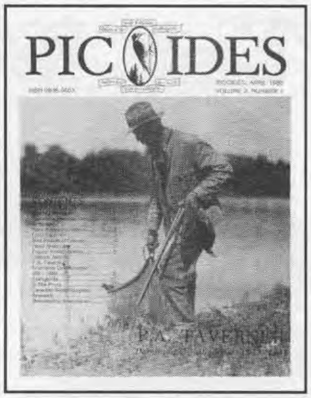
In this example logistic regression orders and combines our measures of habitat loss into a log-linear gradient. The ecological hypothesis was therefore transformed into a regression (based on a log-linear probability model) that obtains the maximum likelihood solution to the observed occurrence patterns of birds.

...continued on p. 12

[1]Present address: Landscape Ecology Laboratory, Department of Zoology, University of Toronto, 25 HarbordSt., Toronto, ON. M5S 3G5. Email: stephajm@zoo.utoronto.ca

[2]Present address: Cortex Consultants, Inc. 988 East 16th Ave.., Vancouver, BC. V5T 2V9.
Email: gsutherland@cortex.ca

1987



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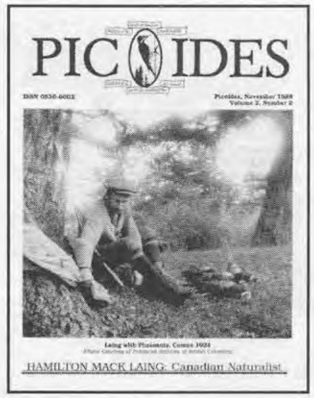

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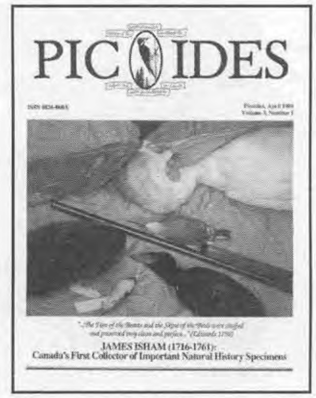

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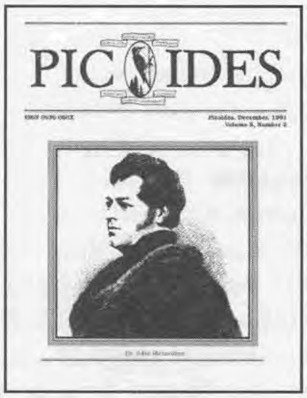

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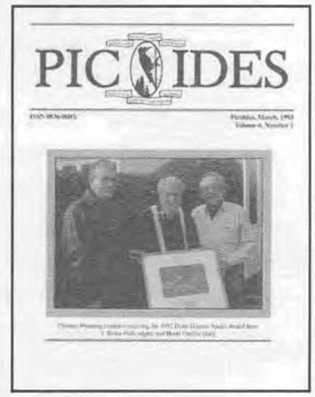
30 ISSUES

15 YEARS OF PICOIDES



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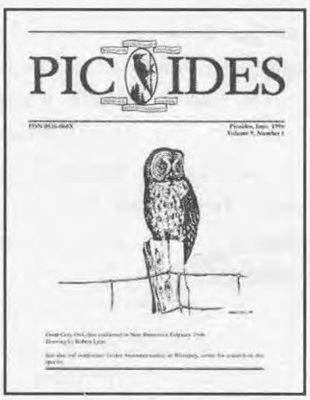

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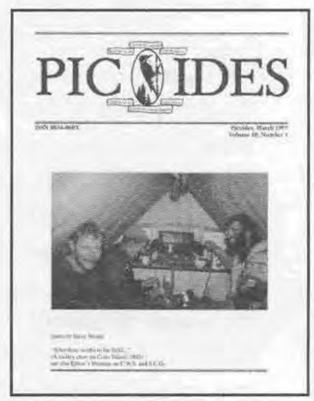

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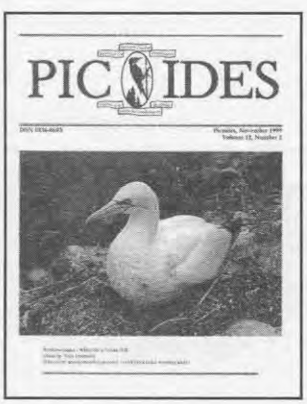

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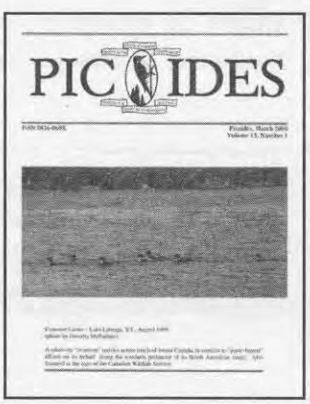

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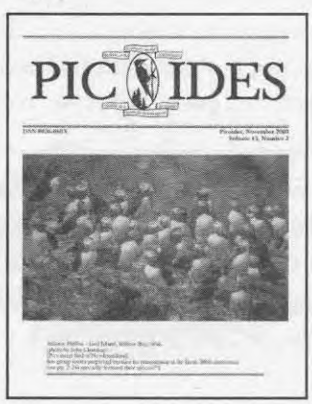

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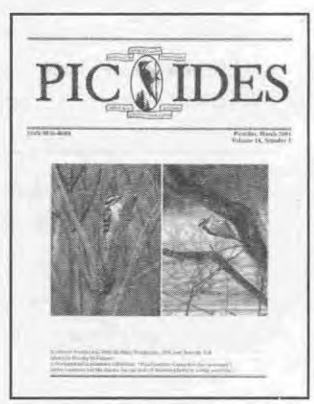

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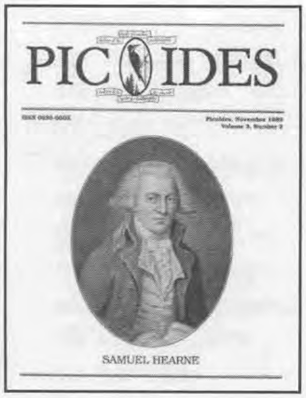

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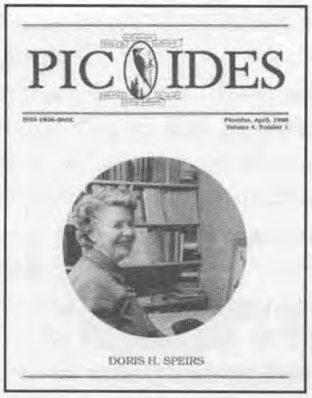

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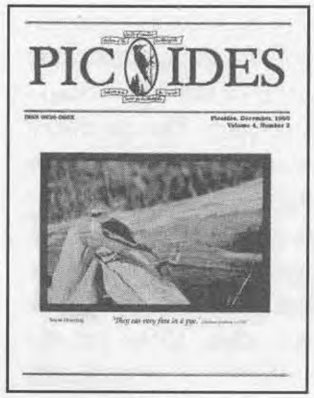

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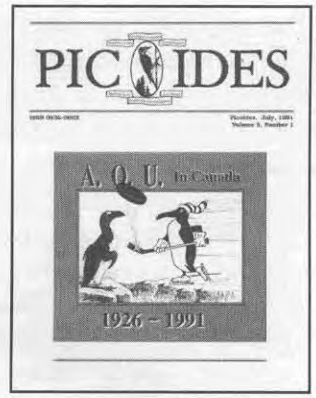

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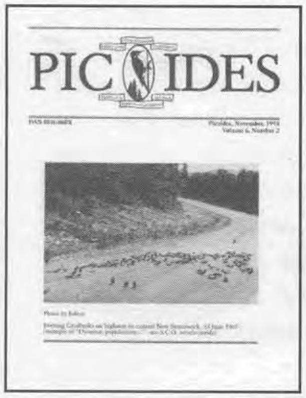

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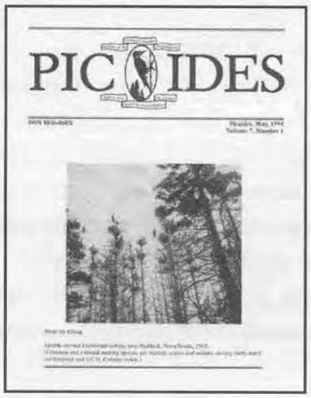

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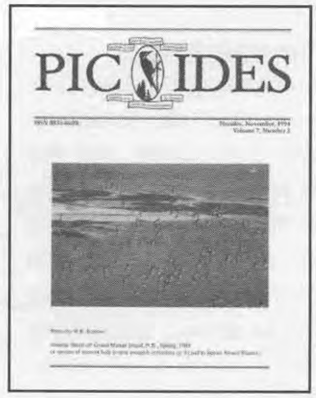

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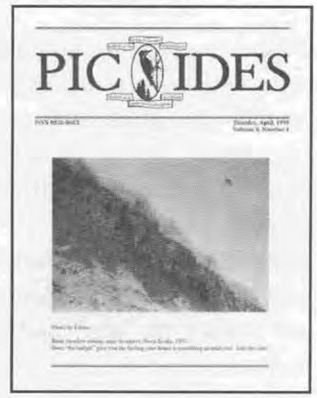

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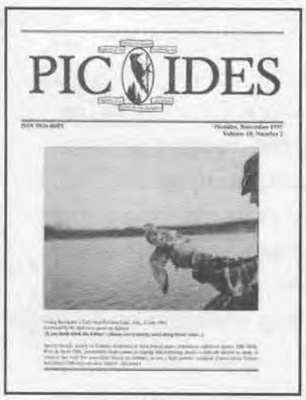

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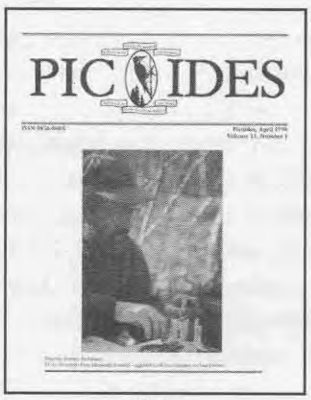

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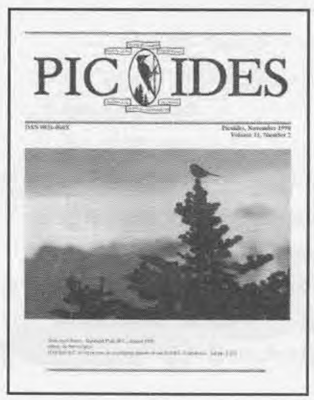

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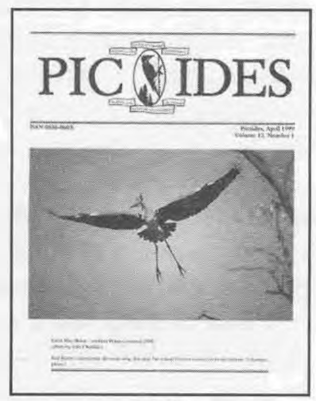

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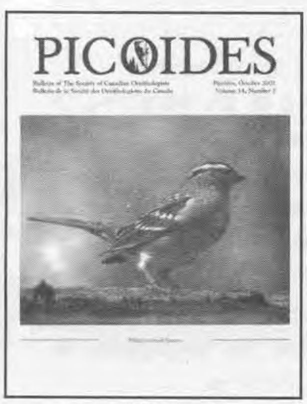

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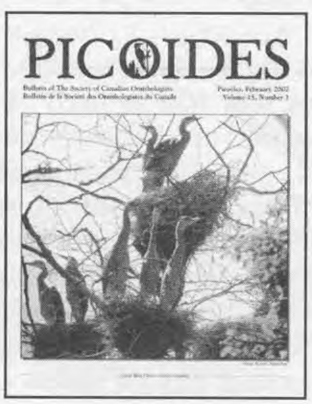

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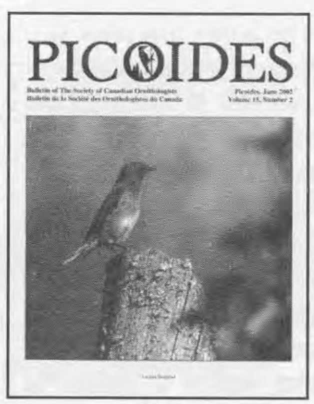

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The particular habitat variables (or predictors) entered into the regression model form the basis of our statistical hypotheses (the individual coefficients of the regression) - the second part of the triplet of inference. The predicted values of each coefficient become estimates of the statistical hypotheses represented by the parameters of the probability model. These estimates are made with varying levels of predictive ability and generality (i.e. precision or degree of confidence in the estimate). The third part of the triplet is the data gathered. In this case, these are the measured habitat variables at different scales in the landscape, and the presence or absence of bird species at each site within and among years.

So far, so good. We now have the three pieces of the triplet derived from the underlying hypothesis: the probability model (the log-linear probability model) the statistical hypotheses (the coefficients of the regression), and the data. Note how subtly through this process the underlying ecological hypothesis influences the way we look for patterns in our data, from the basic study design through analysis to interpretation, either increasing or decreasing our ability to "see" and discriminate among alternative explanations. This is a second reason why it is critical to understand the assumptions behind a statistical analysis. The chosen analysis strategy (e.g., regression was more appropriate than a 3 treatment ANOVA comparison in this case) is both an extension of the ecological hypothesis and a generalization of that hypothesis. The scope and generality of one's inference is inherently constrained by the nature of the hypothesis itself and the way it is formulated, something it is all too easy to forget. It is part of the researcher's craft to be able to create simple enough representations of their hypotheses to capture the generality of the processes they are studying while also retaining in them sufficient detail to understand the rich range of behaviours actually displayed by ecological systems.

What happens as we start to make inferences using this triplet in this example? Naively, one hopes that once you have the hypothesis specified statistically, and the data in hand, you run the analysis and proceed to interpret the results. Not so! Making inferences about the relative strength of ecological hypotheses from estimates of goodness of fit resulting from an analysis is not nearly as simple as interpreting and comparing numerical results subsequent to hitting the [analyze this] button. Logistic regression is a model building process that involves an examination of innumerable models, each including a different suite of habitat variables and/or a subset of variables. Each regression model actually represents a different ecological hypothesis. Assessing support for each with the data requires knowing when you are generating new hypotheses that better "fit" the data (for example by creating new statistical hypotheses through re-estimating regression coefficients) and when you are challenging the support for a particular hypothesis with the data, and therefore drawing conclusions about the underlying ecological hypothesis of interest. Results may indicate real effects or effects appearing as artifacts of the particular study area, or the data (such as small sample size). Often, the ability to determine whether or not a relationship between measures of habitat (e.g., loss of area or habitat diversity) and a species occurrence pattern is real depends on the researcher's: a) prior knowledge of the system (via pilot studies and/or other research results and experience), and b) choice of measurement scale and study area. If the region affected by an ecological process is larger than the area under investigation, then the perceived pattern may go unnoticed, and inferences about the underlying hypothesis could be incorrect because some of the processes determining the data are not accounted for in the structure of the analysis.

As an example, Spotted towhees (SPTO) are a ground-nesting and foraging species in the study area. Their occurrence might therefore be related to the presence of downed wood (branches and fallen stems of shrubs and small trees) which could provide both nesting material and cover, as well as be a source of insects for food. In this research study, this relationship between Spotted towhees (SPTO) and habitat in the local vicinity alone (< 1ha) resulted in a parameter estimate for downed wood that predicted a significant 3.3 fold increase in the likelihood of finding a SPTO if downed wood was also present. However, a totally different relationship was predicted for this variable when two other measures of the surrounding habitat at a larger scale (< 100ha) were subsequently taken into consideration, the cover of conifers within 500 m and the proportion of park area within 500 and 760 m of bird survey stations. In this case, the parameter estimate for downed wood was less important and predicted that SPTO were only 60% as likely to be found in the presence of downed wood. Evidently, downed wood, conifer coverage and surrounding parks were confounded variables with SPTO occurrence. SPTO were more likely to be found with greater amounts of landscape level habitat, and after factoring in the surrounding habitat, the presence of downed wood was not directly related to the presence of SPTO. If the entire region affected by a process is examined, then the pattern changes, becomes noticeable, or even disappears. Researchers need to take very great care to ensure that they understand the limits of what their analyses can really tell them about their hypotheses, and be aware of the limits to their inference at all stages in their research.

Why worry so much about the researcher's triplet? Ecology, perhaps more than any other branch of science, must contend with the complexities of the underlying component processes (such as dispersal, behavioural changes, and competition), often leading to difficult problems and tangled inferences. Yet, we are increasingly required to make predictions when several competing hypotheses may be plausible in light of the data. Given that it is neither feasible nor ethically acceptable to study entire populations and landscapes, and that it is obviously never possible to expose the same population to all possible land-use treatments, how are we to fulfill our goals as a predictive science? The design, methods, and variables we choose to measure are of utmost import. The way we analyze that data to assess trends and draw conclusions about how the world works is no less important.

In a subsequent article, we will look at some statistical methods that combine hypotheses, models and data in making inferences that explicitly take 'subjective" information and uncertainties into account - rather than assume an artificially "objective' view of problem-solving. In particular, we will review the roles of likelihoods and Bayesian thinking and how they use the researcher's triplet in ways that are sometimes more intuitive than the usual approaches to ecological analysis we are taught in undergraduate statistics courses.

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Further Reading

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THE SOCIETY OF CANADIAN ORNITHOLOGISTS 2003 RESEARCH AWARDS - CALL FOR APPLICATIONS

Applications are invited for two Taverner Awards ($500 each) and one Baillie Award ($1,000) for 2003.

Percy A. Taverner Awards are offered by the Society of Canadian Ornithologists to honor Percy A. Taverner and to further his accomplishments in increasing the knowledge of Canadian birds through research, conservation and public education. The awards are aimed at people with limited or no access to major funding, regardless of professional status, who are undertaking ornithological work in Canada.

James L. Baillie Student Research Award is open to any student conducting ornithological research at a Canadian university. It honours the memory of James L. Baillie and will support field research on Canadian birds. This award is funded by Bird Studies Canada from proceeds of the Baillie Birdathon, and is administered by the Society of Canadian Ornithologists.

A single application may be made for both awards, but only one award can be won by an applicant in a given year. Taverner Awards are given only once for the same project; Baillie Awards only once to the same person. However, past winners of either award may apply for the other. Funds are not awarded for stipends. All applicants must use a standard application form, which may be obtained on the SCO website (or by contacting the chair of the research committee. Applications must reach the following address before 24 January 2003:

Dr. Kevin Teather, Chair
SCO Research Awards Committee
Department of Biology
University of Prince Edward Island
Charlottetown, PEI
C1A 4P3

Awards will be announced no later than 1 April 2003. For application materials or additional information, contact Kevin Teather (Phone: (902-566-0325,
Email: kteather@upei.ca).

A NEW WEBSITE APPROACH: MARBLED MURRELETS ON LAKES IN BRITISH COLUMBIA, CANADA. http://mapserver.geog.sfu.ca/murrelets/

Falk Huettmann*, Peggy Yen, Nevis Antoniazzi, Greg, Burroughs, Marilee Pregitzer, and Jasper Stoodley

* Contact address: Geography Dept. – Earth Modelling lab – 2500 University Avenue NW, University of Calgary, falk@ucalgary.ca, Tel. 1 403 230 3122, Fax 1 403 282 6561

Marbled Murrelets (*Brachyramphus marmoratus*) are Pacific seabirds of international conservation concern. Besides nesting, these birds are also being sighted feeding or resting on inland freshwater lakes (Hobson 1990). However, only few sightings of Marbled Murrelets on lakes exist, so far (Carter and Sealy 1986). In the framework of a supervised student project with the BCIT (British Columbia Institute of Technology), the Centre for Wildlife Ecology (Simon Fraser University) and the Geography Department, University of Calgary, we compiled all known lake sightings for Marbled Murrelets in British Columbia reaching back as early as 1927 (Carter and Sealy 1986). All sightings were georeferenced, compiled into a centralized database, and described with Metadata according to the FCDC (Federal Geographic Data Committee) standard, also used by the Canadian Wildlife Service of Environment Canada (Chora et al. 2001, Antoniazzi et al. 2002).

British Columbia has a vast and sparsely surveyed coastline of over 8,000km, with over 100,000 known lakes that fall within the potential distributional range of Marbled Murrelets (within 75km of coastline). However, presently only 55 Marbled Murrelet sightings on 24 lakes are known for British Columbia, occurring throughout the entire year (Chora et al. 2001). We believe this relatively low number of sightings is mostly due to lack of survey effort and lack of awareness that Marbled Murrelets can occur on freshwater lakes throughout the year. Contributed sightings from Amateur birdwatchers and wildlife professionals would be very important to clarify this phenomenon; they could also produce sightings of Russian Long-billed Murrelets (M. perdix) occurring on North American lakes (e.g. Mlodinov 1997). In order to increase the sample size and triggering more surveys and sightings, we developed a public accessible predictive model where Marbled Murrelets could occur on lakes. This model allows to guide surveyors, and amateur birders as well, to survey lakes where Marbled Murrelets may potentially be found. Once back from the field, the survey results can be reported via a website with ease, and are stored in a centralized database; data can be made available to the public for research and conservation purposes by request. All that is required to access this tool is an internet connection, whereas ArcView or experience with GIS-related products is not necessary.

The predictive model was derived by relating published and unpublished lake sightings of Marbled Murrelets with the BC Watershed Atlas Fisheries Information Summary System (Ministry of Sustainable Resource Management 2001). The lake information was then merged in a GIS with the environmental lake attributes and fish information freely available from the WWW/internet. We used traditional modeling algorithms, such as Generalized Linear Models and Classification and Regression Trees, and computed a general predictive index of occurrence for Marbled Murrelets on lakes (see also Huettmann and Diamond 2001, Yen et al. in press). The website was implemented via ArcIMS and Java scripts by Jasper Stoodley, and is kindly hosted on the SFU-Geography Department server.

Currently, the website runs as a pilot project in order to fine-tune the approach and learn about experiences and the general acceptance with such a website. After a trial period, it is intended to publish specifics of this project, and link this website with GeoGratis and others websites/clearinghouses that make data and information available to the general public free of charge. The model-link between Marbled Murrelets and lake characteristics still requires bigger sample sizes and more statistical fine-tuning. However, the groundwork is done and the infrastructure is set up. It is hoped that this 'tool' will eventually greatly enhance the documentation of lake sightings of Marbled Murrelets, and improve our current knowledge on the biology and conservation of this elusive seabird and its habitat. For more information see the website or contact the authors directly. Feedback and suggestions are always appreciated.

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Carter, H. and S. Sealy. 1986. Year-round use of coastal lakes by Marbled Murrelets. Condor 88: 473-477.

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...continued on p. 17

CANADIAN BIRD-RELATED THESIS ABSTRACTS

Bélisle, M. 2000. Influence de la composition et de la configuration du aysage sur le mouvement des oiseaux forestiers. Ph.D. Thesis, Centre de recherche en biologie forestière, Université Laval, Québec

belisle_marc@hotmail.com

Theoretical models suggest that movement constraints will impede habitat election and dispersal, and consequently, will decrease animal population persistence. Empirical evidence suggesting that landscape composition and configuration may have large-scale repercussions on bird populations does not specifically address bird movements and thus cannot assess their large-scale influence. Here, I quantified the influence of landscape composition and configuration on the movements of forest birds within agricultural and peri-urban landscapes in Québec and Alberta.

I first measured the probability that birds, lured by playbacks of mobbing calls, would travel distances between 25-200 m in continuous forest, along narrow (< 10 m) woodland strips, and across open areas between two forest patches. The four species studied were as likely or slightly less likely to travel along woodland strips relative to continuous forest. All species were more inclined to travel in woodland strips than across open areas, and this difference increased with distance.

I then used playbacks to encourage birds to travel to a destination either by crossing an open area or by taking a longer route under forest cover. Birds preferred to travel under forest cover rather than to cross open areas, even when the forested detour conveyed a substantially longer route than the short cut in the open. Only when the detour under forest cover was considerably longer than the short cut in the open, in both relative and absolute scales, were birds more likely to take short cuts. Yet, birds rarely ventured further than 30 m from the forest edge. Residents and migrants responded similarly in late summer, and residents remained closer to forest edges in late summer as compared to in winter. Finally, I translocated territorial, mated males of three species between 1-4 km. Birds of all species took more time and were less likely to return to their territories as forest cover decreased in the landscape. Forest patch configuration in landscapes had little influence once the effect of forest cover was taken into account. These results support the hypothesis that habitat loss and fragmentation constrain avian movements in landscapes outside the migration periods.

Ibarzabal, J. 2001. Évaluation du risque de prédation des nids des oiseaux de la sapinière boréale humide. Ph. D. Thesis, Centre de recherche en biologie forestière, Université Laval, Québec.

jhawk.ibarzabal@sympatico.ca

The objective of this study was to evaluate the relationship between landscape structure and variables linked to the nesting success of birds (NSB) following timber harvest in the humid boreal balsam fir forest, of the Laurentian massif located in the southern part of the boreal zone. I first examined three variables from landscape structure (forest area, core area of the forest, and length of edges present in the landscape) at two spatial scales (83 and 1610 ha) and I measured their association with four extensive methods linked with NSB, based on parental activity and nest predator activity (visit to bait stations, presence of gray jays Perisoreus canadensis or red squirrels Tamiasciurus hudsonicus). Variability in all indicators was small over the study area and independent from landscape structure variables. Nest predator activity was low in the mature forest and can explain the lack of associations among NSB indicators.

Since current timber harvesting methods are powerful generators of forest edges, I next performed an experiment to evaluate, at a third spatial scale (0-120 m), the existence of a relationship between edges and activity of nest predators. No increase in the activity of nest predators was associated with the proximity to edges and depredation events were not associated with prior detection of the red squirrel. Depredation was higher on the ground than in trees, however. Finally, the distribution of nest predator activity in relation to landscape can provide further insight on the impacts of forest management on NSB. A telemetric assessment of bird locations for eleven groups of gray jays showed that they concentrated their activities near the forest edges, especially at less than 30 m from open areas. Moreover, their movements were slower in landscapes with abundant edges, suggesting that they focused their foraging within those areas. In conclusion, the NSB is not affected by modification of landscape structure variables in the humid boreal balsam fir forest, but a high population density of gray jays could affect NSB at less than 30 m from forest edge.

Imbeau, L. 2000. Effets à court et à long terme de l'aménagement forestier sur l'avifaune de la forêt boréale et une de ses espèces-clés : le pic tridactyle. Ph. D. Thesis, Centre de recherche en biologie forestière, Université Laval, Québec.

louis.imbeau@uqat.ca

Logging is generally considered the most important threat to the long-term survival of some species associated with boreal forests. The general objective of this study was to produce a first evaluation of short and long-term effects of clear-cut logging currently practiced in Québec's boreal forest on birds. To do so, I compared boreal avifaunas of Fennoscandia and eastern Canada by using life-history traits related to habitat selection and nesting strategy of each species in order to develop a vulnerability index related to changes caused by modern forestry. A basic premise behind these comparisons is that information obtained in Fennoscandia can be used to attempt to foresee future long-term impacts of forestry on the boreal avifauna of eastern Canada.

In the two regions, neo-tropical migrants generally did not present great vulnerability levels whereas the most sensitive species were resident cavity-nesters. Such species are showing important population declines in the last 50 years in Fennoscandia. Another goal of this study was to obtain more information on the Three-toed Woodpecker (Picoides tridactylus), a key holarctic species which is one of the most sensitive to loss of old-growth forests. This woodpecker preferred to forage in recently-dead trees with a larger dbh than other available trees. Moreover, snags with a low bark cover and a broken top were preferred for drumming. These results may explain why this species is confined to old-growth forests: only this habitat ensures a constant recruitment of all these substrate types.

Using drumming playback stations, I also evaluated the convenience of clear-cut separators and riparian strips as possible refugia for this species in forests managed for logging. Although the abundant clear-cut edges were not avoided in managed landscapes, spatial configuration of residual forest seemed to highly constrain foraging movements of this species because of its strong avoidance of open areas. However, residual forests strips appear essential to maintain this species within managed areas, its population density within such residual forests being comparable to the one obtained in contiguous forests.

Shepherd, Pippa. 2001. Space use, habitat preferences, and time-activity budgets of non-breeding Dunlin *Calidris alpina pacifica* in the Fraser River Delta, B.C. PhD thesis, Centre for Wildlife Ecology, Dept. of Biological Sciences, Simon Fraser University, Burnaby, B.C., Canada, V5A 1S6

pshepher@sfu.ca

I investigated aspects of the ecology of non-breeding Dunlin Calidris alpina pacifica in the Fraser River Delta, British Columbia, the most northerly site in Canada supporting a sizeable population in winter (approximately 40,000 birds). I used radio telemetry, direct observation, and Geographical Information Systems to document site fidelity, space-use patterns, habitat preferences, and time-activity budgets of individual non-breeding Dunlin throughout the 24-hour day and twice-daily tidal cycles.

Site fidelity and habitat preferences were examined at both regional and local scales. Space-use was quantified by estimating home range and core area sizes, and by examining core area placement, macro-habitat choices (marine versus terrestrial), and movement patterns within the home range. By following individuals through time and calculating within-bird means by tide stage, macro-habitat, and time of day, I minimized sampling biases and produced a detailed picture of the individuals' behaviour.

Dunlin were trapped in three areas within the Delta during two non-breeding seasons (1995–96 and 1998), and categorized by sex, and, where possible, by age. I used a maximum likelihood mixture model to assign sex, based on culmen length. Dunlin were site faithful, both regionally (to the Fraser Delta) and locally (within the Delta). I used compositional analysis to show that Dunlin chose habitats non-randomly at both regional and local scales, and there were differences among sex and site categories. Marine habitats were ranked highest. I assessed marine invertebrate prey densities (large and small annelids, crustaceans, and molluscs) for intertidal micro-habitats throughout the Delta, to examine their relationship with space-use by Dunlin.

Across sites, marine home range size decreased as prey density within the home range increased, with prey density accounting for 63% of the variance in home range size. Within a single site, both marine home range and core area size decreased as prey density in-creased, with prey density explaining 89% of the variance in home range size and 80% of the variance in core area size.

Dunlin marine core areas contained higher densities of crustaceans and smaller annelids than did the rest of the home ranges. Most Dunlin also used a range of terrestrial habitats, particularly at night. Soil-based agricultural crops were preferred at a regional scale, and pasture was the only agricultural crop that was highly ranked and significantly preferred at both regional and local scales. Dunlin spent on average at least 15.7 hours per 24-hour day foraging (depending on season), and at least another 3 hours per day flying (measured in spring), leaving on average at most 5.3 hours per day for activities such as roosting, preening, vigilance, and aggression.

The percentage of time that Dunlin spent feeding did not differ between day and night, nor between marine and terrestrial macro-habitats. Dunlin spent on average at least 7.1 hours foraging at night, of which at least 2.9 hours occurred in terrestrial habitats, although the relative use of marine and terrestrial habitats varied considerably among individuals. Females spent less time foraging than males, but there was no difference between age classes.

Finally, I compared the sex ratios and within-sex body sizes of Dunlin wintering in the Fraser River Delta with those wintering in central California, where ecological variables might favour smaller birds. Although female Dunlin are larger than males, both populations were similarly male-biased, and I did not find significant within-sex size differences between latitudes.

SHOREBIRDS AT MARY'S POINT, NB

...continued from p. 14

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POETRY CORNER

The Darkling Thrush - Thomas Hardy (written on the last day of the 19th Century)

I leant upon a coppice gate
When frost was spectre-gray,
And Winter's dregs made desolate
The weakening eye of day.
The tangled bine-stems scored the sky
Like strings of broken lyres,
And all mankind that haunted nigh
Had sought their household fires.

The land's sharp features seemed to be
The Century's corpse outleant,
His crypt the cloudy canopy,
The wind his death-lament.
The ancient pulse of germ and birth
Was shrunken hard and dry,
And every spirit upon earth
Seemed fervourless as I.

At once a voice arose among
The bleak twigs overhead
In a full-hearted evensong
Of joy illimited.
An aged thrush, frail, gaunt, and small,
In blast-beruffled plume,
Had chosen thus to fling his soul
Upon the growing gloom.

So little cause for carolings
Of such ecstatic sound
Was written on terrestrial things
Afar or nigh around,
That I could think there trembled through
His happy good-night air
Some blessed Hope, whereof he knew
And I was unaware.

Society of Canadian Ornithologists/Société des Ornithologistes du Canada
WEBSITE: www.nmnh.si.edu/BIRDNET/SOCCanOrn/

Standing Committees and Work Groups

See inside front cover for contact information for those with # beside name.

Doris Huestis Speirs Award Committee (annual award for excellence in Canadian Ornithology)
Marc-André Villard (chair)#

Research Awards Committee (mandate: annual selection of research candidates, fall call for applications, selection and announcement by April of following year, members appointed and rotated.
Three awards: James L. Baillie 1K$, Taverner (2 awards) 0.5K$. (Another award to be announced soon)
Kevin Teather (chair)#

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Kathy Martin (chair), Dept. For. Sci. UBC. Voice: 604-822-9695; Email: kmartin@interchg.ubc.ca
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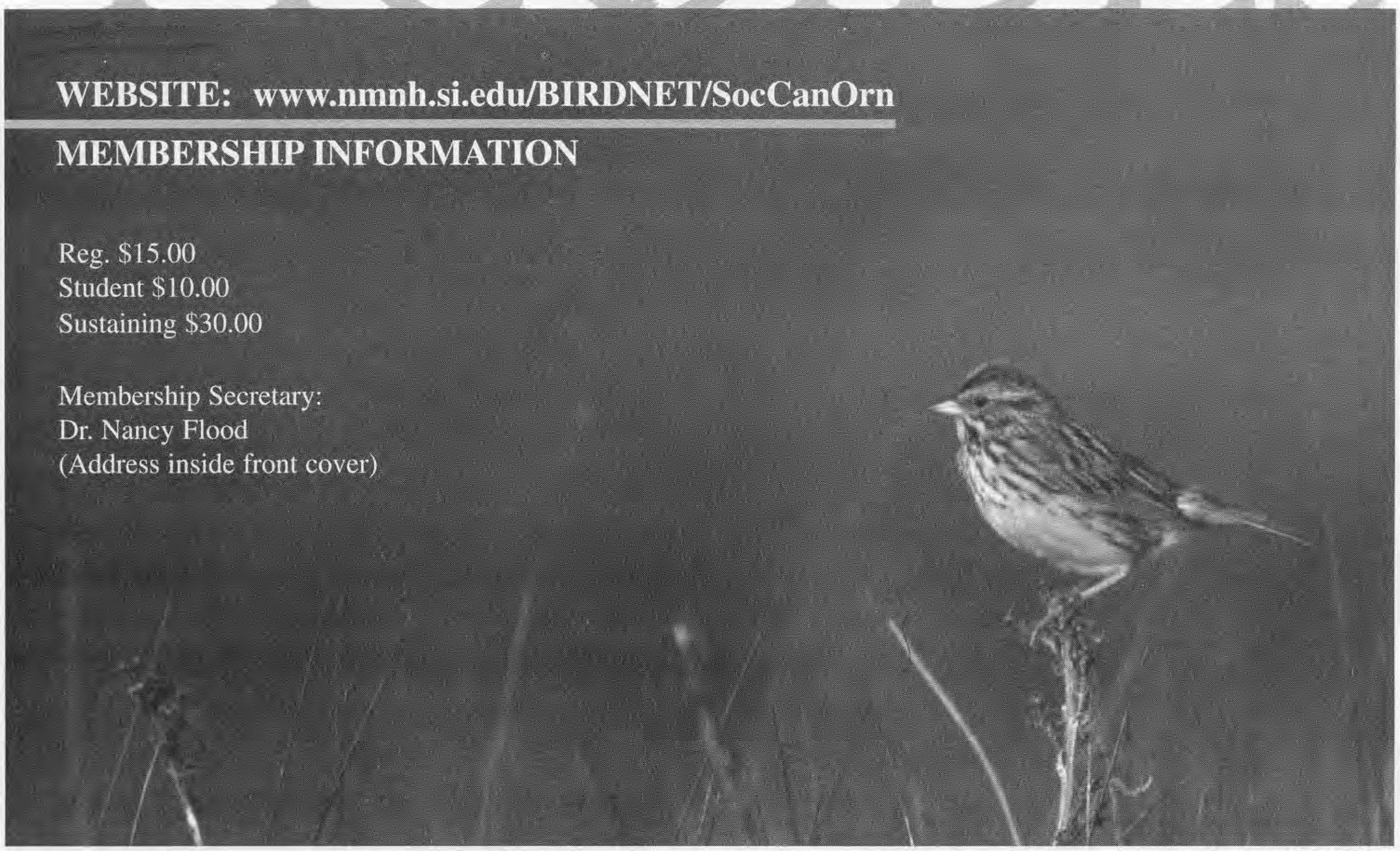

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